



<http://researchspace.auckland.ac.nz>

ResearchSpace@Auckland

Copyright Statement

The digital copy of this thesis is protected by the Copyright Act 1994 (New Zealand).

This thesis may be consulted by you, provided you comply with the provisions of the Act and the following conditions of use:

- Any use you make of these documents or images must be for research or private study purposes only, and you may not make them available to any other person.
- Authors control the copyright of their thesis. You will recognise the author's right to be identified as the author of this thesis, and due acknowledgement will be made to the author where appropriate.
- You will obtain the author's permission before publishing any material from their thesis.

To request permissions please use the Feedback form on our webpage.

<http://researchspace.auckland.ac.nz/feedback>

General copyright and disclaimer

In addition to the above conditions, authors give their consent for the digital copy of their work to be used subject to the conditions specified on the Library Thesis Consent Form.

**Child Immunisation: Reactions and Responses
to New Zealand Government Policy 1920-1990.**

by

Alison Suzanne Day

**A thesis submitted in fulfilment of the requirements
for the degree of Doctor of Philosophy in History.**

The University of Auckland, 2008.

ABSTRACT

My thesis has explored the history of child immunisation in New Zealand from a socio-medical perspective. The framework has been hinged around the actions and immunisation strategies of the Health Department over the period 1920 to 1990 and the responses of parents to those actions and strategies.

One of the most important concepts considered was how the Health Department decided on and then implemented immunisation policy during the period. Health professionals played a significant role in the delivery of immunisation to children and have impacted on a number of policy changes. After World War Two, with an increase in the number of vaccines on offer, the specialised expertise of the World Health Organization and the Epidemiology Advisory Committee in policy determination became very influential.

The responses to departmental immunisation policies by parents demonstrated a significant change during the period, although most apparent in the 1980s. From a situation of wariness (and perhaps indifference) in the 1920s and 1930s to almost total vaccine acceptance from the 1950s, the 1980s were, by contrast, illustrative of parental assertiveness especially concerning side-effects. The advent of feminism in the 1970s and the issues of informed consent in the mid-1980s assisted in raising levels of parental awareness in immunisation which continued into the 1990s. Ethnic and socio-economic background also contributed to different levels of acceptance of immunisation, which will be addressed.

Opposition to immunisation tended to wax and wane during this period. Two groups were dominant, although at opposite ends of the time spectrum. Both were small but vocal in their views. Nevertheless, neither group made much impression on New Zealand parents, although they were both an irritant to the Health Department.

Overseas experiences in immunisation were interwoven throughout my thesis to set the New Zealand events in an international context. The introduction of a particular vaccine was compared and contrasted with similar schemes elsewhere to give an

appreciable understanding of New Zealand's position. Vaccine controversies overseas were also examined to determine their influence in New Zealand.

Immunisation policy has been shaped by a myriad of factors and influences from both inside and outside the country. There were extensive changes over the years in the way parents, health professionals and the Health Department perceived immunisation which will be examined in my thesis.

ACKNOWLEDGEMENTS

I would most especially like to thank my main supervisor, Associate Professor Linda Bryder for her guidance, help and support during the years it has taken me to complete this thesis. Without her encouragement and calm acceptance of the major changes that have occurred in my life whilst writing it I doubt I would have been able to finish. I owe her a heartfelt debt of gratitude that I have finally made it!

To my second supervisor, Mrs Judith Bassett, my sincere thanks for all your insightful and pertinent comments and most particularly for your help in finding people for me to interview during my research. I have been very privileged to have two excellent supervisors, who both complemented each other.

There are other people whom I wish to thank. To my parents-in-law Ruth and Norman Parker who kindly proof-read the thesis for me and offered grammatical assistance I am indebted to you both. To Kate Prebble who really helped me in the last stages, I am most grateful. To all the people in the History Department who gave up their valuable time to be interviewed by me and who also put me into contact with other people you are much appreciated. I would also like to express my gratitude to the History Department for awarding me the Myra and Eric McCormick Scholarship in History which proved invaluable during the first few years.

Finally, a special thank you to my husband Michael Parker who supported me financially after my scholarship finished and has offered many words of encouragement and advice right until the very end.

TABLE OF CONTENTS

Abstract	ii
Acknowledgements	iv
Table of Contents	v
List of Abbreviations	vi
Chapter 1: Introduction	1
Chapter 2: Curtailing the ‘Assassin of Children’. Diphtheria immunisation in New Zealand 1920-1941	27
Chapter 3: ‘Get Them Young’. The Health Department and the expansion of childhood immunisation 1941-1962	57
Chapter 4: ‘Something Everybody Did?’ Attitudes and responses to immunisation policy 1941-1962	95
Chapter 5: From Salk to Sabin: international influences on polio vaccine policy in New Zealand 1955-1962	125
Chapter 6: Re-inventing Disease Perception: immunisation and public health policy 1962-1972	167
Chapter 7: ‘Slow to Change?’ The Health Department and immunisation policies 1972-1990	200
Chapter 8: ‘Crises of Confidence?’ Vaccine controversies and medical and public responses 1973-1990	234
Chapter 9: Empowerment and Expectation: the changing nature of parental attitudes towards immunisation 1973-1990	268
Chapter 10: Conclusion	297
Appendix 1: Immunisation Schedules 1964-1990	306
Appendix 2: Table of Immunisations 1920-1990	310
Bibliography	311

LIST OF ABBREVIATIONS

AJHR	Appendices to the Journals of the House of Representatives
ANZ	Archives New Zealand
APVDC	Association of Parents of Vaccine-Damaged Children
AS	Auckland Star
BCG	Tuberculosis Vaccine
BMJ	British Medical Journal
BUAV	British Union for the Abolition of Vivisection
CARE	Citizens Association for Racial Equality
CDCAC	Communicable Disease Control Advisory Committee
CIS	Carcinoma in Situ
CS	Christchurch Sun
CSL	Commonwealth Serum Laboratories
D	Dominion
DHSS	Department of Social Security (Britain)
DGH	Director General of Health
DNZB	Dictionary of New Zealand Biography
DPH	Department of Public Health
DT, double	Combined Diphtheria and Tetanus vaccine
DTP, triple	Combined Diphtheria, Tetanus and Pertussis vaccine
EAC	Epidemiology Advisory Committee
EP	Evening Post
FDA	Federal Drug Administration
GP	General Practitioner
HART	Halt All Racist Tours
HBCT	Hepatitis B Control Team
IAS	Immunisation Awareness Society
IMAC	Immunisation Advisory Centre
IPV (Salk)	Inactivated Polio Vaccine
JCVI	Joint Committee of Vaccination and Immunisation
MJA	Medical Journal of Australia
MOH	Medical Officer of Health
MMR	Mumps, Measles and Rubella vaccine

MRC	Medical Research Council (Britain)
MWWL	Maori Women's Welfare League
NCES	National Childhood Encephalopathy Study
NZAVS	New Zealand Anti-Vivisection Society
NCSS	New Zealand Crippled Children Society
NZG	New Zealand Gazette
NZH, <i>Herald</i>	New Zealand Herald
NZMA	New Zealand Medical Association
NZ Listener	New Zealand Listener
NZMJ	New Zealand Medical Journal
NZNJ	New Zealand Nursing Journal
NZPD	New Zealand Parliamentary Debates
NZT, <i>Truth</i>	New Zealand Truth
NZYB	New Zealand Yearbook
ODT	Otago Daily Times
OPV (Sabin)	Oral Polio Vaccine
PHN	Public Health Nurse
PMD	Public Health Dissertation
SMO	School Medical Officer
SST	Sunday Star Times
SSPE	Subacute Sclerosing Panencephalitis
TAB	Typhoid Vaccine
WHO	World Health Organization
WT	Waikato Times

CHAPTER 1: Introduction

‘It doesn’t have to be’.¹ This was the opening line of the New Zealand Ministry of Health’s leaflet on the meningococcal meningitis B vaccine for the under-fives campaign in 2004-05. New Zealand was in the middle of an epidemic and the Ministry heavily promoted the benefits of immunisation to parents. Centre stage in the media coverage were, however, the heartbreaking cases of a seven-month-old Pakeha girl who lost part of her limbs to the disease and a Pacific Island baby boy who lost his life.² As the disease had been shown to be no respecter of race or socio-economic background, the vaccine was welcomed by a wide range of parents. Clinics were set up at local doctors’ surgeries and the subsequent campaign proved to be a success with over 690,000 young New Zealanders being immunised by November 2005.³

A year later in November 2006 a television programme was screened which cast doubt over the safety of the Norwegian-made meningococcal meningitis B vaccine used in New Zealand. This had a negative impact on parents. Practice nurses reported nearly all parents were raising concerns about vaccine safety and that as a result over a third of them were delaying the immunisation of their children.⁴

The meningococcal meningitis B campaign was the latest in a long line of immunisation programmes instigated by the Ministry of Health (formerly the Health Department), to improve the level of protection available to New Zealand children against infectious diseases. It was also one of a growing number of instances where the vaccine was later brought into question. One of my prime reasons for choosing to study the history of immunisation was the exploration of these types of situations and the reactions of people and health professionals. This has proved to be a fascinating case study of social history.

¹ Leaflet, Meningococcal Meningitis Campaign, Ministry of Health, 2004.

² *New Zealand Herald*, Editorial, 14 July 2004. The stories of these two children regularly appeared in the media during June and July 2004.

³ ‘Injecting Success’, *ImmNuZ*, 42, November 2005, p.2.

⁴ ‘Practice Nurse Survey. Impact of Norwegian TV programme’, *ImmNuZ*, 46, November 2006, p.3. The programme was aired on 5 November 2006.

Commencing around 1920 with the introduction of the diphtheria vaccine into New Zealand, my thesis aims to explore how government policy towards immunisation was determined and implemented up to 1990. I limited my study to the immunisation of children up to the age of 16, as these were the people to whom immunisation has been predominantly targeted. Some campaigns, for example the ones for the oral polio vaccine in 1962 and the rubella campaign in the 1970s, also targeted adults (women for rubella). In these instances the adult experiences are mentioned to present a more complete picture but analysis is not taken further.

Historiography

To date there have been few published historical studies which have considered the social impact of immunisation in New Zealand or indeed, elsewhere. Early histories of immunisation from the 1950s and 1960s, such as Henry Parish's two books, *A History of Immunization* (1965) and *Victory with Vaccines: The Story of Immunization* (1968) were focused exclusively on the history of vaccine development and the achievements of immunisation in lowering the incidence of disease.⁵ In a similar mode was J. R. Wilson's book, *Margin of Safety: The story of the Poliomyelitis Vaccine* (1963) which considered the development of the Salk and Sabin vaccines,⁶ and S. R. Rosenthal's work *B.C.G. Vaccination against Tuberculosis* (1957), which looked at the 'remarkable decline in the death rate from tuberculosis' using BCG.⁷ However, there was little discussion regarding the debates around immunisation, public campaigns; including how the campaigns were organised and who carried out the immunisations, and parental views of immunisation.

Whilst providing some useful background material, these works were very much 'histories from above' looking at 'great men and great deeds' and focused on immunisation's successes. From a 1960s perspective this was how immunisation must have been perceived; diphtheria was a distant memory for many and polio had almost been eradicated in western countries where the vaccines had been used. Indeed the value of these works now are as examples of this perspective, portraying

⁵ H. J. Parish, *A History of Immunization*, Edinburgh, 1965 and *Victory with Vaccines. The Story of Immunization*, Edinburgh, 1968.

⁶ J. R. Wilson, *Margin of Safety. The Story of the Poliomyelitis Vaccine*, London, 1963.

⁷ S. R. Rosenthal, *B.C.G. Vaccination against Tuberculosis*, London, 1957.

immunisation's 'Golden Age' before the concerns about vaccine side-effects became more prominent.

From the 1970s onwards, immunisation was usually mentioned in connection with the study of the history of particular diseases but not as a topic in its own right. One of the earlier examples was J. R. Paul's work, *A History of Poliomyelitis* (1971) with polio the disease being the dominant discourse rather than polio immunisation 'per se'.⁸ Historians addressing particular diseases, including the social, political and economic responses, have invariably discussed immunisation as part of a wider story.

This methodology was evident in Evelyn Hammonds' work on diphtheria in New York City in the early part of the twentieth century. The book contained two chapters on the city's mass immunisation campaign for diphtheria from 1929-32. Diphtheria was (and is) a disease that has not received a great deal of attention from historians and this work was therefore of some significance. However, the disease was studied in isolation; there was no comparison to other diseases and their methods of control. Moreover, the book only considered events in New York City; there were no references to diphtheria immunisation carried out in other parts of the United States and only a few to initiatives overseas.

The chapters on diphtheria immunisation in Hammonds' book were carefully constructed and presented a picture, not only of vaccine developments and initiatives by scientists and health administrators in New York City, but also some of the views of parents regarding immunisation and their reasoning behind acceptance or refusal. Hammonds also drew attention to the importance of mass advertising and media publicity and examined the significant role it played in the campaign's success, thus providing a benchmark for future campaigns both at home and overseas. This work's value was in portraying a large American city's experience and perspective and so providing a comparison and contrast for diphtheria policy both in New Zealand and elsewhere.⁹

⁸ J. R. Paul, *A History of Poliomyelitis*, New Haven and London, 1971.

⁹ E. M. Hammonds, *Childhood's Deadly Scourge: The Campaign to Control Diphtheria in New York City, 1880-1930*, Baltimore, 1999.

Another important disease-focused study was David Oshinsky's book on the history of polio in America.¹⁰ An immensely readable work, 11 of the 16 chapters are devoted to the story of the development of the Salk and Sabin polio vaccines and the politics surrounding their implementation. The major theme was the conquest of polio; the book does not focus on immunisation in its own right. Oshinsky has produced a detailed insight into the rivalries and politics that encircled the two polio vaccines and the media interest they generated. In turn he used these insights to explain the polio vaccines' popularity and the 'star' status of the protagonists, Salk and Sabin, which also kept the disease in the spotlight. Consequently, the book's perspective was very much a 'view from on top' and did not feature the 'history from below'; the experiences of those who received the vaccine. This work's value to my thesis was in helping to contextualise the New Zealand experience with the polio vaccines, as their popularity was by no means confined to the United States.

Georgina Feldberg, in her work on the history of tuberculosis in America, also examined immunisation.¹¹ A discussion of BCG comprised part of the later chapters where Feldberg considered in detail the reasons why the United States did not adopt the vaccine as part of its campaign to fight tuberculosis. She contended that in addition to doubting the results of the BCG tests performed by the Pasteur Institute, American doctors preferred to concentrate on trying to control the social reasons for tuberculosis, and did not wish to use vaccination for fear it would divert resources away from this goal. However, as was evident with Oshinsky, Feldberg's work was very American-focused with little attempt to set it in a wider context by drawing comparisons with experiences elsewhere. Feldberg did, however, emphasise the position the Americans found themselves in, almost alone by the 1950s, in their refusal to use BCG.

There are also two PhD theses from Canada and Britain that explored the history of a particular disease in their country. Christopher Ruddy's thesis focused on the history

¹⁰ D. Oshinsky, *Polio. An American Story. The Crusade that Mobilized the Nation Against the Twentieth Century's Most Feared Disease*, New York, 2005.

¹¹ G. Feldberg, *Disease and Class. Tuberculosis and the shaping of modern North American society*, New Jersey, 1995.

of polio in Canada up until 1962.¹² As with works on an individual disease, immunisation was encompassed within the story. Ruddy made an important contribution to the historiography of the polio vaccines as he examined the significant and often overlooked contribution of Canada to their development in the later chapters. He also highlighted the role of Connaught Serum Laboratories and the contribution of key players who helped bring the vaccine and immunisation campaigns to fruition. Again, however, the work was introspective, focusing primarily on Canada, although the contribution and influence of the United States was acknowledged. Polio vaccine developments in other parts of the world were largely ignored as well as the views of those ‘from below’. Nevertheless, it was a detailed and careful account, which provided a comparison for the New Zealand polio experience and was especially useful for contributing the ‘other side of story’ of the SV40 controversy of the 1970s and 1980s in New Zealand.¹³

Jennifer Stanton’s thesis also focused on a disease, this time on hepatitis B in Britain.¹⁴ Additionally, she published an article based on the chapter on hepatitis B immunisation.¹⁵ In both the article and thesis she examined the issues which determined hepatitis B immunisation policy in Britain. Policy at the time was to offer immunisation only to ‘at risk’ groups which included health workers and drug users. She argued that because of a number of factors including the high cost of the vaccine, the relative confinement of the disease to the ‘risk groups’ and stigmatization, any further extension of this policy was not advocated. This provided a direct contrast with the situation in New Zealand where the threat was to all children. Stanton did not make any comparisons to experiences overseas; the United States experienced a situation similar to the one in Britain but this was not discussed.

One PhD thesis which focused specifically on immunisation was by Patrick Vivier. He considered national immunisation policy in the United States from 1955.¹⁶ One of

¹² C. J. Ruddy, ‘Do Something!...Do Anything! Poliomyelitis in Canada 1927-1962’, PhD thesis, University of Toronto, 1995.

¹³ For a detailed discussion of SV40 and its impact see Chapter 8, pp.232-38, pp.244-49.

¹⁴ J. M. Stanton, ‘Health policy and medical research: hepatitis B in the UK since the 1940s’, PhD thesis, London University, 1995.

¹⁵ J. M. Stanton, ‘What shapes vaccine policy? The case of Hepatitis B in the UK’, *Social History of Medicine*, 7, 3, 1994, pp.427-47.

¹⁶ P. M. Vivier, ‘National Policies for Childhood Immunization in the United States: An Historical Perspective’, PhD thesis, John Hopkins University, 1996.

the most important themes was the effect of political changes on policy which could and did beget significant policy alteration by different Administrations. Vivier effectively demonstrated the difference in priorities between the political parties and consequently how vaccines had to compete against each other for funding. He also pointed out how the influence of individuals and organisations such as the Center for Disease Control were important determinants of policy implementation. Another significant aspect was the examination of the legislation put in place to award compensation to children deemed to have been vaccine-damaged and the political issues surrounding this. However, Vivier did not explore the views of health professionals who administered the vaccines or parents, nor did he analyse how these policies were implemented at community levels.

The impact of past vaccine crises and controversies within an historical context has formed the basis of several recent books and articles. The Cutter Incident, one aspect of the American polio story, has been examined by historian Paul Offit. In 1955 a number of children and adults were infected with live polio virus from the supposedly inactivated vaccine made by Cutter Laboratories of Berkeley, California.¹⁷ Offit carefully unravelled the story and the tragedies behind the incident and considered its impact on vaccine production in the United States. He argued that the Cutter Incident was responsible for the subsequent situation where few manufacturers were prepared to make vaccines for fear of damages claims. This was particularly evident for controversial vaccines such as pertussis as these vaccines can cause serious side-effects in a very small number of children and leave manufacturers much more vulnerable to lawsuits. As vaccines were produced for the state and government health authorities there was little profit to be made, another factor taken into consideration by manufacturers. To support these arguments he thoroughly examined the Cutter Incident including the far-reaching implications at the time for production and control of vaccines within the United States as well as the experiences of some of its victims and their families. Government handling of the situation and the resignation of key players meant eventually the immunisation programme was able to continue.

¹⁷ P. A. Offit, *The Cutter Incident. How America's First Polio Vaccine led to the growing Vaccine Crisis*. New Haven and London, 2005.

There was however, little attempt to assess the consequences outside of the United States. In other western countries, such as Britain and New Zealand, the Cutter Incident had a much more detrimental effect on the planned immunisation programmes than in the United States where the programme was still able to be carried out. In Britain, vaccine production techniques were considerably altered and this resulted in substantial delays in implementing planned immunisation programmes in New Zealand (who were dependent on overseas supplies) and elsewhere. Despite the United States centred approach, Offit's book was a valuable source in recognising the importance of the Cutter Incident, and has been used in my thesis as a background to understanding the New Zealand experience.

Another immunisation incident which had an effect in New Zealand and formed the basis of an article was the Bundaberg Tragedy in 1928 in Australia where contaminated vaccine was given to 21 children, resulting in 12 deaths.¹⁸ Taking into account the broader picture of diphtheria immunisation in Australia, Claire Hooker argued that this incident, while tragic, 'had little long-term influence on community opinion, which was affected more by local experience of a diphtheria outbreak'.¹⁹ Whilst this argument did not fully reflect the impact in New Zealand, Hooker's article allowed comparisons to be made between the Australian and New Zealand diphtheria immunisation programmes, providing a wider context to the New Zealand experience.

The pertussis controversy in Britain in the 1970s, when the safety of the vaccine was called into question by both parents and health professionals, was the focus of an article by Jeffrey Baker.²⁰ He considered the role of various groups in exacerbating and dealing with the crisis and argued that anti-immunisation and vaccine distrust in Britain was a theme that could be traced back to earlier campaigns opposing smallpox vaccination. Baker also argued that because of this distrust, mandatory immunisation, such as imposed in the United States, would be 'politically untenable' in Britain.²¹ However, Baker might have had to reconsider this as a total explanation if he had taken into account other countries, such as Australia and New Zealand, which also did

¹⁸ C. Hooker, 'Diphtheria, Immunisation and the Bundaberg Tragedy: A Study of Public Health in Australia', *Health and History*, 2, 2000, pp.52-78.

¹⁹ *ibid.*, p.73.

²⁰ J. P. Baker, 'The pertussis controversy in Great Britain, 1974-1986', *Vaccine*, 21, 2003, pp.4003-10.

²¹ *ibid.*, p.4009.

not have mandatory immunisation but nor did they have such a strong history of anti-immunisation sentiment as Britain.

The controversy over the safety of the pertussis vaccine was also the subject of an article by David and Mark Geier.²² They argued that there was a direct correlation between an increasing number of lawsuits which applied to the pertussis vaccine, a drop in the number of manufacturers who produced it, and the push in the United States to change to the safer acellular vaccine. The article was predominantly focused on events in the United States which led to the adoption of the acellular vaccine, although comparisons are drawn with other countries, especially Britain and the pertussis controversy that occurred there. However, the article centred on the legal and political implications; parental responses to the pertussis vaccine in the United States were not examined in any detail.

In contrast to most historians of individual disease, who have concentrated only on the local context, historians who have focused specifically on immunisation have adopted a more comparative perspective. One of the earliest articles employing this technique was by Jane Lewis which considered diphtheria immunisation in Canada and Britain.²³ This paper, alongside Evelyn Hammonds' book on diphtheria in New York City and Claire Hooker's article on Australia, was among the few works to consider both diphtheria and immunisation. Lewis' comparative analysis of diphtheria immunisation in Britain and Canada found that using publicity alongside mass school immunisation campaigns was essential to greatly improving levels of immunisation, an argument supported by Hammonds. Lewis examined the quite different experiences of Britain and Canada and argued that in the case of Britain, cautious attitudes, local authority reluctance to implement immunisation and a lack of funding meant that a national scheme was implemented much later than in Ontario, Canada where funding, vaccine and a government-run programme were all in place by the late 1920s. However, Lewis did not explore popular feeling towards immunisation in Britain which may also have affected uptake. Anti-immunisation movements against

²² D. Geier, M. Geier, 'The True Story of Pertussis Vaccination: A Sordid Legacy?' *Journal of the History of Medicine and Allied Sciences*, 57, 2002, pp.249-84.

²³ J. Lewis, 'The prevention of diphtheria in Canada and Britain 1914-1945', *Journal of Social History*, 20, 1986-87, pp.163-76.

mandatory smallpox vaccination had been quite prevalent in Britain and the impact was probably significant.²⁴

Following the comparative methodology Linda Bryder, who examined BCG, and Ulrike Lindner and Stuart Blume, who considered polio immunisation have recently produced comparative analyses of three different countries' various experiences with these vaccines. Linda Bryder, in her article on the use of BCG, explored the enthusiasm of the Scandinavians, the cautiousness of the British and the distrust of the Americans who did not introduce it nationally as other countries did.²⁵ The different approaches are examined; Scandinavia with socialist policies in place used BCG early on as a preventative measure, whilst, Bryder contended, Britain and the United States were 'wedded' to the curative method. She pointed out that, in conjunction with other factors, this changed in Britain after World War Two as staffing shortages in hospitals and sanatoria treating tuberculosis led to a change in attitude towards BCG as did the new social climate which led to the National Health Service. The United States, however, unaffected by staffing problems and with the development of new drug treatments such as streptomycin, did not alter its BCG policy although, as Bryder indicated, by the 1950s it was alone in this attitude; other western countries had implemented BCG in one way or another. She highlighted the importance of different political climates in determining immunisation policies.

The article by Ulrike Lindner and Stuart Blume was similar in structure to Bryder's paper and also considered three countries with different policies, although they examined the introduction of the Salk (IPV) and Sabin (OPV) vaccines in Britain, the Netherlands and West Germany.²⁶ Starting from a premise that most historical polio immunisation studies tended to focus on the United States where the vaccines were

²⁴ See N. Durbach, *Bodily Matters: The Anti-Vaccination Movement in England, 1853-1907*, Durham, 2005.

N. Durbach, 'They Might As Well Brand Us': Working-Class Resistance to Compulsory Vaccination in Victorian England', *Social History of Medicine*, 13, 1, 2000, pp.45-63.

D. Porter, R. Porter, 'The Politics of Prevention: Anti-vaccinationism and Public Health in Nineteenth Century England', *Medical History*, 32, 3, 1988, pp.231-252.

A. Beck, 'Issues in the Anti-Vaccination Movement in England', *Medical History*, 4, 1960, pp.310-321.

²⁵ L. Bryder, 'We shall not find salvation in inoculation: BCG vaccination in Scandinavia, Britain and the USA, 1921-1960', *Social Science and Medicine*, 49, 1999, pp.1157-67.

²⁶ U. Lindner, S. S. Blume, 'Vaccine Innovation and Adoption: Polio Vaccines in the UK, the Netherlands and West Germany, 1955-1965', *Medical History*, 50, 4, 2006, pp.425-46.

developed, Lindner and Blume sought to redress the balance by focusing instead on Europe. The Netherlands, who were able to produce their own IPV, continued with this vaccine, whilst West Germany, where IPV was only sporadically implemented, enjoyed success with OPV. Britain used both, firstly IPV, then switched to OPV to finally eradicate polio. All three countries therefore demonstrated different approaches. One important element, not present for either the Netherlands or Britain, was the influence of cold war politics in determining the immunisation status of West Germans as East Germany had already extensively immunised its population with OPV. Not to be outdone in this respect by East Germany, West Germans were quickly immunised with OPV.²⁷ These events only served to emphasise the myriad of factors that could influence the immunisation status, not only of an individual person, but of a whole country. Lindner and Blume themselves argued that comparative historical analyses such as theirs and Bryder's 'can [only] enrich...substantive policy debates such as now take place in the vaccine field.'²⁸ Whilst this was true it should not detract from the value of historical literature which contextualised immunisation within a disease framework as this could also inform immunisation debates from a more detailed, albeit different, perspective.

Many of these works however, adopted a high-brow focus, or centred on policy-making, or on a specific immunisation incident overseas. Whilst recognising it is important to discuss technological developments in relation to immunisation and policy-making, I also wished to consider how ordinary parents and health professionals regarded immunisation and whether these attitudes changed over time. Roy Porter has pointed out the perils of not considering the viewpoint of the patient in medical history 'for it takes two to make a medical encounter - the sick person as well as the doctor'.²⁹ Porter further argued that it is 'undesirable' to ignore the 'sufferers' role in the history of healing' and this can also be applied to preventative medicine.³⁰

My thesis aims to contribute to the historiography in three important areas. Firstly, immunisation policy has been analysed over a number of decades in order to examine

²⁷ U. Lindner, S. S. Blume, 'Vaccine Innovation and Adoption: Polio Vaccines in the UK, the Netherlands and West Germany, 1955-1965', *Medical History*, 50, 4, 2006, p.441.

²⁸ *ibid.*, p.446.

²⁹ R. Porter, 'The Patient's View. Doing History from Below', *Theory and Society*, 14, 2, 1985, p.175.

³⁰ *ibid.*, p.176.

the effect of changes and different influences over time. Historians, such as Patrick Vivier, who have written on immunisation policy generally, have only looked at certain time periods and have not considered immunisation from its inception. Other historians, for example, Jane Lewis and Linda Bryder, have limited their studies to one particular type of immunisation, diphtheria vaccine and BCG respectively, whereas my thesis considers all the immunisations received by children during the given period.

Secondly, my thesis discusses parental reactions to immunisation in an attempt to trace and record how these changed over time and how various factors affected these responses. This has not been considered before in any depth from an historical viewpoint. I will explore parental views from a social perspective, considering how society's views at the time influenced parental thinking with regard to making an immunisation decision for their children. This approach allows parental attitudinal changes to be pinpointed at different time periods and for different vaccines in order to build up a comprehensive picture of parental views.

Thirdly, my thesis, although focusing on child immunisation in New Zealand, is placed in an international context. Where possible, overseas experiences are used to compare and contrast to events in New Zealand in order to demonstrate the very significant influence that these other countries had in shaping immunisation policy and parental views. Nevertheless, some occurrences overseas, such as vaccine crises, have had little impact in New Zealand and these will also be examined. As noted many historians writing on immunisation and disease, such as Feldberg, Oshinsky and Offit, have taken a very narrow geographical approach. Setting my thesis in an international context adds both depth and breadth to my arguments and demonstrates the importance of taking into account influences and happenings elsewhere when writing from a historical perspective.

Major Themes

My thesis explores the professional, government and public responses to immunisation from the 1920s to 1990. One of the major themes considers how the New Zealand Health Department changed its strategies as it modified its view of the

public with regard to immunisation. Throughout the period the Department was slow to take on board changes in social attitudes and reassess its views accordingly. Additionally, departmental policy tended to be reactive throughout the period. Doctors, as well as vaccine initiatives in other countries, often provided the impetus for change; however those outside of the medical profession faced a rougher road to having their ideas accepted. In association with this was the exploration of the changes in public perceptions of immunisation over time. Changes in immunisation views have gone through several phases. Initial wariness in the 1920s and 30s due to several incidents with vaccines was followed by acceptance and then popularisation in the 1950s with the polio vaccine. The 1970s and 1980s saw a movement towards a more reserved and questioning response with the decline in infectious diseases.

Immunisation has always had its controversies and this is another theme which has a significant role in several chapters. Vaccine crises, whether in New Zealand or elsewhere, often affected the public's confidence in the safety and efficacy of a vaccine and could have a serious impact on the levels of immunisation. Throughout the period there were a number of controversies over different vaccines in New Zealand, some of which had a greater impact than others. Vaccine crises overseas were noteworthy in that there was often little effect on parental views within New Zealand. Those controversies which were 'home-grown' had much more bearing.

Anti-immunisation groups were present at both the beginning and the end of the period, although some anti-immunisation sentiment was in evidence the whole time. The influence of Britain in shaping anti-immunisation history was evident initially in the 1920s and 1930s and came from a vivisection perspective in the form of the British Union for the Abolition of Vivisection (BUAV). Events in Britain were also responsible for the BUAV's shift away from anti-immunisation in the 1950s. By the time of the re-establishment of an organised group in the 1980s, the character and membership of the movement had changed and was mainly influenced by happenings on the New Zealand immunisation scene.

One theme which is examined throughout the thesis was the Department of Health's policy of using doctors to give the routine vaccines and immunise preschoolers, limiting the Department's immunisation activities to school-based campaigns only.

Using the family doctor in this way had been the Department's aim from the advent of diphtheria immunisation in the 1920s as it did not have the resources to routinely immunise all children and believed that doctors were better situated to achieve this aim. This policy has since remained in place. However, many campaigns which had been so successful in schools did not achieve the same results for preschoolers when the immunisations were to be given by the family doctor. There were a variety of reasons for this which included cost (up to 1972), access to the family doctor and transport. The lower levels of immunisation compliance for preschoolers in comparison to those children in school was of grave concern to the Department and was the subject of immunisation initiatives to boost levels throughout the period.

The way immunisation was promoted and the amount of information available to parents also changed over time. Originally consisting of a few lines on a consent form in the 1920s, by the 1990s colourful pamphlets which explained the vaccine and some of its side-effects were commonplace. The main reason behind this was the growing acceptance of the idea of informed consent, where parents were given enough knowledge and information to be able to make an educated decision regarding whether or not to immunise their child. Most of these changes occurred in the 1980s. However there were other influences already in place, such the establishment of Health Education Officers by the Health Department in the 1950s. Their brief was to promote health which included the benefits of immunisation and they appeared to have made some impression.

There were changes over time in the way Maori and other ethnic minorities were perceived by the Department and how immunisation was promoted to them. In the 1920s, typhoid immunisation was portrayed as virtually mandatory by the Health Department and parental consent requirements were not adhered to, the Health Department believing the gaining of such consents was too difficult. This began to alter with the widespread promotion of diphtheria immunisation in the 1940s and 1950s when consent for immunisation had to be obtained from every parent, including Maori. From the 1970s more attention began to be paid to the special requirements of Maori health and later Pacific Island health, by the Health Department. This was demonstrated by initiatives such as Plunket's government contract in South Auckland to raise the standards of child health and immunisation. Nevertheless, as with Pakeha,

the Health Department was often slow to reflect the changing views of ethnic minorities within society and adapt their immunisation policies accordingly.

Methodology

One important methodology which adds significantly to shape and tone of my thesis was that of oral history; in my case interviews with several generations of mothers concerning the immunisation their children as well as a number of health professionals. Historian Perry Blatz has argued that oral history has ‘long been one of the most important tools of the public historian’.³¹ Certainly for the history of child immunisation it proved to be one of the most revealing tasks that was undertaken during my research. My focus was quite specific as I wished to ascertain parental and health professional views regarding immunisation and what they remembered about immunising their children. These memories were influenced by events within their own lives, for example, one mother’s traumatic birth experience and the effect of this on her baby led her to question more medical intervention in the form of immunisation at the age of three months. Her own remembered reaction to rubella immunisation as a girl confirmed her decision not to immunise.³² This experience added weight to historian Michael Frisch’s argument that oral history can be ‘a powerful tool for discovering, exploring, and evaluating the nature of the process of historical memory – how they connect individual experience and its social context, how the past becomes part of the present, and how people use it to interpret their lives and the world around them’.³³ This mother’s experience with her own and her son’s immunisation became the primary reason for her serious long-term interest in vaccines, and resulted in her establishing an anti-immunisation group in New Zealand.

The interpretation and analysis of the oral interviews involved comparing, contrasting and questioning the stories and information received. Blatz has commented on the

³¹ P. K. Blatz, ‘Craftsmanship and Flexibility in Oral History: A Pluralistic Approach to Methodology and Theory’, *The Public Historian*, 12, 4, p.7. Perry Blatz is an Associate Professor of History at McAnulty College and Graduate School of Liberal Arts, Duquesne University, United States.

³² Interview with Hilary Butler, 12 December 2001.

³³ M. Frisch, *A Shared Authority: Essays on the Craft and Meaning of Oral and Public History*, Albany, 1990, p.188, from A. Thomson, ‘Fifty Years On: An International Perspective on Oral History’, *Journal of American History*, 85, 2, 1998, p.586.

complicated nature of this task for the oral historian, given the ‘sheer complexity of human experience – its interrelatedness, inconsistency, and irrationality, and more importantly, our own fallibility in attempting to understand it’.³⁴ People’s interpretation of their memories as to why they did or did not undertake a perceived important task, in this case, immunisation, was as important to the process of analysis as the empirical data they can remember. Openness and a readiness to listen are essential prerequisites of oral historians and they must analyse the stories they hear, as Blatz pointed out, ‘with no small amount of humility’.³⁵

During my examination of the interviews, I frequently checked archival material that did not seem to correspond with the remembered experiences of my interviewees. In one case an oral interview uncovered an additional source not found in official archives. A mother from the 1950s remembered being given a small book by her cousin to read, authored by Dr Eva Hill, against polio immunisation.³⁶ This work was a major influence in her decision not to immunise her children.³⁷ Although there was no official record of it, given Eva Hill’s interest in this area, it was very likely that such a work did exist, though possibly in the form of a pamphlet or booklet. Similarly other interviews completed stories that archival records were unable to do, enabling a whole picture to be presented. As historian Elizabeth Kennedy has pointed out, ‘there is a tremendous amount to be learned by fully exploring the subjective and oral nature of oral histories’ drawing the conclusion that the subjective nature of oral history interviews does not undermine the authenticity of written sources but is complementary to them.³⁸

The history of parental attitudes to immunisation in New Zealand has not been researched before and there are no recorded oral interviews held on this topic in any of the major libraries in this country. The primary decision-makers with regard to immunisation, as other aspects of childcare, were mothers and my selection of interviewees reflected this. I undertook a number of interviews with mothers who had their children from 1935 to 1990.

³⁴ P. K. Blatz, ‘Craftsmanship and Flexibility in Oral History’, p.19.

³⁵ *ibid.*

³⁶ Interview with Margaret Pye, 4 April 2002.

³⁷ *ibid.*

³⁸ E. L. Kennedy, ‘Telling Tales: Oral History and the Construction of pre-Stonewall Lesbian History’ in R. Perks and A. Thomson eds., *The Oral History Reader*, 2nd edition, New York, 2006, p.281.

To achieve a broad range of views from different time periods I interviewed at least five mothers who had had their children during each decade. It was easier to locate interviewees who had children born in the 1960s, 70s and 80s than it was for the 1930s, 1940s and 1950s. The advanced years of the interviewees meant I was unable to locate anyone who had had children earlier than 1935. As not all the mothers who consented were able to be interviewed personally, they kindly completed the interview question sheet and returned it to me either by email or in the post. In all I interviewed 37 mothers, although some had dual roles, for example I interviewed one woman in her capacity as secretary of the Immunisation Awareness Society (IAS) and then also as a mother with children born in the 1960s before the inception of the IAS in the 1980s.³⁹ During this intervening period her views on immunisation radically altered. I interviewed mothers who were pro-immunisation as well as those from an anti-immunisation standpoint. Feminists from the 1970s and 80s were interviewed as well as the co-founder of the IAS. All of these women had children and I have recorded their experiences as mothers and how their feminist views influenced how they felt about immunisation for their own children.

I also decided to interview a variety of health professionals who were involved in the immunisation of children starting from the late 1940s as I was unable to locate anyone who had been working in the selected fields before then. Public Health, Plunket, practice nurses and midwives were interviewed, along with general practitioners, Health Department Medical Officers, a Community Health worker and a retired Director-General of Health. A second set of interview questions were used to interview health professionals to determine their work history and how their role encompassed immunisation. Their views on immunisation and how they perceived the views of their patients were also elicited to detect any change over time. In determining health professionals to interview I followed the process I used with parents and tried to interview at least five people from each decade beginning in the 1940s. As with the parental interviewees, it proved easier to find people who worked in the 1970s than in the 1940s.

³⁹ Interview with Daphne McKerras, 21 March 2002.

Before I could commence interviewing I needed to obtain ethics approval for my research from the University of Auckland Human Subjects Ethics Committee. To facilitate this I submitted a copy of my intended interview questions and a form explaining the purpose of my study. I also included a copy of my intended consent form. After consideration the Ethics Committee granted approval for my research on 14 March 2001 for a period of three years (2001/042).

All interviews were taped, except in the case of the retired Director-General of Health where I took notes, and the interviewees' consent obtained. Participants were able to withdraw at any time up until the completion of my research. The taped interviews were later transcribed for ease of use. The tapes and transcripts of those participants who gave their consent will be offered to Auckland Public Library upon completion of my thesis. The remainder will be in my care.

In total, 62 people were interviewed or sent me a written communiqué regarding their views and experiences with immunisation. In searching for people to interview word-of-mouth proved invaluable as did the assistance of my supervisors who arranged for me to interview relatives and friends. Through the contacts of my second supervisor I was able to find several willing members of the Pacific Island community to interview in both a parental and health professional category. My primary supervisor was very helpful in providing some Maori contacts. The history department itself proved a rich source of participants with many of my fellow PhD students either consenting to be interviewed themselves and/or being able to provide me with contacts amongst health professionals. The interviews undertaken with both health professionals and parents were important in determining the shape and conclusions of this thesis.

Up until the 1970s the comments of interviewees showed that most were prepared to follow the direction of the Health Department and that there was little divergence in views. From this time, however, a much wider range of parental views emerged and the interviews assisted me in tracing the shifts in attitude towards immunisation during the period. One important aspect that emerged was that nearly all participants, both health professionals and parents, thought that immunisation was an important topic. Some of the more elderly mothers were still able to recall taking their children

to be immunised at the doctor's and some of the younger mothers were able to recollect making the immunisation decision, how they arrived at it and the names of most of the immunisations received. The overwhelming impression I received from the interviews conducted with mothers was that immunisation was an important maternal responsibility and not a decision to be taken lightly. The decision not to immunise was equally made with care. None of my interviewees failed to immunise because they 'did not get around to it', the most common assumption of the Health Department.

I tried to secure interviews with a broad cross-section of society, locating mothers who were working and middle class and who also included a number of Maori and Pacific Island representatives. Coupled with the broad spectrum of ages it is likely that most immunisation views held in New Zealand were revealed during the course of the interviews. The working areas of health professionals were also varied, with some located in middle-class areas whilst others worked in suburbs that were predominantly Maori or Pacific Island. However, my sample is necessarily small given time and resources; a much larger survey may reveal opinions not represented in these interviews. Nevertheless, my sample does illustrate many of the immunisation beliefs held by New Zealand mothers over a number of decades and from a range of backgrounds.

For the first part of my thesis, I was able to use written accounts on immunisation taken from public health dissertations completed at Otago University, from the 1940s to the 1960s. Many of these involved interviews with, and observations of, members of the public on a range of immunisation topics, including reasons for non-immunisation, to the impact of the anti-immunisation group, the BUAV, in the 1950s.⁴⁰ The descriptions of participants and their home environments also proved useful when tracing health professionals' views of parents through the period. From the 1980s, articles on the way parents responded to immunisation and why some of them chose not to immunise their children were occasionally published in medical

⁴⁰ A complete listing of all PMD theses consulted can be found in the bibliography.

journals, both locally and overseas.⁴¹ These sources were particularly useful for considering the pertussis vaccine and the controversy surrounding it.

My main sources for information were the Health Department files on immunisation located at Archives New Zealand in both the Wellington and Auckland branches.⁴² These were supplemented by Health Department published reports, parliamentary debates and the *New Zealand Yearbook*. From these I was able to uncover the framework of the history of immunisation in New Zealand. Other valuable sources included magazines and newspapers. *Health* magazine, published by the Health Department for members of the public, demonstrated the type of information on immunisation that the Department wanted people to have.⁴³ The *New Zealand Listener*, which provides social and political commentary on contemporary New Zealand, originally reflected a stance comparable to *Health*. However, this began to undergo modification in the latter part of the twentieth century as a reflection of the changes in society and articles became more critical and less dependent on official sources. Magazines and newspapers were important resources for helping to substantiate arguments and lines of inquiry.

Chapter Summary

Although I have adopted a chronological approach to my thesis, I have divided it into two halves; the first section explores the period 1920 to 1962 and the second section 1962 to 1990. The first chapter of each section deals with the initial time period, 1920 to 1941 and 1962 to 1972 respectively. The remaining chapters examine a different aspect of each period, 1941 to 1962 and 1972 to 1990. This plan was undertaken because a more thematic approach within these two timeframes seemed the best way to deal with a large amount of information in a logical and coherent manner.

⁴¹ For example S. New, M. L. Senior, 'I don't believe in needles: qualitative aspects of a study into the uptake of infant immunisation in two English Health Authorities', *Social Science and Medicine*, 4, 3, 1991, pp.509-18.

C. M. Harding, K. J. Holden, 'Whooping cough vaccination: a review of the controversy', *Maternal and Child Health*, August 1982, pp.319-24.

K. Kershaw, 'Protecting the children', *New Zealand Nursing Journal*, March 1987, pp.24-25.

⁴² I also tried to access Archives New Zealand at Dunedin but was told there was a hundred year bar on files.

⁴³ *Health* magazine dealt with a range of health issues, immunisation was just one of these.

Chapter Two considers the establishment of diphtheria immunisation in New Zealand up until 1941. From a promising early start, the programme was put on hold in 1929 after an immunisation tragedy at Bundaberg, Queensland. The public in both Australia and New Zealand took some time to regain their confidence in the diphtheria vaccine, although Claire Hooker has argued that there was little long-term effect in Australia.⁴⁴ In New Zealand, two health districts implemented programmes in the mid-1930s, however this was not universal and the reasons for the sporadic approach are examined further in the chapter. Consequently, by the outbreak of World War Two, coverage in New Zealand was patchy as districts had been left to implement their own programmes. To rectify this and following the lead of Britain, a national immunisation programme for diphtheria was set up in 1941. By examining diphtheria immunisation programmes in Britain, Canada and New York City it was possible to set the events in New Zealand in an international context. Both New York City and Canada implemented mass immunisation campaigns to lower the diphtheria rate which enjoyed high levels of acceptance and the reasons behind these successes were examined by Evelyn Hammonds and Jane Lewis respectively.⁴⁵ On the other hand, Britain's progress, as Jane Lewis has pointed out, was much more cautious, and, as will be discussed, was comparable to the New Zealand experience albeit for different reasons.

Chapter Three considers how the Health Department implemented an increasing number of immunisation programmes from 1941 to 1962. It was during this period that a concerted effort was made with diphtheria immunisation, finally bringing the case numbers down to a handful by the mid-1950s. This situation was in evidence elsewhere; Jane Lewis has shown that Britain's diphtheria rates underwent a significant decline after the introduction of the National Immunisation Scheme in the early 1940s.⁴⁶ Comparable programmes were introduced by Australian state governments which also began to have a discernable effect.⁴⁷ Further vaccine

⁴⁴ C. Hooker, 'Diphtheria, Immunisation and the Bundaberg Tragedy: A Study of Public Health in Australia', *Health and History*, 2, 2000, pp.52-78.

⁴⁵ E. M. Hammonds, *Childhood's Deadly Scourge: The Campaign to Control Diphtheria in New York City, 1880-1930*, Baltimore, 1999.

J. Lewis, 'The prevention of diphtheria in Canada and Britain 1914-1945', *Journal of Social History*, 20, 1986-87, pp.163-76.

⁴⁶ *ibid.*

⁴⁷ C. Hooker, 'Diphtheria, Immunisation and the Bundaberg Tragedy: A Study of Public Health in Australia', *Health and History*, 2, 2000, pp.52-78.

developments were also taking place. In New Zealand, pertussis vaccine was introduced in 1941 and its combination, firstly with diphtheria vaccine (as the double vaccine) and then with tetanus (as the triple vaccine) by the early 1950s was the subject of much discussion between the doctors and the Health Department. By this time the influence of the World Health Organization (WHO) on departmental immunisation decisions were plainly visible and WHO was wholeheartedly in favour of immunisation. BCG was introduced into schools during this period, and Britain had commenced a similar scheme. Nevertheless, the position of the United States was in stark contrast to New Zealand, because, as Georgina Feldberg and Linda Bryder have both pointed out, BCG was never used as part of a national immunisation programme.⁴⁸ This chapter discusses New Zealand's initial enthusiasm for BCG and has shows how, despite universal uptake in the 1950s, the usefulness of BCG was being hotly debated less than ten years later.

Chapter Four considers parental responses to the Department's immunisation programmes. Most parents in this period (1941-62) were favourable to their offspring receiving immunisation and accepted the advice of the Department and doctors, often without question. The Health Department believed it was a mother's duty to have her children immunised and failure to do so was perceived as negligence. Hammonds has argued that this was also an integral belief of the health authorities in the earlier New York City diphtheria immunisation campaign of 1929-32.⁴⁹ Opposition to the Health Department's immunisation programmes in New Zealand came from the BUAV although its overall impact was negligible. The BUAV's shift in focus from the mid-1950s to concentrate on vivisection meant there was no further organised anti-immunisation group in New Zealand until the 1980s.

Some resistance to immunisation came from Maori, whose children had been receiving typhoid immunisations since the 1920s. From the 1940s Maori began to question the consent process as permission to immunise was only required from tribal committees as the Department thought it was too difficult to obtain parental

⁴⁸ L. Bryder, 'We shall not find salvation in inoculation: BCG vaccination in Scandinavia, Britain and the USA, 1921-1960', *Social Science and Medicine*, 49, 1999, pp.1157-67.
G. Feldberg, *Disease and Class. Tuberculosis and the shaping of modern North American society*, New Jersey, 1995.

⁴⁹ E. M. Hammonds, *Childhood's Deadly Scourge: The Campaign to Control Diphtheria in New York City, 1880-1930*, Baltimore, 1999.

permission. Because parental consent was not used, departmental employees who administered immunisation had to be indemnified by the government against an assault charge. Despite concerns about the process, the Department still perceived typhoid as a threat to Maori health and believed that the end justified the means.

Chapter Five considers the introduction of the two polio vaccines: Salk's killed injectable vaccine in 1955 and Sabin's live oral vaccine in 1961, into New Zealand. The 1955 Cutter Incident in the United States occurred when infected vaccine made by Cutter Laboratories of California was given to children and resulted in cases of polio with some deaths. It had a significant effect within the United States and as discussed, the impact and consequences were examined by David Oshinsky and most particularly by Paul Offit.⁵⁰ A focus of this chapter is a discussion of the ramifications from Cutter in New Zealand. The plans of the Health Department were seriously curtailed because of a vaccine shortage worldwide and New Zealand children had to be immunised as and when a supply of vaccine became available. To advise the Department, a polio vaccine committee was established. In the early 1960s the Board of Health set up the Epidemiology Advisory Committee (EAC) and this body played a very important role in advising on and determining Health Department immunisation policy thereafter. Overseas experiences with the polio vaccine are also explored to provide an international context for New Zealand. The Health Department and its advisors were well aware of overseas trends and were influenced by them. Canada produced its own Salk vaccine and was able to quickly immunise its own child population as it was not dependent on overseas suppliers.⁵¹ The Netherlands government also funded the production of Salk vaccine and contrasts to the New Zealand experience are drawn in the chapter.⁵² An epidemic of polio in 1961 was the major impetus for the introduction of the Sabin vaccine into New Zealand to fully eradicate the disease. The campaign this time also included adults and was New

⁵⁰ D. Oshinsky, *Polio. An American Story. The Crusade that Mobilized the Nation Against the Twentieth Century's Most Feared Disease*, New York, 2005.

P. A. Offit, *The Cutter Incident. How America's First Polio Vaccine led to the growing Vaccine Crisis*. New Haven and London, 2005.

⁵¹ C. J. Ruty, 'Do Something!...Do Anything! Poliomyelitis in Canada 1927-1962', PhD thesis, University of Toronto, 1995.

⁵² U. Lindner, S. S. Blume, 'Vaccine Innovation and Adoption: Polio Vaccines in the UK, the Netherlands and West Germany, 1955-1965', *Medical History*, 50, 4, 2006, pp.425-46.

Zealand's first true 'mass' immunisation campaign, as about 85 percent of the total population received the oral vaccine.

Chapter Six demonstrates the shift in focus for immunisation from the perceived 'killer' diseases, such as diphtheria and polio, to the commoner childhood illnesses of measles and rubella. To try and persuade parents to have their children immunised, the Health Department began to publicise the more serious side-effects of these so-called 'mild' illnesses. Campaigns were conducted elsewhere, such as in the United States where, from 1963 to 1968, 20 million doses of measles vaccine were given out.⁵³ The measles vaccine did not have such an auspicious start in New Zealand, due to events in Britain, when serious side-effects from the vaccine in a few children halted the British measles immunisation programme. As New Zealand was about to use British vaccine the programme was put on hold. Resulting ambivalence by the Health Department towards the vaccine meant it was now introduced through the family doctor instead of a school campaign. Levels of acceptance were, therefore, correspondingly low. This was also the period where the rising cost of visiting the doctor for immunisation had begun to affect levels. By making immunisation free in 1972 it was hoped that more parents would consent to have their children immunised.

Chapter Seven considers the influences on Health Department immunisation policy, especially that of the EAC and the WHO. The rubella vaccine strategy of immunising preschoolers was questioned by some in the medical profession and the policy was eventually changed to immunising 11-year-old girls. Internationally, there was no clear-cut policy for rubella immunisation, Britain immunised 11-year-old girls, whilst the United States continued to immunise preschoolers. With regard to the use of the measles vaccine in the United States the Child Immunisation Initiative aimed to eradicate measles by 1982. Although this goal was not achieved Patrick Vivier has argued that as a result of the programme there was a drastic reduction in measles cases by 1982 which was classed as a major public health achievement.⁵⁴ There was also a drive in New Zealand from the late 1970s to promote measles immunisation in

⁵³ P. M. Vivier, 'National Policies for Childhood Immunization in the United States: An Historical Perspective', PhD thesis, John Hopkins University, 1996.

⁵⁴ *ibid.*

the hope of eradicating epidemics although the onset of one in 1984 demonstrated that immunisation levels were still not high enough.

The disease hepatitis B and the challenge of finding a cost-effective vaccine were brought to the Department's attention in the early 1980s. However, it took a long time before the Department was prepared to accept there was a hepatitis B problem amongst children in New Zealand. This was because in other countries, such as Britain and the United States, those most affected were adults on the fringes of society and health workers, both of whom attempted to keep the problem 'silent' for fear of recrimination.⁵⁵ In contrast the hepatitis B problem was very open in New Zealand although it took some time before a workable solution could be found to reduce the expense of the vaccine.

Chapter Eight considers vaccine controversies in New Zealand and in other comparable countries in the 1970s and 1980s. In New Zealand in both 1974 and 1983 the actions of the Health Department were put under the spotlight regarding the presence of the monkey virus SV40 in the oral polio vaccine. This eventuated in the establishment of a committee whose brief was to examine the safety of the polio vaccines used in the campaigns of the 1950s and 1960s. The safety of the rubella vaccine was also brought into question in the late 1970s by a National Health Institute virologist, although the Health Department, after an investigation, was not able to substantiate his claims. The questioning of the polio and rubella vaccines in the 1970s and 1980s had little effect on the confidence of the public in terms of immunisation uptake. These experiences provide a contrast with the pertussis crisis in Britain in the 1970s. Claims made during a British television programme that the pertussis vaccine had severe side-effects sent immunisation rates plummeting and resulted in a government-funded study into the safety of the vaccine as well as an Ombudsman inquiry. Jeffrey Baker has argued that the British public's lack of confidence in the vaccine stemmed from nineteenth century anti-immunisation movements around the time of mandatory smallpox vaccination.⁵⁶ This argument and the impact of the crisis in New Zealand will be explored in the chapter.

⁵⁵ J. M. Stanton, 'Health policy and medical research: hepatitis B in the UK since the 1940s', PhD thesis, London University, 1995.

⁵⁶ J. P. Baker, 'The pertussis controversy in Great Britain, 1974-1986', *Vaccine*, 21, 2003, pp.4003-10.

In the United States there was a similar pertussis vaccine crisis in the 1980s. Mark and David Geier have argued that this opened the way for a proliferation of lawsuits from allegedly vaccine-damaged children and resulted in government legislation.⁵⁷ In 1980s New Zealand, the Department's school-based immunisation campaign for the vaccine meningococcal meningitis A ran into serious problems when the Health Department initially dismissed legitimate parental concerns regarding side-effects. The resulting confidence crisis forced the Department to re-evaluate its views of parents and demonstrated the need for more public information regarding vaccine side-effects, although New Zealand did not experience law suits unlike the United States.

Chapter Nine considers the social changes that had an impact on immunisation in the 1970s and 1980s. The effect of feminism in New Zealand and the growth of the women's health movement meant some women began to question immunisation for their children, particularly regarding vaccine contents and side-effects. Concerned mothers were the motivating force behind the establishment of the Immunisation Awareness Society who wanted parents to know all the facts before deciding to immunise their children and much of their information ran counter to that produced by the Health Department. It was an incident unrelated to immunisation that ushered in the concept of informed consent. The 1987 Cartwright Inquiry to consider the treatment of women with pre-cancerous cervical cells at National Women's Hospital resulted in a tightening of requirements relating to informed consent. The informed consent standard applied to immunisation although it was not until the 1990s that this was fully implemented. It was also revealed that a major reason for the non-immunisation of Maori and Pacific Island children was a lack of information. Nevertheless, parental attitudes, although more wide-ranging than in the past, were still mainly in favour of immunisation, the difference being now that many parents had a discussion or received information on immunisation before taking their children for the vaccines. Yet immunisation levels amongst Maori and Pacific Islanders remained lower than among Pakeha.

⁵⁷ D. Geier, M. Geier, 'The True Story of Pertussis Vaccination: A Sordid Legacy?' *Journal of the History of Medicine and Allied Sciences*, 57, 2002, pp.249-84.

My thesis considers the implications of the New Zealand Health Department's immunisation policies, on parents and health professionals, from a social viewpoint. Determined by a range of sources and taking account of international influences, a comprehensive picture of childhood immunisation in New Zealand from 1920 will be attempted. My work aims to fill a gap in New Zealand historiography as there has been little written about the history of immunisation except as part of the story of a disease and only for a specific time period. Similarly, it attempts to contribute to the international historiography through the examination of subject from a socio-historical perspective and is explored as a topic in its own right. My thesis places New Zealand's immunisation experiences in an international context which many other works in this field have not attempted to do.

CHAPTER 2: Curtailing the ‘Assassin of Children’.
Diphtheria immunisation in New Zealand 1920-1941

New Zealanders, both Maori and Pakeha, were familiar with immunisation. Smallpox vaccination had been compulsory in the Dominion since 1863 although by the early part of the twentieth century compliance was negligible due to the perceived low risk of infection and the inherent unpleasantness of the vaccination.¹

Diphtheria immunisation was introduced into a society with mixed views regarding the necessity of such injections and their benefits. In this chapter the cautious path adopted by the New Zealand Health Department in its use of this vaccine and the events which shaped policy, such as the 1928 Bundaberg tragedy, will be discussed. Developments in New Zealand will also be examined within an international setting, with comparisons made to diphtheria immunisation schemes set up in Canada and in New York City during the same period. Opposition to immunisation was a feature of these two decades; although not widespread, it was vehement in its condemnation, and its impact on public acceptance will be assessed. There was some Maori opposition to the typhoid immunisation scheme that the Health Department began to establish during the 1920s which will be analysed in conjunction with issues of consent for Maori which were to have serious implications for the Department in the 1940s and 1950s.

1920 Public Health Act and consent

Vaccination was incorporated within health legislation in the 1900 Public Health Act instead of under a separate statute as had been the case previously. This move now established it as the responsibility of the newly-formed Department of Health. The

¹ There is a difference between vaccination and immunisation. Vaccination was a term originally used in connection with smallpox when lymph or vaccine was introduced into the body in order to render the individual immune from the disease. Immunisation is defined as a process or procedure that protects the body against infectious disease by stimulating the production of antibodies. It is more common now to use the term immunisation which has become all-encompassing to include vaccination. The term immunisation will be used during this thesis except for BCG and smallpox which are both referred to as vaccinations. In keeping with this terminology, anti-immunisers will be used to describe those opposed to immunisation.

passing of a new Public Health Act in 1920 ‘radically restructured New Zealand’s public health administration...and was a major landmark in New Zealand’s health history’.² It was also a linchpin in terms of subsequent immunisation policy as provisions made for immunisation applied only during times of disease outbreak; it was no longer mandatory. At the time this caused barely a ripple; in the House of Representatives there was no mention of immunisation at all, and indeed, there was very little debate on the provisions of the proposed bill itself.³ The compulsory vaccination provisions had been in abeyance for years with little or no enforcement by the government and without the threat of disease, there was little compliance by the New Zealand public. The Act just legitimised the prevailing situation.

Nevertheless a voluntary immunisation regime had significant repercussions. Consent now had to be obtained from parents before any immunisation could take place under s.5 of the 1908 Infants Amendment Act which defined powers of guardianship.⁴ This remained unchanged until 1968 with the passage of the Guardianship Act which, with the advance of technology and surgical procedures, included a section on consent to operations (s.25) which incorporated immunisation. This was replaced in 1989 with the Children, Young Persons and Their Families Act which under s.149 detailed the provisions relating to consent for surgical, medical and dental procedures for children and young persons.⁵ Consequently, from 1920 onwards, the Health Department had to actively persuade parents to consent to have their children immunised, which was no easy task.

Diphtheria Immunisation in the 1920s

Paradoxically, before the 1920s, the only vaccination available was for smallpox, a disease that rarely appeared in New Zealand and seldom troubled parents enough to comply with vaccinating their offspring, certainly by the twentieth century.⁶ Of much

² G. Rice, ‘The making of New Zealand’s 1920 Health Act’, *New Zealand Journal of History*, 22, 1, 1988, p.3.

³ *ibid.*, p.20.

⁴ *Statutes of New Zealand*, 1908, p.592. The Act applied to persons under 16 years.

⁵ *The Knowledge Basket - Legislation NZ*.

<http://gpacts.knowledge-basket.co.nz.ezproxy.auckland.ac.nz/refl/cma/>

⁶ The major outbreak in the twentieth century was in 1913 and was mostly confined to Maori in the upper North Island. For further discussion see A. S. Day, ‘The Maori Malady; the 1913 smallpox epidemic and its nineteenth century background’, MA thesis, University of Auckland, 1998.

more immediate concern to parents were childhood diseases such as diphtheria, pertussis and measles which caused suffering and deaths every year. Of children aged between two and five in 1921, 300 per 1000 died of epidemic diseases and these posed the greatest threat to the life of a child.⁷ The Health Department recorded that in 1921 there were 122 deaths from measles and 107 from pertussis, 57 of which were of babies under one year.⁸ Diphtheria, which was a notifiable disease, had an incidence of 2442 in 1921 with 95 deaths, a death rate of 7.84 per 1000.⁹ This situation was reflected elsewhere. In England and Wales diphtheria was ranked as the first cause of death in children aged four to ten years and second for children in the three to four age group.¹⁰ Similarly in Australia by the 1920s, 'diphtheria had become the primary cause of childhood death'.¹¹ Nevertheless, the introduction of diphtheria immunisation was approached with caution by all these countries.

Diphtheria immunisation pioneered the development of the voluntary childhood immunisation programme in New Zealand quite simply because it was the first vaccine available that could do so, even though, in New Zealand, mortality rates for both pertussis and measles were higher. Vaccines for these diseases were not available until later, 1941 for pertussis and 1970 for measles.

Diphtheria is caused by the bacterium *Corynebacterium diphtheriae* and results in a sore throat, fever and the characteristic membrane that grows on the tonsils, throat and nose which inhibits breathing. The disease is at its most fatal in young children. A vaccine for diphtheria had been standardised by 1897, when it was found that adding antitoxin to diphtheria toxin gave acceptable results as an immunising agent, although it was not until after World War One that the vaccine began to be widely used.¹²

⁷ *Appendices to the Journal of the House of Representatives* (AJHR), 1922, H-31, p.25. Tuberculosis accounted for 70 deaths per 1000 and respiratory diseases for 240 deaths per 1000.

⁸ AJHR, 1921-22, H-31, p.8. The death rate per 1000 was 10.08 for measles and 8.84 for pertussis. The figures for pertussis may have been higher as the disease was not notifiable.

⁹ AJHR, 1921-22, H-31, p.8. Diphtheria figures at this time also included croup which was often indistinguishable from diphtheria without conducting a laboratory test.

¹⁰ A. B. Christie, *Infectious Diseases: Epidemiology and Clinical Practice*, London, 1980, p.873. In England and Wales between 1915 and 1942 the number of cases per year of diphtheria was 4000 at the beginning of the period and 2500 at the end.

¹¹ C. Hooker, 'Diphtheria, Immunisation and the Bundaberg Tragedy: A Study of Public Health in Australia', *Health and History*, 2, 2000, p.57.

¹² In 1890 Emil Behring was able to demonstrate that by introducing diphtheria toxin into a host, it would then produce an antitoxin to combat the toxin. Later experiments determined that the addition of some antitoxin to toxin mixtures gave better results.

Hampered by lack of staff and resources, the New Zealand Health Department's initial foray into diphtheria immunisation concentrated on immunising children at schools and orphanages where cases had already been notified in order to prevent further spread. The Presbyterian Boys' Orphanage in Dunedin appeared to be the first recipient of such immunisations in 1919.¹³ This ad hoc policy continued up until the early 1920s when a trial was eventually undertaken in two Hamilton schools to determine whether diphtheria immunisation was suitable to be carried out on a preventative basis. The Health Department found that it was 'simple in practice, caused very little inconvenience to those inoculated, and scarcely any interference with school-work'.¹⁴ This was another important linchpin for the future of immunisation, representing a major shift in thinking and policy. The Health Department now began to focus on immunisation as a measure to actively prevent disease even before it appeared, in contrast to the previous policy of using it as a defence mechanism for control and containment once the disease was in evidence.

To implement this policy, the Department wished to pursue a school-based programme but it was not until 1924 that Cabinet authorised the expenditure for such a scheme, having already declined a previous application. Dr Thomas Valentine, the Director-General of Health, pointed out that by not employing diphtheria immunisation in New Zealand it 'leaves the Department open to criticism that it is failing to take advantage of latest methods'.¹⁵ Before immunisation occurred, each child would receive a test, known as the Schick test after its inventor, Bela Schick, to determine whether he or she was already immune to diphtheria.¹⁶ Valentine had been hoping to have at least two independent medical officers in each district to oversee the scheme's implementation, but with financial constraints already forcing the closure of

¹³ There was some debate about this as the Medical Officer of Dunedin included these numbers for the Health Department. However the Department and the school had no records of immunisations carried out at this establishment.

See A. G. Paterson to T. J. Hughes, 24 July 1929, H1 131/11/6 B. 92 Diphtheria in Schools 1928-33, Archives New Zealand (ANZ), Wellington. Also *Evening Post* (EP), 3 May 1924.

¹⁴ AJHR, 1923, H-31, p.9.

¹⁵ T. Valentine to Minister of Health, 22 April 1924, H1 131/11 B. 92 Diphtheria in Schools 1924-28, ANZ, Wellington.

¹⁶ Each child would receive an injection containing a tiny amount of diphtheria toxin. Inflammation at the injection site demonstrated that the child did not possess antibodies to neutralise the toxin and therefore required immunisation.

'C. A. Birch, 'The Schick Test', *Practitioner*, 210, 260, 1973, p.843.

the district offices in Napier, Whangarei and Wanganui in 1923, the necessary staff could not be employed at this time.¹⁷

The most obvious solution and one that could be utilised, was to use the doctors of the School Medical Service to implement immunisation when they visited a school for the purpose of examining the children.¹⁸ Before 1923, however, the Division of School Hygiene was headed by Edgar Wilkins, a fierce anti-immuniser who viewed immunisation as ‘an atrocious crime’.¹⁹ Wilkins resigned in 1923, perhaps because he was unable to countenance a diphtheria immunisation programme run by his Division.²⁰ The Division of School Hygiene now passed into the hands of Dr Ada Paterson who was responsible for the implementation of the diphtheria programme which finally commenced in 1924.²¹ Although the Department was keen to implement diphtheria immunisation, it realised it would have to tread carefully with the New Zealand public, no doubt remembering the lack of enthusiasm for smallpox vaccination.

Treatment was not compulsory, strong persuasion not even being adopted, as it appeared wiser to gradually educate the public by demonstrating the benefit of the treatment than to antagonise them by enforcing a measure they did not fully comprehend.²²

The Department convened meetings at the selected schools to give interested parents a chance to ask the School Medical Officers questions, and written parental consent had to be received before the immunisations took place. Each child was given three doses of toxin-antitoxin at weekly intervals. By 1926 the scheme had been extended to

¹⁷ D. Dow, *Safeguarding the Public Health. A history of the New Zealand Department of Health*, Wellington, 1995, p.97.

¹⁸ For a detailed history of the School Medical Service see, M. Tennant, ‘Missionaries of Health. The School Medical Service during the Interwar Period’, ed. L. Bryder, *A Healthy Country. Essays on the Social History of Medicine in New Zealand*, Wellington, 1991, p.128.

¹⁹ D. Dow, *Safeguarding the Public Health*, pp.108-09.

²⁰ *ibid.* Dow has indicated it is not clear why Wilkins resigned although he speculated that it was to do with his views on immunisation, pp.108-09.

²¹ Ada Paterson was one of the original doctors of the School Medical Service and became the director of the Division of School Hygiene in 1923, responsible for the physical inspection of thousands of schoolchildren every year. During the 1930’s and the depression she promoted the Health camps for children originally set up by Dr Elizabeth Gunn in 1919. She died in 1937 of cancer whilst still in her position.

M. Tennant, ‘Paterson, Ada Gertrude 1880-1937’, *Dictionary of New Zealand Biography* (DNZB), updated July 2005.

URL: <http://www.dnzb.govt.nz/>

²² AJHR, 1926, H-31, p.40.

include a number of endemic areas.²³ By the end of 1928 it was estimated that 11,500 schoolchildren at primary level had been immunised.²⁴ However, diphtheria immunisation was still piecemeal, completed when time, money and staff were available to undertake it. At this point the importance of public health itself within government and society was only just beginning to be recognised and with it the need for extra funding to implement preventative measures.

Events in Bundaberg, Queensland in 1928 spelled the end of immunisation for at least two years in New Zealand. Early vaccines and the conditions for making and storing them were crude. This meant contamination could occur at different stages in the process before it reached a child's arm. Three years before Bundaberg, six infants died after being injected with pure toxin at Baden near Vienna. No antitoxin had been added to complete the vaccine. As a result immunisation was forbidden for a time in Austria.²⁵

Bundaberg, however, was much closer to home and had a greater impact in both Australia and New Zealand. After a recent outbreak of diphtheria in 1928 the Medical Officer of Health for Bundaberg recommended an immunisation campaign. Although children immunised earlier were fine, of the 21 immunised on 27 January 1928, 18 became ill and 12 died. The vaccine had been stored in an unrefrigerated cupboard and had been used repeatedly. The Royal Commission of Inquiry appointed to investigate the tragedy found that the vaccine had become contaminated with staphylococcus pyrones as no antiseptic had been added by the manufacturers, Commonwealth Serum Laboratories (CSL) of Melbourne.²⁶ The Commission further

²³ *ibid.*

²⁴ *Christchurch Sun*, 18 January 1933, H1 131/11/6, B. 92, ANZ, Wellington.

²⁵ Other incidents involving diphtheria toxin-antitoxin included the following: - in 1919 in Dallas, Texas there were five deaths and 40 cases due to an injection of toxin-antitoxin mixture which was actually toxic due to the failure to add toxin all at once. In 1924 at Concord and Bridgewater, Massachusetts some 40 children developed severe and localised reactions as the toxin-antitoxin mixture contained phenol as some of batch had been stored below freezing. In 1927 in Russia toxin was supplied instead of toxoid, 12 of the 14 children injected died. From H. Parish, *A History of Immunization*, Edinburgh, 1965, p.151.

²⁶ A. H. Brogan, *Committed to Saving Lives. A History of the Commonwealth Serum Laboratories*, Melbourne, 1990, p.25. Toxin-antitoxin when frozen produced phenol which could cause severe reactions.

advised that antiseptic should be used by CSL in all vaccines to prevent contamination.²⁷

This disaster had serious repercussions in Australia. In a press release put out just before the Bundaberg tragedy the Department of Public Health had advised parents to have their children immunised against diphtheria.²⁸ Extensive publicity was given to this disaster in the newspapers and at the Brisbane Children's Hospital and in towns diphtheria immunisation was stopped within forty-eight hours of the event.²⁹ Historian Claire Hooker has argued that as a result in 'most areas immunisation was not undertaken again for the next few years, although she pointed out that it is unclear how much the delay was due to community resistance or to political caution.'³⁰

Across the Tasman Sea, the New Zealand Health Department had just extended the immunisation programme but felt that, 'In light of the few tragedies at Bundaberg and elsewhere it is open to doubt whether, particularly in New Zealand, immunization with toxin-antitoxin should be recommended'.³¹ The Health Department noted that although they were using CSL vaccine there had been no unfavourable side-effects other than of a 'slight and transient nature'; fresh vaccine was used every day and not carried over.³² Nevertheless, Bundaberg was a serious blow to immunisation in New Zealand as it dampened the enthusiasm and confidence of the Health Department and the Division of School Hygiene in the safety of the vaccine. The programme fell 'temporarily into abeyance' due to 'much public alarm'.³³ By 1928 parents had been taking 'advantage of this treatment fairly extensively' at schools located in parts of Auckland where diphtheria had occurred.³⁴ Such was the impact of Bundaberg that by 1932 the Department predicted that 'unless the public avail themselves more widely of this proved preventative we must expect in the course of the next year or

²⁷ *ibid.*, p.26.

²⁸ P. J. Tyler, 'An Irreproachable Instrument? The Board of Health and Public Health Administration in New South Wales, 1881-1973', unpublished PhD dissertation, Armidale, University of New England, November 1998, p.195.

²⁹ C. Hooker, 'Diphtheria, Immunisation and the Bundaberg Tragedy', p.70.

³⁰ *ibid.*

³¹ *AJHR*, 1928, H-31, p.12.

³² *AJHR*, 1928, H-31, p.25.

³³ *AJHR*, 1932-33, H-31, p.2.

³⁴ *ibid.*

two to have further outbreaks of the disease'.³⁵ The authorities felt that parents had lost their confidence in the toxin-antitoxin vaccine and were only prepared to allow their child to be immunised when the disease occurred in 'serious epidemic form'; when the threat from diphtheria could be seen as greater than the threat from the vaccine.³⁶ Similarly in Australia, which was alleged to have the world's highest incident rate of diphtheria, attendance at the New South Wales public health clinics for diphtheria immunisation was described as 'disappointing' in 1934.³⁷ Confidence began to be restored only by the late 1930s.

Diphtheria Immunisation Initiatives in New York City and Canada

Whilst immunisation was in abeyance in both Australia and New Zealand, Canada and New York City were both having significant success with their immunisation programmes. In Canada, up until the mid-1920s, diphtheria was the number one cause of death in children under 14 resulting in great anxiety for both parents and the health authorities.³⁸ In October 1925 Connaught Serum Laboratories of Toronto and the Provincial Board of Health of Ontario trialled diphtheria vaccine on 15,000 school and preschool children in the Hamilton, Brantford and Windsor areas of the province.³⁹ Connaught could manufacture vaccine at a third of the cost of importing it from the United States and this self-sufficiency was a crucial factor in encouraging diphtheria immunisation in Canada. Encouraged by the success of these initial campaigns, the City Health Department of Toronto authorised administering diphtheria vaccine to over 36,000 schoolchildren between 1926 and 1929, once parental consent had been obtained. The death rate from diphtheria in Ontario fell from 25.7 per 100,000 in 1920, to 6.1 in 1930 and 0.9 in 1939.⁴⁰ Jane Lewis pointed out that mass immunisation programmes were 'crucial to success' as it was only after

³⁵ *ibid.*

³⁶ *ibid.* Also 'Diphtheria Immunisation', H1 131/11/6 B. 92, ANZ, Wellington.

³⁷ P. J. Tyler, 'An Irreproachable Instrument', pp.212-13.

³⁸ C. J. Ruddy, 'Connaught and the Defeat of Diphtheria' *Contact*, February 1996.

<http://www.healthheritageresearch.com>

³⁹ Toxoid or anatoxin, developed in 1924, gave a better rate of immunity and fewer reactions in younger children. It was also more stable and was not affected by freezing. The Maloney test - developed by J. P. Maloney of Connaught Serum Laboratories - was required to detect skin sensitivity and determine dose level.

⁴⁰ *ibid.* Also see, J. Lewis, 'The Prevention of Diphtheria in Canada and Britain 1914-1945', *Journal of Social History*, 20, 1986-87, p.163.

an intensive two and half year campaign in the schools that diphtheria mortality rates began to steadily decline.⁴¹

In 1929, after a series of successful trials, a city-wide immunisation campaign was launched with the aim of eliminating diphtheria from New York City within two years. In charge of overseeing this task was the Diphtheria Prevention Commission comprising philanthropists, social welfare agencies and physicians. Extensive advertising in newspapers, on billboards, through churches and interested companies was used to persuade people to immunise their children.⁴² ‘By the summer of 1929, no one living in New York City could fail to be “diphtheria conscious”’ - placards exhorting people to ‘Save Children from Diphtheria’ were everywhere.⁴³ It was also made easy to obtain immunisation - 30 immunisation stations were opened in parks by May 1929 and an additional 44 new clinics were opened by the Diphtheria Prevention Commission.⁴⁴ Perhaps the most decorative initiative were the six converted snow-removal trucks decked out with balloons and ‘circus paraphernalia’ which toured around congested parts of the city to offer children immunisation.⁴⁵ The campaign met with significant success even though the goal of eradicating diphtheria was not quite realised. From January 1929 to February 1931 more than 522,000 children were immunised and the Commission estimated that 1,400 lives had been saved and 17,000 prevented from contracting the disease.⁴⁶ By 1939 diphtheria cases numbered 543, with only 22 deaths recorded, and this ‘excellent showing was credited to the extensive immunisation of children against diphtheria’.⁴⁷

One important aspect of New York City’s success was the promotional nature of the campaign as ‘it takes the most intensive effort to get...[the] public even slightly roused as to the seriousness of such a preventable disease as diphtheria’, a lament that

⁴¹ *ibid.* p.166. Jane Lewis was Professor of Social Policy at the London School of Economics until 1996 and is currently a Fellow of All Souls College, Oxford.

⁴² E. M. Hammonds, *Childhood’s Deadly Scourge: The Campaign to Control Diphtheria in New York City, 1880-1930*, Baltimore, 1999, p.192.

⁴³ *ibid.*, p.211. There were 360,000 placards on public transport, 1,100 billboard posters and 6,000 posters sent to chain stores. In addition 8,500,000 pieces of literature were produced in ten different languages. See Diphtheria Prevention Commission. *Saving Children’s Lives. Diphtheria Prevention in the City of New York*, New York, 1932, pp.3-4.

⁴⁴ E. M. Hammonds, *Childhood’s Deadly Scourge*, p.212.

⁴⁵ *ibid.*, p.213.

⁴⁶ Diphtheria Prevention Commission. *Saving Children’s Lives. Diphtheria Prevention in the City of New York*, New York, 1932, p.2 and 7.

⁴⁷ AJHR, H-31, 1941, p.2.

could equally have applied to the people of New Zealand.⁴⁸ One tactic used by the Commission was to change public perception of the disease, a method later employed in New Zealand and elsewhere.⁴⁹ Originally diphtheria was seen simply as a common childhood illness but which could pose a serious threat. During the campaign diphtheria was 'portrayed as a disease whose very presence was a disgrace, a visible sign of parental neglect and medical indifference'.⁵⁰ Changing public perception of the disease became a key tactic, to be employed, if required, in future immunisation campaigns when parents were perceived as ambivalent. The campaign also demonstrated the success that could be achieved with a mass immunisation campaign that was fully promoted and energetically pursued, especially when immunisation was taken to the parents.

Diphtheria Immunisation in the 1930s

These campaigns, particularly the one in New York City, had been carefully monitored by the Health Department in New Zealand. Ada Paterson received the Weekly Bulletin issued by the Department of Health, City of New York, and applied for a diphtheria handbook with the comment that the 'result of your experience would be most valuable to us'.⁵¹

Overseas experiences had a significant impact on both the New Zealand Health Department and some members of the medical profession by stimulating interest in the diphtheria vaccine, particularly as the experiences of the United States and Canada made such impressive reading. However the Bundaberg disaster meant the Department would have to tread carefully with diphtheria immunisation in New Zealand; in contrast there were no tragedies of such significance in either the United States or Canada at this time to slow or stop the campaigns. The aim of the Health Department in the early 1930s was to try and recommence its immunisation

⁴⁸ *ibid.*, p.2.

⁴⁹ Measles is a good example of this in New Zealand when the Health Department was trying to promote immunisation in the late 1970s. See Chapter 7, pp.208-19.

⁵⁰ E. M. Hammonds, *Childhood's Deadly Scourge*. pp.192-93.

⁵¹ A. Paterson to Diphtheria Prevention Commission, 21 May 1929, H1 131/11/6 B.92. On this file, Diphtheria in Schools 1928-33 and on the previous one H1 131/11 B. 92 Diphtheria in Schools 1924-35 there was quite extensive literature from the United States on the New York campaigns - the Health Department was obviously very interested in events there.

programme in schools that had been halted in 1928.⁵² It also became increasingly aware that it needed to gain access to preschoolers as it was these children who were most vulnerable to diphtheria. Immunising preschoolers would reduce the pool of susceptible targets for the disease. This, however, was much more problematic than immunising children already at school as it relied on mothers bringing their little ones to a clinic or the doctor for immunisation. Little was achieved with preschoolers in the 1930s; it was not until the mid-1940s that preschool immunisation became a priority.

Some departmental employees were enthusiastic proponents of immunisation. One such Medical Officer of Health was Dr Harold Turbott who was in charge of the East Cape Health District.⁵³ Turbott instituted diphtheria immunisation in schools in his district in 1932 and reported that by the following year the incidence rate for diphtheria had fallen from 4.4 per 10,000 population to 3 per 10,000.⁵⁴ In 1937, as Medical Officer for Health of the South Auckland District, Turbott, along with his assistant Helen Deem, initiated another diphtheria immunisation campaign.⁵⁵ All children between one and 16 were to be offered immunisation which totalled over 20,000 children.

Turbott also made efforts to reach preschoolers; parents of schoolchildren were invited to bring along their younger children for immunisation. In order to reach parents without school-aged children, newspapers published advertisements and information about diphtheria immunisation. Nevertheless, Turbott acknowledged that

⁵² Immunisations were resumed sporadically in 1929 when 146 children were immunised at a school in Manurewa. Outbreaks of diphtheria dictated which schools received immunisations. AJHR, 1930, H-31, p.28.

⁵³ Harold Turbott became Medical Officer of Health (MOH) for East Cape in 1928 and after a brief sojourn in Samoa in 1935, became MOH for South Auckland Health District in 1936. In 1940 he became Director of the Division of Social Hygiene and was appointed deputy Director-General of Health in 1947. He became Director-General in 1959 and retired in 1964. He also had an extensive and lengthy involvement with the World Health Organization, being a regular delegate and President of the 13th Assembly in 1960.

D. Dow, 'Turbott, Harold Bertram 1899-1988', DNZB, updated July 2005.

URL: <http://www.dnzb.govt.nz/>

⁵⁴ AJHR, 1935, H-31, p.2.

⁵⁵ Helen Deem became a School Medical Officer to the South Auckland District and assistant to Harold Turbott in 1936. In 1939 she was appointed Medical Advisor to the Plunket Society a position she retained until her death in 1955, aged 55.

L. Bryder, 'Deem, Muriel Helen 1900-1955', DNZB, updated July 2005.

URL: <http://www.dnzb.govt.nz/>

‘it has proved difficult to get much response from pre-school children in rural areas for a variety of reasons’.⁵⁶ Even by the late 1930s acceptance of diphtheria immunisation by parents was still problematic. Figures for the campaign in the South Auckland Health District demonstrate this. Of 17,531 schoolchildren, 9,251 obtained parental consent, just over half (52.7 percent). Preschool figures were much lower; only 783 children were brought by parents and of these only 288 completed the course.⁵⁷ It was found that ‘it was difficult to persuade mothers of toddlers to continue for three injections’ and most parents clearly preferred not to have their preschool children immunised at all.⁵⁸ Turbott commented that he hoped the campaign would ‘help popularize a process still sceptically regarded or neglected by parents of almost half the school-children and the majority of the pre-school children of this health district’.⁵⁹ As can be seen, even by the late 1930s a large number of parents were still hesitant to accept immunisation for their school-aged children, and especially for their toddlers, except in epidemic conditions.

Nevertheless, both the immunisation schemes initiated by Turbott achieved a reduction in the incidence of diphtheria. In the East Cape, where the programme was continued by Turbott’s successor, there were only 15 cases of diphtheria in 1936, 2.45 per 10,000 population.⁶⁰ By 1939, South Auckland Health District boasted similar figures, with only 35 cases of diphtheria, 2.53 per 10,000 of population.⁶¹ The case rate for South Auckland per 1,000 school children in 1939 was 0.29 in those immunised as opposed to 1.8 in those unimmunised, ‘justifying the continuance of artificial immunity work throughout the district’ and demonstrating that persistence with proactive schemes did work.⁶²

It was not until the late 1930s that other health districts also commenced diphtheria immunisation campaigns, although on a much smaller scale. The Medical Officer for

⁵⁶ H. B. Turbott, H. Deem, ‘Preliminary Report on a Diphtheria Immunization Campaign, South Auckland Health District’ Appendix C, AJHR, 1938, H-31, p.96.

⁵⁷ *ibid.*, p.98.

⁵⁸ H. Deem, H. B. Turbott, ‘Diphtheria Immunization Campaign in South Auckland Health District, New Zealand, 1937-1938’, Appendix C, AJHR, 1939, H-31, p.114.

⁵⁹ *ibid.* Of the schoolchildren who received immunisation only 4,357 completed the full three dose course.

⁶⁰ AJHR, 1937-8, H-31, p.2.

⁶¹ H. B. Turbott, ‘The Control of Diphtheria in a Rural Health District’ Appendix A, AJHR, 1940, H-31, p.50. In 1937 the incidence was 6.47 per 10,000 population.

⁶² *ibid.*

Wellington instigated a programme to immunise schoolchildren and 80 percent of the 1,035 pupils selected received consent from their parents.⁶³ Similar localised schemes were undertaken in Whangarei and the Wellington-Hawke's Bay Health Districts in the late 1930s. Nevertheless, these latter programmes were in response to outbreaks of the disease 'and to combat it immunisation had to be resorted to'.⁶⁴ Much smaller numbers of children were involved as programmes were confined to the locality of the diphtheria outbreak and little provision was made for preschoolers, with the focus still remaining on older schoolchildren. Proactivity was confined to the two schemes initiated by Turbott, both of which sought to achieve coverage of the whole area. Outside of these, policy remained firmly reactive, responding only when outbreaks occurred.

Nonetheless, for the whole country, 786 cases of diphtheria were notified in 1938 with 31 deaths.⁶⁵ This was almost half the numbers notified in 1930, when 1440 cases and 58 deaths were recorded.⁶⁶ Immunisation had obviously had some discernible effect although other factors such as improved housing and nutrition, especially once the effects of the Depression began to lessen, would also have made a significant contribution. However, the question to be addressed is why were New Zealand's figures not lower? In New York City by 1939 cases had been slashed from an average of 10,685 a year in the 1920s to 543 and deaths from 684 to 22.⁶⁷

New Zealand's Health Department was particularly cautious after the Bundaberg tragedy and diphtheria immunisation in the 1930s tended to be administered on a fragmentary basis, responding when there was an outbreak of diphtheria. Concern about public reaction, together with a lack of initiative in implementing active immunisation in all health districts, seriously impeded progress. Nevertheless, the Health Department had tried in 1933 to extend immunisation within New Zealand by advocating using medical practitioners where possible to administer the vaccine

⁶³ AJHR, 1939, H-31, p.5.

⁶⁴ *ibid.*

⁶⁵ *ibid.*

⁶⁶ AJHR, 1931, H-31, p.8.

⁶⁷ AJHR, 1941, H-31, p.2.

through their surgeries. They hoped ‘that there will be a considerable extension of this work in the Dominion’.⁶⁸

This scheme, aimed at reaching preschoolers, was not very successful due to the cost of three visits to the doctor as well as parental concerns regarding immunisation. Additionally, although Turbott and Director-General of Health, Michael Watt, were keen to extend the immunisation programme, many Medical Officers of Health did not share their enthusiasm, preferring to await the outcome of Turbott’s efforts in the East Cape. The Health Department left it up to individual Medical Officers of Health to implement school-based diphtheria immunisation programmes and did not co-ordinate them or introduce a standard scheme throughout the country. Programmes that did take place, such as in Wellington in 1938-39, were undertaken once the success of East Cape and then South Auckland had been established. For any further progress central direction and implementation of a nationwide programme was imperative so efforts could be co-ordinated and coverage massively extended.

Low staffing levels also meant it was difficult to implement the immunisation programme in schools. Kinohaku School in the Waikato experienced an outbreak of diphtheria in 1937 and the School Committee tried, without success, to arrange for the immunisation of their schoolchildren. They were told by the Department that ‘it was impossible to arrange the matter as their officers were overworked now and had their hands full’.⁶⁹ The School Committee therefore had to arrange for a local practitioner to undertake the immunisations.⁷⁰ The School Medical Service before 1939 was affected by both a lack of resources and a reduction in staff numbers. This corresponded with a rise in the numbers of children to be inspected, from 78,980 in 1921 to 107,556 in 1938.⁷¹ Given that the main focus of the School Medical Service was physical examinations, little time was left to fit such extras as diphtheria immunisation.

⁶⁸ ‘Diphtheria Immunisation’, H1 131/11/6 B.92, ANZ, Wellington.

⁶⁹ J. Schultz to Minister of Health, 8 December 1937, H1 131/11/6 B.99, Diphtheria in Schools 1933-39, ANZ, Wellington.

⁷⁰ The doctor charged £20 for this service which the Department refused to refund on the grounds that there was no need for urgency. This was because the immunisation took at least three months to work and would have had no effect in an ongoing epidemic.

⁷¹ M. Tennant, ‘Missionaries of Health. The School Medical Service during the Interwar Period’, ed. L. Bryder, *A Healthy Country. Essays on the Social History of Medicine in New Zealand*, Wellington, 1991, p.132.

Low rates of diphtheria also meant that some parents, doctors and medical officers of health did not believe it was necessary to immunise proactively, but rather, preferred to wait until an outbreak actually occurred. This attitude particularly seemed to dominate in the 1930s and early 1940s - diphtheria death rates from 1934-44 averaged around 0.1 to 0.2 per year per 10,000 population.⁷² Indeed, in 1933, the medical officer in charge of the Christchurch Infectious Diseases Hospital, Dr J. F. Duncan, pointed out that there was no diphtheria at all in Canterbury and there was 'no need for [immunisation], really, as we only get a stray case now and then'.⁷³ Many other health professionals, as well as parents, shared this ambivalent attitude towards diphtheria immunisation in New Zealand in the 1930s.

Although New Zealand's approach was in contrast to the one adopted in New York City and Canada it was not dissimilar to Britain's. Since 1921 in Britain there had been on average over 3,000 deaths a year from diphtheria and this figure was showing no signs of decline by 1938.⁷⁴ Lack of initiative by the Ministry of Health and many local authorities regarding immunisation schemes, coupled with a reluctance to fund them, meant little was achieved before the introduction of a national campaign in 1940.⁷⁵ This measure was introduced because of Ministry fears of epidemics of diphtheria occurring in air raid shelters. By 1943 the Chief Medical Officer reported that 50 percent of the child population had been immunised in the preceding two years.⁷⁶ Lewis stated the 'huge increase in numbers immunised and the concomitant decrease in the death rate from diphtheria was due entirely to the national scheme'.⁷⁷

In 1941, following Britain's lead, New Zealand introduced a national immunisation programme. After the success in the South Auckland Health District, the School Medical Service had continued to offer diphtheria immunisation at each school inspected there, spending two of an allocated three weeks conducting immunisations. A further 998 children were immunised during 1939 which also included some pre-

⁷² AJHR, 1947, H-31, p.5

⁷³ CS, 18 January 1933, in H1 131/11/6 B.92, ANZ, Wellington.

⁷⁴ J. Lewis, 'The Prevention of Diphtheria in Canada and Britain 1914-1945', p.168.

⁷⁵ For a full discussion on British inertia before World War Two see, J. Lewis, 'The Prevention of Diphtheria in Canada and Britain 1914-1945', *Journal of Social History*, 20, 1986-87, pp.163-76.

⁷⁶ *ibid.*, p.170.

⁷⁷ *ibid.*

schoolers.⁷⁸ In 1941 this scheme was extended to all schools in the North Island and to the larger schools in towns in the South Island. Schools were limited in the South Island due to the low incidence of diphtheria in comparison to the North.⁷⁹ At each school examined by the School Medical Officers, parents of new entrant (primer) children and children up to age seven were offered immunisation. In an effort to reach the preschool population the Health Department co-operated with the Plunket Society to open child welfare clinics for children from ages one to five.⁸⁰ It was hoped to have about twenty of these opened by February 1941 where diphtheria immunisation would be offered in addition to a range of other services. Plunket rooms were also co-opted for diphtheria immunisation clinics on set dates 'where, it is hoped, an increasing number of mothers will bring their toddlers for protection'.⁸¹

The Department was now keen to try and administer diphtheria immunisation to preschoolers and through Plunket hoped to gain access to the most vulnerable section of society. Statistics published in 1939 by the Director of Public Hygiene which described diphtheria death rates in New Zealand from 1920 to 1931 made alarming reading. It was found that most fatalities occurred in the under one category, at 19.7 per 100 cases. This dropped to 7.5 per 100 cases in the one to five category and then to 3.3 for the five to ten age range.⁸² These studies illustrated the vital importance of having infants immunised as early as possible in life to avoid contracting diphtheria and the Department was keen to promote this. Both Plunket and District nurses were encouraged to talk to mothers about immunisation and to encourage them to have their preschoolers immunised. It was recognised that nurses themselves may have had reservations at recommending such a course of action, so an article was published in the *New Zealand Nursing Journal* which aimed to calm nurses' fears regarding immunisation. However, it also indicated that there was no room for discord: 'nurses can potently influence people and their voices should be raised unanimously in favour

⁷⁸ AJHR, H-31, 1940, p. 50. The extra week was spent on physical examinations.

⁷⁹ 'Prevention of Diphtheria. A New Zealand Wide Campaign for Protection', *New Zealand Nursing Journal*, (NZNJ), 34, 4, 1941, p.119.

⁸⁰ The Plunket Society was established in 1907 by Frederick Truby King to promote the health and welfare of mothers and babies. Clinics were held in local Plunket rooms by the Plunket nurse for mothers of babies and toddlers. The health and weight of the infant would be checked and advice would be given on childcare. For a history of the Plunket Society see L. Bryder, *A Voice for Mothers. The Plunket Society and Infant Welfare 1907-2000*, Auckland, 2003.

⁸¹ M. Tennant, 'Missionaries of Health. The School Medical Service during the Interwar Period', p.132.

⁸² AJHR, 1939, H-31, p.24.

of artificial immunity to diphtheria'.⁸³ Objections were not to be voiced to the public, whatever views a nurse might hold; she was to comply with official departmental immunisation policy.

Attitudes to Immunisation

Although nurses were to promote the official line regardless, parents had the right to decide for themselves. During the 1920s and 1930s public attitudes were influenced by several factors. The disaster at Bundaberg in 1928 and memories of some of the serious consequences of smallpox vaccination were likely to have given many parents cause for concern.⁸⁴ Only just over 50 percent of parents gave their consent for their schoolchildren to be immunised in the South Auckland District during the campaign of 1937-38 and only 30 percent of preschoolers were protected.⁸⁵ Most parents were probably afraid to have their children immunised, so numbers rose only when there was an outbreak of diphtheria in the area, and then up to 80 percent of eligible schoolchildren might be immunised.⁸⁶ Before World War Two many parents still preferred to utilise immunisation, especially with their preschool children, only when there was a threat from the disease. Immunisation was perceived as a defensive mechanism by many people, not one that could be used proactively to prevent outbreaks occurring. At this point, some parents still believed that diphtheria immunisation was too risky and a large minority were just not sufficiently motivated, even in districts such as South Auckland where immunisation was actively encouraged.

These beliefs and fears were formed from information in newspapers, talking with friends and family and from medical practitioners, some of whom were also ambivalent about immunisation. It was likely therefore that some doctors who had reservations themselves did not offer immunisation to parents. Nonetheless, the reduction in case numbers between the years 1930 to 1939 may be partly attributed to

⁸³ AJHR, 1940, H-31, p.118.

⁸⁴ General vaccinia was a recognised consequence of smallpox vaccination. Others included being infected with other diseases through the use of the same needle for everyone. Death was not unknown.

⁸⁵ H. B. Turbott, 'The Control of Diphtheria in a Rural Health District' Appendix A, AJHR, 1940, H-31, p.50.

⁸⁶ AJHR, 1939, H-31, p.5.

some general practitioners (GPs) and parents taking advantage of diphtheria immunisation for their children.⁸⁷

Parents had little information to guide them when making a decision about diphtheria immunisation. The popular New Zealand childcare manual of the early twentieth century, *Feeding and Care of Baby*, made no mention of diphtheria immunisation.⁸⁸ Newspapers tended to put forward departmental views in their infrequent articles.⁸⁹ Parents in the Wellington Health District in 1939, where an outbreak of diphtheria was to be contained by an immunisation campaign, were reassured by the *Dominion* newspaper that this 'is to take the form of three small and painless injections of anatoxin' and that this 'protection lasts probably for life'.⁹⁰ The Health Department might arrange for a discussion at the local school but as they were keen to increase numbers, persuasion and encouragement to immunise would underpin their discourse.

At this time the Health Department did not produce pamphlets for parents and consent forms contained no additional information about immunisation. Nevertheless by the end of the 1930s some progress was made on this front. Realising that some districts were still using a consent form from 1925 a new one was drawn up and adopted by the Department as the standard consent form in the late 1930s. Ada Platts-Mills, a Wellington School Medical Officer, commented that the form 'would be of great value' and was 'impressed by the desirability of having some effective form for the information of parents'.⁹¹ Nevertheless, health education, which was a recognised feature of departmental policy, was described as 'sporadic and underfunded' mainly consisting before World War Two of lectures, pamphlets and posters on various health topics.⁹² The focus was on more general matters of health, hygiene and nutrition; immunisation did not warrant such attention at this point. The concerns of

⁸⁷ For figures see page 39.

⁸⁸ F. T. King, *Feeding and Care of Baby*, London 1913, (reprinted annually until 1932), revised and enlarged edition, 1940. Truby King was the founder of the Plunket Society and very influential in childcare matters both in New Zealand and abroad. For further information see B. Brookes, 'King, Frederic Truby 1858-1938', DNZB, updated 7 July 2005.

URL: <http://www.dbnz.govt.nz/>

⁸⁹ For example see *Auckland Star* (AS), 20 June 1931, EP, 20 April 1925.

⁹⁰ *Dominion* (D), 14 February 1939, H1 131/11/6 B.99, ANZ, Wellington.

⁹¹ A. Platts-Mills to Director of Department of Public Health (DPH), 13 October 1938, H1 131/11/6 B.99, ANZ, Wellington.

⁹² D. Dow, *Safeguarding the Public Health*, p.138.

parents regarding the lack of information on immunisation, and the slowness of the Department to respond, became more pronounced over the next few decades.

Anti-immunisation in New Zealand

New Zealanders had been fairly ambivalent about smallpox vaccination with a small section of society being committed anti-immunisers. In the early part of the twentieth century they were led by Edwin Cox, a dentist who originally hailed from Britain. In 1906, George Fowlds MP became Minister for Health and was also a committed anti-immuniser.⁹³ A conscience clause had already been inserted into the 1900 Public Health Act to appease New Zealanders by allowing anti-immunisers to adhere to their views without risk of fine.⁹⁴ The right to oppose immunisation if they so desired was therefore part of the New Zealand public's expectations.

Opposition to the vaccination acts focused on two main issues: the first was the injection of impure substances into the body and the second was objection to the compulsory clause of the act. With the passing of the 1920 Public Health Act opposition now focused on the formulation of vaccines themselves.

In 1929 a branch of the British Union for the Abolition of Vivisection (BUAV) was formed in Auckland and was originally known as the New Zealand branch. In 1932 it was renamed the Auckland branch although it remained the only one in New Zealand until after World War Two.⁹⁵ By 1940 the BUAV boasted 154 branches in total including six in Australia and one in New Zealand.⁹⁶ Originally formed in Britain in 1898, the society opposed experiments on animals. As smallpox lymph was at this time prepared using calves, vaccination practices came under severe scrutiny from the BUAV and a constant theme was agitation for repeal of the compulsory vaccination acts which were still operating in Britain.⁹⁷

⁹³ A. S. Day, 'The Maori Malady, the 1913 smallpox epidemic and its nineteenth century background', p.42.

⁹⁴ *ibid.*, p.35.

⁹⁵ Email communication with H. E. Roberts 10 September 2002. Helen Roberts is an Archivist for Archives and Special Collections at the Brynmor Jones Library, University of Hull, UK.

⁹⁶ E. Hopley, *Campaigning against Cruelty. The hundred year history of the British Union for the Abolition of Vivisection*, London, 1998, p.7.

⁹⁷ Compulsory smallpox vaccination in Britain was not repealed until the passage of the National Health Act in 1946.

At the time of the formation of the New Zealand branch, Dr Walter Hadwen was the President of the BUAV. A staunch anti-immuniser himself, the focus of the society remained firmly on exposing the alleged evils of immunisation and the cruelty endured by animals in preparing vaccines. This ‘issue had become entrenched in the anti-vivisection movement’ under his presidency.⁹⁸ As policy was directed by the head office in Britain, the New Zealand branch also made anti-immunisation its main focus up until the 1950s.

Although there had been little overt anti-immunisation sentiment in New Zealand, letters did occasionally appear in the newspapers condemning the practice such as the one from Auckland man, James Devereux:

There is growing a tremendous body of public opinion all over the civilised world that is bitterly opposed to the medical practice of injecting substances from the pus of diseased animals into the sacred bloodstream of human beings and especially innocent children.⁹⁹

Certainly from the 1930s the BUAV became visibly active, sending out leaflets and writing letters to the Health Department. The Department was, many times over the coming years, asked to stop diphtheria immunisation. In one such letter the BUAV urged the Department to ‘utterly refuse to countenance worthless products of drug houses’ and claimed that diphtheria could be ‘treated successfully without these dangerous poisons’.¹⁰⁰ Newspaper advertisements were also purchased by the BUAV; one appeared in the Wellington paper the *Dominion*, which exhorted parents ‘DO NOT BE MISLED’ and invited them to apply for free literature on the ‘MENACE OF IMMUNISATION’.¹⁰¹

The Health Department discovered early on that the best technique was to ignore BUAV protestations as best it could whilst carefully defending its position by way of reply. The BUAV certainly had an impact on the way the Department approached publicity measures. A radio talk to be given by the Department on diphtheria

⁹⁸ E. Hopley, *Campaigning against Cruelty*, p.55.

⁹⁹ AS, undated but early 1920s, H1, 131/11 B.92, ANZ, Wellington.

¹⁰⁰ M. Walker to Minister of Health 28 June 1935, H1 131/11/6 B.99, ANZ, Wellington. M. Walker was the President of the BUAV in Auckland.

¹⁰¹ D, 13 November 1940, H1 131/11/6 11076 Diphtheria in Schools 1942, ANZ, Wellington, also *Otago Daily Times* (ODT), 9 November 1940.

immunisation was to be presented ‘on the lines of assisting a natural process’ so it would have ‘less tendency to antagonise the anti-vivisectionists’.¹⁰² ‘Treading slowly and carefully’ was the byword of departmental policy in the 1930s.

The impact made by the BUAV on parents by 1940 is difficult to gauge given the inconsistencies of implementation of diphtheria immunisation. It is likely that it might have influenced some parents not to immunise their children, but as many parents were not prepared to take that risk anyway until there was a diphtheria epidemic the BUAV’s overall influence would have been small, just reinforcing some parental views. Alternatively, it might have persuaded those wavering not to immunise. Certainly the BUAV campaign grew in the post-war years as a concerted effort was made by the Department to immunise all children against diphtheria. Its impact will be discussed in further detail in the next chapter.

Another anti-immuniser just beginning to make his views known was Ulric Williams, a medical doctor situated in Wanganui. Although he had practised conventional medicine up until the early 1930s a ‘vision of Christ’ convinced him to adhere to a more natural and less interventionist way of life. He became a teetotaler and interested in naturopathy as a method of treatment. A nourishing diet, exercise, fresh air and sunlight amongst other things were all necessary in his view for a healthy lifestyle.¹⁰³ Williams now became a ‘vigorous opponent of immunisation’ and would ask at public meetings, ‘How do you expect to help your healthy children by injecting them with the blood of diseased horses?’¹⁰⁴ As a consequence of these and other actions, Williams was expelled from the New Zealand Medical Association in 1936 for ‘gross breaches of ethical rules’ and the Medical Council attempted to have him deregistered in 1941 following the death of a patient.¹⁰⁵ Williams certainly had influence in and around Wanganui where he lived; immunisation figures were often low. He periodically wrote anti-immunisation letters to the local press, the national

¹⁰² M. Champtaloup to DGH, 23 May 1933, H1 131/11/6 B.92, ANZ, Wellington.

¹⁰³ B. Hamilton, ‘Williams, Ulric Gastor 1890-1971’, DNZB, updated 7 July 2005.
URL: <http://www.dbnz.govt.nz/>

¹⁰⁴ R. E. Wright-Sinclair, *A History of the New Zealand Medical Association*, Wellington, 1987, p.65. Wright-Sinclair pointed out that diphtheria antitoxin which is used to treat diphtheria is made from horse serum, not the vaccine itself.

¹⁰⁵ *ibid.*, p.65. Also B. Hamilton, ‘Williams, Ulric Gastor 1890-1971’, DNZB, updated 7 July 2005.
URL: <http://www.dbnz.govt.nz/>

press and the Health Department to put forward his views on immunisation.¹⁰⁶ In 1946 Thomas Lonie, the Medical Officer of Health for Palmerston North, wrote with reference to immunisation, 'Wanganui has always been a difficult place for any work of this nature'.¹⁰⁷ Dr U. A. Hadden, who held diphtheria immunisation clinics in Wanganui from 1943 felt compelled to write to the Director-General of Health to inform him of the state of affairs there as a result of Dr Williams' activities:

I fear that Dr Ulric Williams' Anti-Immunisation outbursts are having a really appreciable effect upon the willingness of the public to accept immunisation, and I would wish to stress the fact that I regard the position in Wanganui as one of potential danger, in view of the sharp rise in incidence in diphtheria.¹⁰⁸

Nevertheless, Lonie reported to the Director-General of Health that in 1946 'a recent increase of cases of diphtheria stimulated the local conscience resulting in a large increase in the number of immunisations done privately' and with enough support to maintain a monthly Health Department clinic.¹⁰⁹ Anti-immunisation sentiment was fine when there was no threat of diphtheria, but many parents would take their children for immunisation if they felt there was a threat. This model of panic immunisation during times of impending crisis after periods of neglect was still a common pattern in New Zealand highlighted when an epidemic of smallpox struck in 1913. Panic and fear caused a huge rush for immunisation after years of apathy.¹¹⁰ It was this pattern of thinking that the Health Department wished to change as had already happened in the campaigns in New York City and Canada. The trend now was for immunisation to be used as a preventative measure, hopefully to be accepted by the public even when there was no outbreak of the disease. How the Department tried to achieve this will be discussed in the subsequent chapters.

¹⁰⁶ *Wanganui Chronicle*, 27 November 1939, 2 December 1939 and 7 December 1939, *Wanganui Herald*, 27 November 1939 and later 24 May 1945. The Health Department sent a reply to both papers setting out the advantages of immunisation. See H1 131/11/6 11076 Diphtheria in Schools 1939-42, ANZ, Wellington.

¹⁰⁷ Memo from MOH Palmerston North to Director-General of Health (DGH), 2 September 1946, H1 131/11/6, 19514, Diphtheria in Schools 1946-7, ANZ, Wellington.

¹⁰⁸ U. A. Hadden to DGH, 13 May 1946, H1 131/11/6, 19514, ANZ, Wellington.

¹⁰⁹ T. Lonie to DGH, 2 September 1946, *ibid.*

¹¹⁰ See A. S. Day, 'The Maori Malady: The 1913 Smallpox epidemic and its nineteenth century background', MA thesis, Auckland, 1998.

Maori and Typhoid Immunisation

In 1900, 98 percent of Maori lived in rural communities, based in small villages or kainga with hapu or family ties.¹¹¹ Leaders were the kaumatua or family heads and any major decision-making was 'centred on consensus-forming discussion among family heads on local marae'.¹¹² Those leaders with a whakapapa claim to leadership, rangitira, would speak for the hapu at a wider hui or meeting.¹¹³ Most Maori communities made a 'precarious living from mixed subsistence farming' barely making enough to survive.¹¹⁴ If this needed subsidising, Maori would undertake seasonal work such as fencing or drain-laying to earn extra money.¹¹⁵ Education was provided by the Native school system but that was the only service provided by the government. Life for Maori at this juncture was still very much independent of Pakeha control.

Due to poor living standards, such as a lack of toilet facilities, overcrowded rooms, no running water and poor food hygiene, typhoid was epidemic in Maori communities in the early twentieth century and a cause of concern both to the Health Department and to Maori. Given the difficulties and expense involved in implementing sanitary improvements in a host of rural settlements and that the problem was immediate, the Health Department decided the most appropriate course of action was to immunise Maori against typhoid. A vaccine to prevent this disease became available at the beginning of the twentieth century and paratyphoid A and B vaccines were included by 1916 to produce the typhoid or TAB vaccine which was used for Maori in New Zealand.¹¹⁶ The vaccine was first introduced for nurses in 1913 in recognition of the risk they bore when nursing typhoid patients and was later extended for use with Maori.¹¹⁷ In 1919, having ruled out 'wholesale inoculation' as 'a very difficult matter' the Health Department decided to proceed with the 'inoculation of school

¹¹¹ M. King, *The Penguin History of New Zealand*, Auckland, 2003, p.247.

¹¹² *ibid.*

¹¹³ *ibid.*

¹¹⁴ *ibid.*, p.249.

¹¹⁵ *ibid.*, p.251.

¹¹⁶ H. J. Parish, *A History of Immunization*, Edinburgh, 1965, p.68.

¹¹⁷ *Kai Tiaki*, 1913, 6, 3, p.126. Several nurses had already died from typhoid contracted through nursing patients.

children, who furnish by far the majority of cases...with as many adults as could be secured'.¹¹⁸ The policy was to immunise settlements where typhoid occurred as this was felt to be an achievable goal and the native schools made schoolchildren accessible. Immunisations per year numbered around 2000 in 1923 and 1924.¹¹⁹

In the East Cape in 1928 mass immunisations of Maori schoolchildren commenced every two years, and 'After a few years this saved enough children to cause the typhoid rate to fall'.¹²⁰ Immunisations for schoolchildren became yearly as more Maori districts were included. In the Waikato, annual immunisations commenced in 1937; in 1936 there had been 39 cases of typhoid, 23.92 per 10,000 Maori.¹²¹ By 1939 there were three cases, 1.17 per 10,000 Maori.¹²²

By the late 1930s typhoid immunisation and measures to improve sanitation (such as supplying privies and providing safe water supplies) reduced the incidence of typhoid, as can be seen in the Waikato, although in 1937 typhoid and paratyphoid caused 39 times more deaths of Maori than Europeans.¹²³ On the whole, according to the Health Department, the 'Natives, as a rule, are quite amenable to inoculation', however, 'it does happen that occasionally some opposition is shown, which...is usually overcome when the necessity is made plain to them'.¹²⁴ Nevertheless, in the 1920s the Health Department encountered some fierce resistance from Ratana church members which hampered efforts for 'at least a decade'.¹²⁵ The Ratana church was established by Tahupotiki Wiremu Ratana who believed that Maori were God's chosen people and that he was to unite them and turn them towards Him. He became a faith healer with a growing reputation and widespread appeal.¹²⁶ Although Ratana had wired the Health Department in 1921 commenting that he had no objection to immunisation, and that 'People can please themselves', many Ratana followers refused TAB

¹¹⁸ AJHR, 1920, H-31, p.15.

¹¹⁹ AJHR, 1923, H-31, p.34 and AJHR, 1924, H-31, p.41.

¹²⁰ H. B. Turbott, 'Progress in Prevention of Typhoid Fever in Maoris', Appendix B, AJHR, 1940, H-31, p.51.

¹²¹ *ibid.*

¹²² *ibid.*

¹²³ *ibid.*

¹²⁴ AJHR, 1926, H-31, p.42.

¹²⁵ D. Dow, *Maori Health and Government Policy 1840-1940*, Wellington, 1999, p.191.

¹²⁶ M. King, *The Penguin History of New Zealand*, p.336.

vaccine.¹²⁷ In one case a Maori pupil at Matauri Bay Native School died of typhoid as his family had refused immunisation several months earlier on the grounds of their faith.¹²⁸ Maori opposition was also encouraged by Pakeha anti-immunisers and the Health Department found that there were often a certain number of objectors in a district:

Their numbers are usually increased by followers of Ratana and certain interfering Europeans who have been influencing Maoris against submitting to inoculation. It has become increasingly difficult to get a high percentage of protection in districts where objectors are in any number.¹²⁹

Resistance to immunisation on the basis of faith was a new concept in New Zealand.¹³⁰ As has been shown previously, anti-immunisers came from a background of anti-vivisection. There had been no opposition on religious grounds previously in New Zealand. Indeed the Ratana church's case is unique as they were the only religious group in New Zealand immunisation history to offer tangible resistance to immunisation. Their protests, however, did not stop a significant number of Maori from being immunised, and by the 1930s less protest was heard as the Ratana church turned its attention to politics.¹³¹

Maori Consent Issues

One area which was to cause the Health Department great anxiety in the 1940s was the issue of consent for typhoid immunisations. Although the Department was very strict about parental consent for diphtheria immunisations (which few Maori children had received) it adopted a different approach when it came to Maori consent for TAB vaccine. Rather than having each parent sign a consent form for the immunisation of their child, the Health Department consulted with the community leaders who would give permission to immunise all the children of their hapu or iwi. Even by 1938, Michael Watt, the Director General of Health, reiterated that 'the present system of carrying out the work with the general knowledge and consent of leading members of

¹²⁷ D. Dow, *Maori Health and Government Policy 1840-1940*, p.155.

¹²⁸ *ibid.*

¹²⁹ AHJR, 1927, H-31, p.27

¹³⁰ Ulric Williams changed his lifestyle following a vision from Christ. However, he did not oppose immunisation on religious grounds, rather on the contaminating substances in vaccines.

¹³¹ See M. King, *The Penguin History of New Zealand*, pp.343-44.

the particular communities is to be continued'.¹³² In some cases however, not even the consent of the community leaders was sought, that of the native school teacher being considered sufficient. Peter Buck, Te Rangi Hiroa, head of the Division of Maori Hygiene, under whose direction the immunisation programme was organised initially, commented in 1922,

Personally, I always take it for granted that the parents of school children have consented to inoculation. This attitude is all right when you have the co-operation of the Native School Teacher. Maori parents are hardly likely to bring a charge of assault against the nurses and the School Teachers. Where however the School Teacher has doubts because some of the parents object, then it is safer to postpone operations and report.¹³³

Derek Dow, a New Zealand medical historian, has argued that the 'tactics used by departmental officers to implement the inoculation programme pushed up to and beyond the bounds of ethical practice'.¹³⁴ The actions of the Department were illegal and could have resulted in charges of assault being brought against the nurse who administered the injection. Buck was obviously well aware of that from his comment, yet despite the risk, the practice still continued well into the 1940s. Nurses and medical officers pointed out that it was too difficult to obtain individual written consents from all the parents of children at a native school, and would rather take the risk and immunise without authorisation so as to prevent an outbreak of typhoid.

The situation became much more problematic by the late 1930s when a drop in the numbers actually contracting the disease and increasing contact with Pakeha encouraged some Maori to question why their consent had not been obtained and why only Maori were immunised with TAB and not Pakeha. Nurses also had to obtain consent for the diphtheria immunisation which Maori were beginning to be offered and so demonstrably highlighted the irregularities in the consent process relating to the TAB vaccine. At first these were isolated incidents and were ignored by the

¹³² D. Dow, *Maori Health and Government Policy 1840-1940*, p.192. Michael Watt became the first director of the Division of Public Health in 1920 and Deputy Director General in 1925. In 1930 he was appointed Director General of Health and established the New Zealand Medical Research Council in 1937. He retired in 1947.

D. Dow, 'Watt, Michael Herbert 1887-1967', DNZB, updated 7 July 2005.
URL:<http://www.dnzd.govt.nz/>

¹³³ D. Dow, *Maori Health and Government Policy 1840-1940*, p.192.

¹³⁴ *ibid.*

Department before finally erupting into a serious crisis in the late 1940s. The consequences of this will be considered further in the next chapter.

1941 Social Security Amendment

The Health Department, early in the life of the promotion of diphtheria immunisation, realised that in order to achieve a more extensive coverage, particularly of preschoolers, it would need to utilise the family doctor. Parents were encouraged to take their young children to the GP for immunisation. Nevertheless, whilst immunisation at school was provided free of charge to parents, a visit to the doctor for the same procedure would involve cost. At a time when many parents still had anxieties regarding the vaccine for their toddlers, having to pay as well was a great disincentive. With the onset of the depression in New Zealand in the early 1930s and the rising costs of medical care, ‘very many members of the community found it difficult, if not impossible to pay’ and many probably had no GP at all, being unable to afford one.¹³⁵ In 1934 the *New Zealand Medical Journal* pointed out that only ten percent of patients were paying full fees.¹³⁶ Medical treatment for most people would therefore be reserved for problems of a serious nature. Diphtheria immunisation, which was a preventative measure only, would not be a financial option for many families in the 1930s.

The Labour Government, elected in 1935 under the leadership of Michael Joseph Savage, was determined to pass legislation that made all hospital, pharmaceutical and maternity services free to everyone regardless of income. The 1938 Social Security Act put these provisions into place. Additionally, the act intended to make visits to the doctor free, which ‘caused considerable and lasting friction between the government and the medical profession’.¹³⁷ This had both immediate and future implications for immunisation as the Health Department’s continuing policy was to have GPs deliver many of its immunisation programmes, particularly to preschoolers. The doctors in New Zealand refused to accept the capitation system (which was accepted in Britain under the 1946 National Health Act) and in 1941 the Social

¹³⁵ I. Hay, *The Caring Commodity. The Provision of Health Care in New Zealand*, Auckland, 1989, p.81.

¹³⁶ *ibid.*, p.82.

¹³⁷ D. Dow, *Safeguarding the Public Health*, p.122.

Security Amendment Act was passed which reinforced the doctors' independent professional position in society. This allowed them to charge patients fees which they could claim back from the Social Security Fund.¹³⁸ Further legislation in 1949 allowed doctors to charge patients in excess of the general medical benefit of 7s.6d provided by the government. At about this time a visit to the doctor cost 10s.6d.¹³⁹ Therefore for a family to take advantage of diphtheria immunisation meant three visits to the doctor with an average of an extra 9s.0d. for the parent to pay even though vaccine was provided free to GPs. Cost to parents continued to be an important factor in determining the immunisation status of their children, particularly for preschoolers. From 1941 with the introduction of the national immunisation campaign, the Department set up its own immunisation clinics for preschoolers and also enlisted the help of Plunket nurses to try and access the mainly unimmunised toddler group, as GPs were not being utilised for this purpose. The departmental policy of using doctors to implement immunisation programmes and the inherent and continuing problems of this will be discussed further in the subsequent chapters.

Conclusion

The interwar years were to provide the foundation for subsequent immunisation policy in New Zealand; 'proceed with caution'. With new developments in vaccines after World War One, immunisation, which had fallen into abeyance in New Zealand with the smallpox vaccination, now began to make a comeback. Programmes for both diphtheria and typhoid immunisations were begun in the early 1920s and heralded the start of the Health Department's responsibility for an area of preventative medicine that would continue to expand over the subsequent decades.

The 1920 Public Health Act changed the way the Health Department dealt with immunisation. Threats of fines and court action for non-compliance were now outmoded; persuasive tactics needed to be employed with parents and consent was now required before immunisation could take place. The need for the education of parents with regard to immunisation was not really taken up by the Department until

¹³⁸ For a complete analysis of the Welfare State in New Zealand and the role of the doctors see Iain Hay, *The Caring Commodity. The provision of Health Care in New Zealand*, Auckland, 1989.

¹³⁹ I. Hay, *The Caring Commodity*, p.139.

after World War Two, although during the 1930s parents received other information regarding health and nutrition for their children via pamphlets or radio talks. In terms of relative importance at this stage, there were other areas of childcare such as nutrition, hygiene and dental care that were seen as more of a priority to the Department, although the occasional radio talk and article in the newspapers did try to promote, with limited success, the message about diphtheria immunisation.

Although about 11,500 children had been immunised at school by 1928, the Bundaberg tragedy in the same year had a huge impact on the immunisation programmes, determining their shape for the next ten to 15 years. At a point where the programme had just been expanded, all immunisations were halted for around a year. The fear engendered by Bundaberg within the public, and the caution exercised by the medical profession and the Health Department, were in evidence throughout the 1930s. As a result a piecemeal diphtheria immunisation programme was put in place during this decade which focused mainly on immunising schools where outbreaks of the disease were occurring. Only two districts had introduced proactive immunisation programmes achieving around 50 percent coverage and were largely the results of the efforts of one Medical Officer of Health.

In contrast to Canada and New York City, both of whom had substantial immunisation campaigns, New Zealand's efforts looked meagre. However they were comparable with both Britain and Australia (whose public confidence was also seriously damaged by the Bundaberg disaster) and New Zealand followed Britain's lead in introducing a national immunisation programme in 1941. Lack of staffing and resources also precluded the introduction of a programme on Canadian or American lines.

Typhoid immunisations were confined to Maori to try and combat the high levels of typhoid present in their communities. These were mainly given to children but the Health Department did not observe the legal consent requirements, instead procuring agreement from family kumatua or the native schoolteacher rather than parents themselves. This illegal procedure was to have serious repercussions in the 1940s and 1950s for the Health Department.

Anti-immunisation sentiment for both Maori and European was in evidence during this period. Those Maori who were followers of the Ratana church objected to the typhoid immunisations on religious grounds. The establishment of the BUAV in Auckland in 1929 provided a focus for those opposing immunisation due to concerns over the cruelty to animals and the contents of vaccines. By the late 1930s the BUAV had become quite prolific in producing literature denouncing immunisation which was published in several newspapers and freely distributed to houses. Although its impact is difficult to gauge in the early years the campaign continued into the 1940s and 1950s and expanded in both intensity and coverage. This suggests that there was some support from within the New Zealand public for their views.

With the introduction of the national immunisation scheme in 1941 it was hoped that the diphtheria incidence rate would decline rapidly, eventually to nought. Nevertheless, it took until 1960 for this to be achieved. The reasons for this, as well as the introduction of BCG and the controversy over typhoid consents will be considered in the next chapter.

CHAPTER 3: ‘Get Them Young’. The Health Department and the expansion of childhood immunisation 1941-1962

The 1940s and 1950s saw the introduction of several new vaccines for use on infants and schoolchildren in addition to diphtheria. Pertussis, tetanus and BCG were, by 1960, established within the Department’s immunisation framework, with polio immunisation undertaken as a mass campaign.¹ The growing importance of immunisation as a preventative measure led to greater efforts at promotion and persuasion of parents by the Health Department, which itself had to fully appreciate the ramifications of this new area of public health.

This chapter will consider how the Health Department implemented a successive number of immunisation programmes aimed at infants, preschoolers and schoolchildren. The increasing number of vaccines on offer led to the development of new methods to assess safety with specialists from organisations such as the World Health Organization (WHO) asked to offer their expertise. These developments, together with the introduction of an immunisation schedule, will be considered in light of a power shift from general practitioners (GPs) towards the Department and experts in determining immunisation. Relationships between the Health Department and GPs will also be examined in the light of the Department’s continuing policy of promoting immunisation at the family doctors’ surgeries. The use of more controversial vaccines such as pertussis and BCG together with their implications for New Zealand will also be considered.

Diphtheria Immunisation 1941-1960

The onset of World War Two had serious consequences for the fledgling diphtheria immunisation programme which commenced in 1941. Staff shortages due to doctors being sent overseas meant some districts were without key personnel. In Southland immunisations of schoolchildren did not begin until 1943 when a Medical Officer of

¹ The Salk and Sabin polio vaccines and New Zealand’s campaigns to immunise children against polio will be the subject of Chapter 5.

Health could finally be appointed.² Hamilton did not have a School Medical Officer at all during wartime which seriously hampered immunisation efforts in that health district.³ In the Auckland Health District little was achieved before 1942 due to a shortage of vaccine; in that year about 3000 schoolchildren received immunisation.⁴ Nevertheless, some districts were able to commence immunisation from inception of the programme and in the Otago Health District around 2000 children per year were immunised from 1940 to 1943.⁵ In 1942, for New Zealand as a whole, the School Medical Service immunised 14,917 school children of whom 12,989 completed the course.⁶ Nevertheless, this was not a huge number when compared to the scheme in South Auckland in 1937-38, where the district's 17,531 children were offered immunisation with 9,251 accepting.⁷

An epidemic of diphtheria in 1946 in the North Island clearly showed that these numbers were not high enough to prevent further outbreaks of the disease and that still more needed to be accomplished. In 1946 there were 1,638 notified cases of diphtheria although rates had been increasing since 1943.⁸ South Auckland Health District reported more cases of the disease (245) in the first six and a half months of 1946 than for the whole of the previous year.⁹ The Health Department noted in its Annual Report that this was part of a worldwide trend, particularly in under-immunised countries. Following the war there had been a resurgence of a virulent strain of diphtheria in Europe that had caused 'great mortality'. Norway, a country where little immunisation had been carried out, had 71 cases in 1939 but 22,787 in 1943.¹⁰ In Britain, due to the National Immunisation Scheme, figures had decreased

² T. H. Bierre, 'An epidemiological history of diphtheria in the provinces of Otago and Southland 1901-1948', PMD, University of Otago, 1950, p.13. This was due to the creation of the Southland Health District.

³ H1 131/11/6 16143 Diphtheria in Schools 1941-46, Archives New Zealand (ANZ), Wellington.

⁴ C. Levene, 'An Inquiry into Diphtheria immunisation in Auckland, with special reference to the attitude of parents to this subject', PMD, University of Otago, 1951, p.7.

⁵ T. H. Bierre, 'An epidemiological history of diphtheria in the provinces of Otago and Southland 1901-1948', p.32.

⁶ *Appendices to the Journal of the House of Representatives* (AJHR), 1943, H-31, p.21.

⁷ H. Deem, H. B. Turbott, 'Diphtheria Immunization Campaign in South Auckland Health District, New Zealand, 1937-1938', Appendix C, AJHR, 1939, H-31, p.114.

⁸ AJHR, 1947, H-31, pp.4-5.

⁹ *New Zealand Herald* (NZH), 20 July 1946.

¹⁰ AJHR, 1947, H-31, p.5.

from 47,698 cases in 1939 to 35,994 in 1943, although clearly these numbers were still of great concern.¹¹

The 1946 epidemic acted as a catalyst for the Department. With the end of the war and a return of medical personnel more immunisations could take place. The Department targeted those most at risk, and left virtually untouched by school campaigns, namely the preschoolers. They hoped to have 70 percent of children under five immunised.¹² In 1946, 66,533 children received an immunisation and of this number, 40,409 were aged three months to five years, a huge increase on previous figures.¹³ Public Health nurses had also been granted permission to immunise and they administered about a third of this total.¹⁴ Some districts held Saturday morning clinics to enable parents unable to attend during the week to bring along preschoolers for immunisation. Nearly 11,500 children under five were immunised in Auckland with about half attending the clinics for that purpose, and the remainder going to their doctor's.¹⁵ Fear of the disease was a powerful motivator for parents, especially during an epidemic. By 1947 case numbers had halved to 546, with the Health Department modestly claiming that this 'fall in the incidence of diphtheria is world-wide and cannot be claimed as the result of the Department's campaign of inoculation, important though that is'.¹⁶

The diphtheria epidemic of 1946 was the last to strike the shores of New Zealand. The efforts of the Department appeared to be paying off when by 1950 only 56 cases of diphtheria were notified, and in 1954 the figure was only 69 despite the postwar baby boom.¹⁷ The Department commented that 'the majority of cases occurred in persons who had not previously been immunized and it is certain that if immunization were more general the disease would almost disappear'.¹⁸ This time the Department had the resources and staff to be able to continue implementing a widespread

¹¹ *ibid.*

¹² *ibid.*, p.6. In the Auckland Health District 1940-44 there were 856 cases of diphtheria and 34 deaths - all of children under seven. *Auckland Star* (AS), 26 June 1946.

¹³ AJHR, 1948, H-31, p.22.

¹⁴ The figure was 24,235.

¹⁵ C. Levene, 'An Inquiry into Diphtheria immunisation in Auckland, with special reference to the attitude of parents to this subject', pp.8-9. In all 17,151 children were immunised during the 1946 epidemic in Auckland.

¹⁶ AJHR, 1948, H-31, p.5.

¹⁷ AJHR, 1951, H-31, p.6, AJHR, 1955, H-31, p.12.

¹⁸ AJHR, 1955, H-31, p.12. Diphtheria immunisation was for younger children only.

diphtheria immunisation programme. Immunisations carried out by the Department numbered 29,181 for 1948, 26,918 in 1953 and in 1954, 26,701 booster doses were given out (16,651 of combined pertussis and diphtheria).¹⁹ This was almost double the number immunised in the early 1940s and very likely more as numbers immunised by doctors were not always included. Prioritising diphtheria immunisation was a successful move by the Department. By 1961 with only one case of diphtheria notified, the Department declared ‘a spectacular victory for immunisation’ in the light of the high incidence of the disease only a few years previously.²⁰ In a way it was, as through utilising schools and establishing clinics the Department had, by the early 1950s, substantially reduced the incidence of the disease. This was, however, later than other countries. Historian Clare Hooker has pointed out that in Australia ‘Federal and State governments took advantage of their increased role in wartime to conduct broad, intensive advertising campaigns in most municipalities’ with the result that in the state of Victoria, 78,000 children were immunised during 1942-43.²¹ Nevertheless, Hooker qualified this statement, arguing that ‘diphtheria control remained slow’ and that it ‘was not until the 1970s that it truly became a rare disease’, well after New Zealand.²²

In Britain, which operated a national immunisation programme from 1940, 50 percent of its child population was immunised by 1943.²³ Jane Lewis, a social policy historian, argued that the ‘huge increase in numbers immunised and the concomitant decrease in the death rate from diphtheria was due entirely to the national scheme’.²⁴ By 1950 there were 952 cases with 49 deaths and by 1965, 25 cases with no deaths.²⁵ This reflected a similar pattern to the one demonstrated in Australia; immunisation proved to be a reasonably protracted experience to reduce the incidence rate to very low levels. New Zealand, however, was not able to make significant progress with the immunisation programme until after 1945 due to lack of resources and medical personnel. Moreover, it was most likely that diphtheria immunisation was not a

¹⁹ AJHR, 1949, H-31, p.34, AJHR, 1954, H-31, p.61, AJHR, 1955, H-31, p.58.

²⁰ AJHR, 1961, H-31, p.7.

²¹ C. Hooker, ‘Diphtheria, Immunisation and the Bundaberg Tragedy: A Study of Public Health in Australia’, *Health and History*, 2, 2000, p.74.

²² *ibid.*, p.74.

²³ J. Lewis, ‘The Prevention of Diphtheria in Canada and Britain 1914-1945’, *Journal of Social History*, 20, 1986-87, p.170.

²⁴ *ibid.*

²⁵ A.B. Christie, *Infectious Diseases: Epidemiology and Clinical Practice*, London, 1980, p.873.

priority it for the Health Department and health districts during the war. The impetus of the 1946 epidemic focused attention on diphtheria in a way that had previously not been possible. As a result substantial gains were made with immunisation campaigns and levels of diphtheria were, by the 1950s, comparable to those in both Britain and Australia.

Doctors, Plunket and Public Health Nurses

To facilitate diphtheria immunisation in New Zealand after 1946, School Medical Officers in each district were directed to spend at least half their time on immunisation when visiting schools. Children aged five to seven were to be routinely offered immunisation with older children being done on request. To try and gain access to the under-fives, extra clinics were held at district head offices in addition to the ones held at preschool centres (Plunket rooms and kindergartens). Nonetheless, the most important change was to allow Public Health nurses to undertake immunisation work which could then be done during a routine home visit. It was hoped that many more babies could be immunised in this way. A trial had been undertaken in North Auckland District in 1945 and was then extended throughout New Zealand. Public Health nurses were to focus on immunising all infants aged six months to one year and this goal was to 'become the Department's long-term attack on the diphtheria problem'.²⁶ The Medical Officer of Health for each district was to assume 'full responsibility for the work and assure himself that all nurses are working to a standard technique and are competent to do immunisations'.²⁷

Nurses very quickly played a vital role both in administering immunisations and providing information to mothers. They now had the advantage of being able to offer immunisation immediately to a 'defaulter' mother if she wished her baby to be immunised at home. Most importantly, it eased the staffing requirements of the immunisation programme that had been floundering in many areas due to a lack of qualified personnel. South Auckland Health District, by 1946, had gone from being

²⁶ Director-General of Health (DGH) to MOH (Medical Officers of Health), 13 May 1946, H1 131/11/6 19514 Diphtheria Immunisation in Schools 1946-7, ANZ, Wellington.

²⁷ *ibid.*

one of the best-protected districts to one of the worst.²⁸ In the Wellington and Nelson Health Districts, Public Health nurses were utilised in the rural areas and were able to offer immunisation to small groups in places where visits by the School Medical Officer could not be arranged.²⁹

Health Department clinics for preschoolers were also set up in Plunket rooms. The Plunket Society had been established in 1907 to promote the health and welfare of mothers and babies. Separate from the Health Department, the Plunket Society received a grant from the government each year to fund its most of its activities. The remainder was funded by donations, in both time and money, from the New Zealand public. Plunket nurses visited mothers with newborns and held clinics for older babies in Plunket rooms. From the 1930s there was growing departmental concern regarding the health and immunisation status of preschoolers who were too old for Plunket but too young for school and the attentions of the School Medical Service. To gain access to these children the Department came to an agreement with Plunket in 1940 to use their rooms to examine preschoolers and offer immunisation clinics as well if that should be needed.³⁰ This was the beginning of a long, productive relationship between the Department and Plunket in relation to immunisation of preschoolers. Plunket nurses, like Public Health nurses, were soon used to promote immunisation to mothers during visits and remind them to visit their GP or the Health Department clinic for that purpose.

To try and relieve staffing pressures the Health Department attempted to develop relationships with local GPs who would be willing to staff clinics in areas which required immunisation. Hamilton's Medical Officer reported that he had been using GPs for a while to deal with staff shortages commenting, 'My practice has been to contact the doctor and make the best possible bargain for the Department'.³¹ Nevertheless, not all doctors appreciated the Hamilton Medical Officer's approach, as one doctor refused to give his services and alternative arrangements had to be made with the Medical Superintendent of New Plymouth Hospital to let one of his staff

²⁸ H1 131/11/6 19514, ANZ, Wellington.

²⁹ MOH Wellington to DGH, 8 July 1946, H1 131/11/6/19514, ANZ, Wellington.

³⁰ L. Bryder, *A Voice for Mothers: The Plunket Society and Infant Welfare 1907-2000*, Auckland, 2003, p.147.

³¹ MOH Hamilton to DGH, 14 May 1946, H1, 131/11/6 19514, ANZ, Wellington.

undertake the immunisation work.³² In addition to staffing clinics GPs were to be the first port of call for parents requiring immunisation. The Health Department's aim was to have as much immunisation as possible done by the family doctor and this continued to be the bulwark of immunisation policy. The Department would then immunise the remainder at clinics or school which 'suits departmental policy very well, because it enables Departmental Officers to do other work'.³³

In general the Health Department was conciliatory towards GPs because of their dependence on them to fulfil the immunisation programme and staff departmental clinics if necessary. Conflict was avoided where possible; this was demonstrated, for instance, by the movement towards the Schick testing of schoolchildren every five years to check levels of diphtheria immunity, instead of trying to enforce the forwarding of immunisation returns, (which many doctors did not do.) Evelyn Hammonds, in *Childhood's Deadly Scourge*, pointed out that the physicians in New York had a much more antagonistic relationship with their Health Department. Although the New York City Health Department wished private physicians to carry out immunisations and felt that it was appropriate for them to do so, the Commissioner of Health, Dr Shirley Wynne, was 'prepared to have the department of health step in and do whatever was necessary to prevent diphtheria in the city' if they failed to act.³⁴ Further, New York physicians had been critical of the Health Department for 'what they have considered an invasion of their proper function'.³⁵ The New York City Health Department was in a much more powerful position than the Health Department of New Zealand in that it had both the resources and manpower to fully implement its own immunisation programmes, with or without the doctors' assistance. Without the co-operation of the medical profession, particularly GPs, the diphtheria campaign in New Zealand would have been unable to function properly.

The Department paid GPs two guineas (£2.2s.0d.) per hour for the immunisation of groups of children. However, there was an initial problem as GPs, unlike Medical

³² MOH Hamilton to DGH, 21 May 1946, *ibid*.

³³ MOH Hamilton to DGH, 16 November 1953, BCAA 1990/419a Diphtheria Immunisation 1944-54, ANZ, Auckland.

³⁴ E. M. Hammonds, *Childhood's Deadly Scourge. The campaign to control diphtheria in New York City 1880-1930*, Baltimore, 1999, p.203.

³⁵ E. M. Hammonds, *Childhood's Deadly Scourge*, p.203.

Officers, had no right of entry to schools. In a memo sent to all Medical Officers of Health it was decreed that doctors were to be limited to private immunisations or special arrangements had to be made with Head Office if a doctor was to immunise a group. This instruction was not well received in some districts, J. H. Dawson, Medical Officer for Hamilton, commented, 'I read with regret that the practice of private doctors visiting schools is to be discouraged' as during 'the last year I had arranged for local practitioners to immunize school children' due to staff shortages.³⁶ Instead, GPs were to be encouraged to take over departmental immunisation clinics when the local Health Department was shortstaffed. This policy was not always easy to adhere to, particularly in rural areas.

Schools occasionally wrote to the Department asking for diphtheria immunisation for their children. The Health Department tried to comply with these requests as they were seen to be the result of its publicity. Nevertheless, it encouraged parents to take their children to the nearest departmental clinic if a School Medical Officer was unable to attend. In Whitianga, after an outbreak of diphtheria in 1946, the Auckland Health Department engaged a local practitioner, Dr W. G. Davidson, to attend to the immunisations of schoolchildren and preschoolers as it was unable to send a Medical Officer.³⁷ However, the Balfour School Committee did not find its dealings with the Health Department to be very profitable. The Secretary of the Committee, A. Liddell, had telegraphed the Minister for Health, Arnold Nordmeyer, in July 1946 in exasperation.³⁸ He had been told by Invercargill's Medical Officer that Balfour School could not be immunised as the local Health Department was too shortstaffed and doctors were not allowed to give vaccine to children in school. Parents were informed that their only option was to take their children to the nearest clinic in Invercargill or to the local GP in Gore (Balfour was described as 'a somewhat remote and isolated country district' by the Health Department). The Medical Officer's comment was that if the parents were really anxious 'Let them pay to have it done'

³⁶ MOH Hamilton to DGH, 20 May 1946, H1 131/11/6 19514, ANZ, Wellington.

³⁷ BAAK A358 125a Diphtheria, ANZ, Auckland.

³⁸ Arnold Nordmeyer 1901-1989. Ordained as a Presbyterian minister in 1925, Nordmeyer became the Labour MP for Oamaru in 1935. He became Minister of Health in 1941, shifting to Industries and Commerce in 1947 until Labour's election defeat in 1949. With another Labour victory in 1957, Nordmeyer became Minister of Finance, and then Party Leader in 1963. He retired in 1969.

B. Brown, 'Arnold Henry Nordmeyer 1901-1989', *Dictionary of New Zealand Biography* (DNZB), 5, 2000, Wellington, p.373.

and his generally unhelpful attitude was at odds with the Department's campaign of encouraging immunisation. It certainly did not endear him to the Balfour School Committee!³⁹ Immunisation was not always a priority with the local Medical Officer of Health despite instructions from Head Office in Wellington. Nonetheless, with the intervention of the Minister for Health, the local GP was engaged to immunise the children of Balfour. Although some had offered their services free of charge, offers of remuneration, both for servicing departmental clinics and immunising privately, meant most GPs were willing to support the Health Department's immunisation policy.⁴⁰

Diphtheria immunisation was not free if it was carried out by a medical practitioner in private practice as it was at the departmental clinics. Vaccine was made available at no cost to GPs but under the 1941 Social Security Amendment Act the GP retained the right to charge for his time. Unfortunately some members of the public thought that the immunisations were free, even if they were done privately; the literature supplied by the Health Department did not state that doctors were entitled to charge a fee. Mrs M. G. Vant of Thames was charged 18s. for a course of diphtheria and pertussis immunisations for her son. She had believed they would be free as school-aged children received the injections without charge.⁴¹ The Health Department replied that it depended whether the GP was willing to accept the fee from the Social Security Fund for this purpose. 'Many practitioners are satisfied with this fee but apparently yours is not'.⁴² Nevertheless, Mrs Vant was not the only one to complain. Mrs P. Barnett of Te Puke wrote to the Minister to protest that she had been charged 10s. for the cost of the vaccine in connection with the immunisation of her infant son, which she believed was free. She was told to approach the doctor in question who would probably 'be quite prepared to refund the amount paid by you' after correspondence had taken place.⁴³

These instances demonstrate that some doctors were prepared to put their own economic position before the Health Department's policy of promoting diphtheria

³⁹ A. Liddell to Minister of Health, 11 July 1946, H1 131/11/6 19514, ANZ, Wellington.

⁴⁰ MOH Hamilton to DGH, 20 May 1946, H1 131/11/6 19514, ANZ, Wellington.

⁴¹ This would have meant six trips to visit the doctor. M. G. Vant to DGH, 5 May 1948, H1 131/11/6 24116 Diphtheria Immunisation in Schools 1949-53, ANZ, Wellington.

⁴² H. B. Turbott to M. G. Vant, 26 July 1948, H1 131/11/6 24116, ANZ, Wellington.

⁴³ Minister of Health to P. Barnett, 26 November 1946, H1 131/11/6 19514, ANZ, Wellington.

immunisation. Experiences such as these might have deterred parents from having their children immunised at a doctor's surgery. The Health Department was placed in a paradoxical situation. Its policy was to encourage parents to take their children to be immunised by their own doctor but as they often charged fees for immunisation over and above the amount (7s.6d.) provided by the Social Security Fund, it discouraged parents from attending. It meant the Health Department had to continue to run clinics if it wished to keep up levels of diphtheria resistance in the community, often paying doctors to run these clinics as it did not have enough of its own staff to cover them. Utilising GPs to implement immunisation was not, therefore, a particularly successful policy from its inception because cost deterred parental attendance. Although there were departmental clinics and Public Health nurses who could give immunisations, some children inevitably missed out. The cost issue became paramount in the 1960s and will be considered in a subsequent chapter.⁴⁴

Pertussis Vaccine

Pertussis, or more commonly, whooping cough, was and is one of the more important communicable diseases of childhood and is very serious in infants under 12 months.⁴⁵ It is caused by the *bordetella pertussis* bacteria which affect the respiratory tract and is characterised by paroxysms of coughing which terminate in the characteristic 'whoop'. In the United States 265,269 cases were reported in 1934.⁴⁶ Despite its prevalence as a serious childhood disease it has been very much neglected. Certainly in New Zealand it did not arouse anything like the fear that epidemics of diphtheria and later polio did in the eyes of the New Zealand public. Nevertheless, large numbers of children still suffered; in 1920 of the 107 deaths from pertussis, 57 were in children under one year.⁴⁷ It should be emphasised that even though deaths from pertussis numbered more than diphtheria, like measles it was not notifiable. It is difficult to draw an accurate social picture of the disease in New Zealand due to lack of evidence; however, before 1967 epidemics occurred every three years. In 1949, 308 people

⁴⁴ See Chapter 6, pp.185-89.

⁴⁵ The term pertussis will be used in this thesis.

⁴⁶ P. F. Wehrle, F. H. Top Snr, *Communicable and Infectious Diseases*, St Louis, 9th ed., 1989, p.465.

⁴⁷ AJHR, 1921-2, H-31, p.12.

were admitted to hospital suffering from pertussis, and in 1950, 136 of the 225 cases were under the age of one.⁴⁸

Pertussis vaccine was reportedly first used in 1941 in Takaka in the South Island by Dr Brydder who was immunising all the children in his district for free.⁴⁹ The Department was cautious in its initial approach to the pertussis vaccine. It was not until Director-General Michael Watt visited Melbourne in 1942 and met the Director of Commonwealth Serum Laboratories, Dr F. G. Morgan, that the Department felt confident enough to put forward the vaccine to the public.⁵⁰ Initially the vaccine was offered in response to parental request, at Health Department clinics to children aged three months to two years. In 1944 the Health Department immunised 1460 pre-schoolers and in 1949, 5452 children were fully immunised.⁵¹ Additionally, from 1944, GPs were able to offer the vaccine free of charge to parents of children in the eligible age bracket.⁵²

Pertussis is at its most dangerous in the under-ones and it was discovered that babies and young children were able to tolerate the vaccine much better than older children in whom it could have some severe reactions. Nevertheless in 1945 William Anderton, the Member for Eden, raised questions in the House regarding the efficacy of the vaccine. His attention had been drawn to a report from the Infectious Diseases Committee of the Medical Research Council (MRC) in London which stated there was no difference in incidence of the disease between immunised and unimmunised.⁵³ The Minister for Health replied that 'there is at present no unanimity as to the value of vaccines in protecting against whooping cough or in the degree of protection conferred. For these reasons the Department of Health does not advocate the use of such a vaccine, but carries out inoculations on request only'.⁵⁴ At this point in time, the Department erred on the side of caution; full-scale use was not endorsed.

⁴⁸ R. M. Cullen, W. J. Walker, 'Pertussis hospitalisations and mass vaccination in New Zealand 1948-1996', *New Zealand Family Physician*, 24, 6, 1997, p.46.

⁴⁹ J. P. Carmine to DGH, 11 January 1941, ABQU 632 W4415/275 54669 131/128 Whooping Cough 1931-83, ANZ, Wellington.

⁵⁰ M. Watt to H. B. Turbott, 25 August 1942, ABQU 632 W4415/275 55580 131/128/1 Whooping Cough Immunisation 1935-87, ANZ, Wellington.

⁵¹ AJHR, 1945, H-31, p.6, AJHR, 1950, H-31, p.56.

⁵² DGH to MOH, 23 March 1944, ABQU 632 W4415/275 55580 131/128/1, ANZ, Wellington.

⁵³ *New Zealand Parliamentary Debates* (NZPD), 1945, 271, p.30.

⁵⁴ *ibid.*

Nevertheless, the pertussis vaccine did achieve a landmark in immunisation history in New Zealand as it became the subject of the first question on immunisation in the house since the repeal of the compulsory vaccination acts. The importance and visibility of immunisation as a public health measure was steadily growing.

Parents could choose to immunise their children against pertussis but it was not part of departmental policy and hence received very little publicity from the Health Department. The Department had decided in 1943 there would be no campaign for pertussis in the same way as diphtheria until ‘some experience of its protective value has been gained’.⁵⁵ Testing had shown that the vaccine itself was only about 60 percent effective and the Department was hoping an improved vaccine would be developed postwar.⁵⁶ Another significant aspect of the pertussis vaccine was the way it was introduced into New Zealand, which was not by the Health Department as with diphtheria, but by medical practitioners, some of whom were keen to use it even before it had been approved by the Department. As will be seen with some other vaccines, for example hepatitis B in the 1980s, the Health Department was not often the prime instigator when it came to vaccine introduction. Doctors commonly took the initiative in various ways whilst the Department adopted an increasingly careful and cautious approach to immunisation. In the case of pertussis, lack of publicity by the Department meant many parents were probably unaware of the vaccine’s existence. In addition, the effort of taking a child an extra three or four times for an injection plus the associated cost may well have proved too much, as by 1947 only 4892 children had been immunised.⁵⁷

Double Vaccine

The important role of doctors in introducing vaccines can be clearly seen with both the advent of the double and triple vaccines in the 1940s and 1950s. These vaccines together with polio also led to the gradual establishment of more formalised procedures governing the supply and use of vaccines than had been the case

⁵⁵ H. B. Turbott to MOH Auckland, 10 May 1943, ABQU 632 W4415/275 55580 131/128/1, ANZ, Wellington.

⁵⁶ H. B. Turbott to G. E. Amos, 30 June 1944, ABQU 632 W4415/275 55580 131/128/1, ANZ, Wellington.

⁵⁷ AJHR, 1948, H-31, p.22.

previously. Manufacturers were required to notify vaccines under the 1947 Food and Drug Act although for a vaccine to be free it had to receive Health Department approval and be placed on their 'free list'.⁵⁸

In April 1948 the Department introduced the new combined vaccine of diphtheria and pertussis and asked Medical Officers of Health to notify reactions to it. The new vaccine was not a success as reported reaction rates were high; a Christchurch Medical Officer, Dr E. Needham, reported a case which had severe necrosis at the injection site four months after using the combined vaccine.⁵⁹ It was withdrawn in November 1948 after a Wellington child developed an abscess at the injection site after her third immunisation with the combined vaccine.⁶⁰ Doctors who wished to continue using it were told they would have to approach the suppliers, Glaxo, directly. Instead the Department, from 1949, offered single pertussis vaccine which was again available on request. This now meant six visits to the doctor or to the departmental clinic if parents wished their child to be immunised against both diseases as the injections could not be given at the same time.

The Department found that some mothers were taking their children to GPs who offered the combined vaccine and a circular memo to Medical Officers for Health in 1952 commented that the Department's 'approach to mothers is being stultified by the fact that we are unable to offer a combined vaccine'.⁶¹ In this instance, both doctor and consumer demand pushed the Department to approach Glaxo again.⁶² The Medical Officer for Health for Invercargill, Dr L. Frank Jepson, trialled the new combined vaccine. He reported there was no reaction in the 21 children who had received it and that there was an obvious public desire for it.⁶³ In 1953 the Health Department gave approval for the combined vaccine to be used by Public Health nurses on infants up to 12 months old. Three doses were to be administered after 6 months, at a spacing of one month with a booster to be given at age two to three. The

⁵⁸ The 'free list' denoted vaccines purchased by the Health Department for use in departmental clinics and by GPs. They were provided free of charge. Other vaccines used that were not on this list had to be paid for by the patient.

⁵⁹ E. Needham to MOH Christchurch, 20 October 1948, H1 131/11/6 24116, ANZ, Wellington.

⁶⁰ DGH to Minister of Health, 17 January 1949, *ibid*.

⁶¹ Circ. Memo 1952/69, 21 March 1952, H1 131/11/6 24116, ANZ, Wellington.

⁶² The new vaccine did not contain an alum precipitate which tended to cause more reactions.

⁶³ H1 131/11/6 24116, ANZ, Wellington.

popularity of the combined vaccine quickly grew. In 1953, the Department gave out 2023 doses of the combined vaccine and 26,918 doses of diphtheria vaccine.⁶⁴ In 1954, 16,651 doses of either the diphtheria or combined vaccine were issued by the Department.⁶⁵ This apparent decrease in take-up occurred because GPs were the primary users of combined vaccine and often did not notify the Department of the numbers they had immunised, thus masking its true popularity. As a result the Health Department stopped publishing immunisation figures in 1956 because they failed to portray the whole picture.⁶⁶

Pertussis Vaccine and Reactions

With more people being immunised against pertussis, reactions to the vaccine itself were more likely to occur. A circular from the Health Department in 1954 drew Medical Officers' attention to the increased likelihood of severe reactions if there was a family history of convulsions, epilepsy or encephalitis.⁶⁷ Two local cases of encephalitis were mentioned that had followed the administration of pertussis vaccine demonstrating that the Department was well aware of the serious side-effects the vaccine could have.⁶⁸

Unlike the United States which had made pertussis immunisation routine from 1943, Britain had been much more cautious.⁶⁹ Notifications of pertussis numbered well over 100,000 during the early 1950s.⁷⁰ Yet the British MRC conducted a lengthy investigation into the safety and efficacy of the vaccine before routine immunisation began in 1957. Field trials of the vaccine from 1951 to 1954 by the MRC showed that, 'In over 30,000 vaccinated children...there was no definite evidence that

⁶⁴ AJHR, 1954, H-31, p.61.

⁶⁵ AJHR, 1955, H-31, p.58.

⁶⁶ AJHR, 1956, H-31, p.73.

⁶⁷ Circ. Memo 1954/147 'Dangers of Whooping Cough Immunisation', BCAA 1990/474b Whooping Cough Immunisation 1943-64, ANZ, Auckland.

⁶⁸ *ibid.*

⁶⁹ J. P. Baker, 'Immunization and the American way: 4 childhood vaccines', *American Journal of Public Health*, February 2000, p.202.

⁷⁰ C. L. Miller, T. M. Pollock, A. D. E. Clewer, 'Whooping-Cough Vaccination. An Assessment', *Lancet*, 31 August, 1974, p.510.

convulsions or encephalopathy were directly related to vaccination'.⁷¹ The trials also concluded that 'it was possible by vaccination to produce a high degree of protection against the disease', in contrast to some earlier trials in Britain which had found there was little difference in the incidence or severity of pertussis between the immunised and unimmunised.⁷² There had been a wide variation in effectiveness of the vaccines used which was due to differences in potency.⁷³ Additionally it was found that the use of a 'British standard vaccine ...will produce substantial protection against the disease'.⁷⁴

Just as the MRC was giving the pertussis vaccine the green light, J. M. Berg of the Fountain Hospital, London, published an article in the *British Medical Journal* in 1957 which raised new concerns over the serious side-effects that the vaccine could induce.⁷⁵ He demonstrated that the pertussis vaccine was responsible, whether on its own or combined with other vaccines, for the 'reported neurological sequelae' in a number of cases.⁷⁶ Nevertheless, he still felt pertussis immunisation was justified as the risks of the disease outweighed the risks of immunisation. On the point of contraindications, Berg believed that 'any suggestion of a neurological reaction to a pertussis inoculation should be an *absolute* contraindication to further inoculation'.⁷⁷

Berg's article was closely followed by another from J. Strom of the Hospital of Infectious Diseases in Stockholm, who took Berg's argument further by questioning whether 'universal vaccination against pertussis is always justified, especially in view of the increasingly mild nature of the disease and of its very small mortality' when the vaccine could induce serious 'neurological complications'.⁷⁸ Strom had found that one in 17,000 children in Sweden suffered from encephalitis after receiving the vaccine and questioned its use as the effects of the disease in Sweden were milder than those

⁷¹ Medical Research Council (MRC), 'Vaccination against Whooping Cough. Relation between protection in children and results of laboratory tests', *British Medical Journal* (BMJ), 25 August 1956, p.457.

⁷² MRC, 'Vaccination against Whooping Cough', BMJ, 18 April 1959, p.1000.

⁷³ A. B. Christie, *Infectious Diseases. Epidemiology and Clinical Practice*, London, 1980, p.676.

⁷⁴ MRC, 'Vaccination against Whooping-Cough', BMJ, 18 April 1959, p.1000.

⁷⁵ MRC, 'Vaccination against Whooping Cough', BMJ, 25 August 1956, p.461.

J. M. Berg, 'Neurological Complications of Pertussis Immunization', BMJ, 24 July 1958, pp.25-27.

⁷⁶ *ibid.*, p.25.

⁷⁷ *ibid.*, p.26.

⁷⁸ J. Strom, 'Is Universal Vaccination against pertussis always justified?', BMJ, 22 October 1960, p.1186.

induced by immunisation.⁷⁹ This was and still is a crucial point in immunisation policy guidelines; when the risk from immunisation is greater than the risk from the disease, then policy needs to be reviewed. These viewpoints placed the pertussis vaccine and its side-effects firmly in the international medical arena and it became the subject of increasing controversy regarding its safety over the following decades.⁸⁰

In New Zealand 'it has been known for some time that whooping cough vaccination may be followed very rarely by encephalitis'.⁸¹ So wrote Dr Neil Begg, Medical Advisor to the Plunket Society in 1961, adding that he had seen 12 cases during his many years in practice. Ten of these had 'developed irritability, high fever and neck stiffness from about 1-7 days after pertussis immunisation'.⁸² Nine made 'uneventful recoveries' but one had 'sleep inversion and personality changes for many months afterwards'.⁸³ Two cases however, 'brought the position home' to him as 'normal bright children became low grade imbeciles'.⁸⁴ Begg was 'convinced of the danger' and argued that pertussis vaccine should not be used for children over 12 months of age due to the increased chance of reaction.⁸⁵

Nevertheless, a couple of years earlier a study of 460 children aged six to seven from the Dunedin area was undertaken by D. R. Aicken of the Department of Preventative Medicine at Otago Medical School. This study was published in the *New Zealand Medical Journal* in 1958.⁸⁶ In contrast, Aicken found that although 20 per cent of children reported a reaction the majority were 'of a trivial, local or general nature' with only five per cent suffering respiratory symptoms or allergic reactions.⁸⁷ No

⁷⁹ *ibid.*

⁸⁰ For a further discussion of the pertussis vaccine controversy see Chapter 8, pp.239-44 and 255-57.

⁸¹ C/1/61, N. Begg to Plunket nurses, 25 January 1961, BCAA 1990/474b Whooping Cough Immunisation 1943-64, ANZ, Auckland.

⁸² *ibid.* Neil Begg was a paediatrician who had trained in London, Edinburgh and Stockholm from 1946 to 1948. On his return to New Zealand he became a paediatrician to Dunedin hospital as well as the Karitane-Harris Hospital and was a lecturer in paediatrics from 1949 to 1976. In 1956 he became the Medical Advisor to the Plunket Society until his retirement in 1977.

L. Byder, 'Begg, Alexander Charles 1912-1991, Neil Colquhoun 1915-1995'. *Dictionary of New Zealand Biography*, updated 7 July 2005.

URL: <http://www.dnzb.govt.nz/>

⁸³ C/1/61, N. Begg to Plunket nurses, 25 January 1961, BCAA 1990/474b, ANZ, Auckland.

⁸⁴ *ibid.*

⁸⁵ *ibid.*

⁸⁶ D. R. Aicken, 'A Study of the Incidence and Immunisation Against Whooping Cough in Dunedin', *NZMJ*, August 1958, pp.633-37.

⁸⁷ *ibid.*, pp.636-37.

cases of encephalitis or similar were revealed although the size of the study was too small to illustrate this.⁸⁸

Pertussis immunisation, by the late 1950s, was reasonably well accepted in New Zealand and there 'had been a considerable decrease in the incidence and severity' since the introduction of the combined vaccine.⁸⁹ Aicken's study also confirmed the effectiveness of the pertussis immunisation, with about 70 percent of respondents receiving two or three doses of combined vaccine. A non-immunised child was found to be three and half times more likely to contract pertussis than those who had received immunisation.⁹⁰ Having the third injection also appeared to reduce the chance of catching the disease by 50 percent and Aicken recommended greater importance be placed on this.⁹¹ Although some of the decline in the incidence of pertussis was attributed to improved living standards, according to Aicken, 'immunisation was a main factor contributing to the improvement'.⁹² At this juncture, pertussis was still in existence within the community and the Health Department felt that New Zealand should continue with its programme of mass immunisation, despite the small risk from the vaccine. The disease was felt to pose a greater threat.

Tetanus Vaccine

Although the combined vaccine for diphtheria and pertussis had been available since 1953, the Department did not see tetanus as a priority. Tetanus (or lockjaw) is caused by clostridium tetani and enters the body through a dirty wound. Characteristic symptoms include muscle rigidity, spasm and the 'locking of jaws' with severe cases ending in death. In 1955 there were 11 fatalities with five of these deaths being in children under 15.⁹³ There was an average of 31 cases a year between 1957 to 1961.⁹⁴ Due to the small numbers of children affected, the Department felt it could not justify the routine immunisation of children were for several reasons. Tetanus immunisation

⁸⁸ The National Childhood Encephalopathy Study found the risk of permanent brain damage to be one in 310,000 immunisations in 1979. See Chapter 8, p.243.

⁸⁹ C/1/61, N. Begg to Plunket nurses, 25 January 1961, BCAA 1990/474b, ANZ, Auckland.

⁹⁰ D. R. Aicken, 'A Study of the Incidence and Immunisation Against Whooping Cough in Dunedin', p.636.

⁹¹ *ibid.*, pp.635-36.

⁹² *New Zealand Herald* (NZH), 3 October 1956.

⁹³ AJHR, 1956, H-31, p.17.

⁹⁴ *New Zealand Year Book* (NZYB), 68, 1963, p.164.

was known to last only five years and as most deaths occurred after childhood repeated doses would be needed. Additionally there was no vaccine that combined tetanus with diphtheria and pertussis and the Department had made diphtheria immunisation a priority. There was also the perception that parents ‘are unlikely to favour additional pricking’.⁹⁵ Tetanus immunisation was available at the doctor’s at the request of the parent only, in the same way pertussis vaccine had been several years previously.⁹⁶

Many doctors, parents and some Medical Officers of Health did not agree with the Department’s stance regarding tetanus immunisation. Again, as with both the pertussis and combined vaccine, GPs took the initiative to demonstrate to the Department that there was both a need and consumer demand for the vaccine. In 1954, Dr L. Fullerton Johnson of Cambridge wrote to the Hamilton Health Department pointing out that ‘lockjaw’ was endemic in the Waikato. ‘As a house surgeon at Waikato Hospital I had to deal with some distressing cases of tetanus and believe that, here, Tetanus Prophylactics are second in importance to diphtheria immunisation’.⁹⁷ Because of departmental inaction and his own concern, Johnson had been conducting his own propaganda campaign to alert families to the dangers of tetanus, particularly in a farming community, and persuade them to be immunised. He had already brought this problem to the notice of the Hamilton Medical Officer of Health in 1946, who replied,

Although tetanus seems to occur more frequently in the Waikato than in Auckland or in Taranaki, I do not think that the number of cases warrant a mass immunization of children on the basis of the campaign carried out against diphtheria. Judging from the difficulties we have experienced in getting permission from parents to have their children immunized against diphtheria, I think the response to a tetanus prophylactic would be very poor.⁹⁸

Nevertheless, in 1957, the Medical Officer of Health for Auckland, A. S. Wallace, urged all parents to have their children immunised against tetanus after a nine-year-

⁹⁵ AJHR, 1956, H-31, p.18.

⁹⁶ *ibid.*

⁹⁷ L. Fullerton Johnson to MOH Hamilton, 5 October 1954, BCAA 1990/503a Tetanus Immunisation 1954-66, ANZ, Auckland.

⁹⁸ MOH Hamilton to L. Fullerton Johnson, 26 April 1946, YCBE 1990/32b Tetanus 1942-69, ANZ, Auckland.

old boy contracted tetanus when a rusty nail penetrated his toe.⁹⁹ Two doses six weeks apart followed by a booster six to 12 months later would ensure satisfactory immunity.¹⁰⁰ Other Medical Officers of Health, such as Nelson's, were keen that parents should have their children immunised and encouraged them to go to the family doctor.¹⁰¹ By the mid-1950s many GPs were offering parents the option of triple vaccine, diphtheria, pertussis and tetanus, although this vaccine was not provided free.

By the late 1950s for babies and preschoolers, immunisation had become a lengthy and time-consuming affair. Initially, babies received three injections with the combined vaccine, with a choice of venue; at the doctor's, at a departmental clinic or at home by the Public Health nurse. As tetanus could not be administered at the same time as the combined vaccine a further three trips to the doctor were required for a primary course for preschoolers and schoolchildren. Furthermore, the vaccine could only be given a month after other injections and only at the family doctor's. Additionally, the Salk polio vaccine which was available from 1955 onwards had to be given at least one month later, at intervals of four weeks with a booster about six to 12 months later.¹⁰² These three injections could only be administered by the Health Department. For a child to receive all these vaccines before 1960 would have entailed the mother visiting at least two different places (polio clinics and combined vaccine clinics were also held at different times by the Department) up to nine times, with the correct spacing, if she wished her child to be immunised against all these diseases. Additionally it meant the child had to endure nine needles and the attendant consequences.

The shortcomings of this system were pointed out to Head Office in 1954 by the Medical Officer of Health for Nelson, who indicated that mothers in country areas were concerned that their children were not receiving immunisation against tetanus. Their children were immunised by Public Health nurses coming to their home and they were not authorised to give tetanus. 'They point out that, whereas the

⁹⁹ NZH, 22 June 1957.

¹⁰⁰ *ibid.*

¹⁰¹ W. Murphy to DGH, 13 April 1955, H1 144/27/3 29319 Sera and vaccines: triple vaccines 1953-63, ANZ, Wellington.

¹⁰² The polio vaccine will be discussed in Chapter 5.

Department advocates the triple protection their own staff (both in the field and in the City clinics) are not providing it'.¹⁰³ Nonetheless, the views of the Nelson Medical Officer were not shared by his colleagues at the Medical Officers Conference in 1958, where it was confirmed that Public Health nurses could not administer tetanus, thereby depriving some children of access to a vaccine.¹⁰⁴ The reason for this decision was probably to try and encourage parents to visit their GP for some of the child immunisations, in line with departmental policy. GPs had traditionally administered tetanus injections and the decision may have been an attempt to appease them, at a time when polio vaccine could be administered only by the Health Department. Nonetheless, the Department was in a quandary, on the one hand it was publicising the benefits of tetanus immunisation for children whilst at the same time restricting its administration to GPs. This meant access was denied to those in rural areas who needed it most.

Triple Vaccine

In the United States it was reported that vaccines for diphtheria, tetanus and pertussis had been in routine use since the 1940s.¹⁰⁵ Nevertheless these initial schemes were the 'responsibility of private medicine, the states and local agencies' as there was no national immunisation programme until the 1962 Vaccine Assistance Act was passed.¹⁰⁶ This provided resources for a free nationwide immunisation scheme directed at under-fives and funded the use of the triple vaccine. In 1962, 67.8 percent of children aged between one and four received a least three doses of triple vaccine, just over two-thirds of children receiving protection during the campaign's first year.¹⁰⁷

¹⁰³ MOH Nelson to DGH, 13 April 1955, H1 144/27/3 29319, ANZ, Wellington.

¹⁰⁴ BCAA 1990/503a, ANZ, Auckland.

¹⁰⁵ P. M. Vivier, 'National Policies for Childhood Immunization in the United States: An Historical Perspective', PhD, John Hopkins University, 1996, p.17.

¹⁰⁶ *ibid.*, p.18.

¹⁰⁷ *ibid.* p.90. For a detailed discussion of the Vaccine Assistance Act 1962 in the United States see P. M. Vivier, 'National Policies for Childhood Immunization in the United States: An Historical Perspective', PhD, John Hopkins University, 1996, pp.66-105.

In New Zealand Glaxo Laboratories offered a triple vaccine in 1954 which combined diphtheria, tetanus and pertussis.¹⁰⁸ The Medical Association had suggested that it should be put on the free list in September 1956 but the vaccine had not yet been approved by the Health Department.¹⁰⁹ Some parents were unaware of this and did not realise they would have to pay for the vaccine as well, as evinced by P. S. Werry of Mangakino who wrote to the Department asking for a refund when he was charged for the triple vaccine material used for immunising his baby.¹¹⁰ Despite its increased cost the vaccine proved popular with both doctors and parents. In the Nelson Health District the Medical Officer of Health pointed out that ‘the majority of medical men who immunise infants, used the triple injection, against Diphtheria, Pertussis and Tetanus’ and he asked if he could apply for some for use by Health Department staff.¹¹¹ In Matamata, Dr N. T. Dalton commented in 1956 that there was a big demand for the triple vaccine in his area.¹¹² In 1958 several parents wrote to the Auckland Medical Officer of Health asking for tetanus immunisation for their children.¹¹³

Both parents and GPs were keen to use the vaccine as it gave protection against tetanus and cut down the number of immunisation trips to the doctor. Indeed, Dr Neil Begg, the Medical Advisor to Plunket, when commenting on an immunisation routine for babies in 1956, suggested ‘a combined diphtheria-pertussis-tetanus inoculation should be given’ spaced at three, four and five months.¹¹⁴ Some Plunket nurses were also advising mothers, contrary to departmental policy, to have the triple vaccine.¹¹⁵ Doctors once more led the initiative, offering parents a triple vaccine years before the

¹⁰⁸ Glaxo had originally been established in 1873 by Joseph Nathan trading under the name of Joseph Nathan and Co. The company went into dried milk production in 1904 in New Zealand and the product was registered as Glaxo. The dried milk was exported to the UK and a new company was formed to develop the British market. In New Zealand the equivalent company became Glaxo Laboratories (NZ) Ltd in 1937 and manufactured pharmaceutical products as did their British counterparts. Glaxo UK were responsible for the production of the combined vaccine used by the New Zealand Health Department in 1953 and produced a triple vaccine for use from 1954.

From J. Millen, *Glaxo. From Bonnie Babies to Better Medicine*, Palmerston North, 1991. See also R. P. T. S. J. Davenport-Hines, *Glaxo. A History to 1962*, Cambridge, 1992.

¹⁰⁹ H1 144/27/3 29319, ANZ, Wellington.

¹¹⁰ A. W. S. Thompson to P. S. Werry, 6 December 1956, *ibid.*

¹¹¹ MOH Nelson to DGH, 13 April 1955, *ibid.*

¹¹² N. T. Dalton to MOH Hamilton, 27 June 1956, BCAA 1990/501b Diphtheria 1954-66, ANZ, Auckland.

¹¹³ BAAK A358 125a, ANZ, Auckland.

¹¹⁴ C/5/56, N. Begg to Plunket nurses, 23 May 1956, H1 144/27/3 29319, ANZ, Auckland.

¹¹⁵ MOH Hamilton to M. H. Buchanan, 12 May 1959, BCAA 1990/501b, ANZ, Auckland.

Health Department finally authorised its placement on the ‘free list’.

Vaccine Approval

By the early 1960s several changes had taken place in the way vaccines were approved for use. Now vaccines needed to be endorsed by both the World Health Organization (WHO), and the Epidemiology Advisory Committee (EAC). The EAC was a panel of local experts who advised the Health Department on a number of matters including vaccines and immunisations.¹¹⁶ Such were the growing complexities of vaccines and with an expanding number becoming available, it became necessary to look outside the Health Department for specialist advice.

One international body consulted frequently by the Department was the WHO, which had been established by the United Nations in 1948. New Zealand was one of 26 original member states, having joined the WHO on 10 December 1946 before it was even ratified.¹¹⁷ In addition to many health programmes conducted by its Operational Services, the WHO also offered Advisory and Technical Services on health matters, including immunisation.¹¹⁸ Expert Advisory Panels comprised of the world’s leading scientists and health administrators provided technical information and guidance in their particular field.¹¹⁹ The Health Department in New Zealand was enthusiastically involved with the WHO from the beginning, sending two delegates, Thomas Ritchie and Harold Turbott, both future Director-Generals of Health, to the inaugural meeting in New York in 1946. The Department sent representatives to every World Health Assembly, with Harold Turbott attending seven times.¹²⁰ In 1960 Turbott was elected president of the 13th World Health Assembly. This substantial involvement in the WHO was continued by Turbott’s successor as Director-General, Doug Kennedy, who was elected as one of the vice-presidents of the 25th World Health Assembly.¹²¹ One member of the Department wrote an article on the WHO’s work that was

¹¹⁶ The development of the Epidemiology Advisory Committee will be discussed further in Chapter 5, pp.132-34.

¹¹⁷ F. S. Maclean, ‘The World Health Organization and its Work’, *New Zealand Medical Journal* (NZMJ), December 1953, p.469.

¹¹⁸ *ibid.*

¹¹⁹ WHO, *The First Ten Years of the World Health Organization*, Geneva, 1958, p.153.

¹²⁰ D. Dow, *Safeguarding the Public Health A History of the New Zealand Department of Health*, Wellington, 1995, p.238.

¹²¹ *ibid.*,p.239.

published in the *New Zealand Medical Journal*.¹²² The continued commitment made by the New Zealand Health Department to the aims of the WHO was reflected in the influence the organisation now began to have on local health matters, including immunisation.

In regard to immunisation, the authority and advice of the WHO was paramount, even above that of the EAC. The approval of the triple vaccine in New Zealand clearly demonstrated the substantial influence of the expert committee of the WHO with regard to vaccines. With the arrival of the triple vaccine in 1954, Turbott had asked for the WHO's recommendations. The WHO had not cleared the triple vaccine due to 'interference by the tetanus toxoid with the whooping cough potency' and it was running a series of tests on this aspect.¹²³ Though the 'G.P's are using it wholesale' and Plunket had advised its use, the vaccine was not put on the departmental free list until 1960 when it was accepted for use by the WHO.¹²⁴ However, other specialist advisory committees were also hesitant. The MRC in Britain was still conducting tests on the triple vaccine in 1958 and approval had not yet been given for its wholesale use. The MRC's stance, therefore, was not dissimilar to the one adopted by New Zealand's Health Department.¹²⁵

From the late 1950s, a large part of the responsibility for decisions regarding vaccine usage was gradually shifted away from the Department to expert advisory committees such as the WHO and the EAC. The reliance placed by the Health Department on these recommendations and the Department's refusal to deviate from them meant that vaccines were often introduced more slowly than perhaps the medical profession and the public would have liked. Further, the Department was now placed in a much more reactionary role as aspects of departmental immunisation policy were now guided from outside the Department, not from within.

¹²² F. S. Maclean, 'The World Health Organization and its Work', pp.469-74.

¹²³ Unsigned letter, 27 September 1956, H1 144/27/3 29319, ANZ, Wellington.

¹²⁴ *ibid.* Also see, N. C. Begg, 'Immunisation Procedures in Infancy', NZMJ, August 1958, p.373.

¹²⁵ *ibid.*, p.372.

Immunisation Schedule 1960

The triple vaccine of diphtheria, tetanus and pertussis was approved for use by the Department in October 1960. This marked an important point in child immunisation history. Not only did it mean fewer trips to the doctor or Health Department clinic but also, with an increasing number of vaccines on offer, an immunisation schedule was now devised. Previously, GPs had been given full power by the Department to determine when each child should be immunised. Now, with an ever-increasing repertoire of vaccines, the Department felt that such an important responsibility should be in the hands of the EAC.

From October 1960 the EAC recommended that the triple vaccine be given between the ages of two to six months with a month between each of the three doses.¹²⁶ The double vaccine, diphtheria and tetanus, was used for booster doses in school at age five; due to the pertussis element, the triple was not to be used after age four.¹²⁷ Guidelines were drawn up by the Department in September 1960, when the triple vaccine was to be given at three, four and five months, with the Salk polio vaccine being given by the Department at seven and eight months and a booster polio vaccine at 15 to 18 months. At school entry a booster diphtheria and tetanus vaccine was offered.¹²⁸ With the use of the Sabin oral polio vaccine (OPV) changes were made to the schedule and in 1963 OPV replaced Salk and was administered at six, seven and 12 months.¹²⁹

The approval of the triple vaccine by the EAC made access to the tetanus vaccine easier for parents. Public Health nurses were able to give the triple and so some parents did not need to visit the doctor at all for any infant immunisation. To coincide with the introduction of the triple vaccine the Department organised a campaign in 1960 to promote tetanus immunisation for children and adults. There was 'an overwhelming response from the public to the Department of Health's anti-tetanus

¹²⁶ Dept of Health, 'Immunisations: Triple Antigen now supplied Free', NZMJ, 59, 1960, p.501.

¹²⁷ *ibid.*, p.502.

¹²⁸ BAAK A358 122c General Vaccines, ANZ, Auckland. Also see D. Dow, O. Mansoor, 'New Zealand Immunisation Schedule History', NZMJ, 109, 1996, p.210.

¹²⁹ BAAK A358 82a Child Health 1959-69, ANZ, Auckland. See Immunisation Schedules, Appendix 1, pp.306-09.

campaign'.¹³⁰ Up until September 1960 the Department used 28,800 doses of locally produced vaccine but in October and November 160,000 doses were administered.¹³¹ Supply was restricted due to a shipping strike in Britain which meant there were not enough imported ampoules to put the local vaccine in! Nevertheless, the response was very gratifying to the Department and was also illustrative of the public demand for tetanus immunisation.

From 1963, after requests by doctors for a pamphlet to hand out, the Department printed details of the immunisation schedule for parents that could be used as a reference guide.¹³² This had the advantage of standardising the timing of injections rather than leaving it totally to the GPs discretion. Both Begg and the Department did not want the GPs to feel that the state was encroaching on the province of the doctor by issuing immunisation guidelines, but nevertheless, as the number of vaccines on offer increased, it was felt that the EAC was the most appropriate body for tracing the way through the thicket of confusing advice, rather than leaving it in the hands of individual GPs. The schedule became definitive as to when injections should be given, doctors now only deciding whether, due to contraindications, they should be given at all.

The development of a schedule was a logical progression for the Health Department. Future improvements and changes were now incorporated into the schedule; doctors were now informed of these changes by a circular and parents by the publication of a new schedule. A copy was now included with the letter received by new parents informing them of the vaccines offered by the Department so parents would know exactly when each immunisation was due. In addition, an immunisation record at the back of the Plunket book made recording and monitoring for parents and doctors more straightforward.

¹³⁰ Circ. Memo 18 November 1960, BCAA 1990/503a, ANZ, Auckland.

¹³¹ *ibid.*

¹³² YCBE 1990/80c Immunisation General 1950-75, ANZ, Auckland.

BCG Vaccination

From 1951 another vaccine became part of childhood immunisations in New Zealand, BCG. Developed to prevent tuberculosis, the vaccine had a controversial past and was considered by some to be ineffective. It had originally been developed by Albert Calmette and Camille Guerin during the first two decades of the twentieth century and was successfully used in human trials in 1921. Although France had been the first to accept the vaccine (by 1928 over 50,000 French children had been given BCG), other countries were not so keen, especially in light of the Lubeck disaster from 1927 to 1930.¹³³ There 261 infants were given an alleged BCG vaccine (which actually contained virulent tuberculosis) that caused 77 to die of the disease with the rest showing signs of chronic or clinically arrested tuberculosis.¹³⁴ Even though a German Commission of Inquiry completely vindicated the vaccine, confidence in BCG was severely shaken for a long time after. Countries which used BCG noted a decline in tuberculosis rates, yet so did countries that did not use the vaccine, a decrease which could also be attributed to factors such as population density, racial characteristics and health education.¹³⁵ Rates for tuberculosis went down in both Denmark and Iceland between 1945 and 1950, yet Iceland did not implement BCG.¹³⁶ Statistics such as these contributed to the international debate surrounding the usefulness of BCG in preventing tuberculosis.

Respiratory or pulmonary tuberculosis was a chronic illness, acquired by the inhalation of the tubercle bacillus into the lungs. It usually took time for symptoms to become apparent and included fever, chills, weight loss and a racking cough as a result of inflammation. The treatment of tuberculosis before World War Two consisted of rest, good food and fresh air, often in a sanatorium, or perhaps surgical intervention. Post-war, the advent of streptomycin in 1948 and the use of mass x-rays tuberculous patients.¹³⁷ Although there was a decline in the incidence of tuberculosis

¹³³ H. J. Parish, *The History of Immunization*, Edinburgh, 1965, p.101.

¹³⁴ S. R Rosenthal , *BCG Vaccination against tuberculosis*, 1957, London, p.317.

¹³⁵ *ibid.*, p.295.

¹³⁶ *ibid.* Denmark's rates declined by 58 percent, whilst Iceland's went down by 71 percent. Rosenthal attributed this to the difference in population density - Iceland was three per square mile whilst Denmark was 228.

¹³⁷ F. B. Smith, 'Tuberculosis and bureaucracy. Bacille Calmette et Guerin: its troubled path to acceptance in Britain and Australia', *Medical Journal of Australia*, 159, p.411.

by the 1940s, it was still felt by the Department of Health that more could be done to prevent the spread of infection. BCG was now seen as a useful addition to the Department's efforts to control pulmonary tuberculosis.¹³⁸

New Zealand had demonstrated an early interest in the vaccine but this enthusiasm had been quashed in 1920s by A. McNalty, the Chief Medical Officer in Britain, who advised New Zealand doctors against using BCG.¹³⁹ The vaccine had been rejected in Britain as the figures produced by Calmette could not be substantiated. New Zealand was not prepared to act without the lead of Britain at this time, even though the report on tuberculosis commissioned in 1928 suggested many eminent doctors were interested in it.¹⁴⁰ At this point adopting the vaccine would have also interfered with the well-established treatment for tuberculosis, and hence, public health officers showed little interest in initiating a BCG vaccination programme.¹⁴¹ It was not until after World War Two that a more serious interest was displayed in the vaccine and this resulted from a shortage of nurses for tuberculous patients due to the high infection rate. BCG was offered to nurses in Britain in 1949 and the scheme was extended in 1950 to a trial of about 56,000 schoolchildren by the MRC.¹⁴² From the mid-1950s local education authorities began to use BCG routinely although it was limited initially to children aged 13 to 14.¹⁴³ Extended in 1959 to cover all children approaching 13 and over 14 and again in 1961 to children over ten, by the early 1960s around 400,000 children a year were being vaccinated.¹⁴⁴

Nevertheless, BCG was still used as part of an overall tuberculosis control scheme, not as a preventative by itself. This was because although 'a strong presumptive case may be made out for the value of B.C.G., it is not convincing enough to justify the wholehearted acceptance of this agent as a means of preventing tuberculosis in Great

¹³⁸ For BCG the term vaccination is used to denote the procedure. I have continued with that tradition.

¹³⁹ F. B. Smith, *The Retreat of Tuberculosis, 1850-1950*, London, p.195.

¹⁴⁰ Committee of Inquiry, 'Prevention and Treatment of Pulmonary Tuberculosis in New Zealand' AJHR, 1928, H-31a.

¹⁴¹ L. Bryder, 'We shall not find salvation in inoculation': BCG vaccination in Scandinavia, Britain and the USA, 1921-1960', *Social Science and Medicine*, 49, 1999, p.1160.

¹⁴² *ibid.*, p.1161. See the article for more detailed discussion on the reasons for the neglect of BCG in Britain.

¹⁴³ B. Harris, *The Health of the Schoolchild. A history of the school medical service in England and Wales*, Buckingham, 1995, p.188. Bernard Harris is a Reader in the History of Social Policy at the University of Southampton, UK.

¹⁴⁴ *ibid.*, p.190.

Britain'.¹⁴⁵ Australia followed Britain's lead and despite some early interest, as with New Zealand, continued with the curative approach of sanatoria and surgery. It was not until 1945 that BCG began to be produced in Australia and was taken over by the Melbourne-based Commonwealth Serum Laboratories a few years later.¹⁴⁶ The BCG programme, which commenced in the 1950s, was offered initially the most vulnerable groups, school leavers and nurses.

Some countries had wholeheartedly embraced BCG. In Japan, BCG was made mandatory in 1949 and 59 million vaccinations were carried out.¹⁴⁷ Denmark, Norway and Hungary also introduced mandatory BCG for certain categories of person.¹⁴⁸ Nonetheless, in the United States, BCG was never adopted on a national scale, despite some extensive testing with good results.¹⁴⁹ Historian Georgina Feldberg has argued that Americans employed a three-pronged attack on BCG after 1924, by first challenging the safety and then the efficacy of the vaccine. Later this transposed into 'the claim that, in the United States, mass vaccination with BCG would not be an appropriate health measure'.¹⁵⁰ The late 1940s and 1950s signalled the introduction of drugs to treat tuberculosis, streptomycin and later isoniazid, which were perceived at the time as alternatives to BCG.¹⁵¹ Moreover, with declining case numbers, the United States pointed out that with good living standards traditional tuberculosis control measures were enough.¹⁵² In adopting this approach the United States, was, by the late 1950s, on its own in rejecting BCG.

In parts of Canada, BCG was given a more positive reception. In 1926 the death rate in Quebec was 118.6 per 100,000 and 82.5 per 100,000 for the rest of Canada.¹⁵³ In the province of Quebec trials were conducted with BCG which demonstrated a 61 percent decrease in mortality in children 15 years and younger. As a consequence the

¹⁴⁵ G. S. Wilson, 'The value of B.C.G. vaccination in the control of tuberculosis', *BMJ*, 2, 1947, p.855.

¹⁴⁶ F. B. Smith, 'Tuberculosis and bureaucracy', p.411.

¹⁴⁷ S. R Rosenthal, *BCG Vaccination against tuberculosis*, 1957, London, p.54.

¹⁴⁸ *ibid.* Also R. Mande, *B.C.G. Vaccination*, London, pp.226-27.

¹⁴⁹ William Hallock Park conducted trials on infants in 1927 and the incidence of TB was shown to be less in those vaccinated. In 1942 Joseph Aronson also trialed BCG on Native Americans with satisfactory results. See G. D. Feldberg, *Disease and Class. Tuberculosis and the shaping of modern North American Society*, New Jersey, 1995, pp.166-67 and p.172.

¹⁵⁰ G. D. Feldberg, *Disease and Class*. p.175.

¹⁵¹ *ibid.*, p.194.

¹⁵² *ibid.*, p.210.

¹⁵³ G. J. Wherrett, *The Miracle of the Empty Beds. A history of Tuberculosis in Canada*, Toronto, 1977, p.62.

Quebec government began BCG vaccinations for schoolchildren by 1949.¹⁵⁴ Nevertheless, other provinces did not adopt BCG to the same extent as the ‘precise value of the vaccine was still in dispute...as were the clinical and ethical implications’.¹⁵⁵ Apart from Quebec, BCG in Canada was viewed as ‘no cure-all - it was only...one more adjunct to the campaign’.¹⁵⁶

BCG in New Zealand

In 1947, Matthew Oram, member for Manawatu, criticised the Health Department and the government for not encouraging and developing the use of BCG in New Zealand and commented on the many favourable trials BCG had undergone elsewhere. He argued, like the Canadians, that the ‘drug was not a cure-all, and was not 100 per cent perfect, but its efficacy has been abundantly proved’.¹⁵⁷ Oram’s remark was indicative of public interest in the vaccine. In February 1948, after receiving positive reports from the medical profession, the Health Department announced BCG would be introduced by the end of the year beginning with a trial on nurses. The introduction of BCG had important repercussions for many sectors of society, but this section will focus on the provisions relating to the use of BCG for schoolchildren.

Tuberculosis was still perceived as a major problem as illustrated by the passing of the Tuberculosis Act in 1948. No other disease since smallpox had attracted such legislative attention most probably due to the fear tuberculosis still invoked. Even by the mid-1940s, the ‘shelters’ as the sanatorium at Greenlane in Auckland was known as, were still greatly feared and spoken of ‘in hushed tones’.¹⁵⁸ Now, with the aid of BCG, mass x-rays, and more effective treatments the Health Department hoped to finally bring the disease under control.

One significant aspect of this control policy was the Tuberculosis Act of 1948. This regulated the treatment and defined the powers of medical officers to deal with those

¹⁵⁴ K. McCuaig, *The Weariness, the Fever and the Fret. The Campaign against Tuberculosis in Canada 1900-1950*, Montreal, 1990, p.84.

¹⁵⁵ *ibid.*, p.192.

¹⁵⁶ *ibid.*

¹⁵⁷ *New Zealand Parliamentary Debates* (NZPD), 1947, 279, p.389.

¹⁵⁸ J. Bassett, written comment, 16 December 2006.

suffering from tuberculosis.¹⁵⁹ The Act was also important for immunisation generally as it made provision for use of the BCG vaccine to control the spread of tuberculosis. The Tuberculosis Regulations of 1951 dealt in detail with vaccination and section 8(2) stated specifically that no child could be vaccinated without the consent of the parent or guardian.¹⁶⁰ This was the first time since 1900 that immunisation had been specifically written into a statute and was the first time in New Zealand that the need for parental consent for immunisations had been stated in law. The regulations were detailed and provided for only approved vaccinators to administer BCG. It was likely that the international controversy that had surrounded the vaccine, and public fear of the disease as well as the special technique required to administer BCG, were partly responsible for the passing of these regulations. It was also restricted to specially trained Health Department personnel and it was not until 1960 that GPs, who became approved vaccinators, could administer it. This programme was therefore at odds with the Department's promotion of GPs to give childhood immunisations.

An approved vaccinator had received a period of training in the technique of injecting BCG and had been approved by the Director-General of Health. A list was then published in the *New Zealand Gazette* and both Health Department doctors and nurses were eligible to become vaccinators. They were then sent 'Instructions to Approved Vaccinators', a three-page booklet detailing the whole procedure relating to BCG including the tuberculin tests. The regulatory ethos continued with the development of a manual in the early 1950s to describe clerical procedures due to 'the importance of this type of work and the unfortunate repercussions which can follow errors'.¹⁶¹ The administration of BCG was therefore in all respects highly regulated by the Health Department. It retained control over its jurisdiction, in contrast to the Department's policies for other childhood vaccines where responsibility had been delegated.

In New Zealand it was decided to target specific groups of people who were especially vulnerable to tuberculosis as suitable for BCG as part of a mass vaccination

¹⁵⁹ *New Zealand Statutes*, 1948, pp.298-319.

¹⁶⁰ Tuberculosis Regulations 1951/290, p.2.

¹⁶¹ L. Smith to J. W. Waldron, 22 April 1955, H1 169/24/21 26886 BCG Vaccination 1953-56, ANZ, Wellington.

campaign. The Health Department's intention was to 'eventually vaccinate every tuberculin negative individual in New Zealand under the age of 35 years'.¹⁶² A pilot scheme was introduced in several post-primary schools in Wellington 'in order that any administrative difficulties attendant to a mass vaccination scheme may be solved' with approximately 80 per cent of parents accepting the procedure for their children.¹⁶³ Of the 1572 children who were tested, 1322 were found to be tuberculin negative and were vaccinated.¹⁶⁴ Cabinet approval for the BCG vaccination scheme had been granted in February 1951 and post-primary children were to be given first priority as 'an easily accessible group approaching young adult life on whom mass vaccination technique and assembly of records can be standardised'.¹⁶⁵ New Zealand was in line with Britain, Australia and parts of Canada in introducing BCG for schoolchildren at the beginning of 1950s.

The administration of BCG in schools was more formalised than the other immunisation programmes carried out in schools, such as diphtheria. Medical Officers of Health were responsible for the vaccination programme in their areas and were to approach headteachers of post-primary schools and other organisations to make arrangements for the School Medical Service to administer BCG at the school. The vaccination team consisted of an 'approved vaccinator', often the School Medical Officer, two registered nurses and a clerk who kept the records. Each pupil whose parents consented was to be given a Mantoux test - where tuberculin was injected just under the skin - and those children whose tests were negative after three to five days were offered BCG. After vaccination each child was given a card stating that a successful vaccination had taken place and other records were carefully inscribed according to detailed instructions.

The BCG campaign started fairly slowly with only 12,000 vaccinations being carried out in 1952 in a group that included hospital staff, contacts and schoolchildren.¹⁶⁶ By 1955 there were 26,052 persons vaccinated, including schoolchildren.¹⁶⁷ The School Medical Service soon discovered there were some useful and important spin-offs to

¹⁶² 'Immunization against Tuberculosis', H-NA 478, General Policy - Napier, ANZ, Wellington.

¹⁶³ 'Immunization against Tuberculosis', Appendix 4, H-NA 478, ANZ, Wellington.

¹⁶⁴ AJHR, 1952, H-31, p.60.

¹⁶⁵ 'Immunization against Tuberculosis', H-NA 478, ANZ, Wellington.

¹⁶⁶ AJHR, 1953, H-31, p.63.

¹⁶⁷ AJHR, 1956, H-31, p.72.

BCG administration. They began to use BCG sessions to promote health education in schools, and, as one doctor remarked ‘there is nothing else so good as an injection for stimulating an interest in health or disease’.¹⁶⁸

BCG had come at a time when medical examinations in schools were declining as children were becoming healthier and displaying fewer physical problems. However, although most schools welcomed visits of the doctors and nurses, others were less co-operative as they felt it ‘interferes with the routine of lessons’.¹⁶⁹ The role of the School Medical Officer had gradually been eroded as schools required the offices of the School Medical Services less. Implementing the BCG programme helped call a halt to this decline as the ‘B.C.G. programme continues to afford an excellent opportunity of entry into the schools and discussing certain problems regarding children with teachers and others’.¹⁷⁰ The School Medical Officer once again became a familiar figure around schools and consequently was consulted more frequently regarding pupil health problems, increasing not only their workload, but also their status in schools.

A comparable situation arose in Britain in the 1950s, as this ‘period also witnessed a number of important developments in the provision of effective forms of vaccination against tuberculosis and poliomyelitis. The administration of these vaccines represented an important addition to the work of the school health service from the mid-1950s onwards’.¹⁷¹ Local education authorities in Britain did not routinely use BCG in schools until the mid-1950s, limiting it to 13 to 14 year olds initially. In 1956 New Zealand BCG policy was changed to vaccinating third formers, as the new entrants to high school (aged 13) rather than school leavers, as research had shown it was more effective to give the vaccine at the beginning of adolescence when the risk of contracting tuberculosis was greatest. Figures from an investigation by the British MRC in 1956 showed BCG reduced an adolescent’s chances of contracting tuberculosis by about 80 per cent.¹⁷² In New Zealand the numbers vaccinated steadily increased. In 1957, 22,126 children between the ages of ten to 15 were Mantoux

¹⁶⁸ *ibid.*

¹⁶⁹ *ibid.*

¹⁷⁰ AJHR, 1957, H-31, p.62.

¹⁷¹ B. Harris, *The Health of the schoolchild*, p.187.

¹⁷² W. H. Tytler, *Memorandum on BCG, For the consideration of Aneurin Bevan, Minister of Health and Joseph Westwood, Secretary of State for Scotland*, 194-, p.4.

tested with 2391 discovered to be positive. The remainder were given the BCG vaccine.¹⁷³ By 1959, there were 34,669 vaccinations ‘with the majority in the age group 10 to 14 years’.¹⁷⁴

BCG was never claimed to be 100 per cent effective. Most trials reported good success rates but did not advocate BCG on its own to be used as preventative measure. In New Zealand, a review of BCG in the *New Zealand Medical Journal* in 1949 argued that it was ‘undoubtedly an additional measure which should be introduced into this country, but which in no way should be regarded as replacing any of the orthodox measures now used in the control of tuberculosis’.¹⁷⁵ This epitomised the way in which BCG was utilised in the coming years in New Zealand. The Health Department used BCG as a preventative measure in addition to mass x-ray campaigns and other methods of control; it was never used on its own, as other vaccines were.

BCG Policy Changes

In 1958 tuberculosis was responsible for 168 deaths. By 1961 figures had improved slightly with 117 deaths but still invited the comment ‘this disease is far from eradicated and still extracts a heavy toll of life’.¹⁷⁶ Tuberculosis was still perceived in the early 1960s as a serious health issue in New Zealand although death figures were low. Nevertheless by 1965, statistics showed that tuberculosis had ‘almost disappeared as a cause of death in non-Maori children’ with only three deaths in non-Maori aged below 24.¹⁷⁷ For Maori under 24 there were no deaths.¹⁷⁸ BCG was just one of a range of options the Department employed to control tuberculosis but it was the most controversial. Even with the programme in schools less than ten years old, some in the medical profession and even within the Health Department itself were calling for it to be abandoned due to falling numbers.

¹⁷³ AJHR, 1958, H-31, p.96.

¹⁷⁴ AJHR, 1969, H-31, p.26.

¹⁷⁵ C. A. Taylor, T. H. Pullar, ‘Specific Immunisation Against Tuberculosis and its Application in New Zealand, NZMJ, 48, 1949, p.267.

¹⁷⁶ NZYB, 68, 1963, p.105.

¹⁷⁷ NZYB, 72, 1967, p.103, 105.

¹⁷⁸ *ibid.*

Medical opposition to BCG in New Zealand was not new. In 1955 four Auckland doctors, who were all chest physicians, wrote to the *New Zealand Herald* to argue that ‘there are a number of grounds on which exception has been and will be taken to BCG vaccination. These objections have the greatest weight when vaccination is proposed for individuals not exposed to the particular hazard’; the chest physicians believed a selective BCG policy would be more appropriate.¹⁷⁹ Other doctors objected to the vaccine. John Rich, a doctor in New Plymouth refused ‘on medical grounds’ to allow his son to be vaccinated with BCG citing that ‘numerous cases have been reported of virulent T.B. being caused with associated deaths or long periods of serious illness’.¹⁸⁰ Another prominent figure, Arthur Moody, Chairman of the Otago Hospital Board, was sceptical of BCG as ‘its value was not established, and New Zealand would do well to take things more slowly’.¹⁸¹ It could be that some members of the medical profession were influenced by American doctors who by the 1950s still opposed the introduction of BCG, preferring to try and eradicate tuberculosis by treatment with drugs such as streptomycin and the newly-developed chemotherapy.¹⁸²

J. F. Dawson, the Medical Officer of Health for Hamilton, was very much against BCG for European post-primary schoolchildren and wrote to Head Office several times to express his opinion. ‘B.C.G. vaccination takes up a considerable amount of our Public Health Nurses’ time and I feel that this time could be given to work of a more productive nature’.¹⁸³ Other Medical Officers shared Dawson’s opinion and at the Medical Officer of Health Conference at Christchurch in 1961 it was ‘agreed in principle to dropping of B.C.G. vaccination of adolescents generally’ and restrict its use to special groups.¹⁸⁴ The Division of Hospitals, which now incorporated the

¹⁷⁹ NZH, 24 June 1955, ABQU 632 W4550/48 52637 246/64/1, BCG Auckland 1952-78, ANZ, Wellington.

¹⁸⁰ MOH to DGH, 19 June 1956, ABQU 632 W4415/522 246/64/9 52641, BCG New Plymouth 1952-79, ANZ, Wellington. Rich also mentioned that of 8000 children vaccinated in Auckland in 1944, 24 developed serious tuberculous lesions. BCG did not start in New Zealand until 1948 with a pilot trial of nurses at Palmerston North Hospital.

¹⁸¹ *Otago Daily Times* (OTD), 6 December 1951. Moody was chairman of the Otago Hospital Board from 1947 to 1953 - see W. Moody, *The Dynamic Doctor: Arthur Moody of Otago*, Auckland, 1978, for a description of his encounters with the Health Department.

¹⁸² L. Bryder, ‘We shall not find salvation in inoculation’: BCG vaccination in Scandinavia, Britain and the USA, 1921-1960, *Social Science and Medicine*, 49, 1999, p.1164.

¹⁸³ MOH Hamilton to DGH, 14 November 1960. J. F. Dawson, the Hamilton MOH, wrote letters in a similar vein on 6 November 1962, 4 November 1960 and 21 December 1959. ABQU 632 W4415/522 52640 246/64/6 BCG Hamilton 1953-79, ANZ, Wellington.

¹⁸⁴ ‘Policy for BCG Vaccination’, 12 December 1962, H1 34419 246/64 BCG Vaccination 1956-69, ANZ, Wellington.

Tuberculosis Division, undertook a review of BCG policy under the direction of V. S. Land, the Assistant Director. Notice was taken of the WHO recommendations which advocated BCG for 'at risk' groups only in countries where the incidence of tuberculosis was declining; however, adolescence was considered to be a period of high risk.¹⁸⁵

In November 1962, when Land wrote to a number of chest physicians seeking their views on adolescent BCG; nine were in favour with six against.¹⁸⁶ He also found that for both European and Maori the incidence in the unvaccinated was still too high to consider stopping BCG. Maori under-fives had an incidence rate of 19.5 per 10,000 in 1960 in comparison to 1.52 per 10,000 for European preschoolers.¹⁸⁷ Land therefore recommended that where possible vaccination of Maori new-borns and school entrants should be introduced. This followed the WHO guidelines which advocated the vaccination of new-borns, school entrants and school leavers in areas where the prevalence of tuberculosis was high.

The Hutt Health District, on its own initiative, had already implemented a scheme in 1958 for Public Health nurses to vaccinate Maori infants as it 'is the Maori children under 5 years...who would benefit most from B.C.G.'.¹⁸⁸ Land's recommendations, rather than stopping the BCG programme, advocated increasing it to reach the more vulnerable sections of society. However, they were then considered by a committee of senior Health Department staff including Land himself.¹⁸⁹ The committee decided that no action was to be taken with regard to implementing BCG vaccination for Maori infants and school entrants. Taking an opposite stance to Land's report it was also decided to discontinue BCG vaccination in the South Island and use a programme of tuberculin testing instead to identify positive reactors. (The South Island had already stopped its BCG programme after the 1961 Medical Officer of Health conference).¹⁹⁰ The 'relatively small Maori population' was also a determining factor

¹⁸⁵ *ibid.*

¹⁸⁶ *ibid.*

¹⁸⁷ *ibid.*

¹⁸⁸ *ibid.*, also MOH Lower Hutt to DGH, 21 September 1964, H1 34419 246/64, ANZ, Wellington.

¹⁸⁹ The committee comprised of H. B. Turbott, C. A. Taylor, D. P. Kennedy, G. O. L. Dempster and V. S. Land.

¹⁹⁰ Circ. Memo 1963/26 4 February 1963, H1 246/64 34419 BCG Vaccination 1956-69, ANZ, Wellington.

in setting up the South Island as a control group in comparison to the North where BCG vaccination continued.¹⁹¹ Positive reactors in the European ten to 15 age group in 1961 still numbered around seven to eight percent in the North Island, much higher than the one percent recommended by the WHO.¹⁹² For Maori in this age bracket the figure was much higher, 18.5 percent in 1961.¹⁹³

This heralded the commencement of a policy that, as tuberculosis numbers continued to decline, would result in the targeting of ‘at risk’ groups only, although this transitional stage for BCG would not have found favour with many people. South Islanders believed they were being discriminated against in favour of the North even though numbers of tuberculosis cases did not warrant a BCG programme in schools.¹⁹⁴ Some health professionals opposed to BCG would see it still being implemented and those in need of it most as identified in Land’s report, preschool Maori, were not seen as priority by the Health Department. The influence of the WHO was very apparent as the Department was careful to follow its recommendations regarding the use of BCG, refusing to abandon it due to the high numbers of positive reactors in adolescence.

Some organisations were very much in favour of the vaccine and made efforts to promote it. The Wellington Tuberculosis Association was reported to be ‘somewhat concerned’ at the wavering policy towards BCG vaccination in schools and that ‘B.C.G. and case-finding should be a “must” in all secondary schools’.¹⁹⁵ The Association hoped that these measures would help to lower the incidence of tuberculosis and detect new cases early. Despite the Minister of Health’s confident assertion in 1959 that the ‘B.C.G vaccine has proved one of the major weapons against tuberculosis’ there was no intensification of the campaign against tuberculosis, and the effectiveness of BCG policy was perceived with increasing scepticism both within and without the Department.¹⁹⁶

¹⁹¹ V. S. Land to M. Chambers, 2 March 1964, *ibid.*

¹⁹² ‘Policy for B.C.G. Vaccination’ 12 December 1962, *ibid.*

¹⁹³ *ibid.*

¹⁹⁴ *Christchurch Press*, 29 February 1968.

¹⁹⁵ *Dominion*, 4 October 1957.

¹⁹⁶ NZPD, 1959, 320, p.1470.

This scepticism focused not on the effectiveness or the safety of the vaccine but rather on the fact that by the 1960s there were not enough new cases being revealed to justify the expense and coverage of BCG programme currently in place in schools, even though it was now only applicable to North Island schools. The debate however, remained within the medical arena and was not shared by the public, most of whom consented for their children to receive BCG. In 1963, 34,621 doses of vaccine were given, mainly to secondary school children.¹⁹⁷ In 1968, 32,137 children aged 13 to 14 received a BCG.¹⁹⁸ These figures remained constant into the 1970s.

Conclusion

From 1941 to 1962 the vaccines routinely available for children had increased from one (or two for Maori) at the beginning of the period to five. This had necessitated the development of guidelines and eventually a schedule of immunisation by the Department to assist both doctors and parents in achieving the required number of immunisations at the correct time. This effectively transferred control of these decisions away from the doctor and over to the Health Department.¹⁹⁹

Changing ideas regarding the authority of science, the growth of medical specialisation as well as an increase in the number of vaccines facilitated the use of expert advice over and above that available within the Health Department. The WHO exerted great influence over immunisation procedure and policy development in New Zealand with the Health Department committed to undertaking active roles within the WHO itself. The EAC, as New Zealand's panel of experts, now guided immunisation policy by making recommendations to the Health Department. Essential decision-making was therefore, during this period, shifted away from the Department and into the hands of specialists; aspects of Health Department immunisation policy would now be determined by experts outside of the Department and even outside New Zealand.

¹⁹⁷ AJHR, 1964, H-31, p.56.

¹⁹⁸ AJHR, 1969, H-31, p.16. These figures do not include those who were found to already have immunity to the disease.

¹⁹⁹ Typhoid immunisations were given to Maori only and will be dealt with in the next chapter. Polio immunisation will be discussed in Chapter 5.

Diphtheria immunisation, although slow to be accepted, finally brought the disease under control by the 1950s, particularly after the hard-hitting epidemic of 1946. Growing vaccine acceptance both by the Department and the public meant new vaccines were readily introduced, such as pertussis and tetanus, making up the triple vaccine. Reliance on expert advice often meant following a slow and cautious path before a vaccine could be approved by the Department, long after consumer demand had been initiated. This deliberate carefulness would become a prominent feature of future vaccine approvals and introduction.

Although some vaccines, like BCG, were totally administered by the Department, other immunisations could be given by the GP. Indeed, departmental policy was to have as much routine childhood immunisation carried out by the family doctor as possible. Cost, however, was prohibitive for an increasing number of families who would utilise the free departmental clinics or not have children immunised. This problem became increasingly apparent in the 1960s and will be discussed further in chapter six.

This period also saw the introduction of controversial vaccines such as BCG and pertussis. Pertussis vaccine was gradually beginning to attract international attention due to its potential to cause devastating side-effects in some children and was certainly viewed with caution by the New Zealand Health Department. BCG originally aroused controversy over its effectiveness as a vaccine. However, by the 1960s the debate for health professionals focused on whether a BCG programme in schools was actually necessary. Nevertheless, it was continued in North Island schools by the Health Department until rates dropped below the required WHO benchmark.

By 1962 immunisation against diphtheria, tetanus and pertussis was established and accepted as routine practice for infants with BCG for adolescents. Procedures had also been put in place to assist in the approval of vaccines by the Health Department. How parents viewed immunisation and the methods the Health Department employed to persuade mothers to accept immunisation for their children will be discussed in the next chapter.

CHAPTER 4: 'Something Everybody Did?'

Attitudes and responses to immunisation policy 1941-1962

During the period 1941-62 the immunisation of infants, toddlers and schoolchildren gradually became an accepted health prevention measure by the majority of New Zealand parents. The Health Department developed a programme of health education to inform the public of many health issues, and in particular promote immunisation.

This chapter will consider parental attitudes and responses to immunisation and will look at how effective the Department's campaigns were in encouraging acceptance. Opposition, mainly from the British Union for the Abolition of Vivisection (BUAV), was at its height up until the mid-1950s when a change in focus removed its presence from the anti-immunisation scene. The role of the BUAV and its impact upon immunisation and upon both parents and the Health Department will be discussed.

Maori were also the focus of departmental immunisation schemes in the 1940s and 1950s, specifically against typhoid. The growing social awareness by Maori led to more frequent opposition to these immunisations, whilst the Health Department had to contend with the legalities of immunising without parental consent. The implications of this perturbing situation will be analysed during the chapter.

Consent

In order for an immunisation to be administered to an infant or a child, consent, either written or verbal, had to be given by a parent or legal guardian.¹ In school-based campaigns, such as those for BCG, written consent was required, whilst a verbal agreement was often the method used when a mother brought her infant to the doctor for his or her scheduled immunisations.

Consent issues had been raised by parents during the diphtheria immunisation campaign of the 1940s and 50s. One parent protested vociferously to the Director-General of Health when his son was taken from his class and given a diphtheria

¹ Consent had to be given under 1908 Infants Amendment Act s.5.

injection without parental permission. No notice had been taken when the child explained the immunisation had already been administered at the doctor's.² This incident resulted in the local Medical Officer of Health reinforcing previous instructions to all departmental staff that no immunisation was to take place in a school without written permission.³ The use of verbal consent also caused misunderstandings. The procedure in place required the nurse to write down that consent had been given when a parent verbally agreed to immunisation. However, disputes arose regarding whether consent had actually been given. In one case a child was immunised after a verbal consent was believed to have been given by her mother to the doctor in a conversation which had been overheard by the nurse. The family felt that this 'matter reduces to one person's word against another, and we have no doubt you will continue to place more reliance on that of your own officers than on that of two offended parents'.⁴ A move to the use of written permission at doctors' surgeries as well as in schools helped to overcome this particular problem. Despite the occasional error, the Health Department was cognisant of the importance of obtaining parental consent for immunisations, especially in schools, as were the majority of parents.

Maori and Consent

The issue of consent for typhoid immunisations for Maori became a serious concern by the 1940s.⁵ During World War Two the social and economic situation of previously rural-dwelling Maori began to change through a shift to the cities. In 1936 there were 1766 Maori resident in Auckland. By 1945 this had risen to 4903 and by 1951 had become 7621.⁶ Uneconomic farming units, the attraction of better-paid employment and the leisure opportunities available in the cities were just some of the reasons behind the steady flow of urban-bound Maori migrants.⁷ Urbanisation also meant Maori were subject to the Pakeha way of life and made some of them aware of

² G. J. Bell to Director-General of Health (DGH), April 1950, H1 131/11/6 24116, Diphtheria Immunisation in Schools 1949-53, Archives New Zealand (ANZ), Wellington.

³ J. P. Kennedy to DGH, 26 May 1950, *ibid.*

⁴ M. R. Cooper and N. J. Cooper to H. B. Turbott, 24 July 1947, H1 131/11/6 19514, Diphtheria Immunisation in Schools 1946-47, ANZ, Wellington.

⁵ Typhoid is caused by the human pathogen salmonella typhi. Symptoms include fever, headache and abdominal pain. The fatality rate is high in infants and often causes encephalopathy in children.

⁶ M. King, *The Penguin History of New Zealand, Auckland*, 2003, p.473.

⁷ *ibid.*, pp.473-74.

opportunities denied and discrimination applied due to their race.⁸ One area of concern was parental consent for immunisation of children. The need for this became more apparent as Maori children began to attend city schools with European children rather than the traditional 'native school'. Previously the Health Department had avoided 'immunising Maoris [for diphtheria] unless the parents were very insistent indeed' believing that it was too difficult to obtain individual consent.⁹ Additionally a survey from 1930 portrayed Maori susceptibility to the disease as low.¹⁰ Diphtheria immunisation did not therefore apply to the majority of Maori before World War Two, however this gradually began to change with urbanisation.

Typhoid immunisations, however, were still administered to Maori by the Department without parental consent. Permission to immunise children at school was meant to be given by Maori community leaders for the children of their hapu or iwi in lieu of obtaining it from individual families.¹¹ The Department felt, certainly in the early stages, that it was 'hardly possible to secure individual consents from Maori parents to the treatment of their children, the best that could be done was to secure the backing of the Maori leaders to the policy'.¹² Ordinary Maori were not perceived by the Department as being capable of understanding and being able to give consent to such a procedure. It was also likely that the Health Department was afraid of parental objections to the immunisations, and 'then the value of the protection as a means of curbing the disease in Maori settlements would largely be lost'.¹³ Therefore, in order to ensure compliance Maori were given the impression by the Health Department that these injections were compulsory. In 1947 it was decided to inoculate all Maori children in North Island primary schools once a year rather than biennially. Each child was initially given two doses of typhoid or TAB vaccine, then one dose each year as a booster, with the programme being carried out in the first term of each

⁸ For a summary of the problems Maori faced when moving to the cities see M. King, *The Penguin History of New Zealand*, pp.475-78.

⁹ M. Watt to Medical Officer of Health (MOH), Whangarei, 12 January 1943, H1 131/11/6 16143 Diphtheria in Schools 1941-46, ANZ, Wellington.

¹⁰ *ibid.* Full-blooded Maori susceptibility was 9.5 percent, three-quarters, 11.1 percent, half was 23.6 percent and a quarter was 24.6 percent.

¹¹ See Chapter 2, pp.51-52 for a discussion on Maori and consent issues in the 1920s and 1930s when the vaccine was first introduced.

¹² T. C. Lonie to C. P. Bates, 22 June 1948, ABQU 632 W4415/263 13/4/1 57734, Enteric Fever Inoculations 1946-72, ANZ, Wellington.

¹³ H. B. Turbott to Solicitor-General, 19 August 1948, *ibid.*

school year by the Public Health nurse.¹⁴ In 1947 19,684 Maori children were immunised against typhoid, in 1949, 18,059 and in 1954, 24,658.¹⁵

The programme ran into trouble in 1948 when the legality of this enterprise and liability of those involved came into question. Rising literacy levels and improvements in environmental standards in Maori communities, coupled with the decrease in typhoid cases, led some Maori to question the necessity for the injections, particularly when they were not routinely given to Pakeha children. By 1948 in the Hamilton Health District, Maori parents were refusing to allow their children to be immunised against typhoid in mixed schools when Pakeha children did not also receive the injection.¹⁶ It was suggested that a colour line was being drawn.¹⁷ ‘Some parents object on this ground only and refuse to listen to reason.’¹⁸ In Dargaville, Mrs Te Whaite, speaking on behalf of all Maori parents, complained that ‘the Typhoid inoculation of Maori children only is a downright racial discrimination and slur on the Maori people’ and she added that her children had been done without permission.¹⁹ Miss Maher, the District Health nurse, described this woman as ‘antagonistic’ and ‘difficult over injections’ and commented ‘I feel that her attitude especially in regard to Typhoid injections is influencing the Maoris of the area to a great extent’.²⁰ The Health Department tried to counteract this problem by pointing out to tribal committees when objections had been raised that ‘typhoid fever is much more common amongst Maoris’ and emphasising that ‘in some Maori districts many pakeha parents ask that their children should be given the advantage of the injections also’.²¹ Nevertheless, most Pakeha knew virtually nothing about typhoid immunisations and TAB vaccine, as a witticism in the House by John S. Stewart, Member for Arch Hill, illustrated only too clearly: ‘To most people the letters “T.A.B.” stood for one thing only, and he would like to know whether the reference in the report was to an anti-betting virus, or something to stimulate betting’.²²

¹⁴ MOH Gisborne to DGH, 5 February 1947, H1 144/24 20094, T.A.B. Vaccine, ANZ, Wellington.

¹⁵ *Appendices to the Journals of the House of Representatives (AJHR)*, 1948, H-31, p.22, 1950, H-31, p.56, 1955, H-31, p.58.

¹⁶ MOH Hamilton to DGH, 13 December 1948, ABQU 632 W4415/263 13/4/1, ANZ, Wellington.

¹⁷ C. P. Bates to Secretary, Education Board, Wanganui, 4 June 1948, *ibid.*

¹⁸ R. Royal to Minister of Health, 24 June 1949, *ibid.*

¹⁹ J. L. Newman to DGH, 20 October 1949, *ibid.*

²⁰ *ibid.*

²¹ T. C. Lonie to R. Heremaia, 14 April 1949, *ibid.*

²² *New Zealand Parliamentary Debates (NZPD)*, 1952, 298, p.1686.

In 1949, the Department of Maori Affairs commented that 'it had always been difficult to convince Maori parents of the wisdom and necessity of inoculation as a protection for their children and the community against typhoid and other diseases'.²³ A perception that Maori might be troublesome meant that little, if any, explanation of typhoid immunisation was given, and tribal committees were often not consulted for consent even though the immunisations were an annual event. The Pariroa (Maori Welfare) Tribal Committee wrote to the Health Inspector at Wanganui in 1949 after their children had been immunised at Kararamea School with a list of questions regarding the injections. These included asking why the children were injected and whether it was compulsory, as well as questioning why parents had not been informed beforehand.²⁴ The Health Department sent back a patronising letter explaining about typhoid immunisations which were referred to throughout as 'a privilege'.²⁵ It is most significant that after twenty years of the Health Department administering these injections, some tribal committees still lacked knowledge of Health Department policy regarding typhoid prevention or the causes of typhoid thus demonstrating that the Department neglected their consultation duties with community leaders. Maori consent of any kind was not always regarded as necessary by the Department, who, it seemed, felt that silence was the best policy to adopt in order to carry out their immunisation policy unopposed.

The legality of the Department's typhoid immunisation policy remained unchallenged until 1948 when the Wanganui Head Teachers Association asked the Department 'to define, for the headteachers' protection, their legal position as temporary guardian of the child... as it is contrary to the usual routine not to have the parents' consent'.²⁶ Questions had been raised by parents and some teachers regarding the right of the Medical Officers to carry out such injections.

The Health Department was fully aware it was acting illegally by administering immunisations without parental consent but was unsure of the legal responsibility of teachers and medical personnel should an incident occur. An opinion was sought by

²³ R. Royal to Minister of Health, 24 June 1949, ABQU 632 W4415/263 13/4/1 57734, ANZ, Wellington.

²⁴ R. Heremaia to Health Inspector, Wanganui, 7 April 1949, *ibid*.

²⁵ T. C. Lonie to R. Heremaia, 14 April 1949, *ibid*.

²⁶ C. P. Bates to Secretary, Education Board, Wanganui, 4 June 1948, and H. B. Turbott to Solicitor-General, 19 August 1948, *ibid*.

the Deputy Director-General of Health, Harold Turbott, from the Solicitor-General on the matter and ‘guidance as to whether this Department should attempt to secure authority for inoculating Maori children against typhoid fever’.²⁷ In his Crown Law Opinion the Solicitor-General made it quite clear that the nurse who immunised a child without parental consent was technically committing an assault and that gaining the permission of the teacher for this act was not sufficient. Indeed the giving of such a consent by the teacher ‘could be construed as amounting to complicity in the technical assault’ and would render the teacher liable as well.²⁸ The Crown itself was not ‘vicariously liable for the act of its employee’ as the Crown Suits Amendment Act of 1910 excluded liability for assault by a servant of the Crown.²⁹ However, both the nurse and the Crown were liable for negligence. The Solicitor-General recommended that in the case of negligence the Crown accept liability and take the responsibility for indemnifying their employees against a charge of assault should a prosecution of this nature arise. It was not regarded as advisable to try and alter legislation ‘in view of the embarrassing issues calculated to arise...namely the issue of interference with parental rights if the legislation were framed in general terms, and the issue of racial discrimination if it were expressed to apply only to Maori children’.³⁰

Turbott now proposed to ask the Government to indemnify employees against liability for an assault charge for immunising Maori children without parental consent. The penalty for assault at this time was either damages of up to £10 or two months in prison, with or without hard labour. It was therefore of some importance to the Health Department that they did not leave themselves open to what could be a most embarrassing situation. Because of the silence surrounding this situation, it is likely that few nurses knew that they could be charged with assault each time they administered typhoid vaccine to a Maori child. Indemnification, in line with the Solicitor-General’s view, was felt to be the most sensible course of action as ‘the experience of the past seems to indicate the probable inexpensiveness of the continuance of the present procedure, even with the modification now suggested of an assurance of indemnity to any employees or their representatives who may inquire’.³¹

²⁷ H. B. Turbott to Solicitor-General, 19 August 1948, *ibid.*

²⁸ Circular 1948/165, 11 October 1948, *ibid.*

²⁹ *ibid.*

³⁰ *ibid.*

³¹ E. L. Greensmith to Minister of Finance, 27 May 1949, *ibid.*

The proposal was approved by Cabinet in June 1949, but was not released before a change in government with the defeat of Labour. The whole matter had again to be put before the new Cabinet headed by National Prime Minister Sidney Holland and was finally agreed to in March 1950. The Health Department had consulted throughout with the Department of Maori Affairs who supported the typhoid immunisation programme and was happy to continue to obtain general consent from tribal committees.³²

The Department sent a confidential circular to all Medical Officers of Health explaining the situation with regard to indemnity for employees. In addition to obtaining consent from tribal committees, the ‘sustained objection of any parent’ was to be respected.³³ Nevertheless, the most important condition was that the indemnity was not to be made public and those who were advised of the situation were to keep it confidential.³⁴ It was notable that the cabinets of two successive governments, Labour and National, the Department of Maori Affairs and the Health Department were all agreed that they would rather indemnify employees for undertaking what constituted an illegal course of action, than introduce parental consent for each Maori child. Secrecy was necessary to avoid publicising a discriminatory and unethical practice and to avoid lawsuits for assault and damages by Maori.

Despite these efforts, consent problems continued, this time with the tribal committees. The Department of Maori Affairs had sent a memo to all tribal committees, Maori Welfare Officers and Tribal Executives asking them to ‘impress upon all parents the wisdom of having their children inoculated’.³⁵ Tribal committees, once having given general approval for immunisation to occur in their community, were to inform parents and note any who objected with a view to persuading them. Children were told of the impending immunisations by their teacher and they were also to inform their parents verbally, a somewhat dubious method for transmitting important information. By these routes the Department hoped to inform and ‘gain consent’ of parents to the immunisations without having to make any special attempt to inform families individually. Nevertheless, by 1950, many tribal committees were

³² Office of Minister of Maori Affairs to Minister of Health, 8 February 1950, *ibid.*

³³ Confidential Circular 1950/81, 31 March 1950, *ibid.*

³⁴ *ibid.*

³⁵ R. Royal to Maori Welfare Officers, 16 May 1950, *ibid.*

not willing to give general consent for the immunisation of the children in their community, seeing this as a parental decision and refused to co-operate. In Auckland, Maori Welfare Officers visited the Maori communities in their area to obtain consents and were 'disappointed at the reluctance of Tribal Committees to assume responsibility'.³⁶ The obtaining of individual consents was not seen as a solution as 'it is the unanimous opinion of the nurses attached to the Auckland office that there is no hope of individual consents being obtained unless a nurse actually visits the homes and more or less insists on a signature being provided', a lengthy and time-consuming operation.³⁷

Other districts introduced their own methods of dealing with the consent issue; Whangarei used written consents, whilst Hamilton and Palmerston North operated verbal consents. In Gisborne, tribal committee consent was used for children in Maori schools, but for those in mixed Maori and European schools individual consents were obtained.³⁸ This 'haphazard system' was not acceptable to G. L. McLeod, the Director of the Division of School Hygiene, but he was concerned that a move to 'tighten up...may mean considerable reduction in inoculation response'.³⁹ McLeod felt that 'Medical Officers of Health must exercise some care in the matter of consents' and they should obtain individual ones where possible. McLeod obviously felt some anxiety on this issue for he issued a warning that Medical Officers of Health must ensure that 'should any untoward event take place... they personally have instituted a sound system of consent short of the individual written one'.⁴⁰ To try and keep the programme going 'blanket consents' (where one consent was used for the whole of the child's school life) were also used which McLeod considered were at the 'very least as good as tribal and verbal consents'.⁴¹

Nevertheless, the problem of gaining consent now made the scheme harder to implement. Other difficulties also emerged. In 1957 the Gisborne District Health Office had to halt typhoid immunisations as it did not have the resources to staff both that and the polio immunisation campaign. In addition, some TAB vaccine had been

³⁶ I. F. MacKenzie to DGH, 5 September 1950, *ibid.*

³⁷ I. F. MacKenzie to DGH, 11 October 1950, *ibid.*

³⁸ G. L. McLeod to H. B. Turbott, 16 September 1952, *ibid.*

³⁹ *ibid.*

⁴⁰ Circular Memo 1952/247, 24 September 1952, *ibid.*

⁴¹ Circular Memo 1954/273, 22 October, 1954, *ibid.*

found to be giving poor protection as in two outbreaks in Gisborne all the family members of those affected had been immunised, and it was felt that resources would be better directed towards the prevention of polio.⁴² In 1962 the programme was finally abandoned, having been stopped already in several health districts as other requirements took priority. Doctors could now administer immunisations if requested by parents.⁴³

Nevertheless the typhoid figures for Maori had not justified such an immunisation scheme for several years before it was finally halted. In 1954 there were 24 cases and two deaths of Maori from typhoid, a rate of 0.16 per 10,000 population.⁴⁴ By 1958 there were only 14 notified Maori typhoid cases and 16 in 1963, with no deaths.⁴⁵ In comparison there were in 1958, 497 notified cases in Maori of respiratory tuberculosis with 47 deaths, yet the Health Department did not advocate BCG for Maori in the same way TAB had been administered.⁴⁶ The Department, despite the huge legal impediments, had continued with a programme that was not needed from the early 1950s given such low figures. It was likely the Department had not re-adjusted its view of Maori to take account of their changing way of life and still believed the programme was necessary due to their living conditions. This failure to update views and perceptions within the Department, and the making of judgements based on outmoded attitudes, was to be one of the features that continued to shape and promote immunisation policy.

The Health Department believed in the efficacy of the TAB vaccine and as with diphtheria, wished to reduce and then eradicate the disease. There were, however, differences between the operation of the diphtheria campaign and the programme for typhoid even though both were in operation for many years. For typhoid, there was no attempt to inform or persuade Maori; they were told the scheme was 'compulsory'. Individual consents were not used, even though these had to be gained for diphtheria from all parents, both Maori and Pakeha. The Health Department was prepared to and did act illegally, with the full knowledge of two Cabinets and several government

⁴² B. W. Christmas to H. B. Turbott, 17 October 1957, *ibid.*

⁴³ AJHR, 1963, H-31, p.23.

⁴⁴ *New Zealand Yearbook (NZYB)*, 1956, 61, p.108,113.

⁴⁵ NZYB, 1960, 65, p.125. NZYB, 1963, 68, p.164.

⁴⁶ NZYB, 1960, 65, p.120,125.

departments, including the Ministry of Maori Affairs, who all still obviously felt that the benefits for the community outweighed an individual's rights. The Health Department did not respect the personal right of Maori to choose whether or not to immunise their children; it viewed them as a group as it was seen to be much easier to gain consent from community leaders than from many individuals.

Health Department promotion of immunisation

The way in which the typhoid vaccine was promoted to Maori as a 'mandatory' immunisation was in complete contrast to the methods used for other vaccines. The promotion of immunisation, as well as health matters in general, began to be more widely adopted by the Health Department after World War Two. The World Health Organization (WHO) placed emphasis on health education and to facilitate this in New Zealand, Harold Turbott established the new role of Health Education Officer in 1946 with the mandate of promoting health information.⁴⁷ Other initiatives in a similar vein included the launching of the departmental magazine *Health* in November 1948, aimed at an 'intelligent lay readership' and subsequently published four times a year.⁴⁸ This was available free to all who wrote in and asked to be placed on the mailing list, including parents, organisations and doctors' surgeries. The first issue included an article on diphtheria immunisation, which advised parents to have their children immunised and how this could be achieved.⁴⁹ Starting with a circulation of 8,000 in 1948, this rose to over 62,000 by 1962.⁵⁰ Over the years articles on immunisation appeared fairly frequently either to complement immunisation campaigns that were taking place or just to reinforce to parents the importance of having their children receive the designated vaccines.⁵¹

In addition to the more traditional printed media the Department made use of both radio and cinema. In 1943, Harold Turbott started his health talks on air. Known as

⁴⁷ D. Dow, *Safeguarding the Public Health. A history of the New Zealand Department of Health*, Wellington, 1995, p.238.

⁴⁸ *ibid.*, p.167.

⁴⁹ W. A. Gamble, 'Diphtheria. Immunisation is a proved safeguard' *Health*, November 1948, p.7.

⁵⁰ D. Dow, *Safeguarding the Public Health*, p.190. NZYB, 1963, 68, p.146. The magazine *Health* was issued free.

⁵¹ For example see *Health*, March 1954, p.3, December 1955, pp.4-5, March 1956, pp.4-5, December 1960, p.12.

the 'Radio Doctor', he gave advice on all manner of health subjects, including childhood diseases and diphtheria immunisation. These talks were later reprinted in *Health*. The Health Department found that Turbott's talks proved very popular and were an excellent way of communicating with a large number of people. Use of the radio in this way followed the lead of Britain where such tactics had increased the demand for diphtheria immunisation. Turbott gave three talks on this topic between 1943 and 1945 as part of the Department's policy of promoting the vaccine.⁵² He also had a regular column in the *New Zealand Listener* which published articles on diphtheria immunisation in 1944 and 1954.⁵³ The *New Zealand Listener* was, and still is, a weekly current affairs magazine which would occasionally feature articles on immunisation. With the commencement of the BCG campaign in schools in the mid-1950s the *New Zealand Listener* carried an article on tuberculosis which discussed BCG as part of the Health Department prevention programme.⁵⁴ From the late 1940s cinemas were utilised to promote diphtheria immunisation, including the times of local clinics, as going to the movies became an increasingly popular pastime. In 1949 the Medical Officer of Health for Hamilton, J. F. Dawson, reported cinema advertising for diphtheria immunisation was about to be introduced in Hamilton.⁵⁵ Medical Officers of Health also made use of the media to impress upon parents the necessity of immunisation; in 1953 the Medical Officer of Health for Auckland, A. W. S. Thompson, asked the *New Zealand Herald* if they could give diphtheria immunisation 'a little bit of publicity in your columns' as not enough children were receiving the injections.⁵⁶

During the 1940s and 1950s only certain vaccines issued by the Department were the subjects of promotional campaigns. Because of the uncertainty surrounding the pertussis vaccine in the 1940s the Department did not publicise it to parents; it was an 'on request' vaccine only. Tetanus was promoted from 1960 when the triple vaccine became available on the free list. Diphtheria immunisation was heavily promoted from 1940 onwards. Posters were published in magazines such as the *New Zealand Listener*. Display notices were placed in buses and trams and newspaper

⁵² H1 15421 34/2/2 Publicity, ANZ, Wellington.

⁵³ *New Zealand Listener (NZ Listener)*, 1944, 10, 249, p.18, 1954, 31, 782, p.20.

⁵⁴ *NZ Listener*, 1955, 32, 822, p.22.

⁵⁵ MOH Hamilton to DGH, 2 August 1949, H1 131/11/6 24116, ANZ, Wellington.

⁵⁶ A. W. S. Thompson to Chief reporter, *New Zealand Herald (NZH)*, 18 August 1953, BAAK A358 125a Diphtheria, ANZ, Auckland.

advertisements were taken out.⁵⁷ Times, dates and places of clinics were also advertised in the local papers and in Plunket Rooms. Clinic information was also included in the new baby pack sent to new parents advising them about immunisation, as well as in the departmental pamphlet, *No More Diphtheria*.

The main problem for the Health Department with its immunisation campaign was that not all children finished the course of injections and hence may not have achieved the required level of immunity. In Auckland in 1946, even during an epidemic, of 3019 children who had their first injection on 15 June, only 2674 returned for the second one. ‘Unless both injections are received and unless there is a set time interval between them the treatment is not effective’ was the message publicised by the Health Department through the press to try and persuade parents to return with their children to complete the course.⁵⁸ Some Medical Officers of Health tried different methods to emphasise the value of diphtheria immunisation. In the Hamilton Health District, a ‘birthday celebrations folder’ was sent to parents on the first birthday of their child, including a card and immunisation reminders, similar to those in use in Scotland.⁵⁹ In Auckland, Public Health nurses were asked to promote immunisation to parents by the Medical Officer of Health, A. W. S Thompson. They were asked to ‘Talk immunisation. Preach it. Push it. And do as much as you can yourself. It may be later than you think’.⁶⁰ Similarly, Medical Officers and Health Inspectors were asked when they visited or saw patients with young children to ‘please make a point of saying something about diphtheria. A word from you may save a child’s life.’⁶¹ By the 1960s parental apathy, it was believed, stemmed from diphtheria becoming less common and so ‘people have lost their fear of it. Many young parents today have never spoken to anybody whose child has had diphtheria. They don’t know what the disease is like’.⁶² Earlier, the Minister of Health, Mabel Howard, had been enlisted to help promote immunisation. She commented that it ‘is a question of weighing the safety and simplicity of immunisation against the possibility of dangerous illness’.⁶³ Nevertheless, a Schick survey taken in Hamilton in 1956 of 1917 children aged five to

⁵⁷ Posters appeared in the *NZ Listener* in 1944, 1946, 1947, 1950, 1953 and 1954.

⁵⁸ *New Zealand Herald* (NZH), 3 August 1946.

⁵⁹ MOH Hamilton to DGH, 28 October 1949, H1 131/11/6 24116, ANZ, Wellington.

⁶⁰ A. W. S. Thompson to Public Health nurses (PHN’s), 9 April 1953, *ibid*.

⁶¹ A.W. S. Thompson to PHN’s, Medical Officers and Health Inspectors, 13 August 1953, *ibid*.

⁶² *ibid*.

⁶³ NZH, 10 September 1949.

16, found that 88 per cent were Schick negative (immune to diphtheria). As the Department was hoping to achieve 70 per cent coverage this was a pleasing figure.⁶⁴ It also demonstrated that most parents were receptive to immunisation and did take their children to complete the required number of injections despite Health Department fears.

The BCG campaign was low-key in comparison to diphtheria; departmental instructions for publicity stated that ‘its initial stages, other than the customary press statement in local newspapers of the commencement of work in the area, consist of little more than the individual distribution of a pamphlet entitled, *Tuberculosis Series - Vaccination against Tuberculosis*.⁶⁵ *Health* magazine also published two articles on BCG in the mid-1950s intended to inform readers of the reasons for administering both the vaccine and the preliminary Mantoux skin test.⁶⁶ The differences in the types of campaigns adopted by the Department at this point can be accounted for by considering the intended recipients. BCG was aimed purely at schoolchildren and therefore only required parents to sign a consent form. Diphtheria, however, required parents to bring a small child to a clinic for immunisations, hence, much more parental effort was required to achieve the desired end. Consequently, diphtheria immunisation needed to be more heavily promoted to reach the intended recipients and persuade them it was worth the effort involved.

Information to, and education of, parents assumed increasing importance in the immunisation campaigns of the 1940s and 1950s. Very little information was provided earlier in the century to parents as the Department did not perceive it was necessary. Additionally, the Department assumed, rightly in most cases, that it would be dealing with the mother who would be responsible for signing forms and bringing children in for immunisations. This certainly coloured the Department’s perception of how promotional material, such as posters and pamphlets, should look and influenced what they contained. The initial letter regarding diphtheria immunisation was sent out when the child was either six months or one year old and was always addressed to the mother. The Medical Officer of Health for Timaru, G. L. McLeod, commented

⁶⁴ AJHR, 1957, H-31, p.16.

⁶⁵ ‘Immunization against Tuberculosis’, undated, H-NA 478 BCG General Policy - Napier, ANZ, Wellington.

⁶⁶ *Health*, June 1954, p.7, March 1956, pp.4-5.

patronisingly, that he kept the letter very simple, giving only the barest details he thought necessary, 'when writing to a young mother'.⁶⁷

Departmental immunisation posters were also directed towards women. One poster issued in 1944 contained the phrase 'Mothers should ask the District Health Officer for Full Information'; another issued in 1947 depicted an illustration of a mother and child with the word 'immunisation' written on the child's blanket. In an article on diphtheria immunisation in *Health*, the word 'parent' was used initially but qualified by using the female form and the term 'mother' in the conclusion.⁶⁸ The Health Department therefore assumed that women would take responsibility for the immunisation or otherwise of their children and directed their propaganda accordingly. Evelyn Hammonds, in her study of the New York diphtheria immunisation campaign in the late 1920s, pointed out that in New York City 'protecting children from diphtheria was an integral part of the duties of mothers' and hence 'the responsibility for the failure to have children immunized was placed directly on the mother'.⁶⁹

Parents or, more particularly mothers in New Zealand, were similarly held to be accountable if their children were not immunised. The Department tended to perceive 'parents' as neglectful, not having made the decision to immunise and letting the opportunity slip by, as opposed to deliberately failing to protect their children. A study undertaken in Dunedin characterised those who had not been immunised as belonging to 'families in which careless parents had failed to bring their children on the day appointed. An apathetic, indifferent, uninformed attitude was shown by many of the poorer families who were just too careless to bother about it'.⁷⁰ In the 1940s there was little interest or concern regarding the reasons why children missed appointments; poverty and lack of transport especially with small children, were not regarded as valid reasons by the medical profession. By the 1950s the Department began to use the term 'parents' rather than 'mother', although it was generally

⁶⁷ H1 131/11/6 24116, ANZ, Wellington.

⁶⁸ W. A. Gamble, 'Immunisation is a proved safeguard', p.7.

⁶⁹ E. M. Hammonds, *Childhood's Deadly Scourge. The campaign to control diphtheria in New York City 1880-1930*, Baltimore, 1999, p.200.

⁷⁰ D. H. H. Pullon, N. D. Walker, D. I. Patterson, 'Report on Diphtheria Immunisation in Normal School, Dunedin North Sept-Oct 1945', PMD, University of Otago, 1945, p.5 (section by D. H. H. Pullon).

accepted that mothers were still responsible for the immunisation of their children.⁷¹ Nevertheless the departmental view of parents as neglectful persisted, as demonstrated by this 1954 comment in the *New Zealand Herald*, 'Parents had been warned often enough...and the duty of getting their own children protected lay on their shoulders'.⁷² As will be subsequently shown, this attitude persisted well into the 1970s and beyond.

Immunisation Information

In the 1940s the information provided by the Health Department to parents usually consisted of a letter containing clinic times and perhaps the pamphlet *No more Diphtheria*, although this was up to the individual Health District. Occasionally, in an effort to further persuade parents, slogans were included which emphasised the ease of immunisation,

This protection is afforded by two tiny injections which are harmless.
Don't wait until it is too late,
Prevention is better than cure.⁷³

There was no other important information provided to parents at this time. Side-effects, even minor ones which often accompany immunisations, such as a temperature and general malaise, were not mentioned. Contraindications, which became much more significant once the pertussis vaccine was put on the free list, even how vaccines worked, were not included in any information from the Health Department during this period, keeping parents in ignorance as to what they were allowing to be injected into their children. There are probably several reasons for this. The medical profession at this point was still regarded with awe by the majority of the population and in such a patriarchal relationship the Health Department probably assumed it was not necessary to provide any other information as the majority of parents would just accept the advice of the Department. No information of a negative or complicated nature was included in literature sent to parents, as it was felt that a description of side-effects could have had a deterrent effect at a time when the Department was trying to promote immunisation. As a result, the gulf in terms of knowledge between the state and the individual was very wide.

⁷¹ See for example, NZH, 12 January 1954.

⁷² *ibid.*

⁷³ H1 131/11/6 24116, ANZ, Wellington.

Information that was given to parents was very pro-immunisation. Articles in *Health* magazine emphasised the safety aspect of immunisation and the protection it could give against diphtheria, the potency of which was emphasised. Figures from Britain and Europe were often quoted, showing the number of cases after the war and the decrease, as a result of immunisation, by the 1950s.⁷⁴ Likewise, Turbott's talks concentrated on the importance of immunisation, usually aimed at the mother, and the experiences of Britain were referred to as an incentive for immunisation. (Although in reality, Britain's post-war immunisation experiences were not much different from New Zealand). All referred to its simplicity and ease. The media could not be relied on at this time for alternative information as the press would cooperate with the Department and publish departmental immunisation propaganda as part of advertisements or articles as seen in the *New Zealand Listener*, which also had links to the New Zealand Broadcasting Company. Indeed, even the *New Zealand Truth*, a controversial newspaper and one that, in the future, would be highly critical of the Department's polio vaccine, published an article in 1946 entitled 'Magical Formula saved thousands of babies' describing the 'heart-moving story' of diphtheria immunisation.⁷⁵ Certainly, the New Zealand press did not have the knowledge base to criticise vaccines and therefore would passively support Health Department policy, questioning only occasionally when a problem occurred.⁷⁶ Nevertheless, it certainly seemed as though some parents were keen for information as the most frequent reason given for refusing consent in a survey carried out in a local area of Christchurch was 'lack of knowledge'.⁷⁷ The Medical Officer of Health for Christchurch, D. P. Kennedy, admitted that this was 'surprising news' to him, emphasising the gulf between the wishes of parents and the perceptions of the Health Department.⁷⁸

By the 1950s with the BCG school campaign, the Department had begun to improve the quality and quantity of information distributed to parents. A booklet entitled *Vaccination against Tuberculosis* was sent. Set out partly in a question and answer form, questions were posed regarding the BCG and Mantoux test which were then

⁷⁴ *Health*, 1948, 1,1, p.7, *Health*, 1953, 5, 2, p.12.

⁷⁵ *New Zealand Truth* (NZT), 20 November 1946, p.28.

⁷⁶ See case of Bruce Ian Peak, p.119.

⁷⁷ D. P. Kennedy to DGH, 5 September 1952, H1 131/11/6 24116, ANZ, Wellington.

⁷⁸ *ibid.*

answered in a reassuring manner.⁷⁹ Parents were told that the vaccine was safe, as it had ‘been given to millions of people in most countries of the world without ill effects’ and that it ‘gives considerable but not absolute protection’.⁸⁰ The booklet also informed parents how the vaccination should look and what to do if there was a problem. This was the first time in Health Department literature given to the public that the Department acknowledged there could be ‘upset[s]’ from vaccines. This open admission that BCG was not fully effective and might induce immunity for only three to seven years reflected how it was marketed to the New Zealand public by the Health Department who emphasised it was just one of a number of methods employed to combat tuberculosis.⁸¹

Nevertheless, the information presented on BCG was more detailed and informative than that provided for diphtheria immunisation in the 1940s and demonstrated that the Department was slowly becoming more attuned to some parents’ desire for further information. The Department also had to take account of the social and educational changes taking place within society as most parents had now completed high school rather than just primary education as would have been the case in the 1940s. However, some parents still wanted ‘a more full explanation of the various immunization procedures, not just a leaflet via the mail and a second-hand explanation from their child’.⁸² Even the BCG leaflet was not satisfactory for some parents. M. Young of Taupiri wrote in 1955 that ‘With only the limited information contained in the circular upon which to base an opinion we regret we cannot give our consent’⁸³. The Department was also criticised for ‘its lofty objective position’ from which it ‘advocates a course we should blindly follow’.⁸⁴ Although these views were only limited to a few in the 1950s parental concerns would continue to grow in the next few decades.

BCG was promoted to the public in a different way from diphtheria. Whereas

⁷⁹ *Vaccination Against Tuberculosis*, Department of Health, Wellington, ABQU 632 W4450/48 52637 246/64/1 BCG Auckland 1952-78, ANZ, Wellington.

⁸⁰ *ibid.*

⁸¹ *ibid.*

⁸² A. B. Arthur, ‘Immunization in the Modern Community’ PMD, University of Otago, 1957, p.14.

⁸³ M. Young to DGH, 14 March 1955, ABQU 632 W4415/522 246/64/6 52640 BCG Hamilton 1953-79, ANZ, Wellington.

⁸⁴ *ibid.*

diphtheria immunisation was the only method of prevention, BCG was presented as just one of a number of ways of preventing and controlling tuberculosis and as only building on measures already in place. The emphasis in the literature centred on BCG as a 'good idea' but it was not given the same level of urgency as diphtheria immunisation. Nevertheless, to promote BCG, myths needed to be dispelled regarding tuberculosis. The Department had to reiterate that the disease was not hereditary and it could not be contracted through poor sanitary conditions. It hoped that the fear the disease still engendered in society would make BCG seem to parents a sensible option for their children.⁸⁵

Shaping Parental Attitudes to Immunisation

By the 1950s most parents accepted the concept of immunisation. Although Health Department propaganda would certainly have helped, the fear of disease still loomed large in New Zealand society at this time. Although diphtheria was on the decline, this was only a recent phenomenon, with the 1946 epidemic still well remembered. Tuberculosis was ever-present and around 1,700 cases were notified each year between 1950 and 1954.⁸⁶ The presence of these diseases in society was a powerful inducement to have children immunised. In 1960, when the triple vaccine was introduced, 71 percent of children completed all three injections whilst 81 percent had at least one immunisation.⁸⁷ In the same year 35,421 BCG vaccinations were performed.⁸⁸

There were other incentives to immunise children. New Zealand child-rearing manuals were expressly in favour of it. Helen Deem, the Plunket Medical Advisor and Nora Fitzgibbon, Plunket's Nursing Advisor, wrote a new book *Modern Mothercraft* in 1945 to replace Truby King's earlier work.⁸⁹ Deem advised that it was 'the duty of all parents to protect their young families against diphtheria'.⁹⁰ In 1953 Deem again emphasised the importance of diphtheria immunisation but advocated

⁸⁵ NZYB, 1956, 61, p.113. The figures for tuberculosis notifications are 1950 - 1769, 1951 - 1557, 1952 - 1705, 1953 - 1710, 1954 - 1651.

⁸⁶ *ibid.*

⁸⁷ AJHR, 1961, H-31, p.9.

⁸⁸ *ibid.*, p.20.

⁸⁹ H. Deem, N. P. Fitzgibbon, *Modern Mothercraft: A Guide to Parents. Official Handbook of the Royal New Zealand Plunket Society for the Health of Women and Children*, Dunedin, 1945.

⁹⁰ *ibid.*, p.108.

having the combined vaccine which contained pertussis vaccine as well.⁹¹ She did however, counsel parents that pertussis did not have a vaccine as effective as the one for diphtheria.⁹²

Immunisation studies undertaken during the 1940s and 1950s indicated that on the whole, New Zealand parents were favourable to the idea of immunisation. One such study in Dunedin in 1957 which employed questionnaires found that the majority of those parents who returned the forms were in favour of pertussis immunisation.⁹³ Another report on 40 mothers of children in Standard 3 at Mornington Primary School revealed that 85 percent of them agreed with the use of vaccines.⁹⁴

Mothers interviewed who had children in the 1940s all said they were in favour of immunisation. Nevertheless this did not always translate into their children receiving it. One mother lived in the country and underwent several house moves when her children were little. She commented that ‘no-one suggested that I should get them immunised otherwise I’d have had them done because I agreed with immunisation’.⁹⁵ Another mother commented that her then two year old daughter received an immunisation for diphtheria at the doctor’s when she went there for another health matter.⁹⁶ Even though diphtheria immunisation was recommended at or before age one, it appeared that this was not always adhered to by doctors, nor did some of them suggest immunisation to eligible families.

By the 1950s it was perceived that immunisation had become ‘something everybody did’, especially ‘if your doctor said it was the right thing to do’.⁹⁷ The views of doctors and Plunket nurses with regard to vaccines were accepted without question at this point by most of the mothers who went to visit them. Nevertheless, even for parents in favour of immunisation there were still barriers. By this decade the

⁹¹ H. Deem, N. P. Fitzgibbon, *Modern Mothercraft: A Guide to Parents. Official Handbook of the Royal New Zealand Plunket Society for the Health of Women and Children*, Dunedin, 2nd revised edn, 1953, pp. 106-07.

⁹² *ibid.*

⁹³ D. R. Aicken, ‘A Study of Immunization and Incidence in New Zealand’ PMD, University of Otago, 1957, p.11.

⁹⁴ A. B. Arthur, ‘Immunization in the Modern Community’, p.13.

⁹⁵ Interview with Irene Kindleysides, 10 March 2002. Mother in 1940s.

⁹⁶ Interview with Maud Beaven, 7 December 2001. Mother in 1940s.

⁹⁷ Interview with Alison Taylor, 18 December 2001. Mother in 1950s.

Department was beginning to recognise that other obstacles to immunisation existed apart from 'neglect'. After undertaking some research, the Auckland Health District found that parents did not use the general practitioner (GP) for immunisation for two main reasons, the cost of a visit and the extended waiting time, although they were unable to establish the percentage of GPs making a charge.⁹⁸ Having to wait in a surgery for an extended period of time would certainly have been a deterrent to some mothers, particularly if they had more than one small child. 'This problem is quite a real one, as it is a difficult job for a mother to control a number of children in a Doctor's surgery, or a clinic, where there is such a strange atmosphere and probably other children crying'.⁹⁹ In addition the journey to the surgery was usually made on foot, and poor weather or a sick child meant an immunisation date would probably be cancelled. Parents whose child was sick were usually advised by the doctor to wait until the child was well before proceeding with immunisations.¹⁰⁰

Nevertheless, the doctor was still the most popular option for immunisation in the 1950s. In a study undertaken in 1950 it was found that of 302 families who were investigated in the Auckland area, 130 completed their children's immunisations at the doctor's whilst 57 used the departmental clinics.¹⁰¹ Notwithstanding this, by 1961 with rising doctors' fees not being matched by a rise in the general medical benefit, G. A. Q. Lennane, the Director of the Division of Child Health, pointed out that 'in some areas parents are unwilling...to take their children to private practitioners for immunisation'.¹⁰² Lennane's concern was that the 'rigid application of the policy of the Department that immunisation be carried out by private practitioners might therefore cause hardship to some children'.¹⁰³ Departmental clinics had been established in many districts to offer parents an alternative to utilising the doctors, especially as immunisations administered at clinics were free. The Auckland Health

⁹⁸ Circ Memo, 1963/124, 25 May 1963, BAAK A358 122c General Vaccines, ANZ, Auckland.

⁹⁹ C. Levene, 'An Inquiry into Diphtheria Immunisation in Auckland, with special reference to the attitude of parents to this subject', PMD, University of Otago, 1951, p.29.

¹⁰⁰ *ibid.*, p.25.

¹⁰¹ *ibid.*, pp.15-19. Letters were sent to 367 families to determine the immunisation status of the children. 215 did not answer, 87 used the doctors for immunisation, whilst 47 attended a clinic. Of the 215, 150 were visited, 43 of these had been immunised at the doctors whilst ten attended a clinic. Of the remainder, 34 had moved, 43 were favourable to immunisation but had not had it done, whilst 19 opposed it.

¹⁰² G. A. Q. Lennane to MOH Invercargill, 28 February 1961, H1 144/27/3 29319 Sera and Vaccines: Triple Vaccines 1953-63, ANZ, Wellington.

¹⁰³ *ibid.*

District had two clinics in its central domain and one clinic in most other areas under its jurisdiction by 1950.¹⁰⁴ In 1962 Auckland Departmental Officers immunised 493 infants with the triple vaccine, whilst Public Health nurses accounted for 545.¹⁰⁵ In addition, 1162 diphtheria/tetanus boosters were administered to those over five and under seven.¹⁰⁶ Despite efforts to encourage parents to visit the GP, some still wished to take advantage of a visit by a Public Health nurse or to utilise the Department's clinics to immunise their children. It also demonstrated that the Department needed to continue with its clinics if it wished to maintain a satisfactory level of herd immunity.

Opposition to Immunisation

Some parents did not have their children immunised because they did not agree with it. One set of parents who had two children in the early 1940s believed a healthy lifestyle would keep them free of serious illness and that the 'concept of introducing an element of disease to promote immunity was fundamentally risky and unnecessary'.¹⁰⁷ Another mother read books by Dr Ulric Williams who was a vehement anti-immuniser and Dr Eva Hill who also promoted a healthy lifestyle.¹⁰⁸ This mother was also heavily influenced by her husband's cousin who was enthusiastic supporter of alternative medicine.¹⁰⁹ Although her first two children were immunised against diphtheria her third and fourth children received no vaccines at all.¹¹⁰ Nevertheless, this mother's beliefs were private and she commented that she 'wouldn't even try and convince her own children'.¹¹¹ Nor did she belong to an anti-immunisation group such as the British Union for the Abolition of Vivisection

¹⁰⁴ C. Levene, 'An Inquiry into Diphtheria Immunisation in Auckland', p.45.

¹⁰⁵ Circular Memo, 1963/124, 25 May 1963, H1 144/27/3 29319, ANZ, Wellington.

¹⁰⁶ *ibid.*

¹⁰⁷ Email correspondence with Sandra Coney, 17 February 2002.

¹⁰⁸ See Chapter 2, pp.48-49 for a discussion on Ulric Williams. Dr Eva Hill was an anti-fluoridation campaigner in the 1950s and went on to advocate alternative methods of cancer treatment after being treated in America for a cancerous lesion. It is certainly probable that she might have opposed immunisation although there are no official records of publications (as mentioned by Margaret Pye) on this topic. However they could still be in private hands.

See, C. J. Piper 'Hill, Eva Esther 1898-1981' *Dictionary of New Zealand Biography*, updated 19 July 2002

URL:<http://www.dnzb.govt.nz/>

D. Cole, 'Doctrinal deviance in New Zealand medical practice: some historical comments', *New Zealand Medical Journal* (NZMJ), 10 July 1982, pp.543-44.

¹⁰⁹ Interview with Margaret Pye, 4 April 2002. Mother in 1950s.

¹¹⁰ *ibid.*

¹¹¹ *ibid.*

(BUAV) which was very much against the use of vaccines. Most objectors to immunisation were often much more visible to the public.

The most prominent opposition group to immunisation until the mid-1950s was the BUAV who by now had two main branches in Wellington and Auckland. A concerted campaign was launched to alert parents to the evils of immunisations from the 1940s onwards to coincide with the Department's diphtheria immunisation drive. In March 1944 anti-immunisation propaganda appeared on the same pages of all the newspapers where Health Department notices were usually published.¹¹² After Turbott's column on diphtheria immunisation appeared in the *New Zealand Listener* in response to an advertisement placed by the BUAV, the local Auckland secretary L. I. Oldfield, wrote a lengthy reply disputing Turbott's claims for diphtheria immunisation.¹¹³ Another letter appeared in the *New Zealand Listener* in 1946, when 34 signatories protested at the Health Department's advocacy of diphtheria immunisation as a means of protecting children.¹¹⁴

Letters and articles now began to focus more on informing parents of the 'truth' of immunisation. In 1950, after the recent disclosure that immunisation could localise paralytic polio, the *New Zealand Truth* published an article in which the Wellington branch of the BUAV stated 'New Zealand children...have been poisoned on a grand scale to keep up the superstition that inoculation forms protection against disease'.¹¹⁵ This position was supported by a series of letters to the *New Zealand Truth*, one of which commented, 'The Anti-Vivisection Society is to be congratulated on airing a few facts about inoculation. The authorities, though realising the danger of diphtheria and whooping cough injections, withheld their findings from the public'.¹¹⁶ Another argued that 'Parents should be grateful to 'Truth' for granting space to the Anti-Vivisection Society to publish figures which clearly show that inoculation is a danger, not a protection against disease'.¹¹⁷ Anti-immunisers tended now to pursue two inter-related themes, the danger and futility of immunisation and the refusal of the authorities to admit this danger. The Health Department even received letters on the

¹¹² C. Levene, 'An Inquiry into Diphtheria Immunisation in Auckland', p.8.

¹¹³ *NZ Listener*, 1944, 10, 257, pp. 22-23.

¹¹⁴ *NZ Listener*, 1946, 15, 372, p.5.

¹¹⁵ NZT, 19 April 1950.

¹¹⁶ NZT, 10 May 1950.

¹¹⁷ *ibid.*

subject from the National Anti-Vaccination League in Britain advocating that New Zealand should stop immunisation.¹¹⁸

The BUAV made special efforts to target new parents with anti-immunisation literature sent through the post. In 1947, the towns of Raglan, Hamilton, Wellington and Feilding were the focus of BUAV attention. Leaflets were also distributed in Katikati and were brought to the Department's notice by the Plunket and District nurses who had been given them by concerned mothers. The leaflet was sent from the Auckland office and signed by the secretary A. Grove to advise parents against a 'well-meaning but ill-advised Health Department'.¹¹⁹ Grove argued that immunisation did not 'carry any guarantee that it will develop the desired immunity; but which in itself is actually a potential danger' as toxin-antitoxin could cause all sorts of side-effects, even death.¹²⁰ 'Medical men of the highest integrity' were quoted to support the BUAV's point of view, including a previous Minister of Health for Victoria, Dr Harris, who commented that, 'You can state that anywhere, at any time that I did say publicly that on no account whatever would I risk my own children's lives by having them immunised'.¹²¹

Statements from allegedly well-known medical journals were also quoted.

PARENTS BEWARE DO NOT BE MISLED BY SUCH STATEMENTS AS "IMMUNISATION DOES PROTECT," "IS HARMLESS," "ITS REACTION IS NEGLIGIBLE." THERE IS DANGER IN VACCINES AND SERUMS.¹²²

Grove even concluded by appropriating the Department's motto 'For a Healthier Nation' to support his advice to parents not to immunise their children, in complete opposition to the Health Department.

¹¹⁸ Secretary, National Anti-Vaccination League to Editor of *Health*, 9 January 1951, H1 24116 131/11/6, ANZ, Wellington.

¹¹⁹ British Union for the Abolition of Vivisection (BUAV), *Re Diphtheria Immunisation*, Auckland, BAAK A358 125a, ANZ, Auckland.

¹²⁰ The Health Department by this time were using alum precipitated toxoid and formal toxoid which were much more stable vaccines and carried less risk than the older vaccine toxin-antitoxin.

¹²¹ BUAV, *Re Diphtheria Immunisation*, Auckland, BAAK A358 125a, ANZ, Auckland.

¹²² This quote reportedly came from *Medical World*, 9 September 1938, BAAK A358 125a, ANZ, Auckland.

Departmental practice at this time was to send a notice to parents once their child was six months old advising them about diphtheria immunisation. The earlier intervention of the BUAV was believed to result in, at the least, parental disquiet. 'It must cause doubts to arise in the parent's mind when they first receive such a pamphlet, and later when the child is six months old they receive a notice from the Health Department inviting them to have the child immunised'.¹²³ Mrs G. B. Ayers, who had three children aged three, two, and six months, wrote to the Health Department that 'naturally, we, as parents with the health of our children at heart, would appreciate an explanation of this circular...as your Health Department advises immunisation'.¹²⁴

The local district office in Auckland received a similar letter from R. A. Linton of HMNZS *Tamaki*, the father of a four month old boy, who was worried about 'what is right'.¹²⁵ HMNZS *Tamaki*, the training base on Motuihi Island, had been closed for a time two months previously due to a diphtheria outbreak. Linton wrote 'We want to protect our son from Diphtheria if possible but judging by what this Mr A. Grove has to say Immunisation is useless, yet the Health Department advises it'.¹²⁶ He believed, however, that 'the Government would not do anything which would bring the results Mr Grove has tried to convince me of in his paper'.¹²⁷ Both G. B. Ayers and R. A. Linton were seeking reassurance from the Health Department with regard to the safety of diphtheria immunisation as they did not have access to other sources. The information put forward by the BUAV completely contradicted the case for diphtheria immunisation and quoted both figures and persons out of context to support their view.

Indeed, the leaflet so incensed A.W.S. Thompson, Medical Officer of Health for Auckland, that he wrote to the Librarian at the Department of Health in Wellington and was sent some books and articles 'in response to your call for ammunition to deal with the Anti-vaccinationists invasion'.¹²⁸ Thompson called the leaflet 'worthless and

¹²³ C. Levene, 'An Inquiry into Diphtheria Immunisation in Auckland', p.11.

¹²⁴ G. B. Ayers to Minister of Health, 25 May 1948, H1, 131/11/6 24116, ANZ, Auckland.

¹²⁵ R. A. Linton to MOH Auckland, 20 July 1947, BAAK A358 125a, ANZ, Wellington.

¹²⁶ *ibid.*

¹²⁷ *ibid.*

¹²⁸ Librarian, Department of Health to A. W. S. Thompson, 9 July 1947, BAAK A358 125a, ANZ, Auckland.

misleading’ and found it was typical of the ‘hysterical nonsense of the Anti-vivisectionists’.¹²⁹

As for the question of safety: does anybody really think that we could have carried out so many thousands of immunisations in this country without accident if it were really of doubtful safety? Diphtheria is a KILLER, and young unimmunised children are nearly all susceptible if attacked. The statement in the leaflet that “in all epidemics nine tenths of all children are naturally immune” just isn’t true. The leaflet is full of misrepresentation; but that statement is a lie.¹³⁰

Thompson was very pro-immunisation and sent copies of this letter to the District and Plunket nurses in Katikati to help counteract the BUAV’s leaflet and improve immunisation figures. This, however, was just the start of protracted and at times vicious correspondence between Grove and Thompson which culminated in a series of letters being exchanged in the first half of 1950. A newspaper article in the *Auckland Star* in January 1950 focused on the need to improve diphtheria figures and featured the Medical Officer for Health for Auckland, Thompson. This provoked Grove into denying Thompson’s claims regarding diphtheria immunisation and several letters were exchanged on the subject, some published in the *Auckland Star* or featured in the *New Zealand Truth*.¹³¹ In an endeavour to demonstrate to the public the inaccuracies and implausibility of the arguments of the BUAV, Thompson collated all the correspondence and had them cyclostyled. Entitled, *Diphtheria Immunisation : For and Against*, a copy was available to any member of the public on application to the Department.¹³²

It is very difficult to determine whether this quite public spat made any impression on parental attitudes to immunisation and whether they were aware of the correspondence in the newspapers or the availability of the booklet from the Department in Auckland. It is probable that some parents were dissuaded from immunising their children because of the arguments of the BUAV although the arguments of the Department might have persuaded some of those who were unsure. Certainly it had an impact on the Auckland Health District office over several years, particularly Thompson. He went to considerable trouble to rebut the BUAV’s

¹²⁹ A. W. S. Thompson to Nurse, 23 July 1947, *ibid*.

¹³⁰ *ibid*.

¹³¹ See *Auckland Star* (AS), 8 July 1950 and NZT, 19 April 1950.

¹³² A copy of this publication forms Appendix II in C. Levene, ‘An Inquiry into Diphtheria Immunisation in Auckland’.

arguments as he believed they were a major threat to the uptake of immunisation and expostulated that ‘I shall continue to attack the pernicious propaganda issued by your society at every opportunity because there may still be a few people foolish enough, or ignorant enough, to be misled by it’.¹³³

This type of response from the Department was unusual as it was general policy to overlook such leaflets and correspondence. ‘It is felt less harm will be done by ignoring it than by endeavouring to secure its withdrawal’.¹³⁴ Nevertheless, nearly all parents were anxious to some degree about vaccine side-effects, as shown by the rapid fall-off in attendance at diphtheria immunisation clinics after the death of Bruce Ian Peak, aged 18 months, in November 1948. This little boy had contracted diphtheria and was injected with anti-diphtheria serum at Masterton hospital; he died of allergic shock to the serum.¹³⁵ This attracted the attention of the BUAV, although in its letter to the Minister of Health, Mabel Howard, it confused serum with vaccine when it accused the Health Department of misleading parents by proclaiming in their propaganda that serums were safe.¹³⁶ The Minister of Health pointed out that serums were used only in the treatment of diphtheria, not in vaccines, and diphtheria prophylactic was ‘unattended by danger’.¹³⁷ However, many parents did not believe this and the Wellington Medical Officer of Health communicated the anxiety of one District Health nurse to Head Office:

Doubts have arisen regarding the safety of individual children having injections since a child died in hospital as the result of a dose of anti-diphtheria serum. Apart from reassuring individual mothers, is there anything you can suggest, to remove this feeling of “is it safe”?

The Wellington Medical Officer wished to enlist the assistance of the Publicity Committee to help ‘counteract the adverse effect of the Coroner’s publicised comments’ who had recommended that sensitivity tests should be used in the future as they had not been in this case.¹³⁸ It was rare for the Health Department to acknowledge that parents might be concerned about the safety of vaccines and not

¹³³ A. W. S. Thompson to A. Grove, 19 June 1950. In C. Levene, ‘An Inquiry into Diphtheria Immunisation in Auckland’, Appendix II.

¹³⁴ M. B. Howard to G. B. Ayers, 10 June 1948, H1 131/11/6 24116, ANZ, Wellington.

¹³⁵ *Evening Post* 13 December 1948.

¹³⁶ A. Grove to Minister of Health, 12 January 1949, H1 131/11/6 24116, ANZ, Wellington.

¹³⁷ Minister of Health to A. Grove, 28 January 1949, *ibid.*

¹³⁸ *ibid.*

wish to immunise on these grounds. Nevertheless, the Department needed to maintain public confidence in immunisation in order to keep up immunity levels within the community. The Health Department consistently responded to attempts by the BUAV to undermine its position, by demonstrating to parents the inaccuracies in the organisation's statements, and by reassuring them constantly in various ways that immunisation was safe.

Future events at the BUAV favoured the Health Department however. The head office of the organisation was in London, and it was likely that its policy directives were sent from there to all branches, including those overseas, such as Auckland and Wellington. The BUAV had had a strong anti-immunisation focus when Dr Walter Hadwen was President until his death in 1932. Successive presidents, although concerned about immunisation, shifted the focus of the organisation more towards anti-vivisection. In 1946 the National Health Service Act was passed in Britain which amongst other things repealed the practice of compulsory vaccination in Britain which the BUAV had long campaigned for. In addition, in 1947, the BUAV and other anti-vivisection groups in Britain lost their charitable status, which meant they were now subject to tax and had much less revenue with which to promote their cause.¹³⁹

By the late 1940s anti-vivisection became the main focus of the BUAV rather than anti-immunisation as had been the case in the past. It is likely that the repeal of mandatory immunisation and loss of revenue led head office to the conclusion that anti-immunisation was not the priority it had been and hence other issues took its place. This change in emphasis for the organisation was passed on to the branches, both in Britain and overseas. As a consequence, by 1955, the BUAV had dropped out of the anti-immunisation scene in New Zealand to concentrate on anti-vivisection. The space left by the BUAV in opposing the Health Department on immunisation issues was not filled for another 30 years, until the 1980s with the advent of another opposition group.¹⁴⁰

¹³⁹ E. Hopley, *Campaigning against Cruelty. The hundred year history of the British Union for the Abolition of Vivisection*, London, 1998, p.56.

¹⁴⁰ See Chapter 9 for a full discussion, pp.279-82.

Another prominent anti-immuniser at this time was Dr Ulric Williams who was based in Wanganui. During this period Williams continued to make his views known

through letters to the local press, the national press and the Health Department.¹⁴¹ He was not alone in expressing his sentiments, as other anti-immunisers also wrote to the Department to voice their concerns ‘as it is quite evident that the children are not “protected” by the injecting of disease germs into their blood streams’.¹⁴² Mrs M. Brendan, in her letter to the Department, advocated inexpensive protective foods, improved sanitary systems and less overcrowding in schools and public buildings to protect children from disease.¹⁴³ Some anti-immunisers believed that improvements in the nation’s health were mainly attributable to better sanitation, rather than a systematic programme of immunisation as Edwin Greensmith demonstrated when he wrote ‘What immunity we now enjoy from filth diseases we owe to the sanitary engineer, not to the befouling of the nation’s bloodstream’.¹⁴⁴ Both Ulric Williams, whose views certainly had an impact on immunisation levels in Wanganui, and the influence of the BUAV, were of great concern to the Department which saw them as serious impediments to maintaining and raising levels of immunisation.¹⁴⁵

Conclusion

The cessation of the Maori typhoid immunisation programme in 1962 signalled the end of the use of tribal consents. Now every child, regardless of the type of immunisation, had to have written permission from the parents before an injection could be administered. The increasing number of protests from Maori and concerns raised by schools demonstrated to the Department that practices which had been accepted in the 1920s were not well received in the 1950s. The situation regarding the TAB immunisations demonstrated how the Department's perceptions of Maori were based on old ideas and it took several years before these views were updated and policy changed. The slowness of the Department to assimilate and modernise its

¹⁴¹ *Wanganui Herald*, 24 May 1945.

¹⁴² M. Brendan to L. S. Davis, 11 July 1946, H1 131/11/6 19514, ANZ, Wellington.

¹⁴³ *ibid.*

¹⁴⁴ *Democracy*, 26 June 1946, H1 131/11/6 19514, ANZ, Wellington.

¹⁴⁵ See Chapter 2, pp.47-49 for a full discussion of William's views.

views on society as a whole, not just Maori, was an issue that will be revisited in future chapters.

During this period, immunisation and other health matters began to be promoted by the Department using various forms of media. Nevertheless, parents were 'told' to immunise their children and why they must do this, with little information given about the procedure or the vaccine itself. This was a source of contention with a few parents who wished to receive more information, but nevertheless the majority accepted immunisation for their children based on medical advice. This level of compliance by parents to the dictates of the medical profession remained in place throughout the 1950s and 1960s.

Parents were perceived by the Department as negligent if they did not immunise their children and much of the promotional material was aimed at this group of defectors, estimated at approximately 20 to 25 percent. However, it was only towards the end of the 1950s that the Department and the medical profession began to perceive that parents might have other reasons for not immunising their children rather than being 'neglectful'. Issues such as transport, the number of small children and the economic position of the family all played a part in determining the immunisation status of family members. The cost of immunisation, certainly in the 1960s, began to be a much more prohibitive factor and will be further explored in chapter six.

This period also witnessed the most visible opposition to immunisation until the 1980s with the activities of the BUAV. Nevertheless, many interviewees whose children were born during the 1940s and 1950s had never heard of the Union so its impact on the views of parents as a whole was likely to have been small. Parents who opposed immunisation at this time usually made the decision based on a lifestyle choice rather than from anti-immunisation literature, and often kept their views to themselves. The vocal BUAV disappeared from the anti-immunisation scene in the mid-1950s when the society turned its focus on anti-vivisection and it was certainly not missed by the Health Department. It would be another 30 years before the space was filled again.

The attitudes and responses discussed in this chapter apply to the ordinary, routine childhood immunisations recommended by the Health Department. None of these vaccines was the subject of a mass immunisation scheme such as was seen in New York City for diphtheria in 1929, where as many children as possible were targeted. New Zealand's first mass campaign was for polio, which will be explored in the next chapter.

**CHAPTER 5: From Salk to Sabin: international influences
on polio vaccine policy in New Zealand 1955-1962**

The announcement made on 12 April 1955 from Ann Arbor in the United States that the Salk polio vaccine was ‘safe, effective and potent’ against the disease was greeted with jubilation by many parents, not only in the United States but also in many other countries around the world.¹ In New Zealand a Health Department programme to immunise all children was immediately presented to the government for approval. Nevertheless, these plans were scuppered by events in the United States which led to the temporary suspension of their immunisation programme and a shortage of vaccine worldwide.

This chapter will consider the implications of the Cutter Incident in an international context and examine how these events shaped New Zealand polio vaccine policy. Both the Salk and Sabin polio vaccines, more than any others in New Zealand’s history, were developed and introduced on the international stage, and consequently received more interest and publicity than any previous vaccine. How this impacted on New Zealand parents and health professionals as well as the Health Department will be considered. In addition, the growing use of vaccines in New Zealand and the concern created after the Salk vaccine manufacturing problems in the United States led to the establishment of a Vaccine Advisory Committee to assist the Health Department. Its role and the influence of the World Health Organization (WHO) will be discussed in part one of this chapter. Part two will examine the role of the Sabin vaccine and New Zealand’s enthusiastic response.

Local and International Perspectives of Polio

Polio was a visible disease. Known as the ‘Crippler’, its victims were often children who spent the rest of their lives on crutches or in callipers. Even though by the 1950s many more adults were being affected by polio, the image of the child debilitated by

¹ D. M. Oshinsky, *Polio. An American Story. The crusade that mobilized a nation against the 20th century’s most feared disease*, New York, 2005, p.203.

this disease still persisted.² In consequence, polio was greatly feared, much more so than diphtheria, which had a higher mortality rate but left few visible signs behind in its survivors. To put polio in perspective, in New Zealand in the 1952-53 polio epidemic there were 80 deaths, yet during the same period there had been 772 deaths from tuberculosis and 614 deaths on the roads.³ Knowing these statistics still did not stem New Zealand parents' great anxiety during the polio epidemics that occurred, on average, every four to five years. Around 1700 cases of paralytic polio were notified during the last major epidemic in New Zealand from 1955-56, which was an increase of 400 cases from the previous one of 1952-53.⁴ Even though the public perception of polio was as a disease of childhood, the demography of its victims was changing. In the 1952-53 epidemic 43 percent of cases were over school age and this shift towards adults was repeated for the two subsequent epidemics of 1955-56 and 1961.⁵

Fear of polio was not confined to New Zealand; it was evident in other developed countries. The United States had a 'polio season' every year; in 1948 there were 27,000 cases of polio and in 1952 there were 59,000.⁶ 'A national poll conducted at the time found that polio was second only to the atomic bomb as the thing that Americans feared most'.⁷ In Canada, polio had a 'terrifying public image' although between 1927 to 1962 there were 50,000 cases with 4,240 deaths, which was a 'relatively minor statistical impact compared to other infectious diseases and chronic killers'.⁸ Britain's experience of epidemic polio came much later with the first major outbreak in 1947; other countries had had epidemics since 1916. Fear of the disease was nowhere near as intense as in those countries with a greater experience of it,

² For a further discussion on polio in New Zealand see D. J. Simpson, 'A Persistent Cloud on the Human Horizon. Polio in the Auckland Region 1925-1962', MA thesis, University of Auckland, 1993. J. C. Ross, 'A History of Poliomyelitis in New Zealand', MA thesis, University of Canterbury, 1993. For polio in Canada and a discussion on the visibility of polio see C. J. Ruddy, 'Do Something!...Do Anything! Poliomyelitis in Canada 1927-1962', PhD thesis, University of Toronto, 1995.

³ J. C. Ross, 'A History of Poliomyelitis in New Zealand', p.82.

⁴ R. M. Cullen, W. J. Walker, 'Poliovirus in New Zealand 1915-1997', *New Zealand Family Physician* (NZFP), 26, 3, 1999, p.49.

⁵ See D. J. Simpson, 'A Persistent Cloud on the Human Horizon', pp.100, 115-16. The disease is more serious in adults which accounted for the increase in numbers of paralytic cases.

⁶ P. A. Offit, *The Cutter Incident. How America's first polio vaccine led to the growing vaccine crisis*, 2005, New Haven, p.31. Polio affected about 0.03 percent of the population, p.44.

⁷ *ibid.*, p.32.

⁸ C. J. Ruddy, 'Do Something!...Do Anything!', p.381 and p.386.

although as Anne Hardy noted, it did raise ‘profound public concern’.⁹ As American paediatrician Paul Offit has maintained, ‘There was a desperate, growing need to prevent polio’.¹⁰

Part I - Salk Polio Vaccine

Polio was caused by three types of polioviruses labelled 1, 2 and 3 and all or any might be present in a community at a particular time. For a vaccine to be effective it had to contain all three types in order to give wide-ranging protection. As one of the worst affected countries, much vaccine research had taken place in the United States funded by the National Foundation for Infantile Paralysis.¹¹ This had originally been set up to assist ‘polios’ by President Roosevelt, a polio sufferer himself. The National Foundation had funded Jonas Salk to make his inactivated polio vaccine which underwent field trials in 1954, closely supervised by the Foundation. The vaccine was given to close on 1.8 million children mainly from the United States, but also from Canada and Finland.¹² Thomas Francis, a virologist from the University of Michigan, had overseen the field trials, and on 12 April 1955 at Ann Arbor, he announced the results that many people had been hoping for. The trials had shown the Salk vaccine to be 80 to 90 percent effective in preventing paralytic polio.¹³ In the United States this news was greeted with scenes of rejoicing, ‘church bells were ringing across the country, factories were observing moments of silence, synagogues and churches were holding prayer meetings, and parents and teachers were weeping’.¹⁴

New Zealand, a country badly affected by polio, had closely monitored events in America. J. E. Caughey, Professor in Neurology at Otago Medical School, had returned from a visit to the United States in February 1955. He commented, ‘If the

⁹ A. Hardy, ‘Poliomyelitis and the Neurologists: The View from England, 1896-1966’, *Bulletin of the History of Medicine*, 71, 2, 1997, p.255. Denmark was the only western European country to experience polio epidemics regularly before 1947.

¹⁰ P. A. Offit, *The Cutter Incident*. p.32. Paul Offit is chief of the Division of Infectious Diseases and Henle Professor of Immunologic and Infectious Diseases at the Children’s Hospital of Philadelphia. He is also professor of paediatrics at the University of Pennsylvania School of Medicine.

¹¹ Infantile paralysis was the original name for polio.

¹² J. P. Baker, ‘Immunization and the American way: 4 childhood vaccines’, *American Journal of Public Health*, 90, 2000, p.199-207. For a description of the 1954 trials in the United States, see J. S. Smith, *Patenting the Sun. Polio and the Salk Vaccine*, New York, 1990, pp.265-69.

¹³ NZ Ambassador, Washington to Minister of External Affairs, 13 April 1955, H1 25622 144/17 Polio Vaccine Committee 1955-56, Archives New Zealand (ANZ), Wellington.

¹⁴ P. A. Offit, *The Cutter Incident*. p.55.

vaccine is successful our remedy for polio is at hand, and a huge vaccination programme will have to be got underway'.¹⁵ It was therefore advisable, in Caughey's view, 'to plan a system of mass vaccination at the earliest possible date' particularly as another polio epidemic was forecast for 1955.¹⁶ Other eminent health professionals were also enthusiastic about the polio vaccine. J. A. R. Miles, Professor of Microbiology at Otago Medical School, believed that the Salk vaccine was the 'largest single step in the fight against the disease'.¹⁷ With the announcement of the success of the field trials the New Zealand government wasted no time in preparing initial plans for an immediate mass immunisation campaign. To facilitate this, Cabinet announced that a committee with the power to purchase the new Salk vaccine would be set up consisting of the Prime Minister, the Minister of Finance, and the Minister of Health.¹⁸ It was hoped initially that enough vaccine could be purchased to immunise all children up to age 15 and, by including the Finance Minister, it was hoped delays could be avoided, particularly as the threat of an epidemic loomed large.¹⁹ The Health Department, backed by the Cabinet, was keen to implement such a scheme, knowing it would receive the full support of the New Zealand public.

The Cutter Incident

Almost as soon as the success of the trials reached New Zealand, reports began to trickle in that some of the vaccine used in the mass immunisation programme in the United States was causing paralytic polio. Cutter Laboratories of Berkeley, California, one of five companies to make the vaccine, were having problems inactivating the poliovirus and some batches of vaccine that had passed safety tests still contained live poliovirus.²⁰ Although the majority of cases were caused by the Cutter vaccine, all the other four United States manufacturers were having inactivation difficulties and one lot of Wyeth's vaccine had also caused cases of paralytic polio after live virus had not been killed.²¹ The 'Cutter Incident' as it

¹⁵ *Evening Post* (EP), 17 February 1955.

¹⁶ *ibid.*

¹⁷ *Dominion* (D), 14 April 1955.

¹⁸ *New Zealand Herald* (NZH), 19 April 1955.

¹⁹ J. Ross, 'A History of Poliomyelitis in New Zealand', p.82.

²⁰ For a full discussion of the Cutter Incident see, P. A. Offit, *The Cutter Incident. How America's first polio vaccine led to the growing vaccine crisis*, 2005, New Haven. The other companies were Wyeth, Pitman-Moore, Eli Lilly and Parke-Davis.

²¹ P. A. Offit, *The Cutter Incident*. pp.102-03.

became known, resulted in 204 cases of paralytic polio and 11 deaths.²² This debacle in the United States demonstrated the lack of foresight shown by those responsible for implementing the United States wide immunisation programme. Standards for vaccine manufacture established in the trial had not been carried over to the mass production of vaccine, and federal government safety tests were not as stringent. Consequently batches of vaccine that passed the tests could, and did, contain live poliovirus. An Oregon Senator, Wayne Morse, commented that, 'The federal government inspects meat in the slaughterhouses more carefully than it has inspected the polio vaccine'.²³

As a result of these cases of vaccine-associated polio, Surgeon-General Leonard A. Scheele firstly withdrew Cutter's vaccine on 27 April 1955 and then in a 'dramatic television address' halted the whole programme on 8 May, 'pending a review of all six manufacturers'.²⁴ American historian David Oshinsky has argued that in 'some ways, the Cutter Incident worked to strengthen the federal health bureaucracy' with improved and expanded testing and control of vaccines by the National Institute of Health and the Laboratory of Biologics Control to ensure that a 'Cutter' could never occur again.²⁵ With these changes in place the programme recommenced in July 1955 and by the end of the year approximately seven million American children had received a first injection.²⁶

The Cutter Incident had major repercussions not just in America but also around the world. Indeed, for many countries, including New Zealand, it changed the face of their planned immunisation programmes. The United States was in many ways less affected by the fall-out from Cutter than countries overseas as its programme was able to continue, albeit rather late. One of the most important consequences was that it affected confidence regarding safety, with other companies fearing they might not be able to produce inactivated vaccine. In Britain the Medical Research Council (MRC) suspended trials with the original Salk vaccine to wait for the results of Salk vaccine

²² T. Gould, *A Summer Plague. Polio and its Survivors*. New Haven, 1995, p.153.

²³ P. A. Offit, *The Cutter Incident*. p.118. For a detailed analysis of what went wrong at Cutter see Chapter 6, pp.106-31.

²⁴ D. M. Oshinsky, *Polio. An American Story. The Crusade that Mobilized the Nation Against the 20th Century's Most Feared Disease*, New York, 2005, p.226.

²⁵ *ibid.*, p.238.

²⁶ J. R. Wilson, *Margin of Safety. The fight against polio*, London, 1963, p.118.

modifications in the hope of finding a safer one.²⁷ It was hoped to use the Hildebrand strain for type 1, which was less virulent than the Mahoney strain originally used by Salk.²⁸

Britain had not responded favourably when the success of the Salk vaccine had been announced, preferring to do its own tests. The *Auckland Star* commented that the British Ministry of Health was being 'excessively cautious' and by July 1955, the start of the polio season in Britain, no polio immunisation had taken place.²⁹ The response of the British government to the Salk vaccine, especially in light of Cutter, was to proceed very carefully. Dr G. S. Wilson, Director of the Public Health Laboratory Service, reflected this attitude when he commented in a speech that 'I do not see how any vaccine prepared by Salk's method can be guaranteed to be safe'.³⁰ The 'whole tone of Wilson's speech was pessimistic to an extent which exceeded even the greatest opponents of the vaccine in the U.S.A' - British caution had already been criticised in some American circles and also in some Canadian ones.³¹ The British attitude was attributed to being caught unprepared, as there were only a few people in the country qualified in the 'modern techniques of tissue culture in virus work'.³² Nevertheless, as previously discussed, excessive caution had also been displayed with the introduction of the pertussis vaccine, BCG and diphtheria. It was an inherent part of the British way of doing things, although the Americans proved to be even more guarded than the British when it came to BCG. New Zealand's view was that 'pretty well everyone in the United Kingdom is sitting on the fence'.³³

Britain was not the only country to be concerned by the Cutter Incident. Sweden, which had arranged trials with the vaccine on 120,000 children, cancelled them immediately. Denmark, which had already immunised 200,000 children with a vaccine prepared according to Salk's process, was anxious but pointed out that its

²⁷ NZH, 18 July 1955.

²⁸ This vaccine was developed by Glaxo and called poliovirin. It was later used in the New Zealand campaigns.

²⁹ *Auckland Star* (AS), 14 April 1955.

³⁰ J. R. Wilson, *Margin of Safety*, p.123.

³¹ *ibid.*, see EP, 14 May 1955.

³² 'Salk Poliomyelitis Vaccine', 7 October 1955, H1 35354 144/17/1 Polio Vaccine Committee 1956-57, ANZ, Wellington.

³³ *ibid.*

safety standards were higher than America's.³⁴ Australia was also affected by Cutter. Initially the National Health and Medical Research Council announced that children aged four to eight would be the first to be immunised with the Salk vaccine. These plans were abandoned after the Cutter Incident and it was decided in August 1955 that Australia would concentrate on manufacturing its own vaccine at the Commonwealth Serum Laboratories (CSL) rather than importing it from the United States.³⁵ Australia remained very cautious regarding the Salk vaccine and Australian opinion remained divided. Dr P. A. Baseley, Head of CSL and who had also worked with Jonas Salk, was 'convinced of the safety and efficacy of the vaccine', whilst Dr F. M. Burnett, who was the Director of the Walter and Eliza Hall Institute of Medical Research, was highly concerned about the vaccine, believing the virulent Mahoney strain was too risky to use.³⁶ He had even 'refused to serve on the controlling committee unless the Mahoney strain is removed from the vaccine'.³⁷ Australia followed the Canadian example of manufacturing its own vaccine, believing it was a safer option as the whole process could be overseen and the vaccine would be independently tested at Fairfield Infectious Diseases Hospital.³⁸

Nevertheless, immunisation programmes were delayed whilst vaccine was developed or countries waited to see what would happen in the United States. Consequently, many children were left vulnerable to the 1955-56 polio epidemic, as vaccine was not available in time to implement immunisation programmes. In the Netherlands, for example, the Dutch Health Council's polio committee chose not to use the Salk vaccine after the Cutter Incident. The 1955-56 epidemic resulted in 2,206 cases of which 1,784 were paralytic and its severity caused the Dutch health authorities to

³⁴ J. R. Wilson, *Margin of Safety*, p.122.

³⁵ *Sydney Telegraph*, 31 August 1955.

³⁶ Frank Macfarlane Burnett was Director of the Walter and Eliza Hall Institute of Medical Research in Melbourne from 1944 to 1966. Until 1977 he was a writer and elder statesman of science at the University of Melbourne. In 1960 Burnett (with P. Medawar) was awarded the Nobel Prize for the discovery of acquired immunological tolerance. He became a Knight Commander of the British Empire in 1969. In relation to the polio prophylactic, Burnett headed the WHO committee on the polio vaccine. See F. M. Burnett, 'The Salk Poliomyelitis Vaccine', *Medical Journal of Australia*, 30 April 1955, p.660.

<http://www.asap.unimelb.edu.au/bsparcs/biogs/P000279b.htm>

³⁷ 'Salk Poliomyelitis Vaccine', 7 October 1955, H1 35354, 144/17/1, ANZ, Wellington.

³⁸ A. H. Brogan, *Committed to Saving Lives. A History of the Commonwealth Serum Laboratories*, Melbourne, 1990, p.118.

rethink their original decision. From 1957 all children up to age 14 were immunised with locally produced Salk vaccine.³⁹

Canada had however, already been manufacturing Salk vaccine from its Connaught Serum Laboratories in Toronto.⁴⁰ Subject to strict government control, Connaught had prepared all the virus fluids for use in the 1954 tests in the United States. They then began to prepare the vaccine in anticipation of a mass immunisation campaign in 1955. Connaught's vaccine was double-checked, by both themselves and the Canadian Laboratory of Hygiene.⁴¹ Each Canadian province then embarked on an immunisation programme with close assistance from the federal government. By July 1955 close to 600,000 children aged between five and ten received at least two doses of Salk vaccine without a single mishap.⁴² This demonstrated to the world that if manufactured and tested correctly there was no danger from the Salk vaccine. It also showed that in the United States the fault lay with the pharmaceutical companies and federal government, not the vaccine itself. Figures for polio cases in Canada in 1955 revealed that the effectiveness of the vaccine was about 85 percent.⁴³ The Canadian experience therefore did much to help restore shaken overseas confidence in the worth of the Salk polio vaccine although it did little to improve the image of American vaccine manufacturers!

Polio Vaccine Advisory Committee

One of the main reasons for the 'Cutter Incident' in the United States was the lack of government interest and control in the manufacture of the polio vaccine.⁴⁴ In New Zealand all vaccines, whether on the free list or not, had to be registered and receive Health Department approval before they could be used. Nevertheless, New Zealand did not produce any vaccines and did not do its own testing; the Health Department was dependent on advice from overseas. As has been previously argued, by the 1950s

³⁹ U. Lindner, S. Blume, 'Vaccine Innovation and Adoption: Polio Vaccines in the UK, the Netherlands and West Germany, 1955-1965', *Medical History*, 5, 4, p.430.

⁴⁰ For a full history of polio including the use of vaccines in Canada see C. J. Ruddy, 'Do Something!...Do Anything! Poliomyelitis in Canada 1927-1962', PhD thesis, University of Toronto, 1995.

⁴¹ *ibid.*, p.353.

⁴² *ibid.*, p.345.

⁴³ *ibid.*, p.355. A case rate of 0.54 per 100,000 was reported for those immunised (599,798) whilst in the non-immunised control group the rate was 5.76 per 100,000 (885,070).

⁴⁴ P. A. Offit, *The Cutter Incident*, pp.118-19.

with a growing number of vaccines on offer, the Health Department recognised a need for expert international advice and turned to the WHO and their technical committees for the provision of this. The Cutter Incident suggested to the Department that the situation now required a local expert committee to advise the Department on the polio vaccines available and their safety and efficacy. A special Advisory Committee was set up in June 1955 with the proviso that ‘Safety will be the keynote of all steps taken in connection with the use of the Salk vaccine in New Zealand’.⁴⁵ The committee consisted of many eminent medical specialists; Sir Charles Hercus, Dean of Medicine and Professor of Preventative Medicine at Otago University, J. E. Caughey, Professor of Neurology at Otago Medical School, Dr S. L. Ludbrook, President of the Paediatric Society, Dr J. O. Mercer, Pathologist to the Wellington Health Board and J. A. R. Miles, Professor of Microbiology at Otago Medical School. Dr J. Cairney, Director General of the Health Department, announced that New Zealand would be considering all suppliers of vaccine, namely, Australia, Canada and South Africa as well as Britain to find the best one for one New Zealand.⁴⁶ The United States was not mentioned.

The establishment of this committee signalled the introduction of a new procedure to determine polio vaccine selection and government policy. The Health Department’s previous responsibility of advising on, and selection of, vaccines was delegated to the Committee; the Department’s main focus now became the supply and administration of vaccine policy. Additionally, the Committee also had the responsibility of reassuring the public that the vaccines offered to them had been approved by New Zealand experts as well as those overseas, so that a ‘Cutter Incident’ could not occur.

The use of a specialised committee for the polio vaccine paved the way for all such important vaccine decisions to be made by outside experts. In March 1960 the Board of Health reconstituted the Epidemiology Advisory Committee (EAC) from the former Influenza Advisory Committee. ‘Its purpose is to advise on measures to control communicable diseases and to influence other aspects of epidemiology’,

⁴⁵ D, 21 June 1955.

⁴⁶ NZH, 18 July 1955.

which included immunisation.⁴⁷ The valuable assistance of the Polio Vaccine Advisory Committee in steering a path through some very difficult waters had shown the Department and the Board of Health that a committee of this kind to advise on immunisation in general was a necessity in the increasingly complicated world of vaccines.⁴⁸ From 1960 the Department relied substantially on advice from the EAC and the WHO before vaccine tenders were accepted and any immunisation programme was implemented. Although it can be argued that this shift of responsibility would have come eventually, given the number of vaccines becoming available, the fact that it came quite early on was a direct result of the Cutter Incident and the aftermath of confusion and concern it created. A mass immunisation campaign as planned in 1955-56 with vaccine probably purchased from the United States would not have stimulated the need for specialist advice from a local committee, particularly as the Department relied on the WHO. However, the lack of vaccine supplies, the now questionable safety of the vaccine, trials of vaccines overseas and huge public expectation were beyond the expertise of the Department and required specialist input to advise on the best course of action. From 1955 onwards immunisation decisions began to be shifted to an advisory committee which contained a Health Department representative.

One of the problems exacerbated by the Cutter Incident was a lack of confidence in the safety and efficacy of the vaccine, especially by some international medical authorities. The vaccine developer, Jonas Salk, had had to face much criticism from scientists in America, who were unimpressed with his work and the resultant vaccine even before Cutter.⁴⁹ The Polio Vaccine Committee surmised that 'It is quite clear that the experts are sharply divided, and authoritative opinion could be quoted that the vaccine is safe and effective or that it is unsafe and of doubtful value, or for any combination of these claims'.⁵⁰ Nevertheless, both the New Zealand Health Department and the Polio Vaccine Committee were convinced of the worthiness of the vaccine, not least by the Technical Report of the WHO study group, set up to

⁴⁷ Health Department, Annual Report for 1960, *Appendices to the Journals of the House of Representatives* (AJHR), 1961, H-31, p.87.

⁴⁸ Immunisation was just one aspect on which the Epidemiology Advisory Committee (EAC) advised.

⁴⁹ For a full discussion of the development of the Salk vaccine see, see J. S. Smith, *Patenting the Sun. Polio and the Salk Vaccine*, New York, 1990.

⁵⁰ 'Salk Poliomyelitis Vaccine', 7 October 1955, H1 35354 144/17/1, ANZ, Wellington.

examine the Salk vaccine. Commencing in July of 1955, it was an offshoot of the WHO committee on the poliomyelitis vaccine originally established in 1952.

The WHO study group had commented favourably on the vaccine, arguing that it gave good protection against polio in children aged between six and ten.⁵¹ Its report showed that approximately ten million children had been immunised without harm and the results demonstrated good levels of immunity.⁵² On 15 December 1955 the Polio Vaccine Committee met to discuss the WHO report. It resolved that it was ‘impressed by the report of the W.H.O. Study Group as to the effectiveness and apparent safety of Salk’.⁵³ Harold Turbott, Deputy Director General of Health, summed up the Department’s position by stating that the vaccine would be ‘the best for the task until something better came along’.⁵⁴ New Zealand, in contrast to some countries such as Britain, was in favour of using the vaccine as soon as possible, believing it was both safe and fairly effective.

New Zealand, Cutter and Polio Vaccine Supply

Initially the Polio Vaccine Committee had expected to be able to purchase ample supplies from overseas having already made the decision that manufacturing the vaccine in New Zealand was not a viable option.⁵⁵ The unravelling of the horror and needless tragedy of the Cutter Incident changed immunisation plans in New Zealand and caused the Health Department, health professionals and parents to re-examine their views on polio prevention. The government’s initial plans for mass immunisation were put on hold pending reports from the United States, and what had seemed a fairly straight-forward situation now became remarkably complicated; a Health Department report commented that ‘there was a period of great confusion lasting some weeks’.⁵⁶ Even by October 1955 the New Zealand Health Department reported that ‘there is no definite information available as to whether all state and

⁵¹ D, 28 November 1955.

⁵² ‘Salk Poliomyelitis Vaccine’ 30 April 1956, H1 25843 144/17 Polio Vaccine 1956-57, ANZ, Wellington.

⁵³ J. Cairney to Minister of Health, 16 December 1955, H1 35354 144/17/1, ANZ, Wellington.

⁵⁴ AS, 5 April 1956.

⁵⁵ Director General of Health (DGH) to Minister of Health, 16 December 1955, H1 35354 144/17/1, ANZ, Wellington.

⁵⁶ ‘Salk Poliomyelitis Vaccine’, 7 October 1955, H1 35354, 144/17/1, ANZ, Wellington.

public health authorities have resumed vaccination on a large scale' in the United States.⁵⁷

Another major problem that faced the Department by the end of 1955 was that of vaccine supply,

It seems clear that there will be no supplies available to New Zealand in the foreseeable future even if we desired it. It would seem that a decision as to whether we should advocate its use in New Zealand is not called for at the present time and we can continue to watch events and be guided by them.⁵⁸

The Health Department and the government were placed in the position of reacting to information received, rather than being pro-active in policy determination as had been their initial intention. Forced by circumstances beyond their control to sit on the sidelines, the Health Department awaited results of vaccine trials from other countries such as Australia, Britain and Canada, who were all developing their own vaccines. If the safety and effectiveness of these vaccines could be proven then New Zealand would be in the market to purchase although there was the added problem that any supplies for New Zealand would only be available once Britain and Australia's own children had been immunised. Companies in the United States were prohibited from selling vaccine overseas until July 1956 and after Cutter the Health Department did not wish to purchase American vaccine. In terms of determining vaccine policy this was a new situation; on previous occasions when vaccines had been introduced the Health Department had been in control, determining when, where and how vaccines would be administered. Now it was in the unenviable situation of watching and waiting.

The onset of a polio epidemic over the summer of 1955-56 added extra pressure to a situation over which the Health Department had no control. Original plans to immunise all children before the epidemic had to be abandoned and the Health Department and the New Zealand public had to face this knowing that whilst some children in the world were receiving vaccine there was none available for the Dominion. Studies undertaken in 1955 and 1956 demonstrated that even though many New Zealanders had lived through several epidemics, only 17 percent were

⁵⁷ *ibid.*

⁵⁸ 'Salk Poliomyelitis Vaccine', 7 October 1955, *ibid.*

immune to all three types of poliovirus.⁵⁹ Both the studies by A. M. Murphy, the technician in charge of the Auckland Virus and Diagnostic Research Unit, and Professor J. E. Caughey indicated that immunity to type 1 was low, particularly for children up to ten years old, which Caughey estimated at 32 percent.⁶⁰ Professor J. A. R. Miles of the Otago Medical School commented that in light of these conclusions that 'it would appear that a very strong case can be made for offering vaccination to adolescents and young adults as soon as a safe vaccine is freely available'.⁶¹ As predicted, New Zealand's sixth polio epidemic was type 1 with 703 notified cases, reinforcing the necessity of having the vaccine as soon as possible in New Zealand.⁶²

The polio epidemic exerted public pressure on the Department to be seen to be doing all it could to obtain vaccine. In November 1955, the Director of Public Hygiene, F. S. Maclean had stated publicly that New Zealand was holding up mass immunisation of children as there was no vaccine available and medical authorities were still distrustful of it.⁶³ Behind the scenes the campaign to procure some vaccine for a New Zealand campaign in the winter of 1956 started in earnest. In December 1955, the Director-General, Dr John Cairney, wrote to the Commonwealth Serum Laboratories in Australia to ask if New Zealand could purchase some polio vaccine.⁶⁴ He wrote again on 6 March 1956 but each time was told Australia had 'none to spare'.⁶⁵ In April after an approach was made to the British Ministry of Health, Glaxo UK offered New Zealand vaccine for September after the close of its own summer immunisation campaign. In June this was fixed at two batches, a total of 200 litres, through their New Zealand branch of Glaxo which had originally been the parent company.⁶⁶ It

⁵⁹ J. Caughey, A. M. Douglas, G. Spears, 'A study of Immunity to Poliomyelitis in New Zealand', *New Zealand Medical Journal* (NZMJ), 55, 308, 1956, p.288.

⁶⁰ *ibid.* See also A. M. Murphy, 'Studies on the Epidemiology of Poliomyelitis in New Zealand', NZMJ, 54, 256, 1955, p.260.

⁶¹ J. A. R. Miles, 'Patterns of Polio Immunity', NZMJ, 55, 1956, p.188.

⁶² AJHR, 1956, H-31, p.13.

⁶³ NZH, 18 November 1955.

⁶⁴ J. Cairney to P. A. Baseley, 16 December 1955, H1 25843 144/17 Polio Vaccine 1956-57, ANZ, Wellington.

⁶⁵ J. Cairney to P. A. Baseley, 6 March 1956 and J. Cairney to P. A. Baseley, 30 April 1956, H1 25843 144/17 ANZ, Wellington.

⁶⁶ AS, 27 June 1956.

was only because of this relationship that New Zealand was offered vaccine at all; indeed, it was described as 'just a lucky chance' by one newspaper.⁶⁷

It was estimated there would be enough vaccine for approximately 100,000 children. Unfortunately for New Zealand, one batch of this vaccine was discovered in tests to have lost potency and could not be sent. Three days after receiving this information on 19 June 1956, a desperate Cairney approached the Canadians for vaccine but was told by G. D. W. Cameron of the Ministry of National Health that Canada was using all it produced.⁶⁸ Meanwhile Turbott replied immediately to the cable from Glaxo, which had informed him of the failure of one batch and the price of the remainder. Turbott agreed without a qualm to £3 per 10cc phial and £2 per box of 1cc ampoules - an expensive vaccine with the cost of the 1956 campaign amounting to £32,360 in total.⁶⁹ The 90,000-dose batch was scheduled to arrive in August.⁷⁰ The vaccine could however be produced more reasonably, as Connaught Serum Laboratories in Canada were charging 62 cents per 1cc dose which was reduced to 50 cents a dose in June 1955.⁷¹

In her book *Mind over Muscle. Surviving Polio in New Zealand*, Karen Butterworth identified both supply and cost of the vaccine as factors restricting the numbers of children who could be immunised.⁷² The files of the Health Department showed that this was not so in the case of expenditure. At the time in 1956 the Health Department was desperate to receive any vaccine at all and the price was not an issue.⁷³ The New Zealand public were expecting their children to be immunised with whatever amount of vaccine could be procured and the Health Department and the government could not let them down. The single most important factor that inhibited the campaign was the amount of vaccine available to New Zealand. However, the Department was also

⁶⁷ NZH, 25 July 1956. For a history of Glaxo see R. P. T. S. J, Davenport-Hines, *Glaxo. A History to 1962*, Cambridge, 1992 and J. Millen, *Glaxo. From Bonnie Babies to Better Medicine*, Palmerston North, 1991.

⁶⁸ J. Cairney to G. D. W. Cameron, 22 June 1956, H1 25843 144/17 ANZ, Wellington,

⁶⁹ *ibid.*, also cable, 19 June 1956, H1 25843 144/17 ANZ, Wellington,

⁷⁰ AJHR, 1957, H-31, p.18 says 45 litres. A cable sent 19 June 1956 says that 90 litres were available which was enough for two doses for 45,000 children.

⁷¹ C. J. Ruddy, 'Do Something!...Do Anything!', p.334.

⁷² K. P. Butterworth, ed. *Mind over Muscle. Surviving Polio in New Zealand*, Palmerston North, 1994, p.139.

⁷³ By March 1958 £400,000 had been spent on vaccine to immunise all in the five to 16 age range. (548,000) BCAA 1990/538b Newspaper clippings 1955-67, ANZ, Wellington.

concerned that the vaccine was safe and British vaccine more than fulfilled this criteria as the British themselves were so cautious about the safety aspect. The original Salk vaccine had contained the most virulent type 1 strain, Mahoney, which tended to induce severe polio. Glaxo used a less virulent strain and subjected the vaccine to the ‘most drastic and thorough tests to assure its freedom from live virus’.⁷⁴ In addition to Glaxo’s tests, each batch was tested again by the National Laboratory Service and by the Department of Biological Standards at the National Institute for Medical Research. The New Zealand Polio Vaccine Committee was ‘satisfied that the vaccine will be as safe as it is humanly possible to make it’.⁷⁵

Britain, Australia and Canada and the Salk Vaccine

In Britain an immunisation campaign for 1956 was mounted with enough vaccine for about 200,000 children aged two to nine who had registered. They were selected on the month and year of their birth.⁷⁶ Nevertheless, many British parents were very cautious about giving the vaccine to their children, preferring to ‘wait and see if other people’s children reacted safely to the vaccine first’.⁷⁷ Acceptance rates were very low at around 29 percent.⁷⁸ The public’s cautious attitude was reinforced by the British health authorities. In 1957 the Health and Public Works Committee of Coventry, after taking advice from the British Ministry of Health, refused the offer of free Salk vaccine from an American businessman even though there was an epidemic of polio in the city.⁷⁹ For the first 30 weeks of 1957, 2105 cases of polio had been notified in Britain, the highest number for seven years, at a time when cases were decreasing in the United States. It was not until after this that the MRC recommended importing vaccine from Canada and the United States to help cope with Glaxo’s supply problems. Historians Lindner and Blume have identified the ‘cautious attitudes of the health authorities’ and ‘problems in ensuring the necessary supply of vaccine’ as major reasons for the delay in implementing a Salk immunisation

⁷⁴ ‘Poliomyelitis Vaccine’, 15 June 1956, H1 25843 144/17, ANZ, Wellington.

⁷⁵ *ibid.*

⁷⁶ NZH, 17 July 1956. See also AS, 27 June 1956 - children born in the month of November in the years 1947 to 1954 and March in the years 1951 to 1954 were eligible for immunisation.

⁷⁷ *ibid.*

⁷⁸ Circular Memo 156/137, 16 July 1956, H1 25843 144/17, ANZ, Wellington.

⁷⁹ NZH, 10 August 1957. Britain had banned the importation of American Salk vaccine but gifts were allowed in. The Ministry of Health said the heavy outbreak did not constitute an epidemic.

programme.⁸⁰ In addition there was the guarded attitude of the public, many of whom were still not confident enough to have their children immunised when the opportunity arose.

In contrast, Australia enjoyed much more success with their immunisation campaigns. By 1958 more than 95 percent of all schoolchildren in Australia had been immunised with Australian-produced Salk vaccine.⁸¹ In February 1956 the results of the Canadian campaign were released which showed that incidence of paralytic polio in immunised children (those who received two doses) was 0.54 per 100,000 whilst for unimmunised children the rate was 5.76 per 100,000.⁸² Emboldened by this success, 1,800,000 children under ten had received one dose of vaccine before the start of the 1956 polio season, with 90 percent of this number receiving at least two.⁸³

Countries such as Australia and Canada, who had experienced severe polio epidemics for much of the twentieth century, were keen uptakers of the polio vaccine despite the adverse publicity the vaccine had received because of Cutter. In contrast, in Britain, whose polio epidemics did not start until 1947, parents did not have the same fear of the disease and many had declined immunisation for their children, preferring to watch and wait rather than take the risk. It was not until the death of Birmingham City and England footballer Jeff Hall from polio in 1959 'that the message got through' and the British began to accept polio immunisation.⁸⁴

Immunisation Campaigns in New Zealand

The Salk immunisation campaigns in New Zealand were dictated totally by the supply of vaccine available. It usually came in small batches and the Department decided the fairest way of allocating it was to offer it to children on an age basis. The Polio Vaccine Committee recommended that nine-year-olds be immunised first, with any spare vaccine to be given to eight-year-olds. It had originally been decided to offer vaccine to the five to nine age group but this was not now possible as Glaxo UK could

⁸⁰ U. Lindner, S. Blume, 'Vaccine Innovation and Adoption', p.437.

⁸¹ J. Goldsmid, *The Deadly Legacy. Australian History and Transmissible Disease*, Kensington, 1988, p.63. In 1958 the immunisation programme was extended to cover 15 to 45 year olds.

⁸² C. J. Ruty, 'Do Something!...Do Anything!', p.355.

⁸³ *ibid.*, p.362.

⁸⁴ T. Gould, *A Summer Plague. Polio and its Survivors*, p.173.

not supply enough vaccine. The Committee had chosen this age group as it was easier to immunise older children and they were considered more likely to spread polio, although the incidence of polio was higher in under-fives.⁸⁵

The supply of vaccine continued to have a major impact on the sequencing of further campaigns and it took until March 1958 to immunise all children up to the age of 16. The original intention had been to immunise everyone in the six month to 21 age group in one large campaign but this proved impossible due to the restricted supply of vaccine. It became necessary, therefore, to prioritise groups within the population who were to receive injections. In 1957 New Zealand was able to purchase enough vaccine (400 litres) from Glaxo UK to complete the immunisation of the five to nine group, approximately 200,000 children, starting in August of that year. From September 1956, CSL in Melbourne were able to supply vaccine at 10,000 doses a month; health professionals and pregnant women were targeted for this.

Additional supplies of vaccine from Glaxo enabled all children in the age range 11 to 16 to be immunised thereby completing the school campaigns. It was hoped to commence the preschool programme of about 200,000 in May of 1958 but due to vaccine shortage from both Britain and Australia the programme had to be postponed until August of that year.⁸⁶ A lack of virologists in Britain and problems with vaccine testing in Australia were the cause of the delay. American vaccine, although now able to be exported, was not favoured by the Department and was never used in any campaign.⁸⁷ Turbott wrote to the British Ministry of Health in October 1956 to ask for permission to purchase any spare vaccine produced by Glaxo as a ‘trickle of supply between bulk issues in your off season would be very helpful to us in resisting public pressure for immediate immunisation’ and so avoid the use of American vaccine.⁸⁸

Boosters were employed from 1957 when the original nine-year-olds were given a third shot after it was decided that this extra injection would be beneficial about 12

⁸⁵ AS, 13 July 1956.

⁸⁶ NZH, 6 June 1958.

⁸⁷ H. B. Turbott to J. Charles, 10 October 1956, H1 26133 144/17 Polio Vaccine 1957-58, ANZ, Wellington.

⁸⁸ *ibid.*

months after the second one. This meant, however, that more vaccine was needed as well as time and resources to implement the scheme. From 1959 boosters and initial injections to those under two were carried out as routine for all. By 1960 the immunisation campaigns, including boosters, of all children from six months to 21 years was complete, as the 17 to 21 year olds had been offered immunisation in 1959.⁸⁹ Nevertheless the debate regarding boosters and immunity levels continued when in 1961 the benefits of a fourth shot were discussed by Turbott in a radio interview which occasioned many enquiries and caused the Health Department to release a press statement advising that a fourth dose was not essential but was recommended. It was not covered by the Department and had to be paid for at the doctor's.⁹⁰

One of the most difficult tasks in organising the immunisation campaigns for the Health Department was arranging for the transportation and storage of vaccine once it arrived in New Zealand. The vaccine had to be kept at a specific temperature in order to retain its potency. 'Operation Vaccine' was the name given to the plan devised for its distribution to the 12 district offices. The Health Department placed an order with Wholesale Refrigerators Limited of Christchurch for 60 containers of one cubic foot capacity for the transportation and storage of the polio vaccine at a cost of £15-20. These boxes could hold 2,500-3,000ccs of vaccine at the required temperature of 0-4 degrees centigrade at a time when refrigerators were not common in New Zealand.⁹¹ The initial delivery to the Wellington District Office in 1956 was made by a TipTop Ice Cream van! The vaccine was then flown to the centres in the special refrigerated containers. Auckland initially received 775 phials of 10cc each, whilst Hamilton received 456. Storage was also problematic for Public Health nurses who were also able to administer the vaccine. Most did not have a refrigerator and this led one Public Health nurse to store it her neighbour's fridge. The Public Health nurse at Raglan had

⁸⁹ It should be noted that only children up to 16 years of age will be considered. Although the immunisation campaign also targeted adults they do not fall within the scope of this thesis.

⁹⁰ Circular Memo, 1961/115, 26 June 1961, BCAA 1990/538a Polio Diseases 1955-67, ANZ, Auckland.

⁹¹ Deputy DGH to Medical Officer of Health (MOH) Christchurch, 29 August 1956, H1 26133 144/17, ANZ, Wellington.

to have it bussed in an icebox from the hospital, to send it back for freezing again each night.⁹²

The first shipment of polio vaccine was suitable for use for 24 hours only after it had been opened and arrived in 10cc phials only; a dose was 1cc. The initial campaign commenced in Auckland on 24 September 1956 and it had been decided by the Committee, in line with British policy and experience, to give each nine-year-old child two shots of vaccine with a gap of about four weeks.⁹³ In order to minimise vaccine wastage seven and eight-year-olds were also given consent cards and after all nine-year-olds had been immunised any spare vaccine was issued to these pupils. City schools usually had enough nine-year-old pupils to receive all the vaccine, however at the last school attended on each day eight-year-olds could be offered vaccine if any was spare. According to the *Waikato Times*, 'when there is some material left in the bottle and volunteers are asked for from seven and eight-year-old groups there is often a scramble to receive the remaining doses'.⁹⁴

Nevertheless, Medical Officers of Health in their reports on the campaign focused on the difficulties of administering the vaccine to the nine-year-old group and it was suggested it would have been easier to have done all in the five to nine group at each school progressively.⁹⁵ It was pointed out that 'For political reasons it is desirable to maintain uniformity as if 5-year olds were vaccinated in one district and not in another there would be some public criticism'.⁹⁶

Erratic supply played a major role in determining the implementation of polio immunisation policy. The timing of the programmes was fixed purely on the arrival times of the vaccine and problems with supply often caused much frustration. It also meant programmes had to be ready to go with little notice as vaccine often arrived well into its life span; poliovirin had an expiry date of four months and immunisation teams often had to work very hard to complete the programme. With the arrival of the 1956 vaccine at the end of September, teams had only two months before the vaccine

⁹²J. A. T. Terry to A. J. Curruthers, 17 April 1958, BCAA 1990/430b Polio vaccination programme organising 1956-58, ANZ, Auckland.

⁹³NZH, 23 August 1956.

⁹⁴*Waikato Times* (WT), 2 November 1956.

⁹⁵MOH Palmerston North to DGH, 12 November 1956, H1 26133 144/17, ANZ, Wellington.

⁹⁶Circular Memo 1957/22, 25 January 1957, *ibid*.

expired to administer two doses of the vaccine and ‘catch-up’ with any who had missed out first time. This ‘forced doctor-nurse teams to race against the clock. The life of the vaccine expired just one day after the last child was injected’ and it is open to question therefore, how much potency the vaccine had retained by this time.⁹⁷ In the Palmerston North District the Medical Officer of Health complained that the ‘programme was a considerable strain on all concerned’.⁹⁸ Such was the haste required that parents were barred when their child was immunised ‘as this might slow down the work of vaccination teams to such an extent that the whole programme might be endangered’.⁹⁹

This was not just confined to the 1956 programme. Medical Officers of Health commented in 1958 that the immunisation programme had imposed ‘long hours and the extra burden this has meant for many members of their field staff’.¹⁰⁰ The Health Department echoed these sentiments, explaining that ‘all of us in this service are looking forward to the end of the current year [1958] when (it is hoped) that the mass immunisation of all children and adolescents will have been completed’.¹⁰¹

These campaigns were carried out at the expense of other School Medical Service duties such as post-primary inspections and BCG in schools. In 1958, 19,295 BCG vaccinations were carried out, whereas in 1959 with the main polio immunisation programme completed, the School Medical Service was able to allocate time to BCG again and administered 34,669 vaccinations in that year.¹⁰² As with diphtheria, the polio immunisation campaign was hindered by a lack of personnel; there was a shortage of Public Health nurses and in 1959 all districts reported they were understaffed.¹⁰³

Another consequence of the polio immunisation programme was some loss of contact between school medical officers and schools, as schools were now using psychologists, speech therapists and others without first consulting the school medical

⁹⁷ NZH, 10 January 1957.

⁹⁸ MOH Palmerston North to DGH, 12 November 1956, H1 26133 144/17, ANZ, Wellington.

⁹⁹ AS, 20 September 1956.

¹⁰⁰ AJHR, 1959, H-31, p.19.

¹⁰¹ *ibid.*, p.81.

¹⁰² AJHR, 1960, H-31, p.26.

¹⁰³ *ibid.*, p.12.

officer who had often been engaged in other duties.¹⁰⁴ It was hoped by the Department that upon completion of the immunisations normal services could resume and relations with schools improve. Notwithstanding this, the work of the School Medical Service and officers of the Department in the polio immunisation campaigns was one of their most important roles in the 1950s and 1960s. Similarly in Britain, the significance of the School Medical Service's contribution was acknowledged by Bernard Harris in his work, *The Health of the Schoolchild*, where he argued that the campaigns against polio and tuberculosis in the 1950s and 60s were classed as one of the School Medical Service's 'most important functions'.¹⁰⁵ Following on from the initial immunisation programme, from September 1957 polio immunisation was extended to all children under 15.¹⁰⁶ British medical officers, as in New Zealand, were described as 'busily engaged on this work during the early part of 1958'.¹⁰⁷ Other countries and their health staff therefore experienced similar problems of timing and administration of the Salk vaccine to those faced in New Zealand.

Salk Vaccine and the Media

Another facet of the Salk vaccine situation was the intense media coverage the vaccine was given, nationally and internationally. Never before in New Zealand had a vaccine received such publicity. Headlines such as 'Dr Salk's vaccine for polio successful' was run by the *Auckland Star* on 13 April 1955, one day after the Francis Report was released in the United States. In-depth coverage was given to the Salk vaccine story, including details on the Cutter Incident, and New Zealanders were given more information about the Salk vaccine than they had ever had about any other vaccine introduced before that date. The first paralytic case of polio from the Cutter vaccine was reported in the United States on 26 April 1955 and by 28 April the story had made its way into the *Auckland Star*. Given the severity and frequency of epidemics of polio, vaccine reports were the focus of intense interest and they also contained stories about the actions of other countries such as Britain and Australia.¹⁰⁸

¹⁰⁴ AJHR, 1960, H-31, p.22.

¹⁰⁵ B. Harris, *The Health of the Schoolchild. A history of the School Medical Service in England and Wales*, Buckingham, 1993, p.188.

¹⁰⁶ *ibid.*, p.190.

¹⁰⁷ *ibid.*

¹⁰⁸ For example, NZH, 18 July 1955 and NZH, 15 March 1956.

Nevertheless the media were also more openly critical of the Health Department, a stance they did not normally adopt. One point of criticism was the lack of information regarding the supply of Salk vaccine. In April 1956, the *Auckland Star* questioned the Department's policy of using vaccine from Britain only and asked 'why the department has not used every means open to it to obtain sufficient vaccine from the United States or Canada with which to launch the campaign....parents who are anxious to have their children vaccinated this winter will regard the department's present policy as thoroughly unsatisfactory'.¹⁰⁹ This was seen as particularly pertinent as Australia was to start its campaign in June.¹¹⁰ Nonetheless it was likely that the Department did not wish to release information before they were confident of a secure supply of vaccine and raise parental hopes too soon. Occasionally, however, media reporting worked to the Department's advantage. In June 1956 after the failure of one batch of polio vaccine, the Department believed it faced the unhappy task of informing parents that only half of the original supply of vaccine would be arriving. Fortunately, the number of children to be immunised had been underestimated by the press, and a report in the *Auckland Star* announced that 25,000 children would be offered immunisation when there was actually vaccine available for 45,000 to receive shots.¹¹¹ This put the Department in the unexpectedly favourable position of advising that more children, not less, would be immunised.

The increased exposure in the New Zealand media and dissemination of information were due to the international interest in the polio vaccine and the high visibility of the disease itself. Parents and the public were much more aware of the vaccine and its problems as evinced by the response to the reporting of the Cutter Incident in the media. One effect of the in-depth newspaper reporting was to transfer the feelings of anxiety to other vaccines. In June 1955 the *Auckland Star* reported that some Auckland parents as a result of 'confusion with the Salk vaccine' had refused to allow their children to have tests for tuberculosis and the subsequent BCG. At the Seddon Memorial Technical College in Auckland it was estimated that 30 per cent of parents refused consent. The action was described as 'widespread' amongst other Auckland

¹⁰⁹ AS, 7 April 1956.

¹¹⁰ *ibid.*

¹¹¹ AS, 27 June 1956.

parents.¹¹² This incident demonstrated that parents were very concerned about the safety of immunisation for their children and also showed that problems with one vaccine easily dented confidence in others. Information could, therefore, have negative effects on the uptake of immunisation. The Health Department now had to try and make sure that the benefits of their immunisation programme were reinforced.

Advertising by the Department was one way this could be achieved by focusing on the positive effects of the polio vaccine. Radio programmes including interviews with departmental staff were used as well as advertising at cinemas and posters on public transport, buildings and other vantage points. Adverts were placed in newspapers and circulars were sent to organisations such as Plunket, kindergartens, playcentres and doctors for distribution to parents.¹¹³ The Deputy Director General of Health, Harold Turbott, wrote two columns for the *New Zealand Listener* on the Salk vaccine, both of which were concerned with the safety aspect.¹¹⁴ In one of these, Turbott even described his visit to Britain to see the vaccine being made, and reported 'I left with the impression that the manufacturer was determined that, within the limits of human possibilities, no child would suffer mishap from being vaccinated with British-made vaccine'.¹¹⁵

By August 1957 widespread publicity was no longer deemed to be necessary due to such high numbers of parents consenting. In addition, Glaxo UK had requested that as New Zealand was receiving more vaccine per head of population than Britain 'publicity would be best avoided'.¹¹⁶ Although newspapers followed the Health Department and government line in supporting immunisation for polio, they had for once, access to a wide range of information with regard to the vaccine because of the international appeal. Many people were now able to read detailed accounts of the testing of the vaccine, the problems with the supplies, information on the immunisation schemes of the Health Department and articles such as those printed in the *Auckland Star*, 'POLIO IMMUNISATION - facts to help you decide'.¹¹⁷

¹¹² AS, 17 June 1955.

¹¹³ 'Poliomyelitis Vaccination Campaign' 14 July 1959, H1 35357 144/17/7 Polio Vaccine Campaign 1961-68, ANZ, Wellington.

¹¹⁴ *NZ Listener*, 35, 886, 1956, p.26 and 35, 889, 1956, p.27.

¹¹⁵ *NZ Listener*, 35, 889, 1956, p.27.

¹¹⁶ Deputy MOH to MOH Hamilton, 5 August 1957, BCAA 1990/538a, ANZ Auckland.

¹¹⁷ AS, 3 August 1956.

Editorials tried to help people to decide that polio immunisation was a sensible measure, ‘Why parents should say “yes”’ was the title of one such work in the *Auckland Star*.¹¹⁸ In the *New Zealand Herald*, parents were told ‘Neither fear nor prejudice should allow New Zealanders to neglect a precaution which can, and will, save lives and preserve health’.¹¹⁹ The aim was to educate parents by giving them relevant information to help them decide. Turbott pointed out that the ‘most important thing is to see that parents get the fullest information. They must appreciate the whole position before they are asked whether they will permit their children to take inoculation treatment’.¹²⁰ The Department adopted this stance to try and negate some of the damaging influence of Cutter in New Zealand. Additionally, with the polio vaccine itself being so newsworthy, the Department needed to keep abreast of the reporters and be aware of what was being presented to the public in the papers. The Department monitored this closely, amply illustrated by the existence of files kept solely on newspaper clippings from the polio immunisation campaigns.¹²¹ That the papers were sometimes aware of things before the Department was demonstrated by the Department learning in the press the date and name of the ship on which the vaccine arrived in 1956.¹²²

Parental Attitudes

One of the key aspects of health education for the Department was to reassure parents that the vaccine was safe, especially after Cutter. Parents were informed that ‘apart from being thoroughly tested overseas, the treatment has also been subjected to the most stringent examination by New Zealand experts.’¹²³ ‘Two series of triple tests’ was the title of one article in the *Auckland Star* devoted solely to a description of the safety tests carried out on the vaccine.¹²⁴ Parents were very interested and there were numerous requests for Health Department officials to give talks and present additional

¹¹⁸ *ibid.*

¹¹⁹ NZH, 9 August 1956.

¹²⁰ AS, 7 April 1956.

¹²¹ See YCAS A740/532d 62/3/4 Salk and Sabin Vaccine 1955-56 and YCAS A740/532e Salk and Sabin Vaccine 1957-74, BCAA 1990/538b Polio Newspaper Clippings 1955-67, BAAK A358/135c Polio Newspaper Cuttings, ANZ, Auckland.

¹²² ‘Poliomyelitis Vaccination’, Circular Memo 1957/22, 25 January 1957, H1 144/17 26133, ANZ, Wellington.

¹²³ NZH, 9 August 1956.

¹²⁴ AS, 3 August 1956.

information.¹²⁵ Some parents found the decision difficult to make between a new vaccine that had already had one accident and a disease that could cause permanent paralysis or even death. A cross section of a poll conducted by the *New Zealand Herald* in June 1956 found that some parents, such as J. Matthews from Belmont, felt they did not know enough to make a decision.¹²⁶ Others such as D. B. Foote of Takapuna commented 'It is a bit nerve-racking. I wish the decision could be made for me. But illness is far less safe than protection - we cannot afford not to have our children inoculated'.¹²⁷ Others such as S. I. Wheatley of Remuera had 'sufficient faith in medical practices to accept the opinion of the authorities'.¹²⁸

Nevertheless, most parents wanted more information and the advice of the doctor before making this decision. In Britain the Queen was asked not to make her decision regarding the immunisation of her children known as 'it was felt her attitude might influence that of others in one or the other direction'.¹²⁹ In contrast, the *New Zealand Herald* obviously felt it would be helpful for parents to know that Queen Ingrid of Denmark had 'found it a great relief to have my own children protected'.¹³⁰ Some parents, however, declined to have their children immunised; at Tiri Lighthouse one father refused to allow his children to receive the polio vaccine even though all had been fully immunised with the combined diphtheria/tetanus vaccine.¹³¹ However, with constant articles and propaganda on a subject of both emotive and international interest, parents were usually persuaded to have their children immunised. Probably most parents felt as 'Mary Anne' in the *New Zealand Woman's Weekly* did, 'If we have consented to the injections and the child still gets polio, at least we can say we did our best'.¹³²

By 1959 the Health Department was able to report a 'remarkable decrease in cases occurring in the protected age groups 5-10 years and 10-15 years' as over 80 percent

¹²⁵ WT, 11 August 1956.

¹²⁶ NZH, 30 June 1956.

¹²⁷ *ibid.*

¹²⁸ *ibid.*

¹²⁹ AS, 3 August 1956.

¹³⁰ NZH, 28 June 1956.

¹³¹ MOH to Deputy DGH, 18 September 1959, BAAK A358 147d Public Health Nursing 1943-70, ANZ, Auckland. Immunising children living in lighthouses was expensive. A trip to Farewell Spit Lighthouse in 1956 cost £14 for the hire of transport to immunise the daughter of the lighthouse keeper. 21 September 1956, H1 14/17 26133, ANZ, Wellington.

¹³² *New Zealand Woman's Weekly*, 3 December 1956, p.3.

had now been immunised.¹³³ In 1954 there were 23 cases but by 1958 only 11 cases were reported; when the Health Department would normally have expected at least 30 cases in these two age groups.¹³⁴ The Department happily concluded (and probably not without some relief) ‘that poliomyelitis vaccination with the Salk vaccine is a very effective measure against paralytic poliomyelitis’.¹³⁵

From the very beginning the Department was concerned about parental response to the vaccine. The Medical Officer of Health for Hamilton, J. F. Dawson commented that ‘Owing to the early misfortune with a particular batch of vaccine in the U.S.A. we do not expect the response to be over-enthusiastic’.¹³⁶ The Department was concerned how parents would react to the vaccine as there had been ‘no indication at present of the likely reaction of parents’ particularly as figures for acceptance had been so low in Britain.¹³⁷ In the 1956 campaign acceptance rates were at an average of 89 per cent for consent cards issued to eight and nine-year-olds.¹³⁸ Other areas were higher; Invercargill boasted a 92 per cent acceptance rate with Timaru and Whangarei at 93, although Hamilton managed only 82 per cent.¹³⁹ This high rate continued; by the end of 1958, over 80 per cent of the five to nine age group and the 11 to 15 age group had received two injections.¹⁴⁰ Preschoolers were not so well covered and although levels of 70 percent were reported in some districts this was by no means universal.¹⁴¹

One factor that would have persuaded parents to have their children immunised was the fear of polio. The emotional response to immunisation as a protection against this dreadful disease cannot be overestimated, especially as an epidemic had only recently been in evidence in 1955 to 1956. One father, Arnold Green, wrote to the Health Department asking for vaccine for his second child, a boy aged three after his

¹³³ AJHR, 1959, H-31, p.17.

¹³⁴ *ibid.*

¹³⁵ *ibid.*, p 18.

¹³⁶ MOH Hamilton to Head Teachers (Primary), 3 August 1956, BCAA 1990/430b, ANZ, Auckland.

¹³⁷ D, 18 July 1956.

¹³⁸ AJHR, 1957, H-31, p.18. Eight-year-olds had an acceptance rate of 89.9 percent whilst for nine-year-olds it was 89.4 percent.

¹³⁹ AAFB 632 W3464/106 144/17/3, 26431 Polio Vaccine 1956-57, ANZ, Wellington.

¹⁴⁰ AJHR, 1959, H-31, p.17.

¹⁴¹ AJHR, 1960, H-31, p.12.

daughter contracted polio and became a 'permanent cripple'.¹⁴² His request was granted and arrangements were made to have the child immunised privately.¹⁴³ Other parents in their zeal to have their children immunised concealed medical conditions from the Health Department, and one child had an epileptic fit after she was injected; her 'mother was so keen to have the child vaccinated that she withheld the information'.¹⁴⁴ In another instance, a child rejoined the queue and received another injection. His parents, when advised 'seemed particularly delighted that the child had received a booster dose' and believed 'the child has never been in better health'.¹⁴⁵

As demonstrated in the previous chapter, this was not usually the case with diphtheria immunisation, where a double injection tended to make parents more anxious. Parents, therefore, felt that polio posed an immediate threat to their children and were prepared to have them immunised even after the Cutter Incident. The threat of the disease outweighed any qualms regarding the safety of the vaccine. Indeed, both polio immunisation campaigns fitted the New Zealand pattern of mass immunisation under threat, particularly as epidemics occurred just before both campaigns. This was in direct contrast to both diphtheria and pertussis, where people did not believe there was such a risk and levels were consequently lower.

Opposition to Polio Immunisation

Opposition was very low-key, in contrast to the British Union for the Abolition of Vivisection's (BUAV) activities during the 1940s diphtheria campaign, and consisted mainly of letters from individuals to the press. Aileen Henry of Epsom wrote to the Minister of Health, J. R. Hanan asking him to 'Please think again before you allow something that will cause a lot of suffering, and even death perhaps, in some cases'.¹⁴⁶ Others were more graphic, a letter from Edith Nichol of Havelock North commented that 'The devil is abroad today and has certainly not forgotten New Zealand'.¹⁴⁷ She believed polio was caused by malnutrition resulting from a faulty diet including soft drinks and pasteurised milk and thus could not be eradicated by the 'serum of

¹⁴² A. Green to J. R. Hanan, 17 August 1956, H1 26133 144/17, ANZ, Wellington.

¹⁴³ J. R. Hanan to A. Green, 11 September 1956, H1 26133, 144/17, ANZ, Wellington.

¹⁴⁴ MOH Palmerston North to DGH, 12 November 1956, H1 26133, 144/17, ANZ, Wellington.

¹⁴⁵ B. W. Christmas to DGH, 6 November 1956, H1 26133, 144/17, ANZ, Wellington.

¹⁴⁶ A. Henry to J. R. Hanan, 8 July 1956, H1 25843 144/17, ANZ, Wellington.

¹⁴⁷ E. Nichol to E. J. Keating, 14 September 1956, H1 26133 144/17, ANZ, Wellington.

diseased monkeys being injected into innocent little children'.¹⁴⁸ The most famous anti-immuniser of the time, Dr Ulric Williams, had already written to the Department in 1955 to express his opinion against the vaccine, reiterating that disease was caused by 'unhealthy, (or unhappy) living, or both'.¹⁴⁹ The *New Zealand Listener* carried a debate between Mary Stroobant and the Health Department. This woman believed that the Department had suppressed any information which 'might cast doubt on the safety and efficacy of polio vaccination' and accused the Department of playing 'God'.¹⁵⁰ Additionally a society calling itself the New Zealand Vigilance Association produced a pamphlet entitled, 'What you have NOT been told about Polio vaccination' which also followed the polio prevention theme of 'right eating, right thinking, sufficient rest, and good habits of hygiene [would] protect children from polio'.¹⁵¹

The polio campaign, in contrast to the diphtheria anti-immunisation campaign, evoked very little opposition apart from a few individuals and a small group who appeared to have little impact. The usual themes of diet and healthy living, coupled with the evilness of injections, formed the basis of protesters' arguments. However, only some were printed in the media and leafleting of parents did not occur. Public anti-immunisation, had, by the late 1950s dwindled to virtually nothing, as a result of the BUAV's focus shifting fully towards anti-vivisection and the widespread acceptance of the polio vaccine.¹⁵²

Assistance of other Organisations

The Health Department had set up clinics to run in conjunction with the programme in schools and from 1960, when the last boosters were given, immunisation clinics became the medium for administering the vaccine. The Health Department also prevailed upon their relationship with the Plunket Society and the Education Department to provide their rooms for these clinics, as the main recipients were

¹⁴⁸ *ibid.*

¹⁴⁹ U. G. Williams to J. R. Hanan, 19 April 1955 H1 25622 144/17, ANZ, Wellington. Williams also wrote to the *NZ Listener* along same lines, 35, 897, 1956, p.5.

¹⁵⁰ *NZ Listener*, 35, 893, 1956, p.5. Also see 35, 897, 1956, p.5 and 35, 900, 1956, p.25 for the debate.

¹⁵¹ D. J. Simpson, 'A Persistent Cloud on the Human Horizon', p.121.

¹⁵² See Chapter 4, pp.115-20.

expected to be infants and preschoolers.¹⁵³ These clinics were run by Public Health nurses in a variety of locations including Plunket Rooms, St John's Ambulance Halls, schools or the Public Health nurse's residence, depending on numbers. In the Hamilton District up to 25 clinics operated in 1959 and by 1960 this had settled to 15 permanent ones.¹⁵⁴ Clinics were the only place Salk injections could be received; GPs were not allowed to administer them until 1961.¹⁵⁵ Having to visit a clinic may have been a contributing factor as to why numbers for the preschool age group were not as high as the Department would have liked. Mothers had to bring their preschoolers to the clinic specially and some mothers may have had difficulties in attending, as had been experienced at the diphtheria and pertussis immunisation clinics and with visiting the doctor for immunisations.

Other groups in addition to Plunket were keen to assist with the immunisation campaign and lend their support, especially those who cared for polio victims. The New Zealand Crippled Children Society (NZCCS) had been started in 1935 with the support of the Rotary Club. By 1960 there were 18 branches in New Zealand and one in the Cook Islands with funds and field officers to be used for the relief of crippled children.¹⁵⁶ The NZCCS was very keen to assist the Department with its vaccine campaign. The Te Kuiti Branch wrote in 1956 that 'members of this committee would be most happy to co-operate in any way that may be possible and is endeavouring to arrange with the local newspaper for some publicity to be given and the residents urged to take advantage of the vaccine that will be available'.¹⁵⁷

Professor J. E. Caughey, speaking at a meeting of the NZCCS, had advised members 'that the society could play a valuable part in the vaccination programme' although his suggestion of using caravans for the immunisation of country children was not

¹⁵³ PHN Thames to MOH Hamilton, 24 April 1958 and PHN Tokoroa to MOH Hamilton, 23 April, BCAA 1990/538a, ANZ, Auckland, are just two examples. Also Auckland Education Board to MOH Hamilton, 23 February 1959, BCAA, 1990/437a Polio Programme Organising (vaccination) 1956-58, ANZ, Auckland. Also Circular Memo, 1958/29, 11 February 1958, BCAA 1990/437a, ANZ Auckland.

¹⁵⁴ BCAA 1990/437a and BCAA 1990/455b Polio Vaccination Programme Organisation 1959-62, ANZ, Auckland.

¹⁵⁵ GPs were allowed to administer the vaccine during the 1961 polio epidemic.

¹⁵⁶ For a full history of the NZCCS up to 1960 see H. E. Carey, *New Zealand Crippled Children Society History 1935-60*, New Plymouth, 1960?

¹⁵⁷ Te Kuiti NZCCS to MOH Hamilton, 4 July 1956, BCAA 1990/538a, ANZ, Auckland.

taken up by the Health Department.¹⁵⁸ Another organisation, the New Zealand Paediatric Society, was also in favour of the vaccine, so much so that Dr Samuel Ludbrook, President of the Paediatric Society, was part of the Polio Vaccine Advisory Committee. The New Zealand Paediatric Society had been established in 1946 by Dr Ludbrook and consisted of 32 members, mainly GPs with a special interest in child health.¹⁵⁹ Both these societies helped to promote and legitimise the vaccine within the community.

The medical profession themselves tended to have mixed feelings about the long term efficacy of the Salk vaccine. Although after 1956 most acknowledged its safety; the immunity it produced was more open to question. The *Auckland Star* reported in April 1956 that ‘Dr Turbott said the Salk vaccine would do the job required of it and would be “the best for the task until something else came along”’.¹⁶⁰ The importance of the vaccine was that it prevented paralytic polio; its acknowledged drawback was that it did not prevent the spread of the disease. Departmental policy was that even though the vaccine was not 100 per cent effective, ‘it is of value as a public health measure’ and the public was advised accordingly.¹⁶¹ Both in New Zealand and abroad unfolding events were observed with interest especially as it was known that Dr Albert Sabin in the United States was trying to develop an oral vaccine that would hopefully give better protection than Salk’s.¹⁶² The public was made aware of these developments through the press and J. A. R. Miles, Professor of Microbiology at Otago and a member of the Polio Vaccine Advisory Committee, advised in 1957 that the live oral vaccine was about five years away and that it could be superior to Salk.¹⁶³

¹⁵⁸ EP, 17 February 1955.

¹⁵⁹ The Paediatric Society was founded in 1946 by Auckland doctor, Samuel Ludbrook, with the first AGM held in 1947 and attended by 32 GPs and paediatricians. Its aims and objectives were ‘to stimulate interest in and to promote the scientific study of child health and paediatrics in New Zealand, and to engage in all activities, clinical and educational, which in the opinion of the Society, may be necessary from time to time in the interest of child health’. The Society consisted of over 155 members in 1972 although too small to publish a journal or undertake research work. By the late 1990’s membership had risen to over 240 members who were specialists in the area of Child health, had passed Part 1 FRACP (Paediatrics), or who practised mainly in the arena of child health. See A. Arthur, *History 1947-1993*, unpublished work, held by Paediatric Society. Also, Editorial, ‘Paediatric Society of New Zealand’, NZMJ, May 1972, p.303.

¹⁶⁰ AS, 5 April 1956.

¹⁶¹ NZH, 6 April 1956.

¹⁶² The vaccine was developed in the USA but its trials took place in the Soviet Union. This was because many American children had already received Salk’s vaccine, whereas the children of the Soviet Union had not.

¹⁶³ NZH, 18 November 1957.

A. W. S. Thompson, the Auckland Medical Officer of Health, had written in 1953 that 'safe living vaccines may soon be available for immunisation'.¹⁶⁴

In 1962 the Health Department reflected on the Salk campaigns of the late 1950s. It concluded that the campaigns were 'necessarily protracted because of the large numbers involved and the limited medical and nursing staff available, each administration of the vaccine being a minor medical procedure requiring full aseptic technique: and because the vaccine became available only in limited quantities and at irregular intervals'.¹⁶⁵ Sabin's vaccine, in contrast, was to prove to be so much easier.

Part II – 'A Short, Sharp Campaign' - Sabin Oral Polio Vaccine

Dr Albert Sabin, along with others, had continued the quest to find a safe living polio vaccine which comprised all three types of the poliovirus. Denied access to America, which was now under the control of Salk, Sabin turned to Russia to try his new vaccine. It was not until June 1959 that Sabin, along with Russian scientists, announced to the International Scientific Congress on Live Virus Vaccines in Washington that the vaccine was a success after being given to an estimated four and a half million people with no side effects and good antibody response. For the next year there was a contest between the three main competitors in the vaccine race, Dr Herald Cox, Dr Hilary Koprowski and Dr Albert Sabin. With problems besetting both Cox and Koprowski, Sabin emerged to the fore by 1961.¹⁶⁶

Events with the development of the oral polio vaccine (OPV) had been closely monitored in New Zealand. Most medical professionals, such as J. A. R. Miles, Professor of Microbiology at Otago Medical School, believed it was superior to the Salk vaccine. This vaccine had several advantages over Salk; it could be administered orally, rather than by injection, making administration easier, particularly for children. It was also expected to induce a longer immunity period than Salk with two doses,

¹⁶⁴ A. W. S. Thompson, 'The Last Days of Poliomyelitis, perhaps', *Journal of the New Zealand Royal Sanitary Institute*, 14, 1953, p.273.

¹⁶⁵ DGH to Secretary of Newspaper Association of NZ, 12 February 1962, BCAA 1990/485a Polio Vaccinations 1956-65, ANZ, Auckland.

¹⁶⁶ For an account of the development of the live vaccine see D. M. Oshinsky, *Polio. An American Story. The Crusade that Mobilized the Nation Against the 20th Century's Most Feared Disease*, New York, 2005, pp.261-63.

whereas for some people four Salk injections were advised. However, for New Zealand, its most important property was that it removed the wild polioviruses circulating in the community by preventing people becoming carriers. This induced 'herd' immunity rather than protecting just the individual. In June 1961 the American Medical Association policy council urged doctors to support the new polio vaccine after concluding Salk was not fully effective against the disease.¹⁶⁷

The failure of the Salk vaccine to eradicate the disease from New Zealand became very evident in January 1961 with the onset of a polio epidemic in Auckland. A total of 214 cases were notified between January to July 1961. Of 85 cases admitted to hospital, 61 per cent were over 15 years of age - those not covered by the Salk vaccine campaigns.¹⁶⁸ The epidemic, although localised to the Auckland Health District, demonstrated to the Department that large sections of the population were still vulnerable to polio. The use of the Sabin vaccine to halt the circulation of wild viruses within the community would hopefully remove polio from New Zealand once and for all.

Further support for immunising with Sabin's vaccine was given by the WHO in 1961. It recommended 'without reservation' the use of OPV in communities 'where polio has been essentially a disease of infancy and early childhood', even if immunisation with Salk had already taken place.¹⁶⁹ As New Zealand fitted into this category and with an epidemic just having occurred, the EAC, acting on the WHO's advice, recommended in April 1961 that the Department of Health institute a programme of immunising infants up to 12 months old with OPV. Three doses of 1ml were to be given four to six weeks apart administered at six and seven months of age, followed by a third dose at 12 months.¹⁷⁰ As the vaccine was taken from a spoon it was hoped that an older infant would be easier to 'feed'. The Department introduced the vaccine to a small group initially, 'so that we might gain local experience with the vaccine before we embarked on any grander programme' and it would also give time to

¹⁶⁷ WT, 30 June 1961.

¹⁶⁸ W. R. Lang et al, 'Poliomyelitis in Auckland: A report on the 1961 epidemic', NZMJ, 60, 1961-2, p.450.

¹⁶⁹ NZH, 13 February 1962.

¹⁷⁰ Circular Memo 1961/25, 28 July 1961 H-NA W2400 132 Immunisation Polio - General, ANZ, Wellington.

‘handle the problems of storage and distribution of supplies within the country’.¹⁷¹
The eventual aim was to immunise the entire population of New Zealand.

This programme started in August 1961 and by December over 13,000 infants (about 80 percent) had received the vaccine, the response being described by the Department as ‘most pleasing’.¹⁷² In Nelson, the Medical Officer of Health, G. Badger, reported that the use of the oral vaccine had resulted in a greater demand from mothers, immunisations had increased from 45 a month for injections to 75 orals a month, probably as a result of the relative ease of administration compared with Salk.¹⁷³ These vaccines were given by Public Health nurses at departmental immunisation clinics; doctors were not able to give the Sabin vaccine until April 1967, although they were given permission to immunise adults with the Salk vaccine from May 1961 in response to public demand during the epidemic.

The success of the initial 1961 campaign and the lack of reactions enabled the Department and EAC to recommend extending the programme. In April 1962 some 780,000 schoolchildren and preschoolers were to be immunised with a second dose offered in June in what was deemed a ‘short sharp campaign’ to eradicate the wild polioviruses in the community.¹⁷⁴ Children were targeted first as they were seen as the main carriers of the disease in New Zealand.¹⁷⁵ However, on the recommendation of the EAC they were to be offered only two doses rather than the ideal of three due to the limiting nature of a mass immunisation campaign. It was felt two doses were a ‘sufficient compromise’ and a third dose could always be added at a later stage.¹⁷⁶ Adults were offered OPV in September and November of 1962, with 1,111,114 accepting two doses.¹⁷⁷

¹⁷¹ ‘New Zealand Experience in Immunization against Poliomyelitis’, undated, H-NA W2400 487, Immunisation Polio - General, ANZ, Wellington.

¹⁷² AJHR, 1962, H-31, p.9.

¹⁷³ G. Badger to DGH, 6 November 1961, H1 35355 144/17/1 Polio Supplies and Orders, ANZ, Wellington.

¹⁷⁴ Memo, 11 January 1962, H-NA W2400 132, ANZ, Wellington.

¹⁷⁵ MOH Napier to Parents, 12 March 1962, H-NA W2400 132, ANZ, Wellington.

¹⁷⁶ Minutes of EAC meeting, 6 February 1962, H1 33136 29/19, Epidemiology Advisory Committee 1962-68, ANZ, Wellington.

¹⁷⁷ H-NA W2400 487, ANZ, Wellington. The adult campaign is outside of the scope of this work.

The Sabin immunisation campaign was a huge undertaking by the Department, on a much larger scale than any previous programmes, and was the first truly 'mass' campaign in New Zealand. With no obstacles to vaccine supply this time, the Department had 1,200,000 doses on order from Connaught Laboratories of Toronto with 600,000 timed to arrive towards the end of March. To ease administration the vaccine had been concentrated into a 1/2cc dose and needed to be mixed with distilled water. The diluted vaccine would then be administered to the patient in a disposable paper cup. To facilitate this the Department placed an order for 1,500,000 paper cups for use in the campaign.¹⁷⁸ Each district had to organise its own supply of distilled water due to freight costs, and the Medical Officer of Health for Hamilton, J. F. Dawson made arrangements for the supply of 280 gallons of distilled water for use in his district.¹⁷⁹ In addition vaccine could not be pre-mixed hours before as only five to ten minutes standing time was deemed a 'safe period'. To ensure its effectiveness, vaccine had to be mixed for each individual child.

The EAC set the campaign to begin on 9 April 1962 and districts were expected to complete their areas by 18 April. In the Hamilton Health District it was hoped to immunise 1,000 children between the hours of 9am to 12pm and 1pm to 4pm. The district had 32 teams operating 239 preschool clinics and over 300 school clinics for the campaign.¹⁸⁰ In Auckland, teams expected to be able to immunise 9,000 pupils a day.¹⁸¹ The second dose was administered using the same method from 28 May to 11 June 1962. Preschoolers were approached in a different way. In the Hamilton Health District the larger towns set aside one day for the immunisation of preschoolers at Plunket rooms and dental clinics. In Auckland all preschoolers were to be immunised at 53 school dental clinics on 9 April; 33 cars were ready to deliver the vaccine to the clinics.¹⁸² It was hoped that by focusing on one day with suitable publicity it would 'stimulate a full public response, while the number of Clinics should spare mothers needless queuing and travelling'.¹⁸³

¹⁷⁸ NZH, 22 December 1961.

¹⁷⁹ *ibid.* The water needed to be distilled so it would not react with the vaccine.

¹⁸⁰ BCAA 1990/454a Oral Polio 1962, ANZ, Auckland.

¹⁸¹ NZH, 27 March 1962.

¹⁸² NZH, 3 April 1962.

¹⁸³ Circular Letter 5 March 1962, YCAS A740/532e, ANZ, Auckland.

Publicity

Publicity for the campaign was of major significance. Apart from encouraging parents to have their children immunised, the Health Department also needed to make sure that parents understood the necessity of immunisation with the oral vaccine. Parents were informed that the Sabin vaccine prevented carriers of the disease thereby eliminating the disease in the community which was something the Salk vaccine did not do. Therefore, the Department pointed out, all children should be immunised with the oral vaccine even if they had already been immunised with the Salk vaccine. The vaccine would only boost immunity and would not be harmful. In March, the Director-General of Health, Harold Turbott, in a comment to the *New Zealand Herald*, emphasised the importance of the immunisation with the oral vaccine commenting that 'there still appeared to be some confusion in parents' minds as to the need for oral vaccine if children had already had Salk vaccine'.¹⁸⁴

To assist parental education, *Health* ran articles on the oral polio vaccine which explained how it worked and the necessity for it, but given that its circulation was only around 62,000, it is debatable how many parents this information reached.¹⁸⁵ Parents also received a letter from their local Medical Officer of Health with their child's consent card giving information regarding the reasons for the oral vaccine. In contrast to the Salk vaccine, emphasis was not placed so much on the safety of the vaccine as on its necessity to prevent carriers of the disease. The Department also placed advertisements in the press, timed for early March, to coincide with the distribution of consent cards as well as press releases. Posters were used, and radio and cinema advertising was taken advantage of. A film slide was prepared by the Department for use on a countrywide basis for March and April, which read,

REMINDER TO PARENTS - ORAL POLIO VACCINE

- **Effective Protection**
- **Pleasant tasting**
- **No needle**¹⁸⁶

¹⁸⁴ NZH, 15 March 1962.

¹⁸⁵ *Health*, 13, 3, 1961, pp. 4-5., *Health*, 13, 4, 1961, pp. 4-5., *Health*, 14, 1, 1961, p.13. Also NZYB, 1963, 68, p. 146. *Health* was published four times a year and was issued free.

¹⁸⁶ Circular Memo 1962/29, 8 February 1962, H-NA 2400 132, ANZ, Wellington.

On 10 March, the 'radio doctor', Harold Turbott, was scheduled to give a talk on oral polio immunisation and four other talks were arranged for weeks in March and April during women's hours. It was perceived by the Department that these types of programme 'are as a rule only too pleased to include gratis mention of matters of human and public interest' especially as the campaign had 'the "blessing" of the Minister of Broadcasting'.¹⁸⁷ The Governor-General in his capacity as a parent, Dr Mulholland, an experienced GP, Dr Neil Begg, Medical Advisor to the Plunket Society and Miss June Opie, a polio victim, were all invited by the Health Department to contribute.¹⁸⁸

The Hamilton District, in particular, felt that radio was a very important medium for conveying information. J. F. Dawson, Medical Officer for Health for Hamilton, believed that many parents had not seen the 'extensive newspaper advertising' and that the Department 'would have to rely heavily on radio publicity. Whereas people do not bother to read the newspaper they will at least listen to the radio'.¹⁸⁹ Dawson made arrangements with the local station to read out the list of clinics for each day of the campaign as a reminder to parents to take their children along.¹⁹⁰

The publicity obviously had an effect as parental response was described by the Department as 'quite remarkable for a voluntary campaign'.¹⁹¹ Approximately 93 per cent of children received the two doses of vaccine, with 97 per cent receiving one dose, signalling that despite departmental worries, parents had understood the need for Sabin after Salk.¹⁹² In the Hamilton Health District, of an estimated 85,000 children, 82,432 received the first dose of vaccine with 92 percent completing the course.¹⁹³ The preschool figures after one dose were not quite as good, with 87 percent receiving immunisation. Nevertheless, the Department felt the figures 'well exceeded even the most optimistic predictions'.¹⁹⁴ No cases of polio were notified between April and

¹⁸⁷ D. P. Kennedy to MOH, 13 August 1962, H-NA 2400 132, ANZ, Wellington.

¹⁸⁸ Circular Memo 1962/30, 9 February 1962, BCAA 1990/485a, ANZ, Auckland.

¹⁸⁹ MOH Hamilton to Station Manager Radio 1XH, 16 March 1962, BCAA 1990/454a, ANZ, Auckland.

¹⁹⁰ *ibid.*

¹⁹¹ AJHR, 1963, H-31, p.5.

¹⁹² Of an estimated 780,000 children, 761,698 received the first dose with 727,864 receiving the second dose. D. P. Kennedy to MOH, 12 October 1962, H-NA 2400 132, ANZ, Wellington.

¹⁹³ AJHR, 1963, H-31, p.102.

¹⁹⁴ D. P. Kennedy to MOH, 12 October 1962, H-NA 2400 132, ANZ, Wellington.

October 1962, which was seen as success for the OPV and justifying the Department's expenditure of £40,593 on vaccine.¹⁹⁵ By 1963 polio in New Zealand had been effectively consigned to the history books.¹⁹⁶

Several factors had influenced parents to have their children immunised again. The 1961 epidemic, although affecting a large number of adults, was still proof that the spectre of polio had not yet been banished from the New Zealand scene and there was still fear of the disease. The oral polio vaccine promised to eradicate polio once and for all. There seemed to be little risk with the immunisation and indeed no reactions were reported to it. Nor did the vaccine have a 'Cutter-type' incident until after the child campaign had taken place.¹⁹⁷ There was now confidence in the polio vaccines, Salk's had reduced the fatality rate from 5.3 of notified cases in 1956 to 1.1 in 1961, and people hoped that the new vaccine would complete the work.¹⁹⁸ As unimmunised adults now made up the majority of the cases and children were seen as the main carriers, self-preservation may also have motivated parents to accept the new vaccine for their offspring and to have themselves immunised in the September/November campaign. The Health Department believed this, commenting that 'many people are undoubtedly motivated towards seeking protection against poliomyelitis'.¹⁹⁹

Another important reason would have been the absence of an injection; Salk required three injections, in addition to those for the triple. Being able to give a child a drink rather than an injection would be a positive benefit for parents. A further contributory factor influencing the parental decision was the information made available to them. The excitement that had surrounded Salk's vaccine was not the same for Sabin's but the Department and the press prepared to give parents as much information as they felt was necessary about the vaccine. Most parents obviously felt that they were given enough information as the acceptance rate was so high.

¹⁹⁵ WT, 16 November 1962, also NZH, 29 June 1962.

¹⁹⁶ Since 1962 there have been four cases of polio in New Zealand all caused by the Sabin oral vaccine. See R. M. Cullen, W. J. Walker, 'Poliovirus in New Zealand 1915-1997', NZFP, 26, 3, 1999, p.50.

¹⁹⁷ In August 1962, 62 cases of polio were reported 30 days after immunisation with the Sabin vaccine from different, non-epidemic areas in the USA. T. Gould, *A Summer Plague*, p.184.

¹⁹⁸ W. R. Lang et al, 'Poliomyelitis in Auckland. A Report on the 1961 Epidemic' NZMJ, 60, 1961, p.453.

¹⁹⁹ AJHR, 1963, H-31, p.7.

Objections were few and far between and the Department commented that 'it is unlikely that there will be any active opposition to the campaign and publicity can be directed towards ensuring that the public is well-informed'.²⁰⁰ One opponent argued, as had many others in previous immunisation campaigns, that 'money was being squandered in working up the emotions of fear in parents' and that healthy living and hygiene would combat disease, which demonstrated a lack of understanding of the nature of polio.²⁰¹ However, this reaction was not common amongst the public, the majority of whom supported the Department's immunisation campaigns.

The Department also had the support of other organisations for its campaign. The St John's Ambulance Brigade had offered assistance, usually in the form of allowing its halls to be used for clinics free of charge. However, the most significant support came again from the Plunket Society as it had for the Salk immunisation clinics. This was in large measure due to Dr Neil Begg's close working with the Department on matters relating to preschoolers and polio immunisation. Additionally, he was a member of the EAC and an advocate for the vaccine. He recommended to the Department that Plunket be responsible for the immunisation of preschoolers where possible.²⁰² Plunket nurses joined teams to immunise preschoolers at clinics set up in Plunket rooms, at schools or in dental clinics, depending on the district. Plunket Society committees were also keen to assist,

They planned vaccination centres (usually Plunket rooms), they arranged timetables to suit the doctors and nurses, they tried to visit every home which had pre-school children to encourage full participation, they arranged a shuttle service of motor cars for transportation and listed mothers who, for some reason, were unable to attend on the chosen four days in April 1962.²⁰³

The contribution of the Plunket Society to the campaign was significant. In the Napier Health District 10,491 of the 14,156 doses administered were given at Plunket clinics and the local Society was thanked for 'the valuable and willing assistance' given during the campaign - nearly 90 percent of preschoolers in that district were immunised.²⁰⁴ In contrast to administering vaccine to schoolchildren, who were all

²⁰⁰ Circular Memo 1962/29, 8 February 1962, H-NA 2400 132, ANZ, Wellington.

²⁰¹ A. E. Garde to Dept of Health, 3 April 1962, BCAA 1990/454a, ANZ, Auckland.

²⁰² N. C. Begg, *The Intervening Years*, Dunedin, 1992, p.109.

²⁰³ *ibid.*

²⁰⁴ E. R. Overton to Secretary, Plunket Society, 24 August 1962, H-NA 2400 132, ANZ, Wellington.

together in one place, the preschool programme was reliant on mothers bringing their children to the clinic at the appropriate time, attendant with the usual difficulties of access and timing. The efforts of the Plunket Society to help overcome these difficulties was a major factor in the Health Department achieving such notable figures for the under-fives and was gratefully acknowledged by the Department.

Overseas Experiences

Britain had initially steered clear of the live vaccine after a disturbing outcome to an experiment by Hilary Koprowski in Belfast. It had been sponsored by George Dick, a Professor of Microbiology at Queen's University, who found that on passing through the body the strains reverted to their natural virulence making the vaccine unsafe for even clinical trial. Dick then became a staunch opponent of the live vaccine and had significant influence in Britain in the late 1950s. Nevertheless, with the advent of the Sabin vaccine, Britain became the first country to manufacture the vaccine through the American owned Pfizer Laboratories. An outbreak in Hull of polio in September 1961 caused the local authorities to make a 'historic decision', live polio vaccine was used for the first time to try and halt the disease by immunising the entire population of Hull. In one week, 358,000 people were immunised and within two the epidemic was over. As a result the Ministry of Health officially endorsed the vaccine and it was put into general use in early 1962.²⁰⁵ The quick take-up of Sabin in Britain was in contrast to the debates and controversy surrounding the Salk vaccine five years previously. Britain, known for her cautiousness and procrastination, adopted a different tack with the oral vaccine and indeed, was using it, as was New Zealand, before the United States.

The United States Department of Health, Employment and Welfare, after the Cutter Incident, was more cautious, licensing the new vaccine and the strict tests imposed on it by the Department of Biological Standards that meant the vaccine would not be available in the United States until the end of 1961. Nevertheless, in an unprecedented step the American Medical Association endorsed the vaccine even before it had been approved, thereby ensuring its use.²⁰⁶ By March 1962 all three

²⁰⁵ T. Gould, *A Summer Plague*, pp.175-76.

²⁰⁶ D. M. Oshinsky, *Polio. An American Story*, p.266.

strains were licensed and favourable press coverage helped ensure that a programme of immunisation was put in place by 1963, with the Salk vaccine being gradually phased out.²⁰⁷

Canada's Connaught Serum Laboratories licensed their Sabin vaccine in March 1962 and by the end of the year 3,771,681 Canadians had received it.²⁰⁸ In 1959, major epidemics of polio in the provinces renewed demand for the oral vaccine, particularly as in New Zealand, there had been a shift towards the number of adults being affected, although hardest hit were the unimmunised under-fives.²⁰⁹ By 1965 with the use of OPV the incidence of polio in Canada was effectively reduced to zero.²¹⁰

Conclusion

The polio immunisation campaigns were unlike any undertaken either before or since, mainly because of the huge international interest surrounding both vaccines and the shared dread of the disease. Its visible after-effects in the form of disabled children were a powerful inducement to be immunised, not just in New Zealand but also in other countries seriously affected by epidemics of polio. Levels of immunisation were high in New Zealand for the Salk vaccine and about 80 percent of the whole population were immunised using the Sabin vaccine, a compliance rate that has remained unmatched. The ease of administration for oral vaccine also contributed to the high levels of acceptance.

The Cutter Incident had a huge impact on the way New Zealand's Salk immunisation programme was implemented, radically changing the plan from mass immunisation of all children to a piecemeal approach by age which was dictated by vaccine supply. It also resulted in a loss of confidence in the American vaccine worldwide and meant that several countries began producing their own. New Zealand had to wait until these supplies became available as American vaccine was not favoured. The Cutter Incident was therefore responsible for reshaping New Zealand's polio immunisation programme.

²⁰⁷ *ibid.*, p.267.

²⁰⁸ C. J. Ruddy, 'Do Something!...Do Anything!', p.378.

²⁰⁹ *ibid.*, p.369.

²¹⁰ *ibid.*, p.378.

The concerns about vaccine safety raised by Cutter contributed to the establishment in New Zealand of a specialist polio vaccine committee independent of the Health Department. This committee now determined all matters pertaining to the purchase, safety and effectiveness of the polio vaccines before recommending an immunisation campaign. In addition this committee relied heavily on the advice and reports of the WHO before making decisions. Recognising its own limitations in the increasingly technical world of vaccines, the Health Department acted on specialist advice before proceeding with any campaign. Cutter made the New Zealand Health Department much more aware of vaccine safety and reliant on the advice of the Polio Vaccine Committee and the WHO. The scope of advice broadened to encompass all vaccines in 1960 with the formation of the EAC.

Most parents were in favour of the vaccine and allowed their children to be immunised with both vaccines when they became available. Indeed there was little opposition per se and objections focused on healthy living and the perceived evils of immunisation. The demise of the BUAV from the immunisation scene to concentrate on opposing vivisection, meant there was no organised resistance such as had been in evidence during the diphtheria campaign.

The international nature of the polio vaccines and the unprecedented coverage in the media gave the public access to more information about the vaccines than had been deemed necessary with previous ones. This was because the polio vaccines, especially Salk's, were very newsworthy in a way that diphtheria was not. American glamour and the 'conquest' of a crippling disease were very appealing to both the New Zealand media and the public. The Cutter Incident, which was widely reported in New Zealand, also indicated to the Department that parents would need to be confident in the vaccine, and providing education and information about the immunisation would be one way of achieving this. The polio vaccines helped to stimulate an interest in immunisation amongst the public and demonstrated to the Health Department that providing information to parents about immunisation had a positive effect on compliance levels.

New Zealand was one of the first countries to immunise its whole population with Sabin vaccine and probably had the world's highest voluntary acceptance rate per

capita at the time.²¹¹ Protected by a repertoire of vaccines, the 1960s New Zealand child was now safe from the most dangerous childhood illnesses. The next stage of immunisation development, against non-life threatening diseases such as measles, was now taking shape.

²¹¹ The USSR immunised 75 to 80 million people but whether it could be classed as 'voluntary' is debatable. See J. R. Wilson, *Margin of Safety*, p.195.

CHAPTER 6: Re-inventing Disease Perception: immunisation and public health policy 1962-1972

The success of both the Salk and Sabin vaccines in controlling polio meant that the last of the ‘killer’ diseases was now preventable by immunisation. Subsequently, the scientific community focused its attention on developing vaccines for diseases considered to be ‘mild’ illnesses of childhood, such as measles. Although measles could, given the right conditions, be a killer, it did not evoke the same fear in parents as diseases such as diphtheria and polio. The Health Department now had to place more emphasis on methods of persuasion to induce people to immunise their children against the less dangerous illnesses. The development of the rubella vaccine in particular signalled a significant change in the role of immunisation. This vaccine was not just used to prevent the disease; it also gained a new role as a community health measure, because the most devastating effect of rubella was to the unborn foetus. This decade therefore witnessed a gradual shift in attitude towards these ‘milder diseases’ as the Health Department began to publicise their more serious side-effects to convince parents it was worth having their children protected. There was also increasing departmental concern over immunisation levels for both European and Maori and the reasons for this anxiety will be explored.

1960s New Zealand

Health policy, including immunisation, was influenced by changes in attitude within New Zealand society and the 1960s were no exception. This decade signalled the beginning of changes to New Zealand society that would bring the rest of the world much closer. Television transmission commenced nationally in 1961 and brought the world into a growing number of New Zealand homes.¹ Jet travel also became a more affordable way to see the world with regular services established between Britain and New Zealand in 1963.² An important consequence of these developments was an increasing exposure to ideas and information from other societies, through both programmes on the television and by visits to other countries. The Health Department, realising the potential of television to reach a large number of parents, began to use it

¹ M. King, *The Penguin History of New Zealand*, Auckland, 2003, p.452.

² *ibid.*, pp.456-57.

to convey health information, including screening an information programme during the 1970 rubella immunisation campaign.

Social change in the 1960s also highlighted the wide gap in health and wealth between Maori and Pakeha. Now moving to towns at a rate of one percent a year, Maori were described in the 1960 *Hunn Report* as in a 'sorry plight'.³ Often in sub-standard housing, only 31 percent of Maori in the 1956 census had a flush toilet compared to 80 percent of Europeans, and only 19 percent had a washing machine.⁴ Statistics for the health of Maori also reflected a much lower standard than that of Europeans. In 1951 life expectancy for Maori males was 51 compared to 68 for Pakeha males.⁵ Infant mortality rates for the years 1954 to 1958 were 57.5 for Maori compared to 19.8 per 1000 for Europeans. The *Hunn Report* concluded that a 'continuous Maori health campaign...is warranted to overcome inertia and other known obstacles' to try and lessen the health gap between Maori and Pakeha.⁶

Nevertheless, although hardship amongst Maori was a serious problem, it was not just confined to Maori, as some Europeans were also 'living on the bread and butter line'.⁷ At this time, there was general concern over the continued existence of poverty in an affluent society. There were families who were unable to afford to send their child on school trips, who did not own a washing machine; of senior citizens unable to afford bus fares or a telephone.⁸ By the end of the 1960s, definitions of poverty had changed from those formed in the 1930s. 'Poverty was no longer understood only as destitution...[now] the standard of living of society's poorest members should move upwards as the standard rose for the rest of society', and 'people who were excluded from the wealth of their own society [were described] as living in "relative poverty"'.⁹ An awareness of the problems in New Zealand led to the establishment of a Royal Commission of Inquiry into Social Security in 1969 'to inquire into the principles of the existing social security system and their relevance in the changing economic and

³ J. K. Hunn, *Report on Department of Maori Affairs*, 1960, Wellington, p.20.

⁴ *ibid.*, p.36. 58 percent of Europeans owned a washing machine.

⁵ *ibid.*, p.22. For females - Maori had a life expectancy of 55, compared to 72 for Pakeha.

⁶ *ibid.*, p.22.

⁷ *New Zealand Parliamentary Debates (NZPD)*, 1968, 356, p.1041.

⁸ M. McClure, *A Civilised Community. A History of Social Security in New Zealand 1898-1998*, Auckland, 1998, p.167.

⁹ *ibid.*, p.165.

social conditions' as part of a range of tasks.¹⁰ Its report in 1972 recommended that New Zealand should 'renew and enlarge its commitment to social security'.¹¹ Ways to achieve this included increasing benefits to families, comprising of either one or two parents, as well as more provision for superannuitants.¹² The Commission also recommended that immunisation, including the doctor's visit, should be free and this was implemented from October 1972.

Measles Vaccine

In New Zealand, as in other countries such as the United States and Britain, the focus of vaccines was now on preventing the so-called 'milder' diseases of childhood. Measles was the first of these illnesses for which a vaccine was developed. In New Zealand measles was generally not regarded as a 'killer' disease in the same way as diphtheria and polio, and most parental perceptions were of a comparatively minor infection. Barbara Gastel pointed out that in the pre-vaccine era there were two schools of thought regarding measles; those who thought it was a mild childhood affliction and those who believed it was 'a severe and crippling illness, a conflict that later proved an obstacle to [the] eradication of measles'.¹³

Secondary complications such as pneumonia could result in severe problems and there was also the risk, albeit a low one, of encephalitis.¹⁴ In the United States in 1962 there were a reported 481,530 cases of measles, however the real number of cases was estimated 4,000,000.¹⁵ Most of these were mild cases which were nursed at home and so would not have been reported if a doctor was not involved. There were an estimated 4,000 cases of measles encephalitis and 400 recorded deaths from

¹⁰ *ibid.*

¹¹ *ibid.*, p.171.

¹² *ibid.*, pp.172-75.

¹³ B. Gastel, 'Measles: A Potentially Finite History', *Journal of the History of Medicine and Allied Sciences*, 28, 1973, p.39. Barbara Gastel is Associate Professor in Humanities at Texas A. and M. Health Science Centre College of Medicine, Texas A. and M. University and Associate Professor of veterinary integrative biosciences and biotechnology.

¹⁴ Malnutrition was also an important factor in determining measles severity and haemorrhagic measles is still a problem in poorer parts of the world. The risk of measles encephalitis was estimated at 1 in 1000 cases. See A. B. Christie, *Infectious Diseases: Epidemiology and Clinical Practice*, London, 1980, p.368.

¹⁵ A. Cliff, P. Haggett, M. Smallman-Raynor, Measles. *A Historical Geography of a Major Human Viral Disease From Global Expansion to Local Retreat, 1840-1990*, Oxford, 1993, p. 220.

¹⁵ B. Gastel, 'Measles: A Potentially Finite History', p.34. Gastel wrote there were an estimated 4,000,000 cases.

measles.¹⁶ In Australia, there were 183 deaths from measles from 1957 to 1966.¹⁷ In the same period in New Zealand, hospitals reported admitting a total of 1929 cases of measles.¹⁸ Analysis of hospital discharges for the epidemic years from 1949 to 1969 showed that nearly 60 percent of cases were in the under five-year-old category, with over 22 percent of cases for the five to tens.¹⁹ With a predominant number of cases occurring amongst young children, the Health Department monitored measles vaccine development in the United States with interest.

Measles vaccine was first licensed in the United States in 1963 after years of research to produce an attenuated, live vaccine. The United States initially adopted this vaccine with great enthusiasm in the 1960s with more than ten million doses being given to children between 1963 and 1965.²⁰ In 1967, the Center for Disease Control announced that measles could be eradicated from the United States by targeting up to 95 percent of the child population in a series of mass immunisation campaigns by the end of the year.²¹ From 1966 to 1968, 19.5 million doses of measles vaccines were given out as part of measles eradication programmes.²² Accordingly, there was a substantial reduction in the numbers of cases of measles; by 1968 the reported incidence was 22,231 cases, less than five percent of the 1962 total of 481,530.²³

The United States campaign against measles reduced disease incidence by using several methods. These included, the use of mass immunisation campaigns to immunise all children under one and those of school-entry not previously immunised; the provision of highly publicised and specialised clinics, free vaccine and birth certificate follow-up programmes to make sure that all were immunised.²⁴ At the beginning of the campaign in 1962, trials indicated that the public was in favour of the

¹⁶ *ibid.* Cliff, Haggett and Smallman-Raynor have used reported cases.

¹⁷ B. Feery, 'Impact of immunization on disease patterns in Australia', *Medical Journal of Australia*, (MJA), 2, 1981, p.175.

¹⁸ R. M. Cullen, W. J. Walker, 'Measles epidemics 1949-91: the impact of mass immunisation in New Zealand', *New Zealand Medical Journal*, (NZMJ), 109, 1039, 1996, p.401.

¹⁹ *ibid.* The epidemic years for measles were 1949, 1952, 1954, 1959, 1963, 1965, 1967 and 1969.

²⁰ A. Cliff, P. Haggett, M. Smallman-Raynor, *Measles. A Historical Geography*, p.219.

²¹ J. P. Baker, 'Immunization and the American Way: 4 childhood vaccines', *American Journal of Public Health*, 2000, 90, 2, p.205.

²² A. Cliff, P. Haggett, M. Smallman-Raynor, *Measles. A Historical Geography*. pp.219-20.

²³ *ibid.*, p.220.

²⁴ *ibid.*, pp.219-21.

vaccine, as was demonstrated by high levels of vaccine take-up.²⁵ In Rhode Island in 1966, 32,000 children received the vaccine in four days.²⁶ Even though measles did not evoke the same sort of fear engendered by diseases such as polio, many American parents were initially willing for their children to be immunised against this disease, particularly as measles was a recognised health problem and vaccine was provided free.

However, by 1969, this seemingly promising picture had altered. Only 61.4 percent of one to four year olds had received a dose of measles vaccine that year, which was below the levels for other vaccines such as polio and diphtheria, tetanus and pertussis (triple vaccine).²⁷ This experience was even more pronounced in the five-to-nine age group with only 59 percent of these children receiving one dose of measles vaccine compared to 83.6 percent for polio and 86.1 percent for the triple vaccine.²⁸ The situation was further exacerbated in 1969 by the re-allocation of funds from the measles to the rubella vaccine which gradually reversed the previous successes. By 1971 cases of measles had increased to 75,290 although this was still much lower than numbers ten years previously.²⁹ American policy towards measles was therefore inconsistent, as its 'importance' waxed and waned depending on other vaccine opportunities that were presented. Although attitudes in the United States were not ambivalent towards the vaccine, measles was an immunisation that could be, and was, sidelined if other priorities arose. This strategy was also evident in New Zealand as will be discussed shortly.

Britain demonstrated a much more cautious approach, comparable to the methods adopted for the introduction of pertussis vaccine fifteen years earlier. The British measles vaccine was not recommended by the Ministry of Health for general use until 1968, after four years of testing had been carried out by the Medical Research Council (MRC) to check for side-effects and longevity of the vaccine.³⁰ In addition, scientific advisers were undecided as to whether measles was a disease which warranted

²⁵ B. Gastel, 'Measles: A Potentially Finite History' p.42.

²⁶ A. Cliff, P. Haggitt, M. Smallman-Raynor, *Measles. A Historical Geography*, p.221.

²⁷ P. M. Vivier, 'National Policies for Childhood Immunisation in the United States: An Historical Perspective', PhD dissertation, John Hopkins University, 1996, p.90.

²⁸ *ibid.*, p.94.

²⁹ *ibid.*

³⁰ J. P. Baker, 'Immunization and the American Way', p.205.

immunisation, particularly after some of the earlier inactivated vaccines had demonstrated high reaction rates.³¹ By 1968 the Ministry of Health felt confident enough to go ahead with a live attenuated vaccine which they felt minimised side-effects and gave long-term immunity. The vaccine made by Burroughs-Wellcome, called Wellcovax, was the vaccine of choice. Public acceptance was initially high, with approximately 800,000 doses administered in the first year.³² Unfortunately, the confidence exhibited by the Ministry of Health was misplaced, as the vaccine had to be recalled after the death of a baby from encephalitis and complications in two other children.³³ Further cases of measles encephalitis brought on by the vaccine were reported in the following weeks.³⁴ The immunisation programme was continued using the Glaxo Laboratories vaccine made from a different strain but due to the shortage in supply it was restricted to certain categories of susceptible children.³⁵ This had implications for the New Zealand measles vaccine programme as the Department of Health had chosen to use Wellcovax.

In New Zealand the Epidemiology Advisory Committee (EAC) had been considering the introduction of the measles vaccine since 1963, but, like Britain, did not feel able to recommend a vaccine that it did not feel was entirely proven to its satisfaction. In March 1967 the EAC had suggested that children at special risk should be immunised by their family doctor if it was deemed necessary, although it was still not prepared to recommend the vaccine for general use.³⁶ The 'cautious approach' adopted by the EAC was felt to be justified until trials had determined the safety of both live and killed vaccines. Therefore it was not until March 1968 that the EAC felt able to recommend general use of the measles vaccine.³⁷

³¹ *ibid.*

³² A. Cliff, P. Haggatt, M. Smallman-Raynor, *Measles. A Historical Geography*, p.253.

³³ *The Times*, 19 March 1969. p.3. Times Digital Archive 1785-1985.

<http://web6.infotrac.galegroup.com.ezproxy.auckland.ac.nz/itw/infomark/...>

³⁴ G. E. Godber to D. P. Kennedy, 19 May 1969, H1 144/18 34759 Sera and Vaccines: Measles Vaccine 1968-9, *Archives New Zealand* (ANZ), Wellington.

³⁵ *The Times*, 12 June 1969, p.1. Times Digital Archive 1785-1985. Susceptible children aged between 4 and 7 and those aged between one to seven who were in a day nursery or living in 'residential establishments' were eligible for immunisation.

³⁶ 'Measles Vaccination Programme' BAAK A358 127b, Measles 1939-78, ANZ, Auckland. Some of these children may not have had a family doctor and therefore no access to the vaccine.

³⁷ C. N. Derek Taylor, 'Measles Vaccination' NZMJ, 68, 168, p.126.

However, others believed there had been an ‘unnecessary delay in the introduction of a nation-wide scheme in New Zealand’.³⁸ Several questions were asked in Parliament about why it had taken so long for New Zealand to introduce a measles vaccine. Norman King, MP for Waitemata, argued that ‘the Government is more concerned about costs than about the health of its own people’.³⁹ Ethel McMillan, MP for Dunedin North, also indicated her belief that the long delay and the limited programme introduced were a result of cost, when in Britain in 1968 immunisation was being given to children up to 15 years of age.⁴⁰ Nevertheless, the EAC at this time included some very eminent specialists, including Professor C. W. Dixon, who was a leading international authority on smallpox and also Professor J. A. R. Miles, an eminent microbiologist. With the measles vaccine the committee had been guided by caution, feeling that the side-effects from some of the earlier vaccines did not allow it to recommend general usage any earlier. The Health Department adopted the EAC’s recommendations and called for vaccine tenders, with Wellcovax eventually being chosen as it was thought to have less propensity to cause fever, being closer to the original strain.⁴¹

The campaign method implemented by the Health Department was also in contrast to Britain and the United States as it decided, upon the advice of the EAC, to use general practitioners to administer the vaccine rather than embark upon a mass campaign. The reasoning behind this again smacked of caution, as although the vaccine had a high protection rate at 85 to 90 percent, more reactions were likely and it was felt that the family doctor would be able to deal more satisfactorily with these.⁴² The vaccine was to be administered to those aged ten months to five years initially and then to under tens.

Nevertheless, the Department was optimistic about public acceptance of the measles vaccine and ordered 60,000 doses of vaccine with the programme due to start in the

³⁸ NZPD, 1968, 356, p.914.

³⁹ *ibid.*, p.925.

⁴⁰ *ibid.*, p.1339. Ethel Emma McMillan had been a Justice of the Peace and served on the Otago Hospital Board and the Dunedin City Council, before becoming an MP in 1953 after the death of her husband. She spent 22 years in Parliament before retiring in 1975. K. Eunson, ‘McMillan, Ethel Emma 1904-1987’, *Dictionary of New Zealand Biography*, Vol. 5 1941-1960, Wellington, 2000, p.327.

⁴¹ H1 144/18 34759, ANZ, Wellington.

⁴² ‘Measles Vaccination Programme’ BAAK A358 127b, ANZ, Auckland.

first week of April 1969.⁴³ However, this was postponed upon receipt of a telephone call from Burroughs-Wellcome on 19 March 1969 informing the Health Department that their vaccine had been suspended in Britain. This was due to three children demonstrating severe reactions, one of which was fatal, within seven days of the vaccine being administered.⁴⁴ The Department of Health and Social Security investigations in Britain revealed that the Burroughs Wellcome vaccine had twice the reaction rate of the Glaxo vaccine for both severe reactions and encephalitis and consequently the suspension was permanent.⁴⁵ Fortunately in New Zealand, the campaign had not yet commenced and the Health Department shipped the vaccine back to Burroughs Wellcome. In Australia, the Commonwealth Health Department had also ordered and distributed vaccine from Burroughs-Wellcome which had to be returned. This event now made the Epidemiology Committee of the National Health and Medical Research Council very cautious in its recommendations of further measles vaccine, with some Australian states and territories preferring to observe further developments.⁴⁶ In New Zealand, inquiries were made of other companies to procure more measles vaccine, with the Department and the EAC eventually settling on Attenuvax made by Merck, Sharp and Dohme in the United States.⁴⁷ However, because of a world shortage in measles vaccine and the consequent need to investigate another one, the programme did not commence until February 1970.⁴⁸

Doctor and Parent attitudes to Measles immunisation

The New Zealand Medical Association (NZMA) was totally supportive of Health Department policy to fully immunise all children although it did not always condone the way it was implemented, especially if general practitioners (GPs) were not included. From the beginning of 1968 the NZMA had conducted a series of minor immunisation programmes around the country in order to immunise susceptible children which ceased upon the withdrawal of Wellcovax. The introduction of a new

⁴³ *Waikato Times* (WT), 7 March 1969, YCBE 1990/31b Measles 1945-71, ANZ, Auckland.

⁴⁴ *The Times*, 19 March 1969. p.3. Times Digital Archive 1785-1985.

The *Waikato Times* reported that seven children had been affected with encephalitis. WT, 20 March 1969, YCBE 1990/31b, ANZ, Auckland.

⁴⁵ G. E. Godber to D. P. Kennedy, 19 May 1969, H1 144/18 34759, ANZ, Wellington.

⁴⁶ Comments, 'Immunization against measles', MJA, 1, 884, 1971, p.939.

⁴⁷ WT, 4 October 1969, YCBE 1990/31b, ANZ, Auckland.

⁴⁸ *South Waikato News*, 17 February 1970, *ibid*.

measles vaccine in 1970 drew the wrath of the secretary of NZMA, Dr Erich Geiringer, who described the delay as ‘inexcusable and negligent’ and claimed it had resulted in the deaths of 24 children since 1967.⁴⁹ Geiringer appeared to overlook the Wellcovax problem of a year earlier which had resulted in the postponement of the programme. Indeed, the NZMA did not reflect the views of all its members either; many doctors were ambivalent about the vaccine. Dr D. Klee of Okahune commented that, ‘Until I can be reasonably certain that Measles Vaccine in use today has a lifelong protective capacity, I will be reluctant to use it in this area except to protect those infants and children at special risk’.⁵⁰ Some GPs who were surveyed in Gisborne felt they would support a campaign only if the vaccine was proven, whilst others agreed with Dr Klee’s view that only those with an underlying medical condition required immunisation.⁵¹

How both doctors and the public perceived measles as a disease was crucial to vaccine acceptance. Doctors varied in their views of the seriousness of measles, several GPs from Gisborne felt it was a ‘minor disease of childhood causing minimal morbidity’.⁵² Other Gisborne GPs described measles as ‘a severe disease of childhood’.⁵³ Notably, a Dunedin paediatrician commented that in his career he had only ever seen three cases of encephalitis and did ‘not think that the incidence of this serious complication is as high in New Zealand as overseas where it is quoted as 1:1000 cases’, although he was in favour of a nationwide immunisation campaign.⁵⁴ Doctors’ views of the seriousness of measles often depended on the socio-economic grouping of their patients because people whose living conditions and nutrition were sub-standard, and who were prone to chest and ear infections, were much more likely to suffer severe measles and complications. For example, a Special Area GP who had

⁴⁹ WT, 11 February 1970, *ibid.* Dr Erich Geiringer, a controversial figure, featured in the SV40 debate in 1974 when he commented on local radio that the Health Department were trying to cover up a national scandal over the SV40 contained in the polio vaccine of the 1960s. See Chapter 8, p.235.

⁵⁰ D. Klee to A. W. S. Thompson, 17 October 1968, H1 144/18 34759, ANZ, Wellington.

⁵¹ J. H. Betteridge, ‘Attitudes to Measles and its Prevention by Vaccination. A Survey conducted in the Gisborne and Dunedin districts’, PMD, Otago, 1968, pp.12-14. Children under two or those who suffered malnutrition were more likely to suffer from severe measles due to the weakened or under-developed immune system. This also applied to those with an underlying medical condition or those susceptible to chest and ear infections as complications such as pneumonia, encephalitis and severe bronchitis were more likely. See ‘Measles Vaccination - Report on a Working Group’, Algiers 27-29 April 1972, World Health Organization, pp.5-6.

⁵² J. H. Betteridge, ‘Attitudes to Measles and its Prevention by Vaccination’, pp.13-14.

⁵³ *ibid.*, p.11.

⁵⁴ *ibid.*, p.16.

60 percent of Maori patients was very keen for the vaccine to be introduced, as 50 percent of Maori children in his practice with measles developed complications.⁵⁵ Nonetheless, it is likely that some doctors did not feel able to justify to parents the advisability of immunisation for their children as they did not regard measles as a serious threat to the child's health. As the use of doctors was the linchpin of the Department's measles immunisation programme from 1970 it was probable that these attitudes affected acceptance rates.

Parents had a myriad of views regarding the seriousness of measles which would also have influenced their decision as to whether to immunise. Most parents felt that measles was a mild, virtually inevitable childhood infection; but this did not necessarily indicate their opposition to immunisation. A study of parental attitudes regarding the measles vaccine revealed that most of the parents who thought of measles as a minor disease were prepared to have their children immunised 'to save a lot of unnecessary sickness and worry...as well as complications'.⁵⁶ In contrast a minority of parents believed measles was a severe disease, but paradoxically, this did not mean that they accepted immunisation; some of them believed that it was not necessary as a doctor's care would suffice.⁵⁷ It also came to light that many parents, although taking a favourable stance on immunisation, wanted more information about the vaccine before allowing their children to receive it. Publicity regarding the side-effects of measles vaccine in Britain, which made the front page of the major newspapers, may also have persuaded parents not to immunise their children.⁵⁸ Nevertheless, about half the parents were prepared to accept the advice of the family doctor without having much prior knowledge about the vaccine themselves.⁵⁹

The study undertaken in the Gisborne and Dunedin areas involving nine families and eight doctors revealed, even with such a small sample, that attitudes towards immunisation and measles were by no means clear-cut.⁶⁰ A belief in the severity of the illness did not always mean an automatic acceptance for immunisation, just as

⁵⁵ *ibid.*, p.15.

⁵⁶ *ibid.*, p.30.

⁵⁷ *ibid.*, p.35.

⁵⁸ *Auckland Star* (AS), 20 March 1969.

⁵⁹ J. H. Betteridge, 'Attitudes to Measles and its Prevention by Vaccination', p.44.

⁶⁰ J. H. Betteridge, 'Attitudes to Measles and its Prevention by Vaccination. A Survey conducted in the Gisborne and Dunedin districts', PMD, Otago, 1968,

those who believed that measles was a mild disease were often happy to have their children immunised. The Health Department itself was not convinced of the seriousness of the disease in the Dominion. It pointed out that 'Measles is a fairly mild disease in New Zealand...Hospital admissions are not very high'.⁶¹ This ambivalent attitude towards measles immunisation may have also underpinned the decision to allow GPs to administer the vaccine, with the onus being placed much more on parents as to whether they wished to utilise the vaccine for their children. With no school-based campaign, all children had to attend the doctor's if parents wished them to be immunised, with all the attendant problems of payment for the visit and accessibility. Certainly there was little of the publicity provided by the Department that accompanied a programme in schools, and this, coupled with the negative newspaper articles the previous year on the events in Britain, and public perception about the mildness of the disease itself, meant the Department could not be sure of levels of public acceptance. Measles immunisation was therefore ushered quietly into New Zealand.

As might be expected, initial levels of acceptance were low. In the Auckland Health District only 3930 doses of vaccine were issued between February and May 1970 which equated to about 21,000 children in the ten month to five year age group. 'This is confirmed by a survey of practitioners who all say the response on the part of the public is poor, the numbers being vaccinated representing something like one percent of susceptible children'.⁶² In December 1971, Dr N. T. Barnett, Medical Officer of Health for Auckland, commented on the poor response to immunisation and advised parents to have their children immunised.⁶³ This advice came during Auckland's worst measles epidemic since 1962, with 114 children admitted to hospital.⁶⁴ The epidemic underlined that measles immunisation still had not been accepted by many parents in the target age groups as it was found that almost half of the hospitalised children were under two and nearly all were under seven.⁶⁵ Nevertheless, some areas responded better than others. About one-third of all vaccines had been utilised on

⁶¹ 'Measles Vaccination Programme', BAAK A358/127b, ANZ, Auckland. Measles was a non-notifiable disease.

⁶² T. H. Bierre to D. P. Kennedy, 26 May 1970, BAAK A358/130c Rubella 1939-71, ANZ, Auckland.

⁶³ *New Zealand Herald* (NZH), 13 December 1971.

⁶⁴ B. T. Steele, 'Measles in Auckland 1971-1972', *NZMJ*, 77, 492, 1973, p.294.

⁶⁵ *ibid.*, p.294.

Auckland's more prosperous North Shore and, coupled with better living conditions, meant there were no hospital admissions from that area.⁶⁶

B. T. Steele, a paediatric registrar in the Infectious Diseases Unit at Auckland Hospital suggested in his paper that the 'failure to prevent this epidemic is a reflection on the lack of interest shown by the general public, by many practitioners, and by the public health authorities'.⁶⁷ He emphasised that only by increasing common 'interest and awareness in the mortality and considerable morbidity attached to measles' could a 'proper vaccination programme to eradicate the disease' be achieved.⁶⁸ In Britain, research concluded that immunisation of ten percent of the child population (under 15) in 1968 had been enough to reduce an expected measles epidemic to a low incidence of the disease, with levels typical of inter epidemic years.⁶⁹ The prevalence of measles in certain parts of Auckland showed that less than ten percent of the targeted group had been immunised, and demonstrated the failure of the Health Department to convince parents (and itself) of the importance of measles immunisation.

This initial ambivalent attitude of the Department towards the measles vaccine had repercussions further down the line. Measles immunisation figures remained low during the 1970s; the Department reported that levels varied between 50 to 70 percent for Health Districts in the age group recommended for immunisation.⁷⁰ With the implementation of the measles eradication campaign in the late 1970s the Department had the uphill task of having to actively promote and raise the profile of the vaccine. They also had to convince parents that measles was not just a mild childhood illness but could have serious complications and was, therefore, worth immunising against. This responsibility was made more difficult by the previous absence of parental education, which was partly the result of the mixed feelings within the Department itself regarding the measles vaccine, and reflected the opinions of many GPs.

⁶⁶ *ibid.*, p.297.

⁶⁷ *ibid.*

⁶⁸ *ibid.*

⁶⁹ I. Sutherland, P. M. Fayers, 'Effect of Measles Vaccination on Incidence of Measles in the Community', *British Medical Journal* (BMJ), 1, 1971, p.698.

⁷⁰ AJHR, 1976, E-10, p.26.

Rubella Vaccine

Another significant reason for the failure of the measles campaign was the huge publicity given to the rubella campaign, which also commenced in 1970, relegating measles to the background as had happened in the United States. Originally timed for 1969, the measles vaccine entered the scene a few months before the rubella immunisation campaign, timed for 27 July 1970. The ‘urgency’ behind the rubella campaign was the prediction by the World Health Organization (WHO) of a rubella epidemic to commence in 1970.⁷¹ The EAC had been monitoring events overseas very carefully and it was not until two new rubella vaccines became available in New Zealand that the EAC felt able in September 1969 to recommend to the Health Department that a rubella immunisation campaign be undertaken.⁷²

Rubella itself was a minor childhood illness which often resulted in a rash although some sufferers had the disease in such a mild form as to be undetectable. Its main consequence was its threat to the health of the unborn child if its mother contracted rubella in pregnancy. This could result in the baby being born with a congenital disability such as blindness and/or deafness. To try and prevent these problems, vaccines were developed from the 1960s with a licence being granted to the Cendevax vaccine in 1969 made by Smith, Kline and French Laboratories in Belgium.⁷³

Rubella immunisation campaigns were being mounted in many countries at this time. However there were several dilemmas faced by these countries in deciding just whom to immunise. Although women of childbearing age seemed the obvious targets, ‘the danger in immunising adult women is that they may already be pregnant without knowing they are, in which case the vaccine might cause the very defects it is designed to prevent’.⁷⁴ The largest sources of infection were children, particularly those aged five to 11, and so another strategy was to immunise these children to help prevent the spread of the disease. However, this would be an immunisation to benefit the community, not the individual, and was not, as pointed out by the Health

⁷¹ Information on Rubella Vaccine for Minister of Health attending Caucus on 11 March 1970, H1 144/18/1 35788 Sera and Vaccines: Rubella vaccine 1968-70, ANZ, Wellington.

⁷² ‘Rubella - sequence of events - NZ’, H1 144/18/1 35788, ANZ, Wellington.

⁷³ ‘Rubella - Overseas’ H1 144/18/1 35788, ANZ, Wellington.

⁷⁴ *ibid.*

Department, 'based on sound public health epidemiological principles'.⁷⁵ Immunising children against rubella would be solely for the benefit of pregnant women as they, themselves, would derive little or no advantage.⁷⁶ A further option was to immunise girls before they reached their childbearing years at around age 11 although there was still a limited risk of pregnancy at this age.

Before deciding which strategy to adopt the Health Department looked carefully at the direction taken by other countries. Australia put in place the policy of immunising girls aged from 12 to 14 in a mass immunisation campaign and also offered the rubella vaccine through the GP to women of childbearing age.⁷⁷ The United Kingdom effected a similar approach, with the Department of Health and Social Security offering immunisation to all girls aged 11 to 14, either through the GP or by an annual school-based campaign.⁷⁸ The United States, however, preferred to focus on school-aged children in kindergarten through to sixth grade. American officials had decided against the immunisation of older girls and women because of the possibility of existing pregnancy.⁷⁹

The views of other countries were very important to both the EAC and the Health Department in deciding which strategy to implement. Nonetheless, they were keen to try and avoid a rubella epidemic and a programme focusing on the immunisation of young girls and women was a longer-term strategy. Faced with the immediacy of the problem the EAC therefore recommended immunising younger children to reduce the pool of infection. A school-based mass immunisation campaign was to be undertaken from 27 July to 14 August 1970 targeting all children aged five to nine, with children of four years being immunised by the GP. Vaccine was also to be made available for girls and women in the childbearing age. The mass campaign was to be a single occurrence; GPs were thereafter to immunise four-year-olds before they entered school.⁸⁰ The Department hoped that as New Zealand was 'a small confined country

⁷⁵ 'Rubella Immunisation Programme' 1 April 1970, H1 144/18/1 36182 Sera and Vaccines: Rubella Vaccine 1970, ANZ, Wellington.

⁷⁶ At this juncture vaccine induced immunity was believed to last about two years so girls did not directly benefit from this policy.

⁷⁷ 'Information on the Rubella vaccine', H1 144/18/1 35788, ANZ, Wellington.

⁷⁸ DHSS to County and County Borough Councils, Circular 11/70, 29 July 1970, H1 144/18/1 W2676 Box 57 Sera and Vaccines: Rubella Vaccine 1970-71, ANZ, Wellington.

⁷⁹ 'Information on Rubella vaccine' H1 144/18/1 35788, ANZ, Wellington.

⁸⁰ *ibid.*

with a limited population, it should be possible, with relative ease, to vaccinate enough children to affect markedly the spread of an epidemic of rubella'.⁸¹ Targeting primary school children was geared solely towards preventing a rubella epidemic as a short-term strategy; GPs were to implement the Department's longer-term aim of maintaining immunity through the immunisation of preschoolers. An impending rubella epidemic made a long-term strategy such as that adopted by Britain and Australia inappropriate at the time to meet New Zealand's needs.

However, the New Zealand Cabinet, upon the advice of Treasury, decided to keep costs down, initially implementing only part of the EAC's recommendations, namely to immunise adult women likely to become pregnant.⁸² One departmental report on the situation commented that to 'allow Treasury to decide the method of dealing with an epidemic in the face of expert advice seems highly dangerous'.⁸³ This decision was reversed by Cabinet in April 1970 after pressure was brought to bear by the Minister for Health, Don McKay, the Health Department, (which was reportedly 'very unhappy' at Cabinet's decision), and the general public.⁸⁴ This meant all the recommendations of the EAC could now be implemented.

The rubella immunisation campaign was a public health measure, the first of its kind in New Zealand; its aim was to prevent unborn babies coming into contact with the disease and being born with a deformity. There was no direct benefit to schoolchildren as rubella itself was a mild illness. Boys in particular would derive no advantage from receiving the jab. As a consequence the Health Department was unsure how the public would respond to the campaign and whether they would allow their children to be immunised for the good of the community. However, the Department need not have worried as over 95 percent of New Zealand parents gave consent to the immunisation.⁸⁵

⁸¹ *ibid.*

⁸² AS, 3 April 1970.

⁸³ 'Rubella Immunisation Programme' 1 April 1970, H1 144/18/1 36182, Rubella Vaccine 1970, ANZ, Wellington.

⁸⁴ P. J. Brooks to Minister of Health, CM 70/12/14, H1 144/18/1 36182, ANZ, Wellington. Robert Muldoon, Minister of Finance, was out of the country when the decision was reversed.

⁸⁵ AJHR, 1971, H-31, p.29.

One of the reasons for this was the substantial publicity campaign undertaken by the Department. There were articles in newspapers and a feature in the *New Zealand Woman's Weekly* expounding the community benefits of the immunisation.⁸⁶ The newspapers had also recently featured the political debates and manoeuvrings over funding for the immunisation programme which had also brought the proposed campaign to the notice of the public. In addition, as part of the Department's publicity campaign, a film was screened on television by the New Zealand Broadcasting Company in the early evening of 11 August called *The Case against Rubella*.⁸⁷ The Health Department found that whilst 'prepared statements were published infrequently, the creation of a "newsy" situation allowed easy dissemination of information to the public'.⁸⁸ For instance, the televising of the departure of immunisation teams by amphibian aircraft to some of the outlying coastal islands, on the day before the school campaign commenced, 'created a favourable response and a great deal of public interest'.⁸⁹

It was likely that this publicity made parents more aware of the rubella vaccine and the impending school campaign and may have induced parents to give their permission. In the Auckland District, of 29,919 children eligible, 25,254 were immunised against rubella.⁹⁰ The Deputy Medical Officer of Health for Auckland, T. H. Bierre, observed that the 'convenience of vaccination at school appealed to the public, and is in New Zealand now a widely accepted procedure, following on earlier similar programmes'.⁹¹ School-based campaigns were always popular with parents because of the ease with which their children could be immunised - all they had to do was sign a consent form.

Nonetheless, preschoolers aged four and adult women were also part of the programme and the Department found that uptake for both these groups was 'much less than anticipated'.⁹² It was discovered that vaccine usage had only been 30

⁸⁶ B. Young, 'Blitzkrieg in the war against Measles' *New Zealand Woman's Weekly*, 13 July 1970, p.22, *Evening Post* (EP), 27 July 1970, EP, 29 July 1970.

⁸⁷ 'Rubella Progress Report, 31 July 1970, H1 144/18/1 36182, ANZ, Wellington.

⁸⁸ T. H. Bierre, 'Immunisation of School Children with Rubella Vaccine', *NZMJ*, 74, 8, 1971, p.9.

⁸⁹ *ibid.*

⁹⁰ *ibid.*

⁹¹ *ibid.*, p.11.

⁹² 'Rubella Vaccine Usage' 2 March 1971, H1 144/18/1 36182 ANZ, Wellington.

percent of the expected total with preschoolers receiving 70 percent of this amount.⁹³ This part of the campaign had been GP-based and consequently involved a cost to parents. Bierre pointed out that ‘the traditional approach through the private medical practitioner...failed to achieve adequate coverage of the pre-school group’.⁹⁴ For preschool children, the problems associated with a visit to the doctor, as well as payment of fee for a vaccine that was not of direct benefit to the child, was likely to have deterred some parents from taking their children, even if they were in favour of the rubella vaccine *per se*. Additionally, not all families of preschoolers had a ‘family doctor’. Those of low means and who frequently moved were most likely to miss out on the immunisation services provided by the GP. As has been seen with the measles programme, using GPs for a departmental immunisation campaign was not a popular option with parents and was under-utilised, resulting in leftover vaccine and unimmunised preschoolers.⁹⁵

Once the school campaign was completed, the Department decided to offer immunisation to all new school entrants in 1971, due to the large surplus of vaccine from the preschool and adult women programme. The vaccine manufacturers, Smith, Kline and French, had informed the Department that the life of the vaccine could be extended by six months so that this programme could take place.⁹⁶ From 1972 onwards rubella immunisation was given to children at the doctors’. The rubella immunisation campaign did however have the desired effect in averting the anticipated epidemic and cases of congenital rubella - only two were notified in 1972.⁹⁷ Whether this success could be sustained would remain to be seen.

⁹³ *ibid.*, p.9. Adult women used 10 percent and schoolchildren 20 percent of the available vaccine.

⁹⁴ *ibid.*, p.11.

⁹⁵ Perhaps the most outstanding case of this was during the 1988 ‘catch-up’ campaign for meningococcal meningitis for those children under two who required a booster shot or had missed the injection first time. Money was allocated from the hepatitis B campaign for this purpose. This campaign was conducted solely by GPs operating out of their surgeries after they had complained about being excluded in the 1987 programme. In the North Shore a coverage of 3.8 percent was achieved and in the Western suburbs, 5.47 percent. The cost per dose was \$96.34. The 47,000 unused doses were sent to Kenya and the Department received a 25 percent refund on the unused vaccine. The Health Department commented that ‘utilisation of general practitioners has been grossly unsatisfactory in terms of coverage and undesirably costly’. See ABQU 632 W4415/918 144/39 67372 Meningococcal Vaccine 1984-88, ANZ, Wellington.

⁹⁶ The vaccine had an original expiry date of 27 April 1971 which was extended to 27 October 1971. H1 144/18/1 W2676 Box 57, Wellington, ANZ.

⁹⁷ AJHR, 1973, E-10, p.7. Congenital rubella was made notifiable under the 1972 Infectious Diseases Order.

The attitude of most parents to the rubella vaccine was positive as demonstrated by the number who signed the consent form. During the immunisation campaign the Department conducted a survey of 845 parents on their reasons for allowing their children to receive the vaccine or not. Of those who dissented (412) it was ascertained that 304 of these children had already had rubella, 42 could not be given it on medical grounds and 19 had already had the vaccine or were to receive it at the doctor's.⁹⁸ Few parents dissented because they objected to the vaccine. Of those who gave their permission, the majority consented for a combination of three major reasons, to prevent deformities in babies (357), to assist the community (333) and to help their own child (315). Certainly the promotional campaign organised by the Department and its districts had played a major role in informing parents about the vaccine. This was complemented by the convenience for parents of a school-based campaign, which the survey revealed as the fourth most popular feature.⁹⁹ Yet again it had been clearly demonstrated that doctor-based campaigns did not facilitate immunisation.¹⁰⁰

Doctors and Schedules

By 1968 the New Zealand immunisation schedule for babies included three doses of triple vaccine or DTP (diphtheria, tetanus and pertussis) to be given at three months, four months and five months respectively along with a dose of oral polio vaccine (OPV). From 1964 a further booster of double vaccine or DT (diphtheria and tetanus) was administered at 18 months along with OPV and then another at school entry.¹⁰¹

It was this additional double vaccine shot at 18 months that caused some stirrings in medical circles, so much so that Dr Stephen Hickling of the Department of Preventative and Social Medicine at the University of Otago published an article in the *New Zealand Medical Journal* questioning the usefulness of this particular booster.¹⁰² He argued that 'the evidence is clearly in favour of omitting any

⁹⁸ T. H. Bierre, 'Immunisation of School Children with Rubella Vaccine', p.10.

⁹⁹ *ibid.*

¹⁰⁰ *ibid.*

¹⁰¹ *Health*, 20, 1, 1968, p.9. See Appendix 1, pp.306-09 for immunisation schedules.

¹⁰² S. Hickling, 'Immunisation Against Diphtheria, Tetanus and Whooping Cough in Childhood', *NZMJ*, 65, 1966, pp.357-62. See also H1 29/19 33136 Epidemiology Advisory Committee 1962-68, ANZ, Wellington.

reinforcing or booster dose of vaccine between primary immunisation in infancy and the time of school entry, certainly when immunisation is not started until three months of age'.¹⁰³ There was little advantage immunologically, and a 'great number of children... would have suffered adverse reactions or psychological trauma' through having this particular immunisation as well as wasted parental and health professional time.¹⁰⁴

This criticism was picked up by the newspapers with the *New Zealand Herald* reporting that 'Doctor Has Doubts VACCINATION MAY BE OVERDONE'.¹⁰⁵ Nevertheless, although Hickling's article 'did provoke some small reaction, it failed to stimulate any action'.¹⁰⁶ There had been enquiries to the Health Department from GPs asking, whether, in the light of Hickling's article, there had been a rethink, with the reply that 'no change in the vaccination schedule is contemplated at present.'¹⁰⁷ In 1969, the Department of Health and Social Security in Britain removed the 18-month booster of triple vaccine from its schedule, on advice from the Joint Committee on Vaccination and Immunisation. Hickling now expressed the hope that New Zealand would take a 'closer look' at its 18-month booster recommendations.¹⁰⁸ By May 1969 the Department recommended that the 18-month booster would be administered only on the advice of the doctor.¹⁰⁹ In 1971, the Department, upon the advice of the EAC, changed to a more effective vaccine which meant one of the doses of triple vaccine in the primary programme could be eliminated.¹¹⁰ The schedule retained the 18-month booster of double vaccine but removed the dose of triple at four months. The triple vaccine was now administered at three and five months.¹¹¹ The Department therefore did finally remove a dose of DTP, although not the 18-month booster advocated by Hickling.

¹⁰³ *ibid.*, p.362.

¹⁰⁴ *ibid.*, p.361.

¹⁰⁵ NZH, 30 June 1966.

¹⁰⁶ S. Hickling, 'Immunisation Against Diphtheria' p.108.

¹⁰⁷ J. McKay to Medical Officer of Health (MOH), 7 July 1966, BAAK A358 82a Child Health 1959-1969, ANZ, Auckland.

¹⁰⁸ S. Hickling, 'Immunisation Against Diphtheria', p.109.

¹⁰⁹ N. T. Barnett to Medical Officers and Public Health nurses, 9 May 1969, BAAK A358 122c General Vaccines, ANZ, Auckland.

¹¹⁰ Circular Letter, 19 July 1971, ABQU 632 W4415/346 144/27/3 56028 Triple DTP 1974-84, ANZ, Wellington.

¹¹¹ *Health*, 26, 1, 1974, p.15. The schedule was now the triple and polio at three and five months, with measles at ten months and the double vaccine at 18 months. At four to five years double vaccine and rubella were offered.

This was the first time that so public a criticism had been leveled at the Department's immunisation policy in a medical journal. By publishing in the *New Zealand Medical Journal* Hickling was hoping that the Department might reconsider its schedule of vaccines. Eventually this did occur but only after a considerable period of time and only on the advice of the EAC. The dilatory way in which the Health Department moved, and its reliance on EAC, became all the more the apparent in the next two decades with the debate over the rubella vaccine and hepatitis B.¹¹²

GPs and Immunisation Levels

Hickling also helped contribute to the growing confidence of doctors to question the Department's immunisation policy and to alter it if they felt that to be inappropriate. This was assisted by the Department's strategy to have all immunisations completed by the family doctor rather than through departmental clinics. From April 1967, GPs were allowed to administer OPV, although many still did not have fridges for vaccine storage.¹¹³ This decision had been prompted by the numbers of children being brought for immunisation at the departmental clinics. It was reported in 1964 that 94 percent of infants were brought to the clinic for the first dose but only 70 percent returned for a third time although all three doses were needed to attain the required level of immunity.¹¹⁴ Investigations had shown that OPV was safe to be administered with DTP and it 'was apparent that if children could receive from their family doctor the triple vaccine and the Sabin vaccine at the same time, the mother would be saved considerable time and effort'.¹¹⁵ The Health Department hoped that by slotting these vaccines together, coverage would increase and more children would receive the subsequent doses.

The NZMA had agreed with the Health Department that its members would be requested not to make an extra charge for giving OPV with the triple vaccine.¹¹⁶ However, one doctor commented that 'it would depend on storage costs and the time

¹¹² See rubella and hepatitis B, Chapter 7, pp.202-208 and 221-31.

¹¹³ NZH, 31 March 1967, BAAK A358 135c Polio newspaper cuttings, ANZ, Auckland. OPV could be stored for six months in a fridge or for seven days at room temperature.

¹¹⁴ AS, 9 August 1965, BAAK A358 135c, ANZ, Auckland.

¹¹⁵ ABQU 632 W4452/914 38840 144/17/8 Oral Polio vaccine 1967-71, ANZ, Wellington.

¹¹⁶ *ibid.*

and trouble involved, whether any extra charge was made for administering the vaccine'.¹¹⁷ Some doctors were clearly charging extra for immunisation visits. A letter from a parent to the Department stated that a visit to the family doctor in Otago cost \$1 for an immunisation visit for the triple and polio vaccines to be administered, yet a visit to another doctor in Dunedin cost \$2.50 for the same immunisation.¹¹⁸ The Department established that this doctor charged \$2.50 for immunisation visits but only \$1.50 for a normal consultation.¹¹⁹

The general medical benefit received by doctors at this time for a visit was 75 cents.¹²⁰ This covered less than half of some of the immunisation fees charged by doctors, and the rest was a cost to parents. Consequently, as the immunisation schedule required several visits to the doctor, this could be an expensive process, even though the vaccine was provided free by the Health Department. At this point in 1969, the measles vaccine was also on the verge of being introduced with a further added outlay to parents as it required a separate visit to the surgery. There was a general concern that the cost of doctors' fees was a major reason why children were not completing the immunisation schedule. This was raised in Parliament by Ethel McMillan, MP for Dunedin North.¹²¹ With reference to the measles vaccine, McMillan wanted the government to pay for the complete immunisation to 'ensure practically all this group is vaccinated...'¹²² 'Otherwise the whole system is a farce, particularly today with so many mothers living on the bread-and-butter line.'¹²³ McMillan's views were shared by William Fraser, MP for St Kilda, who spoke out after a nine-year-old child was admitted to Hutt Hospital with diphtheria. 'It is important that the Government should ensure that immunisation is freely available to

¹¹⁷ NZH, 31 March 1967, BAAK A358 135c, ANZ, Auckland. In the file this quote is marked and a note written besides it which reads 'No charge to be made under any circumstances' and initialled by the Medical Officer of Health.

¹¹⁸ N. T. Barnett to R. Symons, 7 August 1969, BAAK A358 135d Polio Immunisation 1964-70, ANZ, Auckland.

¹¹⁹ *ibid.*

¹²⁰ New Zealand went decimal on 10 July 1967. The government benefit paid to doctors had originally been 7s. 6d. which, translated, became 75 cents. There had been no increase in the benefit since the Social Security Amendment Act in 1941.

¹²¹ See footnote 40 of this chapter for biographical detail.

¹²² NZPD, 1968, 359, p.3722.

¹²³ NZPD, 1968, 356, p.1041.

every child in New Zealand. The field of preventative medicine is in jeopardy as matters stand if some parents are unable to afford doctor's fees'.¹²⁴

From as early as 1920 the Health Department had realised it did not possess the staff or resources to implement routine immunisation programmes for preschoolers. This group was particularly difficult to access because parental co-operation was required. The Department believed that the family doctor would be the best person to attend to the immunisation needs of preschoolers as a relationship with the family would already have been built up. Doctor visits, however, cost money which some families could ill afford (immunisations at school were free), and some parents frequently moved and did not have a family doctor. To help improve local immunisation rates, the Department would establish clinics which offered free immunisation, but they were a short-term measure, designed to raise levels in the community before being disbanded. For the Department, there was no long-term alternative to the use of GPs to implement immunisation services. However, it was hoped that by making that service free more people would immunise their children.

It was problems such as these that led the National government to establish a Royal Commission to Inquire into Social Security in 1969. Costs of general medical care, not just immunisation, caused much disquiet by the late 1960s. Its wide range of tasks included reviewing the general medical benefit and the cost associated with immunisation.¹²⁵ The Commission recommended introducing an immunisation benefit payable up to age 16 to cover doctors' fees, with agreement from the NZMA.¹²⁶ It was hoped that this would now ensure that in the future the cost of immunisation was not a barrier.

¹²⁴ NZPD, 1969, 360, pp.278-79. In 1965 the Department launched a campaign to promote tetanus immunisation to both the adult and teenage population. Public Health nurses promoted the immunisation when they visited homes and talks were held in schools in addition to the advertising that took place. However, the Department discovered that whilst the public were prepared to attend Health Department clinics they 'do not wish to waste their time sitting in a Doctor's surgery in the evening for one immunisation for which they must pay'. As with children, cost and time often precluded immunisation which would otherwise be utilised. H1 131/53 30729 Tetanus 1960-65, ANZ, Wellington.

¹²⁵ For a full discussion on the Royal Commission see M. McClure, *A Civilised Community. A History of Social Security in New Zealand 1898-1998*, Auckland, 1998, Chapter 5.

¹²⁶ *ibid.* This was recommendation No. 89 of the 1972 Royal Commission on Social Security.

This recommendation was not untimely. The Wellington branch of the Plunket Society claimed in 1972 that as far as they could determine, more than 20 percent of children in the community were not immunised against tetanus, diphtheria, polio and pertussis, with cost cited as the prime reason for non-compliance.¹²⁷ Adoption of the Commission's proposals meant that from October 1972 doctors were to provide routine immunisation services free to patients and could not charge additional fees as had been the case previously. They were reimbursed \$1.50 for each immunisation visit and practice nurses received \$1.25.¹²⁸ It was hoped that this move would persuade parents who had been previously inhibited by the expense incurred to immunise their children.

In its 1974 annual report the Health Department confidently stated that the immunisation benefit was increasing the number of fully immunised children.¹²⁹ On the surface this seemed to be the case. From 1972-73, \$127,233 was paid out as immunisation benefits; by 1978-79 this had risen to \$646,700 and by 1985-86 to \$1,445,730.¹³⁰ However, other factors made a significant contribution to this increase. From 1984 an extra visit to the doctor was necessary due to the addition of a dose of triple vaccine at six weeks of age. A rise in doctors' benefits over time also accounted for much of the increase. Moreover, the numbers of children actually eligible for immunisation did not alter much during this period. During the 1980s the Public Health nurses reported that between 71 to 79 percent of new school entrants each year were fully immunised, without much fluctuation.¹³¹ There was also a decline in the birth rate from a high point in 1972 of 39,443 to 24,299 in 1986.¹³²

Fewer children were each receiving more immunisations. Although the introduction of an immunisation benefit helped persuade some parents to immunise their children,

¹²⁷ NZPD, 1972, 380, p.2255. At this point, although vaccine was provided, each visit to the doctor resulted in a charge. Three visits would deter many families for whom cost was an issue.

¹²⁸ I. Hay, *The Caring Commodity. The Provision of Health Care in New Zealand*, Auckland, 1989, p.160. Also *New Zealand Yearbook (NZYB)*, 1975, 80, p.132. In October 1975 this was increased to \$1.85 for doctors and \$1.55 for practice nurses. *Appendices to the Journals of the House of Representatives (AJHR)*, 1976, E-10, 1976, p.75.

¹²⁹ AJHR, 1974, E-10, p.35.

¹³⁰ AJHR, 1980, E-10, p.76 and 1986, E-10, p.68.

¹³¹ See AJHR, 1981, E-10, p.30 and 1986, E-10, p.23.

¹³² D. Thoms, C. Sedgewick, *Understanding Aotearoa/New Zealand: Historical Statistics*, Palmerston North, 1997, p.34, p.39. The birth rate for 1981-86 remained between 24-26,000 until it began to climb again in the late 1980s.

it was not enough of an incentive on its own to have a notable impact on immunisation levels.¹³³

Child-rearing practices

Another change, which began to have an impact by the 1960s on the lives of both children and parents, was in child-rearing practices. These changes eventually influenced all aspects of childcare, from health matters to discipline. Starting in the United States from the 1940s there was a decline in the influence of behaviourist theories, where children were taught to be obedient and well-behaved, and the rise of a more 'permissive' approach which allowed parents to pick up their babies and cuddle them if they cried.¹³⁴ American psychoanalyst and paediatrician Benjamin Spock transformed parental child-rearing practices with the publication of his book in 1945, *The Commonsense Book of Baby and Child Care*.¹³⁵ Spock argued that 'parents know their own children best and should act accordingly' thus challenging the authoritarian position of health professionals.¹³⁶ Spock's book sold millions of copies worldwide and was 'greeted with great enthusiasm in New Zealand'.¹³⁷

Another influential figure during the 1950s and 1960s was John Bowlby, the British child psychiatrist. Research for the WHO led him to conclude that an infant needed to establish a warm, loving and continuous relationship with its mother (or mother-substitute) to develop into a mentally healthy adult.¹³⁸ These new concepts, coming

¹³³ The reasons why parents chose to immunise or not immunise their children will be considered in the next chapter.

¹³⁴ In New Zealand, the founder of the Plunket Society, Truby King, was the purveyor of accepted child-rearing philosophies until after World War Two. His strict feeding patterns were designed to develop character in the child. For further discussion on Truby King and Plunket see, Linda Bryder, *A Voice for Mothers. The Plunket Society and Infant Welfare 1907-2000*, Auckland, 2003.

¹³⁵ B. Spock, *The Commonsense Book of Baby and Child Care*, New York, 1945.

¹³⁶ Benjamin Spock graduated from the College of Physicians and Surgeons in 1929 at Columbia. He started a paediatrics practice and also spent six years studying psychoanalysis before publishing what became an international bestseller.

http://c250.columbia.edu/c250_celebrates/remarkable_columbians/benjamin_spock.htm.

¹³⁷ L. Bryder, *A Voice for Mothers*, p.122.

¹³⁸ I. Bretherton, 'The Origins of Attachment Theory: John Bowlby and Mary Ainsworth', *Developmental Psychology*, 28, 1992, pp.759-75.

http://www.psychology.sunysb.edu/attachment/online/inge_origins.pdf

Bowlby was commissioned by the World Health Organisation to write a report on the mental health of homeless and orphaned children in post-war Europe. This led to the eventual publication of *Maternal Care and Mental Health* in 1951 detailing the effects of maternal separation and deprivation on young children.

from both Britain and the United States, encouraged parents to have a caring and involved relationship with their babies and children and invested them with more power to determine for themselves what was best for their family. These ideas laid a basis for parents to begin to challenge the ideas of health professionals rather than just accepting their advice. Nevertheless, it was not until the early 1970s in New Zealand that such challenges became apparent.

One way of discerning the gradual shift in attitudes towards child-rearing and health professionals themselves was by looking at how immunisation advice was written for parents in the post-war period. Guidance of this kind was contained in childcare books produced by the Plunket Society. Helen Deem, the Medical Advisor to the Plunket Society and Nora Fitzgibbon the Society's Nursing Advisor, wrote *Modern Mothercraft: A Guide for Parents* in 1945, with a second edition appearing in 1953.¹³⁹ This was the New Zealand child care manual for parents throughout the next two decades, until 1970 when Neil Begg, Plunket's then Medical Advisor, wrote *The New Zealand Child and his Family*.¹⁴⁰

The Plunket Society's support for immunisation was reflected in the advice contained in their parenting manuals. In both the 1945 and 1953 editions of *Modern Mothercraft*, diphtheria immunisation was heavily endorsed; indeed, it was the 'duty of all parents to protect their young families against diphtheria'.¹⁴¹ In 1953 there was also additional advice on the pertussis vaccine which pointed out that although this prophylactic was not as effective as the one against diphtheria, 'there is evidence that the newer vaccines are effective in preventing or reducing the severity of the disease'. Parents were 'told' to immunise their children through these manuals and reactions and 'upsets' were dismissed as 'most rare'.¹⁴² The approach of both these manuals harked back to a traditional style which reflected earlier authoritarian attitudes.

¹³⁹ H. E. Deem, N. P. Fitzgibbon, *Modern Mothercraft: A Guide to Parents. Official Handbook of the Royal New Zealand Society for the Health of Women and Children*, Dunedin, 1945, 2nd revised edition, 1953.

¹⁴⁰ N. Begg, *The New Zealand Child and his Family*, Christchurch, 1970.

¹⁴¹ H. E. Deem and N. P. Fitzgibbon, *Modern Mothercraft: A Guide to Parents. Official Handbook of the Royal New Zealand Society for the Health of Women and Children*, Dunedin, 1945, p.108. This advice was repeated in the 1953 edition on p.106.

¹⁴² *ibid.*

Immunisation was a duty to be done without question; there was no attempt at persuasion.

In 1970 Neil Begg in his manual, *The New Zealand Child and his Family*, reflected the influence of a more 'permissive' society and approached the question of immunisation differently.¹⁴³ Parents were now 'advised' to have their children immunised and the word 'duty' had been dropped. Begg even acknowledged that parents 'may feel a little resistant to the thought of the doctor sticking an injection needle into him and you may want to know more about the whole subject of immunisation'.¹⁴⁴ Persuasion was now the methodology employed with parents, a brief history of immunisation was given and some simple detail on how immunisation worked; these were not topics to be found in *Modern Mothercraft*.¹⁴⁵ Begg further advised not to have smallpox vaccinations unless travelling overseas.¹⁴⁶ He commented that the 'whole face of medicine has been changed by the amazing success of this method of preventing infectious disease' and hoped parents would be persuaded to have their children immunised.¹⁴⁷ Although there was still little information on reactions, the whole way the subject of immunisation was approached by the Plunket Society (as the only New Zealand purveyor of written information on childcare) had changed noticeably in the 17 years since the second edition of *Modern Mothercraft*. Additionally, it emphasised the dilatoriness with which new child-rearing ideas were assimilated into both Plunket and the Health Department's perceptions of New Zealand society. This proved to be an ongoing feature of the Health Department, particularly with regard to their perceptions of parents.

The New Zealand Child and his Family also underscored the change that had taken place in terms of exposure to infectious disease. For example, when the second edition of *Modern Mothercraft* was released in 1953, polio was still epidemic in New Zealand; by 1970, it had been virtually eradicated by immunisation.¹⁴⁸ Neither the Plunket Society nor the Health Department could now rely on fear of the disease and invoke 'duty' as reasons for parents to have children immunised against polio. A

¹⁴³ N. Begg, *The New Zealand Child and his Family*, Christchurch, 1970.

¹⁴⁴ *ibid.*, p.113.

¹⁴⁵ *ibid.*

¹⁴⁶ *ibid.*, p.114.

¹⁴⁷ *ibid.*, p.115.

¹⁴⁸ There was one confirmed case of polio in 1970, the first since 1962.

different approach had to be employed, one of active persuasion, which would involve educating the public as to the continued need for vaccine use. The promotion of immunisation through health education now became an increasingly important function of the Health Department.

Compliance with immunisation requirements was perceived as a major challenge by the Health Department, even though the majority of parents did have their children immunised. Typically, mothers were held responsible for the failure to present children for immunisation. The President of the Crippled Children's Society, Mr. J. E. Greenslade, commented that the 'greatest weakness of the New Zealand system was that it was voluntary, and mothers could become careless, endangering the lives of their children'.¹⁴⁹ This view was shared by the Health Department; Dr R. J. Flight, the Deputy Medical Officer for Health for Auckland, pointed out that because 'New Zealand had not had a case of poliomyelitis since 1962, there was a risk that mothers unaware of the horrors of the disease might become careless about immunisation'.¹⁵⁰ The *New Zealand Herald's* view was that 'the success of the immunisation programme rests with mothers ensuring that their babies receive the full three-dose course', supporting the Health Department's perception of maternal responsibility.¹⁵¹

A Schick survey in 1969 to test for levels of immunity against diphtheria amongst 3,066 schoolchildren in the Wellington area indicated that 83.9 percent of children overall showed acceptable levels of immunity, although it was pointed out that this did vary between schools.¹⁵² Other Health Districts demonstrated similar levels of immunity; in 1967 a Schick test survey revealed that Palmerston North had 89.7 percent and Hamilton had 90.8 percent of their schoolchildren protected against diphtheria.¹⁵³ Levels of immunisation were comparable to those achieved in the United States, where, in 1969, 86.1 percent of five to nine year olds had received the

¹⁴⁹ AS, 23 June 1969, BAAK A358 135c, ANZ, Auckland.

¹⁵⁰ NZH, 6 March 1969, BAAK A358 135c, ANZ, Auckland.

¹⁵¹ NZH, 9 April 1969, BAAK A358 135c, ANZ, Auckland.

¹⁵² A. A. Tennant, 'A Recent Schick Survey in the Wellington Health District', NZMJ, 69, 85, 1969, p.89.

¹⁵³ 'Schick Test Survey Palmerston North Health District 1967' and 'Schick Test Survey Hamilton Health District 1967', YCBE 1990/80a Schick Testing 1967-74, ANZ, Auckland.

recommended three doses of triple vaccine, as well as 77.4 percent of those aged one to four.¹⁵⁴

Despite doctors' fees, and other limitations such as access to surgeries or clinics, the majority of parents in the 1960s had their children immunised. One mother of four children who were born between 1966 and 1974 had all her children immunised: 'all they were supposed to have...you just didn't question it'.¹⁵⁵ Another mother whose two children were born in 1966 and 1968 commented that 'you knew you had to do it otherwise you were classed as a bad mother if you didn't, because the children could contract these diseases that they were being inoculated against'.¹⁵⁶ During this period responsibility for immunisation rested squarely on the shoulders of the mother. Handouts of departmental immunisation schedules from 1964 included the instruction 'Read this Immunisation Programme carefully. Your child's life may depend on it'.¹⁵⁷ Failure to immunise was perceived as a neglect of duty of care on the part of the mother. It was not until the 1970s that the notion of 'duty' and the 'blame' ethos as well as the emphasis placed on mothers began slowly to change.

Mothers interviewed whose children were born during this period all did as the Plunket nurse and the doctor advised with regard to immunisation. Contrary then to the opinion held by the Health Department that mothers were neglectful in this area, most did comply. Nevertheless, what the Schick surveys did reveal was a discrepancy in figures across localities. The Wellington survey found that a 'settled non-state housing area' had the highest number of children immune at 94 percent, whilst a school in a state housing area 'with many Island and Maori families' and another school in a 'large mixed racial area with groups of Italian and Greek migrants' were the lowest with 77.6 and 76.1 percent respectively.¹⁵⁸ All the other schools were fairly comparable ranging from 84 to 89.3 percent, including one school that drew its pupils from the local pa suggesting that race was not the only factor.¹⁵⁹ In the

¹⁵⁴ P. M. Vivier, 'National Policies for Childhood Immunization', p.90 and p.94.

¹⁵⁵ Interview with D. McKerras, 21 March 2002. Mother in 1960s and 70s.

¹⁵⁶ Interview with P. Simes, 14 March 2002. Mother in 1960s.

¹⁵⁷ 'Immunisation Schedule 1964', BAAK A358 122c General Vaccines, ANZ, Auckland.

¹⁵⁸ A. A. Tennant, 'A Recent Schick Survey in the Wellington Health District', p.86.

¹⁵⁹ *ibid.*

Hamilton District it was found that 7.7 percent of Europeans and 14.9 percent of Maori were not immunised.¹⁶⁰

Growing migration from the Pacific Islands and non-English speaking parts of Europe meant the Health Department now had to begin to take account of language barriers and unfamiliarity with New Zealand society when organising immunisation campaigns, or even just implementing the schedule. In order to facilitate immunisation, from 1964 consent forms began to be produced in Niuean, Samoan and Cook Island Maori.¹⁶¹ Immunisation schedules also began to be produced to be handed to parents of newborns, although no other information was provided apart from the information obtained from the GP or Plunket nurse.¹⁶² One departmental clinic in Auckland wrote that it just was not possible to find out what immunisations the older children had been given in the Islands as 'Even the parents don't know'.¹⁶³

Maori and Pacific Island Immunisation

Surveys undertaken during the 1950s and 1960s indicated categorically that both Maori and Pacific Islanders had a range of health needs that had to be addressed. In 1960, the Health Department published a report on Maori and European standards of health.¹⁶⁴ In almost every area examined, Maori incidence rates were found to be higher than Europeans.¹⁶⁵ A second study, this time looking at mortality rates, was undertaken at the end of the 1960s and published in 1972.¹⁶⁶ It was concluded that there had been a marked improvement in Maori health since 1960, although the rates were still higher than for Europeans. This was demonstrated by figures for pertussis. The disease had a mortality rate (per 10,000 live births) for Maori of 5.4 in 1954-58, falling to 0.3 for the period 1964-68. For Europeans, this rate was 0.4 for 1954-58 and 0.2 for 1964-68. The general improvement in Maori child health by 1968-69 was clearly illustrated as statistics showed that for both Maori and European, the leading

¹⁶⁰ 'Schick Test Survey Hamilton Health District 1967', YCBE 1990/80a, ANZ, Auckland.

¹⁶¹ BAAK A358 122c General Vaccines, ANZ, Auckland.

¹⁶² C. N. D. Taylor to MOH, 6 September 1965, BAAK A358 122c, ANZ, Auckland.

¹⁶³ R. Walker to MOH Auckland, 26 January 1966, BAAK A358 122c, ANZ, Auckland.

¹⁶⁴ R. J. Rose, *Maori-European Standards of Health*, Department of Health, 1960.

¹⁶⁵ *ibid.*, pp.12-21. The exception was polio.

¹⁶⁶ R. J. Rose, *Maori-European Comparisons in Mortality*, Department of Health, 1972.

cause of death for both preschoolers and school children up to 14 was now accidents with respiratory diseases relegated to second place.¹⁶⁷

Although other factors, such as improvements in housing, diet and health need to be taken into account, immunisation would certainly have played a significant part in reducing Maori death rates in children under five. This was because this period especially, coincided with a number of campaigns, aimed at developing a growing awareness in New Zealand parents of the importance of their children receiving the specified vaccines. However, a survey in 1963 did reveal that in one area 70 percent of Maori and Pacific Island babies had not been immunised.¹⁶⁸ The Health Department acknowledged this, commenting that the ‘epidemic diseases which were once common, typhoid fever, scarlet fever, diphtheria, whooping cough, and chicken pox, seldom cause death today, but the occasional death that does occur is too often that of a Maori child’.¹⁶⁹ Reaching people who did not immunise their children, often due to socio-economic factors, became an increasingly important priority for the Health Department.

One aspect of the 1960 study compared rates for tuberculosis per 100,000 of the population. In Maori under-fives, the incidence of respiratory tuberculosis, 1954 to 1958, revealed that 14.5 Maori children died compared to 0.7 European children. For five to 14 years the figures were 4.7 for Maori and 0.1 for European.¹⁷⁰ By the late 1960s figures for Maori had certainly improved although they were still not as good as European rates.¹⁷¹ The Health Department confidently asserted in 1963 that ‘Tuberculosis can no longer be considered a significant cause of death in either Europeans or Maoris’.¹⁷² Despite this, and the fact that the tuberculosis figure for 1963 was the lowest ever recorded at 3.7 per 100,000, the medical establishment still had concerns about this disease. From 1963, immunisation of schoolchildren with BCG continued for those resident in the North Island only, due to the higher figures and larger numbers of Maori and Pacific Islanders who lived there.

¹⁶⁷ *ibid.*, p.18, p.20.

¹⁶⁸ AJHR, 1964, H-31, p.22.

¹⁶⁹ AJHR, 1965, H-31, p.30.

¹⁷⁰ R. J. Rose, *Maori-European Standards of Health*, Department of Health, 1960, p.14.

¹⁷¹ R. J. Rose, *Maori-European Comparisons in Mortality*, Department of Health, 1972, p.72.

¹⁷² AJHR, 1964, H-31, p.56.

Medical opinions tended to vary over the value and usefulness of the BCG vaccine. When it was used in conjunction with other control methods such as mass X-rays, it was considered a useful tool, and one which the Health Department believed would aid them in achieving low tuberculosis figures in the North Island as well. Although blanket immunisation in North Island secondary schools continued throughout this period, there was also a movement towards a targeted policy which was taken up more fully in the 1970s and 1980s. The Paediatric Society in 1964 expressed concern that over 25 children, mostly Polynesians, had been in the Wellington hospital from January to October 1963 suffering from tuberculosis.¹⁷³ They felt that BCG was still necessary, ‘especially in Maoris and Islanders’.¹⁷⁴

This view was shared in several other districts and the Hutt Health District had already been vaccinating Maori babies, holding clinics for this purpose since 1958.¹⁷⁵ In 1964, 214 babies were vaccinated at these clinics.¹⁷⁶ In the Wellington and Hutt Health Districts from 1964, as a result of the higher tuberculosis figures in children, all Pacific Island babies were to be given BCG.¹⁷⁷ By 1966 the Auckland Health District had also put plans in place to start vaccinating Maori and Pacific Island babies born at the Auckland Hospital Board’s Maternity Hospitals with the appointment of a part-time medical officer to undertake this procedure.¹⁷⁸ At the 1965 conference of chest physicians it was recommended that all Maori and Polynesians were to be vaccinated at an early an age as possible. The Health Department, acting on advice from the Maori Health Committee, decided against specifically targeting ethnic groups, recommending instead that those infants considered ‘at risk’ were to be vaccinated.¹⁷⁹ However, those babies so designated were nearly always Maori or Polynesian.

¹⁷³ J. M. Watt to W. Dempster, 13 April 1964, H1 246/64 34419 BCG Vaccine 1956-69, ANZ, Wellington. For a history of the Paediatric Society see Chapter 5, footnote 153.

¹⁷⁴ J. M. Watt to W. Dempster, 13 April 1964, H1 246/64 34419, ANZ, Wellington.

¹⁷⁵ M. C. Laing to D. P. Kennedy, 21 September 1964, H1 246/64 34419, ANZ Wellington.

¹⁷⁶ *ibid.*

¹⁷⁷ V. S. Land to MOH Wellington, 31 January 1964, H1 246/64 34419, ANZ Wellington.

¹⁷⁸ MOH Auckland to Director General of Health (DGH), 17 June 1966, H1 246/64 34419, ANZ Wellington.

¹⁷⁹ DGH to MOH, 13 January 1965, BAAK A358/140a TB general 1963-66, ANZ, Auckland. The Maori Health Committee was one of a number of government committees who offered recommendations on policy. They also endeavoured to highlight matters of concern with the appropriate government body.

Operating alongside this strategy was the BCG vaccination that was offered at high school to all pupils in Year 3 in the North Island. This policy remained in place during this period to ensure that the groups most susceptible to tuberculosis, young Maori and Pacific Islanders, received vaccination. The Department believed that 'blanket' vaccination, would, in these circumstances, be the best way forward rather than singling out Maori and Pacific Island pupils which could lead to accusations of racism. Therefore, in line with the WHO's recommendations regarding BCG, it was retained in the North Island until levels within the population fell below 0.1 per 1,000.

Conclusion

The attitude of health professionals and the public in the 1960s erred on the side of caution regarding immunisation. Although new vaccines were introduced, the EAC and the Health Department were not prepared to introduce those for rubella and measles until they were convinced of their safety, thereby following the British rather than the American approach. This caution exercised by the EAC and the Health Department characterised many decisions relating to immunisation in the 1960s and beyond.

The influence of the Health Department on public perception and the effective use of publicity were demonstrated by the favourable uptake of rubella immunisation in a popular, school-based campaign in 1970. As a community health measure, the vaccine was well-publicised by the Department and access to it (for schoolchildren) made easy. Uptake was around 95 percent as a result. In contrast, the measles vaccine was given by GPs in their surgeries, involving time and expense for parents. There was little attendant publicity about a vaccine that even the Department regarded with ambivalence. As a result uptake was low. These two campaigns emphasised the crucial roles of promotion, education and access to the success of an immunisation campaign.

Concerns were increasingly expressed by the Department that some parents were not having their children immunised, particularly against polio, resulting in the decision to allow GPs to administer the vaccine with the triple vaccine from April 1967. Nonetheless, doctors' fees tended to preclude immunisation for those parents on 'the

bread and butter line' and immunisation was made free in 1972. Mothers specifically were targeted by the Department during the 1960s as the ones who were 'neglectful' of their children if they were not immunised, or of failing in their 'duty'. This emphasis on 'mothers' and 'duty' was, by the late 1960s and early 1970s was under pressure to change from international influences such as the growth of feminism which objected to the way such terms were employed, as well as new childrearing practices which began to challenge how parents perceived health professionals. How feminism and other influences affected the way the Health Department perceived parents will be discussed in chapter nine.

The first significant questioning of departmental immunisation policy occurred during the 1960s in an article published in the *New Zealand Medical Journal*. This sparked the beginning of some health professionals being more prepared to publicly disagree with the Department over aspects of immunisation, a trend that became more evident over the next two decades.

Although the 1960s seemed to be fairly stable, by the 1970s significant changes were taking place within New Zealand society which had their roots in the previous decade. The impact of these changes, on the Health Department, on immunisation policy, and on parents, will be discussed in the following chapters.

CHAPTER 7: 'Slow to Change?'

The Health Department and immunisation policies 1972-1990

The 1970s and 1980s created a paradox for immunisation. There was an ever expanding range of vaccines on offer to prevent diseases that most parents had either never encountered, or believed were trivial. Consequently, the promotion of child immunisation to the medical profession and the public was an important facet of Health Department policy and a measure of its achievement. The main approach employed to educate the public about a particular immunisation were mass publicity campaigns which were used in a variety of ways. This chapter will consider the methods used and their relative success in raising immunisation levels and will discuss how the Department reacted to a perceived need to change a particular strategy. It will examine the influence of the World Health Organization (WHO), the Epidemiology Advisory Committee (EAC) and the medical profession on immunisation policy in New Zealand, as well as the significance placed on the views of local communities.

The World Health Organization and the Epidemiology Advisory Committee

The Health Department continued to rely on immunisation advice from its two important sources, the WHO and the EAC. At the helm of the Department from 1973 until 1983 was Director-General John Hiddlestone who was an enthusiastic member of the WHO.¹ He commented that the WHO was held in very high regard by the Department. The reports produced by the WHO advisory committees were used frequently by the Department for determining health strategies and actions, and Hiddlestone viewed the Organization's advice as an integral part of Health Department policy and decision-making. The importance of the WHO to Hiddlestone personally would certainly have shaped departmental culture. During his tenure as Director-General of Health, Hiddlestone was Vice-President of the World Health Assembly in 1976, a member of the Executive Board from 1980 and chairman in 1982. Upon retirement from the Health Department in 1983 he became the Director of Health of the United Nations Relief and Works Agency for Palestinian

¹ Interview with H. J. H. Hiddlestone, 23 October 2002.

Refugees.² This strong influence was maintained under later Director-Generals, Ron Barker and George Salmond, both of whom were WHO advocates.

The other important source of advice for the Department was the EAC. Counselling the Department on a range of matters, the EAC in the 1970s was comprised of a number of New Zealand specialists including Professor C. W. Dixon, a world authority on smallpox and Professor J. A. R. Miles, an eminent microbiologist. The EAC continued to be very respectful of any direction given by the WHO when advising on appropriate departmental policy. This view was sustained when the EAC became the Communicable Disease Control Advisory Committee (CDCAC) in January 1985 under changes initiated by the Board of Health although there was no modification of its immunisation brief.³ The Director-General of Health was a member of the Committee and therefore recommendations formulated for immunisation by the CDCAC were repeatedly accepted by the Health Department.

One area the EAC tried to improve was the reporting procedure for adverse reactions. By so doing it hoped to collate information on side-effects to immunisation. Previously, doctors could report these side-effects if they so wished to the Health Department in whatever form they chose. From 1972, however, doctors were to use a specially designed green card to notify the Dunedin-based Committee on Adverse Drug Reactions, based in Dunedin, of any post-immunisation reaction.⁴ A description of the type of reaction to be notified was contained in a circular sent to medical practitioners in November 1972.⁵ Nevertheless, although there was now a formalised reporting procedure to a committee, the report still remained a voluntary action by the doctor concerned and there were several limiting factors. Often, the reaction may have been witnessed only by the parents who may not have been aware, due to lack of knowledge, that it was a vaccine reaction. Occasionally, some doctors either did not

² D. Dow, *Safeguarding the Public Health. A History of the New Zealand Department of Health*, Wellington, 1995, p.239.

³ A new Board of Health had been established in 1983 under the Health Amendment (No 2) Act 1982. An advisory structure of 11 standing committees was appointed in January 1985 of which the Communicable Disease Control Advisory Committee (CDCAC) was one. *Appendices to the Journals of the House of Representatives* (AJHR), 1985, E-10, p.59.

⁴ W. Murphy to Medical Practitioners, 30 November 1972, YCBE 1990/80c Immunisation General 1950-75, ANZ, Auckland.

⁵ Circular Letter to Medical Practitioners, 5 October 1973, AAFB 632 W3463/83 47692 144/18/1 Rubella immunisation 1971-77, ANZ, Wellington.

realise or accept that there was a vaccine reaction if they had not been present. As there was no compulsion to fill out the green card it is likely, certainly at the beginning, that it was neglected.

Other problems were pointed out to the Health Department by R. B. Elliot, Professor of Paediatrics at the Auckland School of Medicine, who commented in November 1973 that ‘the form of notification [for adverse reactions] does not seem to exist in Princess Mary Hospital for Children, and I suspect, in many other of the children’s wards throughout the country’.⁶ Elliot also noted that he was not aware that he should have notified the two cases of catchers cough he had seen following rubella immunisation.⁷ A year after its introduction the Department had not yet made the necessary forms available in all places where children were treated, nor had it fully informed hospital staff and doctors of the type of adverse reaction to be notified. Gradually, the system was accepted by general practitioners (GPs), although without mandatory reporting some reactions were likely to be missed. Nevertheless, this was an important step taken by the Health Department as it signalled an acceptance that there were reactions to vaccines and that centralised information would enable it to establish if there had been a ‘bad batch’ of vaccine or if there had been any contraindications to the use of the vaccine.⁸ Certainly, as the system became established reactions to vaccines were reported to the Committee with ‘some useful information...obtained’.⁹

Rubella Immunisation

Although GPs were responsible for routine immunisation, the Health Department undertook the mass campaigns in schools. The two vaccines of most concern to the Health Department in the 1970s were for measles and rubella, both of which had low uptake figures when administered through doctors’ surgeries. Although a mass immunisation campaign against rubella had taken place in 1971, there were still many

⁶R. B. Elliot to C. N. D. Taylor, 8 November 1973, AAFB 632 W3463/83 47692 144/18/1, ANZ, Wellington.

⁷ *ibid.*

⁸ Vaccine could become impotent if it was not kept cool enough in the fridge in the surgery. Eventually all surgeries had to acquire a fridge thermometer to make sure the vaccine was stored at the correct temperature.

⁹ Circular Letter to Medical Practitioners, 5 October 1973, AAFB 632, W3463/83 47692 144/18/1, ANZ, Wellington.

debates in medical circles surrounding the rubella immunisation policy, and enthusiasm for it amongst parents was fairly low. Figures also varied considerably between health districts. In 1973 it was found that in the Dunedin Health District 61.9 percent of new school entrants were immunised against rubella.¹⁰ In contrast, the Medical Officer of Health for Lower Hutt, James Ramsey, released figures in 1974 showing only 15 percent of children in his district were immunised by age five.¹¹ This low number was repeated in the Hamilton District where doctors claimed for only 1,020 rubella immunisations when over 5,000 children started school in 1974.¹²

After the initial success of the 1971 rubella campaign, which had a 95 percent acceptance rate, this was of grave concern to the Health Department. A strategy was put in place by the Department whereby children were given a rubella immunisation along with a booster shot of double vaccine just before they started school. This was a community measure designed to protect the unborn baby and as primary school children were perceived to be the largest reservoir of rubella infection the strategy was directed towards them. Almost immediately, the Health Department ran into difficulties. The problem was twofold. Firstly, it was necessary to persuade parents to have their preschoolers immunised against a mild childhood illness for the benefit of the community, with little advantage for the child. Secondly, there was also some disagreement amongst members of the medical profession over the policy adopted. Some medical practitioners believed it would be more effective to immunise girls at around age 11.¹³

To ensure the success of the policy the Health Department had to maintain rubella immunity levels at about 95 percent. Up until 1979 this was never achieved. The controversy within the medical profession regarding the rubella immunisation policy was a major reason for the low uptake, as doctors in turn influenced parents. A visiting American Professor of Paediatrics, Henry Kempe, from the University of Colorado Medical Centre, Denver, spoke at the Paediatric Society Conference in October 1973. He stated that he felt it was 'quite wrong' to administer the vaccine to

¹⁰ 'Immunisation state of all new entrants to school in Dunedin Health District 1973', AAFB 632 W3463/83 47692 144/18/1, ANZ, Wellington.

¹¹ *New Zealand Herald* (NZH), 30 July 1974.

¹² Medical Officer of Health (MOH) Hamilton to Head Office, 3 February 1975, AAFB 632 W3463/83 47692 144/18/1, ANZ, Wellington.

¹³ For a discussion on this policy see Chapter 6, pp.178-83.

male children when there was a risk of adverse effects including polyneuritis and polyarthritis with the vaccine used at the time.¹⁴ Nevertheless this view was at odds with current American policy where rubella immunisation was offered to all children from kindergarten through to sixth grade.¹⁵ In New Zealand, at both Paediatric Society conferences in 1973 and 1974, concern was expressed at the current rubella immunisation policy with the intention of making submissions to the EAC.¹⁶ The risk of possible side-effects influenced a large minority of doctors to offer rubella immunisation only to female children. Dr Isabel Fisk of Cambridge went further when she wrote to the Department advising she would 'immunise pre-schoolers only if the parents insist'.¹⁷ She believed it would be more advantageous to immunise Form 1 girls. Many other medical practitioners shared this view; Dr R. P. Bell of Hamilton wrote in 1973 that his centre was immunising girls in their early teens rather than five olds, based on the reading of some overseas medical journals from countries such as Britain, where rubella immunisation focused on 11-year-old girls.¹⁸ Dr Hugh Budge of Paeroa wrote that few children were presented for rubella immunisation and concurred that a 'girls only' pre-puberty policy might find more favour.¹⁹ The diversity of views from within New Zealand regarding rubella immunisation was reflected in the different strategies adopted overseas.

The policy of immunising 11-year-old girls was the strategy used both in Britain and Australia. In contrast, the United States had, from 1969 with the licensing of the Merck, Sharp and Dohme vaccine, employed a rubella immunisation policy which was initially aimed at primary school children and later extended to encompass preschoolers. This particular policy was adopted as 'the dominant view was of rubella as a childhood immunization problem'.²⁰ By 1971, 63.2 percent of children aged between five and nine in the United States had received the rubella vaccine, with

¹⁴ G. B. Collison to Director General of Health (DGH), 2 July 1975, AAFB 632 W3463/83 47692 144/18/1, ANZ, Wellington.

¹⁵ 'Information on Rubella vaccine', H1 144/18/1 35788 Sera and Vaccines: Rubella Vaccine 1968-70, ANZ, Wellington.

¹⁶ *ibid.*

¹⁷ I. J. Fisk to Director of the Division of Public Health, 9 October 1974, *ibid.*

¹⁸ P. R. Bell to J. F. Dawson, 13 November 1973, YCBE 1990/172a Rubella (Measles) 1970-80, ANZ, Auckland.

¹⁹ H. Budge to MOH Hamilton, 18 November 1973, *ibid.*

²⁰ P. M. Vivier, 'National Policies for Childhood Immunization in the United States: An Historical Perspective', PhD, John Hopkins University, 1996, p.108.

51.2 percent of those aged one to four also being immunised.²¹ From 1976 to 1981 preschool rates remained between 59.4 and 64.5 percent, whilst for five to nine year olds for the same period the figures ranged from 69.5 to 77.1 percent.²² Although these figures were not particularly high the incidence of rubella by 1981 was 0.91 per 100,000 and the programme was perceived to be working.²³ The policy of immunising children against rubella therefore remained in place throughout the 1980s in the United States.

Support for the Health Department's policy in New Zealand came from women's groups such as the Federation of NZ Country Women's Institutes. The Dominion Executive Officer, P. M. Summer, expressed the Institutes' concern that the 'programme appears to have fallen down as parents do not take their children to the general practitioner'.²⁴ The Catholic Women's League of New Zealand hoped that the Department would set up 'mobile clinics or designated centres to be used in an intensive rubella vaccination campaign' after reports in the press of the likelihood of an epidemic due to the low numbers immunised.²⁵

Despite doctor dissension, steps to change current procedure moved slowly. The EAC discussed the rubella policy in 1975 and advocated continuing with it for the present.²⁶ In 1977 the policy was again under review with Medical Officers of Health being asked to provide a comprehensive report on rubella immunisation in their area. Of six North Island districts only one, Whangarei, had above a 58 percent uptake.²⁷ The EAC then asked the College of General Practitioners to try and improve levels of immunisation. However, by November 1978 figures among the 18 health districts still varied considerably; Invercargill had 87.67 percent of new school entrants immunised whilst Wanganui was the lowest on 46.79 per cent.²⁸ The EAC and the Department believed the coverage was not enough to prevent outbreaks of

²¹ *ibid.*, p.135.

²² *ibid.*, pp.182-83.

²³ *ibid.*, p.191.

²⁴ P. M. Summer to Health Department, 11 September 1974, AAFB 632 W3463/83 47692 144/18/1, ANZ, Wellington.

²⁵ National Secretary to Minister of Health, 26 August 1974, *ibid.*

²⁶ Circular Letter to Medical Practitioners, 1 October 1974, YCBE 1990/172a, ANZ, Auckland.

²⁷ YCBE 1990/172a ANZ, Auckland. The districts were Whangarei, Auckland, Hamilton, Napier, Wanganui.

²⁸ 'Rubella Immunisation: Primary school new entrants approx July to 31 October 1978', ABQU 632 W4415/345 50136 144/18/1, Rubella Vaccine 1977-79, ANZ, Wellington.

rubella despite departmental and GP efforts. In addition, there were a number of ‘specialists in paediatrics and microbiology [who] were speaking out very strongly against the policy of immunising boys’, and some doctors were refusing to adhere to policy and give rubella vaccine to male children.²⁹ Consequently, the EAC decided to follow the British and Australian example and recommend a change in rubella policy to ‘the direct protection of girls and women’.³⁰ Under this new policy all Form 1 girls would be offered immunisation in school by the Public Health nurses each year.³¹ Commencing in January 1979 this policy met with higher levels of compliance and in that year, 89 percent of all Form 1 girls not previously immunised received the vaccine.³² By 1981 this had reached 98 percent and rates over 90 percent were maintained until the mumps, measles and rubella (MMR) vaccine was introduced and offered to all Form 1 children in 1992.³³ The new rubella immunisation policy adopted in 1979 was deemed to be a successful move as it achieved high levels of compliance from the public and found favour with the majority of the medical profession.

Although New Zealand had originally implemented a rubella immunisation policy, similar to the one adopted in the United States, the Health Department had had growing concerns about its effectiveness for several years, especially in light of the low levels of immunisation, although there had been no epidemics of congenital rubella since immunisation began.³⁴ The Department moved quite cautiously before altering policy on the recommendation of the EAC. Alterations to strategy, (particularly when not clear-cut as in the case of rubella), were usually reactive and occurred only after circumstances indicated modifications were necessary. The change made to the rubella policy indicated that the Department and the EAC gave considerable weight to the opinions expressed by both GPs and paediatric specialists and were prepared to make modifications if it was deemed advisable. It was also clear that the continued relationship between the Department and the EAC

²⁹R. Campbell-Begg to Editor, *Otago Daily Times* (ODT), 17 December 1980, ABQU 632 W4415/266 51380 131/18/1 Rubella Immunisation 1978-81, ANZ, Wellington.

³⁰ *ibid.*

³¹ The new rubella policy also covered women of child-bearing age who were to be blood-tested and offered rubella immunisation if necessary. This particular aspect of rubella policy dealing with adults falls outside the scope of this thesis.

³² AJHR, 1980, E-10, p.23.

³³ AJHR, 1982, E-10, p.20.

³⁴ Congenital rubella was made notifiable in 1972.

demonstrated that no departmental changes to policy would be made unless the expert committee recommended it.³⁵

By the end of the 1970s there were growing concerns regarding a worldwide rubella epidemic and its implications for the unborn babies of New Zealand. This epidemic spanned 20 months from October 1979 to May 1981.³⁶ Unfortunately for the Health Department, the onset of this epidemic led to criticism of its new policy by groups who still advocated immunising preschoolers. Paediatrician Ian Hassall, Director of Medical Services for Plunket, indicated that ‘immunisation of 11 year olds begun in 1979, although soundly based in my opinion, will have no effect on the course of the present epidemic’ and requested a mass immunisation campaign of all schoolchildren for the start of school year in 1981.³⁷ The New Zealand College of General Practitioners also requested a one week campaign for February 1981 to immunise all women and children over 12 months of age.³⁸ The New Zealand Federation for Deaf Children requested the Department to stop the current practice of immunising adolescent girls and ‘revert to its former policy of immunising all children in the pre-school years’.³⁹ The *Otago Daily Times* also entered the fray, expressing its views in an article entitled ‘Criticism of Rubella Immunisation Policy’.⁴⁰ This commented on the ‘obvious lack of success that had accompanied the change in policy’ and advocated introducing school-based rubella immunisation at the primary school level.⁴¹

In light of this discouragement the EAC once again reviewed rubella policy in March 1981 and recommended its continuation as it was achieving high levels of acceptance amongst Form 1 girls, much more so than under the 1970s policy of immunising

³⁵ The Epidemiology Advisory Committee (EAC) became the Communicable Disease Control Advisory Committee (CDCAC) in January 1985.

³⁶ J. Miller, N. S. Kuttner, Y. E. Hermon, ‘The 1980 rubella outbreak in New Zealand’, *New Zealand Medical Journal* (NZMJ), 9 June, 1982, p. 386.

³⁷ I. B. Hassall to G. Gair, 18 December 1980, ABQU 632 W4415/266 51380 131/18/1 ANZ, Wellington.

³⁸ I. St George and J. Moody to G. Gair, 16 December 1980, ABQU 632 W4415/266 51380 131/18/1, ANZ, Wellington. It should be noted that the decision taken to immunise children was not unanimous, two doctors on the committee dissented.

³⁹ M. Gunn to R. D. Muldoon, 18 December 1980, ABQU 632 W4415/266 51380 131/18/1, ANZ, Wellington.

⁴⁰ ODT, 15 December 1980.

⁴¹ *ibid.*

preschoolers.⁴² By January 1982, there were 41 cases of congenital rubella confirmed from the rubella pandemic; however, in the previous epidemic of 1964-65 there had been over 350 children diagnosed with hearing difficulties alone.⁴³ Rubella immunisation policies appeared to have the effect of substantially reducing numbers of congenital rubella cases. R. Campbell-Begg, who was the Deputy Director of the Division of Public Health at the time, commented that,

The Department has been accused of neglect in failing to prevent the present outbreak of congenital rubella. This comes from people and organisations noticeably silent over the 2 years during which time a very substantial amount of rubella immunisation promotion was being relayed to doctors and the community resulting in a great deal of publicity and quite a good response in terms of women seeking blood tests.⁴⁴

The Department obviously felt that they had done their best with regard to rubella policy and making immunisation available and that the criticism was unfair. With such high levels of acceptance by the parents of Form 1 girls, the Department saw no reason to revert to previous policy due to heightened concern during an epidemic, and this strategy remained in place up until 1992 when MMR replaced the single rubella shot.

The Promotion of Measles Immunisation

During the rubella policy debate it was pointed out by one Remuera-based GP that the 'Department cannot be blamed for inaction in the past. The public itself have themselves to blame and also G. P.'s not necessarily for failing to immunize but at least for claiming to be able to do the job and then finding they couldn't'.⁴⁵ It was during the 1970s that the Health Department began to focus more on educating the public with regard to the need for immunisation.

One method of conveying health information to the public was through the Department's magazine *Health* which dealt with a wide range of issues. As a free

⁴² R. Campbell-Begg to Editor, ODT, 16 March 1981, ABQU 632 W4415/267 131/18/1 52352 Rubella Immunisation 1981, ANZ, Wellington.

⁴³ Circular Memo 1982/1, 5 January 1982, YCBE 1990/306a Measles and Rubella 1944-1986, ANZ, Auckland. Also see NZH, 30 July 1974.

⁴⁴ R. Campbell-Begg to Editor, ODT, 16 March 1981, ABQU 632 W4415/267 52352 131/18/1, ANZ, Wellington.

⁴⁵ R. Lang to R. Campbell-Begg, no date on file, ABQU 632 W4415/266 51380 131/18/1, ANZ, Wellington.

magazine published four times a year, *Health* enjoyed an increase in circulation from the 1960s to the 1980s, although this was really only a reflection of the increase in Auckland's population size. In 1963, *Health* had a readership of 63,000.⁴⁶ By 1977 this had risen to 78,000 and then up to 95,000 by 1981.⁴⁷ The introduction of new immunisation schedules and the reasons for the change in rubella immunisation policy were all covered in specific issues of *Health*.⁴⁸

In 1946 the Department had introduced Health Education Officers to convey information on aspects of health to the public. In 1959 a diploma course was commenced in health education, which became a prerequisite for all Health Education Officers. Their role included talks to schoolchildren or interested adult groups and the organisation of exhibitions in various health districts. In 1979, in recognition of the importance of health information a new Division was formed (Health Promotion) and it was headed by Richard Campbell-Begg.⁴⁹ Immunisation was just one area that could receive exposure; there were many others such as accidental poisoning, home safety, drug education and iodised salt, which were the divisional choices for 1972. However, some selections which were aimed at children and the home did overlap with information put out by the Plunket Society.⁵⁰ Coverage for an immunisation programme tended to be most prevalent when the Health Department was initiating a school or preschooler campaign, or if there was a 'drive' to increase figures as was demonstrated with rubella immunisation. From March to June in 1975 two rubella films, 'Stop Rubella' and 'Defence Against Invasion' were shown in 12 Hamilton schools co-ordinated by the Public Health nurses and the Health Education Officer, Natalie Crossman. Upon evaluation the programme was deemed to be very successful.⁵¹ Health Education Officers were therefore used to promote measles immunisation in schools during the campaign of the late 1970s and early 1980s.⁵²

⁴⁶ *New Zealand Yearbook* (NZYB), 1963, 68, p.146.

⁴⁷ NZYB, 1977, 78, p.121 and 1981, 86, p.125.

⁴⁸ For example see *Health*, 31, 2, 1979, p.6 on the change in rubella immunisation policy.

⁴⁹ Richard Campbell-Begg was a Lower Hutt GP in the early 1960s before joining the Health Department and becoming the Medical Officer of Health for Gisborne. With the formation of a new division in 1979, Campbell-Begg, who was now the Deputy Director of the Division of Public Health, was chosen to head it. He remained the Director of the Division of Health Promotion until his retirement in 1984.

⁵⁰ AJHR, 1972, H-31, p.39.

⁵¹ YCBE 1990/238c Measles and Rubella Programme 1977-80, ANZ, Auckland.

⁵² The measles immunisation campaign is discussed in Chapter 6, pp.168-77.

Once the initial programme had been undertaken the Department wanted to improve and maintain immunisation levels within the community to prevent outbreaks of measles. It has been established that rates needed to be at least 95 per cent for this to occur. However, measles immunisation figures had not reached this level in New Zealand and hence gave the Department cause for concern. A survey in the Dunedin Health District in 1973 revealed that only 47.8 per cent of new school entrants were immunised against measles.⁵³ In 1977 the Health Department estimated that only 45 percent of one year olds had been immunised based on immunisation benefit claims, figures which were too low to produce ‘herd’ immunity.⁵⁴ In 1974 the age of immunisation had been raised from ten to 12 months as research had found that older babies showed better immunity levels; before this age the vaccine was unlikely to sero-convert sufficiently.⁵⁵

From 1977 the Department promoted an educational publicity campaign in various guises to try and boost the immunisation rate for measles. One of the more important aspects was to persuade parents that measles was a serious childhood disease, which could have damaging side effects. The perception in the Health Department was that most parents still believed measles was a mild and inevitable illness; the *Herald* had reported in 1971 that ‘few [parents] seemed concerned about English measles’ and this view continued to persist.⁵⁶ Another Health Department tenet was that parents tended to confuse rubella, or as it was more commonly called, German measles, with ordinary measles when it came to immunisations. *Health* magazine attempted to explain the difference between the two and also to explain the two immunisation programmes being promoted at the same time for each disease.⁵⁷

The Health Department now decided to focus on raising immunisation levels generally. Immunisation was made the theme of World Health Day in April 1977 and the Department employed several techniques to convey the message of ‘Immunise your Child!’ to parents. In Dunedin, information leaflets were distributed to schools, pharmacists and GPs amongst others. Slides were shown in local cinemas, the radio

⁵³ ‘Immunisation state of all new entrants to school in Dunedin Health District 1973’, AAFB 632 W3463/83 47692 144/18/1, ANZ, Wellington.

⁵⁴ ‘Measles (Morbilli) Epidemic Eradication Programme’ ABQU 632 W4452/666 58959 131/18 Measles/Rubella vaccine 1980-85, ANZ, Wellington.

⁵⁵ *ibid.* Sero-convert means to develop anti-bodies in the blood as a result of infection or immunisation.

⁵⁶ NZH, 13 December 1971.

⁵⁷ *Health*, 31, 2, 1979, p.2.

stations broadcast information relating to the campaign and TV1 gave the campaign coverage in the news. In a Dunedin study conducted to measure the effectiveness of the campaign on improving immunisation figures generally, it was found that whilst over 85 percent of teachers and 79 per cent of GPs were aware of World Health Day and its immunisation message; this was not reflected amongst parents.⁵⁸ Only 30 percent of those questioned were aware that immunisation was the focus and a study of child immunisation figures for the following six months found there was no improvement in uptake. It was concluded that ‘the World Health Day Immunisation Campaign must be said to have failed in Dunedin’.⁵⁹ Ian St George, a clinical lecturer in general practice at the University of Otago Medical School, also pointed out that ‘there is little substantive evidence for the effectiveness of the mass health education campaign in changing long-term behaviour, or in altering personal goals’ and that the ‘Immunise your Child!’ event demonstrated ‘the shortcomings of the media campaign in achieving even a simple action response’.⁶⁰

By the late 1970s the Health Department was very keen to raise measles immunisation figures and was prepared to focus on that specific aim. It was hoped that a targeted campaign would appeal more than just a general immunisation promotion, particularly as these had been shown to be unsuccessful. In 1978 the Health Department issued a challenge to parents, health professionals and the community alike to eradicate measles epidemics in New Zealand within five years.⁶¹ Parents were urged to take their children to the family doctor for immunisation.⁶² As part of this challenge a ‘Stamp-Out measles’ week was organised by the Plunket Society under the direction of the Deputy Director, Dr Ian Hassall. This initiative was much more dependent on individual contact and Plunket hoped that a campaign such as this would improve measles immunisation figures in the under-fives. Preschoolers were especially vulnerable to some of the more serious complications of measles, such as pneumonia and bacterial ear infections. The Plunket ‘Stamp-Out Measles’ week was held from 23 to 27 April 1978 and supported by the Department of Health. Previous

⁵⁸ I. M. St George, ‘Immunise your child!-The Impact of World Health Day 1977 in Dunedin’, NZMJ, 89, 1979, pp.91-93.

⁵⁹ *ibid.*, p.92.

⁶⁰ *ibid.*, p.93.

⁶¹ Circular Letter to Medical Practitioners P.H. 5/78, November 1978, ABQU 632 W4415/345 50984 144/18, Measles Vaccine 1978-80, ANZ, Wellington.

⁶² *Te Awamutu Courier*, 8 December 1978.

departmental immunisation campaigns had always received full support from Plunket and the 'Eradicate Measles Campaign' was no exception, as departmental staff were described as 'keen to co-operate' with the Plunket initiative.⁶³ Indeed, as historian Linda Bryder has pointed out, Plunket hoped 'the campaign would heighten awareness of immunisation against other diseases, such as polio, whooping cough, diphtheria and tetanus'.⁶⁴

This campaign was not just based on generalised publicity that had been the main feature of World Health Day. Plunket enlisted help from local service clubs such as Rotary and the Lions as well as from Medical Officers of Health and local GPs to help with immunising. They also hoped to utilise their considerable network of mothers to promote immunisation. These Plunket volunteers were used to go door-to-door on Saturday 21 April armed with clipboards to talk to parents about measles immunisation and make appointments for their preschoolers during 'Measles Week', if they had not been previously immunised. Parents were then given a householder card listing times and dates for the injection. Help with transport and babysitting was offered if required. Immunisation stations were then set up during the week, most often in doctors' surgeries, where the child would be immunised. Local campaigns were supported by more general publicity on radio and television stations in the days leading up to 'Measles Week'.

Plunket had adopted a much more personalised approach to increasing measles immunisation figures by using direct contact with the parents themselves rather than just general education and publicity. Hassall hoped that Plunket's campaign would 'succeed in eliminating Measles as an epidemic disease in New Zealand'.⁶⁵ By July 1979, about ten percent of the one to five age groups had been immunised.⁶⁶ Hassall was pleased by the results, commenting that, 'If we relate this to recently published complication rates it means that at least 1000 children will not suffer from middle-ear infection - 800 will be spared pneumonia, 100 will not have convulsions, 20 will be

⁶³ I. Hassall to Plunket Branches, 28 December 1978, YCBE 1990/172a Rubella (Measles) 1970-80, ANZ, Auckland.

⁶⁴ L. Bryder, *A Voice for Mothers. The Plunket Society and Infant Welfare 1907-2000*, Auckland, 2003, p.220.

⁶⁵ I. Hassall to Plunket Branches, 28 December 1978, YCBE 1990/172a, ANZ, Auckland.

⁶⁶ L. Bryder, *A Voice for Mothers*, p. 221.

protected from brain injury and the deaths of 5 children will be prevented as a result of the campaign'.⁶⁷

Despite Hassall's comments, the campaign did not achieve the success both Plunket and the Department had hoped for. End of year measles immunisation figures taken from benefit claims for the year 1979 showed an increase of only 2,396 on numbers from 1978.⁶⁸ In addition, the Health Department had made around 70,000 doses of measles vaccine available for the 'Stamp-Out Measles Week', in anticipation of much greater numbers accepting immunisation.⁶⁹ The Plunket campaign demonstrated that even by adopting a more personalised approach, it was not able to persuade significantly more parents to have their children immunised against measles.

With approximately 30,000 doses of vaccine due to expire in mid-1980, the Health Department decided to extend measles immunisation to include children up to age seven who had not been immunised. Public Health nurses in nearly all the health districts went into schools to implement this scheme in the latter half of 1980.⁷⁰ From this date Public Health nurses also implemented a 'catch-up' immunisation programme for new school entrants which covered measles injections. The Health Department enthusiastically reported that immunisation levels amongst schoolchildren were now increasing as a result of this policy. In 1981 nearly all districts attained over 95 percent coverage for measles immunisation, which was the level deemed necessary to prevent further epidemics.⁷¹ It must have seemed to the Department that their goal of the eradication of measles epidemics now appeared achievable. In consequence, 'energetic promotion' of the measles programme was deferred and preference was given to the rubella immunisation campaign and supporting the new policy of immunising Form 1 girls.⁷²

Other countries also experienced resistance to measles immunisation, especially when the only tactics used were education and publicity produced on a mass, generalised

⁶⁷ *ibid.*

⁶⁸ 'Measles (Morbilli) Epidemic Eradication Programme', ABQU 632 W4415/345 50984 144/18, ANZ, Wellington. Numbers for 1979 were 39,703 and for 1978, 37,307.

⁶⁹ Circular Memo 1979/19, 5 February 1979, ABQU 632 W4415/345 144/18 50984, ANZ, Wellington.

⁷⁰ ABQU 632 W4415/345 50984 144/18, ANZ, Wellington.

⁷¹ AJHR, 1982, E-10, p.21.

⁷² AJHR, 1981, E-10, p.29.

scale. This was demonstrated by the experience of Edmund Poutasse, who was the Senior Public Health Advisor and Programme Co-ordinator of the United States Public Health Service-sponsored Immunisation Programme with the City of New York, Department of Health and Hospitals, from 1962. Poutasse found that using a ‘gimmick’ increased parental receptiveness to immunisation. Initially he had introduced the measles vaccine into a city with rising immunisation levels, using a huge amount of general publicity focussing on the slogan ‘One Shot and Measles Bites the Dust’.⁷³ Nevertheless, despite free vaccine and no charge for the doctor’s services, parents did not bring their children in for immunisation. Poutasse hit on the idea of using the telephone to access taped messages which informed parents where to take their children for their shots. All parents had to do was dial the word ‘measles’. His new slogan ran ‘Want information on where to get a measles shot for your kid? Just dial MEASLES on your phone!’⁷⁴ According to Poutasse, measles immunisations ‘in five boroughs skyrocketed, and for that generation - back in the sixties – the disease surely did bite the dust’.⁷⁵

Looking at the pre-gimmick experience of Poutasse in New York and the study of World Health Day in Dunedin in 1977 by Ian St George, mass publicity campaigns did not work well and more often than not missed their intended targets. Poutasse, especially, found that most parents were not opposed to immunisation ‘per se’; they just need to be approached in a more personalised and interactive way. By generating active interest and involvement, children would then hopefully receive their immunisation.

The Health Department tried, with its ‘Eradication of Measles Epidemics in Five Years’ campaign, to actively challenge parents and health professionals into immunising an increasing number of children to reach levels of around 95 percent. By the conclusion of the campaign in 1983, 97.5 percent of new school entrants in the Auckland region were considered to be immune from measles. In 1984 the figure was

⁷³ E. J. Poutasse, ‘Dial 1-800-history. (the first word-mnemonic telephone number)’, *American Heritage*, 45, 1, 1994, p.30.

⁷⁴ *ibid.*

⁷⁵ *ibid.*

98.1 percent.⁷⁶ Although the Department believed it had achieved the required levels, less than a year after its conclusion, the programme's overall failure was demonstrated quite markedly by a measles epidemic that spanned July 1984 to December 1985.

In Auckland, 250 cases were seen at the Princess Mary Hospital over the period of the epidemic, with 41 per cent under 15 months.⁷⁷ Two children, both of whom had underlying health problems, died. It was concluded in a paper on the epidemic in the *New Zealand Medical Journal* that the 'epidemic was chiefly due to low immunisation rates and represents a failure of current immunisation programmes'.⁷⁸

An important reason for this was that the 'catch-up' programme operated in schools was based on parental recall of immunisations, including measles. One Public Health nurse who was involved in the scheme commented,

From memory the rates that were coming back were something like 67 percent immunised from those national surveys, but the rates in terms of parental recall when they got to school they would say 90 percent of children were fully immunised in the five-year-olds, so clearly they weren't, clearly there were children in that 67 percent to 90 percent whose parents were just forgetting that they hadn't had the immunisation.⁷⁹

A study by Michael Soljak, a Medical Officer at the Whangarei District Office into parental recall also found that it was 'highly likely that parental reports considerably overestimate immunisation levels'.⁸⁰ In the light of these conclusions, a number of parents obviously believed their child had received a measles immunisation when, in fact, they had not. This would help to account for an epidemic breaking out in a country where immunisation levels were perceived to be high enough to prevent such an occurrence.

⁷⁶ 'Interim Report on Current Measles Epidemic in Auckland', ABQU 632 W4452/666 58959 131/18 Measles/Rubella Vaccine 1980-85, ANZ, Wellington.

⁷⁷ I. R. B. Hardy, D. R. Lennon, E. A. Mitchell, 'Measles epidemic in Auckland 1984-85', NZMJ, 100, 823, 1987, p.273.

⁷⁸ *ibid.*

⁷⁹ Interview with C. Doole, 16 May 2002, Public Health nurse.

⁸⁰ M. A. Soljak, 'How many children are fully immunized?', NZMJ, 25 January 1984, p.39. For further details of the survey see Chapter 9, p.293.

Nevertheless, there were other contributory factors; the idea of vaccine failure was mooted as a significant problem. This took two forms, firstly, the changing age at which measles immunisation was deemed to be most advantageous and secondly, the effectiveness of the measles vaccine. When measles vaccine was first introduced in 1969-70 babies were immunised at ten months old. This was changed to 12 months in 1974 and was reviewed again by the EAC in 1982 and changed to 15 months. This gradual shift upwards was due to the recognition that there was less chance of primary vaccine failure if immunisation occurred later.⁸¹ However, this left a large number of susceptibles, immunised at ten months, in whom measles could and did occur. Of the 12 children over eight years old hospitalised during the epidemic, nine were immunised at ten months.⁸² The Health Department commented that 'it is to be expected that measles will continue to circulate amongst such children'.⁸³ Furthermore a 1992 study indicated that in New Zealand measles vaccine had a failure rate of 31 per cent with a one-dose regime by age ten.⁸⁴ Therefore, the Health Department was unable to eliminate measles epidemics even if they had achieved 95 percent coverage required because the vaccine had over a 30 percent failure rate. Measles would still occur in previously immunised children and epidemics would still happen as there was a large pool of 'susceptibles'. Subsequently, it was determined that a two-dose regime would be required to maintain adequate levels. In November 1990 the Health Department replaced the single measles vaccine at 15 months with MMR vaccine and the second dose was added in 1992 for Form 1.⁸⁵

Another concern was loss of potency of the measles vaccine through incorrect storage. Throughout the 1970s and early 1980s the inadequacy of some doctors' storage facilities caused the Department to air their disquiet on several occasions. In 1979 a number of cases of measles from around the country in immunised children were drawn to the attention of the Department, some having been immunised five to six

⁸¹ R. M. Cullen, W. J. Walker, 'Measles epidemics 1949-91: the impact of mass immunisation in New Zealand', NZMJ, 109, 1039, 1996, p.400.

⁸² I. R. B. Hardy, D. R. Lennon, E. A. Mitchell, 'Measles epidemic in Auckland 1984-85', p.274.

⁸³ MOH Wanganui to Head Office, 20 June 1980, ABQU 632 W4415/345 50984 144/18, ANZ, Wellington.

⁸⁴ G. P. Harrison, G. A. Durham, 'The 1991 measles epidemic: how effective is the vaccine?', NZMJ, 105, 22 July 1992, p. 280.

⁸⁵ R. M. Cullen, W. J. Walker, 'Measles epidemics 1949-91', pp.400-01. The first dose was administered at 15 months.

months previously at 12 months old.⁸⁶ A circular letter was sent to doctors asking them to check how their vaccines were stored but such was the extent of cases that the Health Department also arranged for the Australian Department of Health to assay the measles vaccine to check its potency on arrival in New Zealand.⁸⁷ This was to be carried out twice a year until the National Health Institute was in a position to take over. In this way the Health Department hoped to eradicate the future possibility of vaccine failure due to loss of potency or incorrect storage and prevent measles in previously immunised children.

The measles vaccine also achieved prominence in other countries. In the United States immunisation became a 'high profile issue' for the new Administration under democrat President Jimmy Carter.⁸⁸ The 'Childhood Immunisation Initiative', announced in April 1977, was a federal programme run by the Centre for Disease Control which aimed to immunise at least 90 percent of American children and develop mechanisms to ensure nearly 100 percent of all children born in subsequent years received immunisations.⁸⁹ In October 1978, the Secretary of Health, Education and Welfare, Joseph Califano, announced the goal of eradicating measles by October 1982.⁹⁰ There was the introduction of mandatory immunisation for school entrance by the majority of states, which greatly assisted levels of coverage, indeed medical historian Patrick Vivier has argued that the 'school entry immunization laws were viewed as a key mechanism for reaching these high rates'.⁹¹ By 1980, 96 percent of children entering school were immunised against measles and levels of over 97 percent were maintained up to 1985.⁹² The 'Childhood Immunisation Initiative' was itself deemed to be very successful, and, although measles was not eliminated by 1982, fewer than 2,000 cases occurred that year, the lowest on record in the United States.⁹³ In comparison, pre-vaccine figures for 1960 showed a total of 441,703 cases

⁸⁶ J. S. Roxburgh to DGH, 1 August 1979 and Director-General's Meeting 28 July 1978, ABQU 632 W4415/345 50984 144/18, ANZ, Wellington.

⁸⁷ *ibid.*

⁸⁸ P. M. Vivier, 'National Policies for Childhood Immunization in the United States', p.168.

⁸⁹ *ibid.*, p.169.

⁹⁰ A. Cliff, P. Haggett, M. Smallman-Raynor, eds. *Measles. A Historical Geography of a Major Human Viral Disease from Global Expansion to Local Retreat, 1840-1990*, Oxford, 1993, p.222.

⁹¹ P. M. Vivier, 'National Policies for Childhood Immunization in the United States', p.176.

⁹² *ibid.*, p.187.

⁹³ *ibid.*, p.190.

with 380 deaths.⁹⁴ The United States measles immunisation campaigns and the dramatic reduction in case numbers was seen as a major public health achievement, although falling short of total eradication.

In contrast measles immunisation was not as popular in Britain. Although the introduction of the measles vaccine in 1968 resulted in a fall in case numbers from around 250,000 in the mid-1950s to 30,000 in 1974, this subsequently increased in the late 1970s to levels of over 100,000.⁹⁵ By 1980 there were over 140,000 cases of measles in Britain.⁹⁶ Vaccine confidence had been dealt a severe blow in the 1970s with the contention surrounding the pertussis vaccine and this had had a knock-on effect to other vaccines.⁹⁷ Measles vaccine was particularly vulnerable to adverse publicity as originally it had had to be withdrawn in the late 1960s after causing severe reactions in several children.⁹⁸ Hillas Smith, a consultant physician at Coppetts Wood Hospital in London, was heavily critical of the current policy of immunising before age two which he described as being taken up ‘very haphazardly producing what might be called an entirely “laissez-faire” position’.⁹⁹ Lack of commitment on the part of the Ministry of Health and doctors, as well as public concern regarding vaccine reactions, meant measles was still a continuing problem in Britain in the mid-1980s.

In comparison to both Britain and the United States, the initiatives taken in New Zealand to combat measles should have been more successful. The Health Department had a realistic programme to eradicate measles epidemics (in the United States it was to eradicate measles itself) and it was likely that reasonably high levels of immunisation were achieved from 1978 to 1983 (although not high enough to prevent epidemics, which needed levels of over 95 percent, perhaps even 98 percent). Unfortunately, due to some vaccine impotency, problems of parental recall and previous policies regarding age, many children were actually still vulnerable to

⁹⁴ A. Cliff, P. Hagggett, M. Smallman-Raynor, *Measles. A Historical Geography*, p.225.

⁹⁵ H. Smith, ‘Measles Again’, *British Medical Journal* (BMJ), 15 March 1980, p.766. Also see A. Cliff, P. Hagggett, M. Smallman-Raynor, *Measles. A Historical Geography*, p.253.

⁹⁶ *ibid.*, p.256.

⁹⁷ See Chapter 8, p.239. Also see A. Cliff, P. Hagggett, M. Smallman-Raynor, *Measles. A Historical Geography*, p.253.

⁹⁸ See Chapter 6, p.173.

⁹⁹ H. Smith, ‘Measles Again’, p.769.

measles, as demonstrated by the epidemic of measles in 1984. Nevertheless, the Health Department in New Zealand was certainly more successful against measles than British health authorities, due to implementing a programme targeting epidemic eradication. However, because New Zealand had always stopped short of compulsion it could not compare with the United States where mandatory immunisation was a key factor in its childhood immunisation success.

BCG policy for neonates and adolescents

BCG vaccinations in schools had been in place since the early 1950s, but, by the 1970s, with the decline in overall numbers contracting the disease, the Form 3 school programme in the North Island was under review. BCG vaccinations had been officially discontinued in the South Island from 1963 when the level of protective reaction dropped below one percent, although many districts had stopped vaccinating in 1961.¹⁰⁰ Routine tuberculin testing of various age groups was implemented instead until 1976 when this was also halted due to the very low incidence rate. The Department decided to continue with the vaccination of North Island children with a policy review in 1981 as over 100 children a year were still contracting pulmonary tuberculosis.¹⁰¹ In 1977 in the North Island, 42,407 BCG vaccinations were given after tuberculin testing.¹⁰²

It had been identified in the 1960s that attack rates were much higher in Maori than Europeans, although the rates themselves had shown a significant decline. In 1963, there were 984 cases of pulmonary tuberculosis in New Zealand, of which 319 were in Maori.¹⁰³ In 1967, the total figure had dropped to 900, but 368 of these cases were in Maori.¹⁰⁴ Departmental policy now began to move away from mass school immunisations to the targeting of 'at risk' groups, such as Maori, and from the 1970s, Pacific Islanders, who had a higher rate of infection. The Health Department was adhering to the recommendations set out by the WHO in 1960 which stated that there was no justification for mass BCG vaccination in countries with a declining incidence

¹⁰⁰ For a discussion on this issue see Chapter 3, pp.89-92. Also see AJHR, 1970, H-31, p.117.

¹⁰¹ *Health*, 1977, 29, 1, p.10.

¹⁰² AJHR, 1978, E-10, p.70.

¹⁰³ NZYB, 1969, 74, p.153.

¹⁰⁴ *ibid.*

rate. In these places BCG should be used for 'at risk' groups, such as babies and adolescents, in areas where the incidence of tuberculosis was high.¹⁰⁵ Before the 1970s districts themselves decided whether to vaccinate 'at risk' babies and preschoolers. Hutt Health District had been vaccinating Maori babies with BCG since 1958.¹⁰⁶ By the 1970s the selective BCG policy had become established with all districts identifying those babies 'at risk'. Neonates were usually immunised in hospital within the first week of life and all Maori and Pacific Island mothers were offered BCG for their babies. European mothers could request the vaccine if they so wished.

Although the Health Department was implementing WHO recommendations, it was identified in New Zealand that racial groups, not specific age groups, were 'at risk' and hence should be targeted for vaccination. It had been found that 'the Maori child is more than five times as likely as the European child and the Pacific Islander child is more than 50 times as likely as the European child, to contract tuberculosis'.¹⁰⁷ An article in the *Auckland Star*, which focused on the neonate programme, misquoted Dr G. B. Collison, the Deputy Medical Officer of Health for Auckland, by reporting that a compulsory BCG programme for Pacific Islanders was being given consideration. This was condemned as 'racial discrimination' by groups such as Halt All Racist Tours (HART) and the Citizens Association for Racial Equality (CARE) who believed it would be better to immunise all children.¹⁰⁸

Policies such as these did leave the Department open to criticism that programmes were being conducted along racial lines. However, apart from the occasional comment, the neonate BCG programme was accepted by the majority of mothers. In 1974, a total of 1081 babies were vaccinated at the participating hospitals of Wellington, St Helens and Kerepuru.¹⁰⁹ In Auckland, from July to December 1976,

¹⁰⁵ 'Policy for B.C.G. Vaccination' 12 December 1962, H1 246/64 34419, BCG Vaccination 1956-69, ANZ, Wellington.

¹⁰⁶ M. C. Laing to DGH, 21 September 1964, H1 246/64 34419, ANZ, Wellington.

¹⁰⁷ 'B.C.G. Vaccination of At Risk Neonates', BAAK A358 131a Tuberculosis - BCG and Tuberculin testing 1958-68, 1970-74, ANZ, Auckland.

¹⁰⁸ *Auckland Star* (AS), 18 March 1976. HART was New Zealand's anti-apartheid movement and was especially visible in protests at the 1981 Springbok tour. CARE's brief was to oppose racial prejudice in all forms, both in New Zealand and overseas.

¹⁰⁹ 'BCG Vaccinations of Neonates in the Wellington and Porirua Districts 1974 at Wellington Public Hospital, St. Helens and Kenepuru Hospitals', 23 January 1975, BAAK A358 131a, ANZ, Auckland.

1282 BCGs were given to 'at risk' neonates.¹¹⁰ The district offered BCG to all the newborns of Maori and Pacific Island parents and the Medical Officer of Health for Auckland, N. T. Barnett, commented that 'Parental cooperation has been excellent'.¹¹¹ In Wellington, due to increasing numbers of resident Pacific Islanders, the BCG programme was extended to include 'at risk' children progressively from primary school entry level and up to Form 1 in high school over a two year period.¹¹² By contrast, the Hamilton Health District had only 12 babies considered 'at risk' for BCG in 1980.¹¹³

In 1981, the Health Department was confident that the 'at risk' policy was working well enough to control tuberculosis in the community and stopped the routine immunisation of Form 3 students at North Island schools. The change in BCG policy, as numbers declined, owed much to the influence of WHO recommendations which were adopted by the Department. The close links established with WHO and the important roles played by Health Department officials in the organisation over many years gave the WHO considerable prestige within the Department. WHO recommendations, therefore, were seen as highly influential when shaping immunisation policy.

The Hepatitis B Immunisation Programme

Health Department policy initiatives for immunisation tended to wax and wane depending on the circumstances. Issues such as promoting measles immunisation after a need was identified were given a high priority and therefore allocated funding. Both the rubella and the BCG policies demonstrated that the Health Department was prepared to change established policies in light of changing circumstances and medical opinion. Nevertheless, alternative points of view were usually expressed by groups or committees from whom the Health Department regularly sought advice. For instance, when the rubella programme was under review, paediatric specialists were consulted. The Department felt comfortable promoting an immunisation

¹¹⁰ G. B. Collison to DGH, 7 June 1977, BAAK A358 131a, ANZ, Auckland.

¹¹¹ N. T. Barnett to I. B. Hassall, 17 October 1977, BAAK A358 131a, ANZ, Auckland.

¹¹² R. Campbell-Begg to MOH Auckland, undated memo, BAAK A358 131a, ANZ, Auckland.

¹¹³ N. W. Harry to A. Millar, 12 August 1981, YCBE 1990/263a, TB BCG vaccination neonates 1980-84, ANZ, Auckland.

programme approved by the WHO or the Communicable Disease Control Advisory Committee (CDCAC, formally the EAC) after an area of need or improvement had been researched and identified. However, by the time hepatitis B immunisation was introduced in February 1988 (for all babies and preschoolers up to age five) this format had been turned upside down and the Department was shown to be inflexible, slow to react and insensitive to the needs of the community.

The hepatitis B problem in New Zealand was identified in the late 1970s by Alexander (Sandy) Milne, the Charge Laboratory Technologist at Whakatane Hospital, who, because he was seeing quite a number of new cases of viral hepatitis, began testing blood in the 1970s for hepatitis B.¹¹⁴ The hepatitis B virus was spread mainly by contact with infected blood or to a lesser extent, saliva. Over time the virus can result in jaundice, liver damage and death.¹¹⁵ In a study published in the *New Zealand Medical Journal*, Milne found that the average number of viral hepatitis cases in the Whakatane area in the previous three years was about 380 per 100,000 and 43 percent of these were hepatitis B. One of the more worrying aspects of the study was that 43.7 percent of the hepatitis B cases were in children under 15 with the highest proliferation in the six to ten age groups.¹¹⁶ Milne also found that two-thirds of Maori cases were children, compared to one-third for Europeans and others.¹¹⁷ It had become increasingly clear that early infection with hepatitis B eventuating in carrier status could be far more serious than actually having the acute illness. As Milne had uncovered very high rates of hepatitis B carriage in children, especially non-Europeans, he was gravely concerned.¹¹⁸

Milne faced two problems in his efforts to have hepatitis B recognised as a major health issue. First, the medical establishment and the Health Department did not believe there was a hepatitis B problem as 'it was assumed in New Zealand (from

¹¹⁴ W. Muraskin, 'Bucking the Health Establishment: Alexander Milne and the fight for a New Zealand Hepatitis B immunization program', *Social Science*, 41, 2, 1995, p.212. William Muraskin is a Professor of Urban Studies at Queens College, City University of New York.

¹¹⁵ A. B. Christie, *Infectious Diseases: Epidemiology and Clinical Practice*, London, 1980, p.454 and pp.469-70.

¹¹⁶ A. Milne, 'Viral Hepatitis in the Eastern Bay of Plenty', *NZMJ*, 92, 1980, pp.89-90.

¹¹⁷ *ibid.*, p.90. In the 1976 census, the Whakatane and Kawerau population comprised 65.9 percent European, 30.9 percent Maori and 3.2 percent others, *ibid.*, p.88.

¹¹⁸ A. Milne, G. K. Allwood, C. D. Moyes, N. E. Pearce, C. R. Lucas, 'Prevalence of hepatitis B infections in a multiracial New Zealand community', *NZMJ*, 98, 782, 1985, p.531.

American and British medical literature) that the disease was primarily a gay, bisexual and i.v. drug user problem' although there had been no research to substantiate this viewpoint before Milne.¹¹⁹ It was thought that, as hepatitis B was not a problem in Britain at this time, neither would it be in New Zealand.¹²⁰ The second problem Milne faced was his lack of credibility, as, if the medical profession "were going to learn something new and startling it should come from a hospital specialist with credentials in a central hospital", and not from a technologist in a backwater place like Whakatane'.¹²¹ Along with two other colleagues, Dr C. Moyes, a paediatrician at Whakatane Hospital, and Dr G. Allwood, the hospital pathologist, Milne formed the Hepatitis B Control Team (HBCT) to do further investigative work and convince the Health Department that hepatitis B was a major health issue in New Zealand. At this point, in 1980, however, little could be done apart from trying to locate carriers.

This situation changed in 1982 with the advent of a vaccine for hepatitis B. Made from human plasma, the vaccine was expensive at \$150 for a three-dose course.¹²² Nevertheless, a further study by Milne, Allwood and Moyes on the people of Kawerau in the Eastern Bay of Plenty again revealed high rates of infection. Levels of acute hepatitis B were found that were 20 times greater than America and 35 times that in Britain.¹²³ The Kawerau study also found that at age four approximately six percent of Europeans and 17 percent of Maori in the locality had been infected but by age 14 these figures had risen to 57 percent and 71 percent respectively.¹²⁴ Children were being cross-infected at school, rather than by carrier mothers as had originally been supposed.¹²⁵ On the basis of these figures the HBCT recommended universal

¹¹⁹ W. Muraskin, 'Bucking the Health Establishment', p.212.

¹²⁰ *ibid.*, p.212. Eru Pomare, Professor at the Wellington School of Medicine, noted that the prevalence of hepatitis B infection varies around the world. Countries such as Africa, South-East Asia and the Pacific basin had high rates of infection, whilst Australia, Western Europe and the United States had low levels. Prevalence rates were much higher in Maori than Europeans in New Zealand, although European rates were still high in comparison to other countries. Given the infection rates in the Pacific basin this disease was likely to have originated with Maori and spread over time by carriers to Europeans; children were, most likely, the main form of transmission.

E. Pomare, *Hepatitis B. Report to the Minister of Health on the Eastern Bay of Plenty immunisation programme*, November 1985, Wellington, pp.58-60.

¹²¹ *ibid.*, p. 213.

¹²² P. Goldwater, 'The cost of hepatitis B vaccine: money or morbidity?' NZMJ, 96, 736, 1983, p.588.

¹²³ A. Milne, G. K. Allwood, C. D. Moyes, N. E. Pearce, C. R. Lucas, 'Prevalence of hepatitis B infections in a multiracial New Zealand community', p.531.

¹²⁴ *ibid.*

¹²⁵ A. Milne, G. K. Allwood, C. D. Moyes, N. E. Pearce, C. R. Lucas, 'Prevalence of hepatitis B infections in a multiracial New Zealand community', p.531.

immunisation for preschoolers as the minimum in communities such as Kawerau with a high Maori ratio.¹²⁶ Another study, published in 1987 by doctors associated with the Health Department, confirmed that the findings of the HBCT in Kawerau applied to New Zealand in general and advocated a universal programme of childhood immunisation.¹²⁷

The Health Department's response to the hepatitis B problem had been to introduce a very limited immunisation programme from 1 September 1985 for very high risk babies born to mothers who were infectious carriers of the disease (HBsAg positive). This involved only around 300-400 babies nationally per year, with an annual budget of \$30,000, hence making very little impact on the prevalence of the disease in schoolchildren.¹²⁸ The Health Department refused to consider the HBCT's proposal that all children and preschoolers be immunised in the Eastern Bay of Plenty area citing lack of funds for such a programme. The new Director of Health Promotion, Dr John Holden, emphasised that at 'the moment and for the foreseeable future Aids is a more serious threat' and hepatitis B was not a primary concern for the Department.¹²⁹ Nevertheless by 1990 it was revealed that 'Hepatitis B is implicated in the deaths of 100 people a year, and AIDS has yet to kill 100 altogether'.¹³⁰ The AIDS threat had diminished in New Zealand, whilst a universal childhood immunisation programme for hepatitis B had been introduced in 1988. Health Department priorities had had to be redrafted.

Milne had become an internationally recognised expert on hepatitis B by 1984. He had hosted an international conference in Whakatane in 1982 which included attendees of the Health Department, and was described as a 'great success'.¹³¹ As the Department had refused to help the community of Kawerau, Milne and his team, in consultation with Saul Krugman, Professor of Paediatrics at New York University and C. Lucas, Chief of Medicine at Fairfield Hospital, Melbourne, developed a low-dose

¹²⁶ *ibid.*, p.532.

¹²⁷ M. I. Tobias, J. A. Miller, C. J. Clements, A. C. Patel, 'Hepatitis B in New Zealand children: the 1985 national immunisation survey', *NZMJ*, 100, 821, 1987, p.203.

¹²⁸ Circular Memo 1984/165, 8 August 1984, ABQU 632 W4452/701 61770 131/171/4 Hepatitis B Department of Health Immunisation Programme 1984-5, ANZ, Wellington.

¹²⁹ L. Guerin, 'Undercover Epidemic', *NZ Listener*, 31 August 1985, p.18.

¹³⁰ J. Webb-Pullman, 'The Hepatitis B Preschool Immunisation Programme - A case study in institutional racism', Dip. Community Health, Wellington Clinical School of Medicine, 1990, p.18.

¹³¹ W. Muraskin, 'Bucking the Health Establishment', p.214.

regime for children which used a fifth of the recommended standard dose for adults.¹³² It was found that three low-doses given at monthly intervals induced an acceptable level of antibody response.¹³³ This made the vaccine much more affordable at \$15 a course. Nevertheless, a reluctance to go against the manufacturer's instructions meant the CDCAC and the Health Department moved very slowly towards a solution.

A further problem with using a lower dosage of vaccine was the policy of the drug company of Merck, Sharp and Dohme, who produced H-B-Vax, the vaccine used by Milne in the successful Kawerau trials. The Medical Director for Merck, Sharp and Dohme in New Zealand, David Woolner, commented that, 'unfortunately, in New Zealand the low dose option is being pushed with almost missionary zeal by a core of enthusiasts, who, like many medical people, don't appreciate the politics or economics of the path they advocate'.¹³⁴ The company was not in favour of the low-dose concept and tried to reduce the price to persuade the Health Department to purchase the 'whole' vaccine instead. As a result of the drug company's manoeuvrings, the CDCAC was 'very slow and reluctant' to approve the low-dose option and consequently the Health Department felt unable to recommend its use.¹³⁵

J. Webb-Pullman, who wrote a case study on the implementation of the hepatitis B programme, considered that the attitudes of the CDCAC and the Health Department were formed because of their elitist background, 'consisting almost exclusively of male, professional, educated European[s]'.¹³⁶ Without any Maori representation on advisory committees such as the CDCAC or any public advisory groups established (as had been recommended in the Polio Vaccine Report), there was little appreciation of the problem for Maori communities who were trying to protect their children from hepatitis B. William Muraskin, Professor of Urban Studies at Queens College, City University of New York, concurred with this view, considering that 'Policy makers in New Zealand, both specialists and those in hospitals, lacked contact with Maori

¹³² *ibid.*, p.215.

¹³³ A. Milne, G. K. Allwood, C. D. Moyes, N. E. Pearce, C. R. Lucas, S. Krugman, 'Low dose hepatitis B vaccination in children' NZMJ, 99, 795, 1986, p.49.

¹³⁴ D. Woolner to A. C. Patel, no date on file, ABQU 632 W4452/701 61770 131/171/4, ANZ, Wellington.

¹³⁵ W. Muraskin, 'Bucking the Health Establishment', p.215.

¹³⁶ J. Webb-Pullman, 'The Hepatitis B Preschool Immunisation Programme', p.19.

children'.¹³⁷ Moreover, Milne, in spite of his established reputation overseas, was not respected by the Health Department and the CDCAC, and they did not respond well 'to a non-medical man telling them what to do'.¹³⁸ Although Muraskin and Webb-Pullman's assessments were likely to be fairly accurate, it should also be pointed out that, as has been previously demonstrated, the Health Department was very protracted in updating its ideas.¹³⁹ It would have taken considerable time for the Department to adjust its views and accept that hepatitis B was a general problem in New Zealand, and not one that was confined to drug users and homosexuals as in other countries such as Britain and the United States. Nevertheless, other reasons were offered for the Department's procrastination. Neil Pearce, Lecturer in Epidemiology at the Wellington Clinical School of Medicine and a member of the HBCT commented, '[i]t is hard to tell when someone [in the Department of Health] is slow because of caution versus they [simply] did not want to do something. [But] I think it was they did not want to do it'.¹⁴⁰

Because the Department refused to acknowledge the problem and help, the people of Kawerau decided to 'go it alone' and raise funding for the immunisations themselves. Milne and his team organised many meetings to explain the hepatitis B problem to the community and the benefits of immunisation for their children. Immunisation cost \$20 per child, including costs of pre-screening for hepatitis B, the vaccine and the needles. Nurses offered their services for free to give the injections. With no cases of hepatitis B in children in Kawerau after the immunisations took place, the scheme was extended within the Eastern Bay of Plenty and many areas were involved in fund-raising. Communities were angry that the government would not fund the scheme when there was such a glaring need. Eru Pomare, professor at the Wellington Clinical School of Medicine and a prominent Maori, pointed out that, 'There was a strong feeling that if the problem of hepatitis was as serious as the Bay of Plenty statistics suggested, then the Health Department must come forward and support the programme financially as the strain on poor Maori families was great'.¹⁴¹

¹³⁷ W. Muraskin, 'Bucking the Health Establishment', p.214.

¹³⁸ *ibid.*

¹³⁹ This was evident with the introduction of the triple vaccine in the 1950s and with meningococcal meningitis A vaccine in the 1980s.

¹⁴⁰ W. Muraskin, 'Bucking the Health Establishment', p.214.

¹⁴¹ E. Pomare, *Hepatitis B. Report to the Minister of Health on the Eastern Bay of Plenty immunisation programme*, Wellington, 1985, p.15.

Representations for funding were made at high levels in the Health Department by the President, Georgina Kirby, and the Vice-President, Janet Brown, of the Maori Women's Welfare League (MWWL). The League had been established in 1951 and its aims and objectives included 'promoting the health, education and general-wellbeing of women and children and Maori culture'.¹⁴² Links with government officials, including those in the Health Department, had also been forged as the MWWL received considerable administrative support from the Department of Maori Affairs. Representatives from the Department of Health and Maori Affairs were *ex officio* members of the MWWL executive.¹⁴³ The League was therefore well placed to make its views known about lack of government participation in the Eastern Bay of Plenty immunisation scheme.

On 4 July 1985, the Minister of Health under the new Labour government, Michael Bassett, released a press statement referring to the hepatitis B immunisation initiative, which said, sections of the community in the Eastern Bay of Plenty were being asked to contribute money they could ill afford on an immunisation programme which, while desirable, did not in the present state of knowledge warrant the expenditure of public funds that would be required.¹⁴⁴

He also added that 'There is no evidence to support claims that hepatitis B is a major cause of death or disability in New Zealand'.¹⁴⁵ The Minister and the Health Department's failure to take into account community feeling and initiatives, and their perceived trivialisation of a very serious problem in the Eastern Bay of Plenty, demonstrated a very conservative, inflexible approach to policy-making.¹⁴⁶ It appeared that local health initiatives were to be denigrated, not applauded, as these were outside accepted Health Department procedures. This was the impression gained by the public from the statement, although it had been intended as a

¹⁴² T. Rei, 'Te Ropu Wahine Maori Toko i te Ora - Maori Women's Welfare League 1951' in A. Else ed. *Women Together. A history of Women's Organisations in New Zealand*, Wellington, 1993, p.34.

¹⁴³ *ibid.*

¹⁴⁴ E. Pomare, *Hepatitis B*, p.4.

¹⁴⁵ *ibid.*

¹⁴⁶ Milne's study in the Eastern Bay of Plenty revealed that 43 percent of all cases of hepatitis were hepatitis B and of these cases, 43.7 percent were in children less than 15 years old. In Britain the comparable figure for hepatitis B cases was 1.7 percent. In Australia figures were 5.9 percent in community cases and 5 percent in hospital cases.

A. Milne, 'Viral Hepatitis in the Eastern Bay of Plenty', *NZMJ*, 92, 1980, pp.89-90.

reassurance about hepatitis B.¹⁴⁷ To calm the furore aroused by the Minister's statement, Dr Eru Pomare was appointed as a special investigator into the prevalence of hepatitis B in the Eastern Bay of Plenty.¹⁴⁸ This was a very astute move on the part of the Minister and Health Department as Pomare was highly respected in both Pakeha and Maori communities and 'at home' in both worlds. His report, 'a careful and responsible document', concluded that 'hepatitis B is currently New Zealand's most serious viral infection, and an important cause of both morbidity and mortality, particularly in the Bay of Plenty'.¹⁴⁹ Additionally, Pomare 'applauded' the efforts of the HBCT and pointed out that the 'call for Government funding was realistic and justified'.¹⁵⁰ He also questioned whether community and cultural views were taken into account by the Health Department when ranking priorities, commenting that in this case 'it seems little weight was given to either'.¹⁵¹

Pomare's report, produced in November 1985, recommended universal immunisation of all babies and preschoolers with a targeted programme to be introduced for schoolchildren in high risk areas. Nevertheless, a national programme was not introduced until February 1988. The report, described as 'a powerful endorsement of both Milne's work and his goals', was circulated, but had 'done its job' of calming the situation.¹⁵² The major problem was the CDCAC's reluctance to authorise use of the low-dose regime which went against manufacturers' instructions, so all neonates immunised under the Health Department's programme were given a full dose for each of the three injections at \$75 a course. In June 1986 the scheme was expanded to include the babies of all infectious mothers, about 1500 neonates per year. In addition, all babies born in the health districts of Auckland, Takapuna, Northland, South Auckland, Rotorua, Gisborne and Napier were to be offered the immunisation. The expenditure for these schemes was over \$1,000,000 and was a limiting factor to any further expansion of the programme.¹⁵³

¹⁴⁷ *ibid.*, p.8.

¹⁴⁸ Eru Pomare was a professor at the Wellington Clinical School of Medicine specialising in the fields of gastro-enterology and clinical research, who went on to become Dean, a position he held until his death in 1995 aged 52.

¹⁴⁹ *ibid.*, p.9.

¹⁵⁰ *ibid.*, p.85.

¹⁵¹ *ibid.*, p.85.

¹⁵² W. Muraskin, 'Bucking the Health Establishment', p.217.

¹⁵³ The child dose was half a full adult dose. J. Martin 'Hepatitis B - the half dose decision', July 1988, ABQU 632 W4452/702 62752 131/171/4, ANZ, Wellington.

During 1987 the reservations of the CDCAC regarding the use of the low-dose vaccine were finally satisfied by the trials undertaken by Milne and his colleagues using H-B-Vax, and the evidence provided that the vaccine was effective when a low-dose was used.¹⁵⁴ Collaboration with renowned hepatitis B experts such as Saul Krugman, Professor of Paediatrics at New York University and C. Lucas, Chief of Medicine at Fairfield Hospital, Melbourne had facilitated the acceptance of Milne's research by the Health Department and the CDCAC. In July 1987 cabinet approved use of the low-dose vaccine and new funding was made available to immunise all neonates and preschoolers from February 1988.¹⁵⁵

David Woolner, the Medical Director for Merck, Sharp and Dohme in New Zealand had commented that 'You chaps are caught right in the middle, a position I don't envy!' when considering the role of the Health Department.¹⁵⁶ Certainly from 1982 onwards there was added pressure on the Department to act regarding the hepatitis B problem in New Zealand, particularly as increasing evidence demonstrated that it was a major health problem. Milne and the HCBT, local communities in the Eastern Bay of Plenty and the media all outwardly urged the Department to take action. The Department was constrained by the outside factors such as recommendations of the CDCAC and financial considerations but was also very guarded in its approach. John Martin, the Health Department's Senior Administrator, considered that the inquiry into the poliomyelitis vaccine in 1983 and the public relations problems of the 1987 meningococcal meningitis immunisations meant that the Department was very much concerned with its credibility in the eyes of the public.¹⁵⁷ It had no wish to have its judgement questioned in the public domain again. For this reason the Department acted very carefully and placed 'a heavy reliance on the professional support of the CDCAC'.¹⁵⁸

¹⁵⁴ *ibid.*

¹⁵⁵ *ibid.* - \$2.7 million was made available in 1987/8, \$1.2 million in 1988/9 and \$0.2 million in 1989/90 to fund the programme.

¹⁵⁶ D. Woolner to A.C. Patel, no date on file, ABQU 632 W4452/701 61770 131/171/4, ANZ, Wellington.

¹⁵⁷ J. Martin 'Hepatitis B - the half dose decision', July 1988, ABQU 632 W4452/702 62752 131/171/4 Hepatitis B Department of Health Immunisation Programme 1984-7, ANZ, Wellington. Martin later became the General Manager for Operations. See Chapter 8 for meningococcal meningitis campaign, pp.259-65.

¹⁵⁸ *ibid.*

Alexander (Sandy) Milne was the catalyst at the centre of the hepatitis B control question. Neil Pearce, an epidemiologist and member of the HBCT, commented that 'Nothing would have happened if Sandy had not pushed'.¹⁵⁹ Milne was fervent in his belief that hepatitis B was a serious problem and that measures should be taken to control it. If the Health Department was not able to do it then he would – and did. Historian William Muraskin, who has an interest in hepatitis B in America, was obviously very impressed with Milne.¹⁶⁰ He wrote a paper dealing with the 'story of how a laboratory technician working in a minor hospital bureaucracy in New Zealand single-handedly made Hepatitis B a national issue'.¹⁶¹ Milne was not perceived in such a way at the Health Department, and indeed his skilful use of the media and constant outspoken letters often made life uncomfortable for them. Martin commented that for people such as Milne, 'relations with the bureaucracy are never easy: but they undoubtedly contribute to the decision-making process'.¹⁶² By the mid-1980s with the gradual acceptance of the problem, Milne was serving on Health Department hepatitis B working committees, having 'come in from the cold'.¹⁶³

Muraskin pointed out that the United States lacked a 'Sandy Milne'. 'For Hepatitis B to have become a major public issue...it required a group who was determined to make the American public take notice'.¹⁶⁴ In the United States hepatitis B tended to predominate in traditional high-risk groups such as homosexuals, intravenous drug users and non-white poor. Some health workers were also seen to be high risk. Due to the fear of stigma the problem was downplayed and the American public was largely unaware of the epidemic.¹⁶⁵ Universal immunisation had been rejected as too expensive and similarly a childhood programme, on the grounds it would take too

¹⁵⁹ W. Muraskin, 'Bucking the Health Establishment', p.214.

¹⁶⁰ In addition to the paper on Alexander Milne, Muraskin has also written:

W. Muraskin, 'The Silent Epidemic: the Social, Ethical, and Medical Problems surrounding the fight against Hepatitis B', *Journal of Social History*, 22, 1988, pp.277-93.

W. Muraskin, 'Individual Rights Versus the Public Health: The Controversy over the Integration of Retarded Hepatitis B Carriers into the New York City Public School System', *Journal of the History of Medicine and Allied Sciences*, 45, 1990, pp.64-98.

W. Muraskin, 'Individual Rights Vs the Public Health: the problem of Asian hepatitis B carriers in America', *Social Science and Medicine*, 36, 3, 1993, pp.203-16.

¹⁶¹ *ibid.*, p.211.

¹⁶² J. Martin 'Hepatitis B - the half dose decision', July 1988, ABQU 632 W4452 Box 702 131/171/4, 62752, ANZ, Wellington.

¹⁶³ *ibid.*

¹⁶⁴ W. Muraskin, 'The Silent Epidemic: the Social, Ethical, and Medical Problems surrounding the fight against Hepatitis B', *Journal of Social History*, 22, 1988, p. 281.

¹⁶⁵ W. Muraskin, 'The Silent Epidemic', p.285.

long for the campaign to prevent disease.¹⁶⁶ Unlike New Zealand, where the high-risk group were children, in America those most affected were mostly adults on the fringe of society which made reaching them much more problematic. Muraskin argued that America's conservative approach was a 'hopelessly ineffective choice' as people did not avail themselves of immunisation due to fear of stigma or through ignorance.¹⁶⁷

The United States hepatitis B policy was comparable to the one adopted in Britain. With a small number of cases, about 1,000 per annum in the 1970s, the disease was confined mainly to the at-risk groups of homosexuals, drug users and health workers. Vaccine, introduced in 1982, was expensive at £60 a course and health workers were given priority.¹⁶⁸ There was no attempt by the health authorities to add hepatitis B to the childhood immunisation programme; again, as in the United States, a strategy targeting at-risk groups was put in place. Jennifer Stanton, a medical historian, has argued that 'a weak policy remained in place through most of the 1980s' and, as in the United States, there was no 'active promotion of widespread vaccination'.¹⁶⁹ This was mainly to protect the rights and privacy of health workers who wanted to avoid the slur of having hepatitis B.

Similar approaches were therefore adopted in both the United States and Britain. This was due, firstly, to the comparable groups in those countries who contracted hepatitis B and, secondly, because health workers, who were also at risk, were mostly able to keep the problem 'silent'. The situation in New Zealand was very different; the problem received full media attention and was widely reported on in public, indeed local communities were very much in favour of immunisation. This was because the main risk group were children, and because so many were involved, there was no social reproach as was evident in the United States and Britain. In contrast to the 'silence' of the American epidemic, New Zealand's hepatitis B problem was the subject of open and vociferous debate.

¹⁶⁶ *ibid.*, p.287.

¹⁶⁷ *ibid.*, p.288.

¹⁶⁸ J. Stanton, 'What Shapes Vaccine Policy?' The Case of Hepatitis B in the UK', *Social History of Medicine*, 7, 3, 1994, pp.428-29 and p.436.

¹⁶⁹ *ibid.*, p.428 and p.444.

Conclusion

The Department's attitude towards the relative importance of immunisation policy was influenced by many factors. Looking at the bigger picture, immunisation was just one area of health education concerning the Department; other issues such as smoking and child accidents competed for resources. Within immunisation itself, some vaccines were promoted more than others at a particular time depending on Health Department priorities. The measles vaccine was heavily publicised but later had to give way to the rubella vaccine. Other groups and communities may also have had different immunisation priorities from those of the Health Department. This was evident with hepatitis B where local communities were keen to receive the vaccine but the Health Department did not believe that the problem was serious enough to warrant an immunisation programme. The Health Department depended on advice from its own advisory committee, the CDCAC. The extent of this reliance was clearly demonstrated during the campaign for low-dose hepatitis B vaccine when the Department would not use this without authorisation from CDCAC. The advice of the WHO was also carefully considered and was another important influencing factor in shaping immunisation policy. The Department therefore determined programmes and priorities for the introduction and availability of vaccines, particularly new ones, within the perimeters of the advice of the CDCAC and the WHO.

Once a policy was introduced, the Department was flexible enough over time to make changes to the policy if these were deemed necessary. However the Department tended to react to advice, and it was rarely proactive, if ever, in the field of immunisation. This can be seen with the change made to the rubella policy. Action to alter strategy was taken by some of the medical profession and resulted in the eventual adoption of a different rubella immunisation programme. Nevertheless, both schemes were implemented by other countries around the world and both were deemed acceptable as suitable methods of rubella control. The demands by local communities for changes or adoption of new policies did not fare as well, as can be seen by the problems over the introduction of a national hepatitis B immunisation programme for babies and preschoolers. The Department responded much more readily to representations made by health professionals for policy changes or

initiatives, than it did to the concerns of local communities and the general public, who were not versed in medical matters.

Implementation of policy by the 1970s took varied forms, particularly with the decline in serious childhood diseases. Initiatives in the 1970s and 1980s focused on trying to keep immunisation levels as high as possible, as seen with the measles vaccine. The use of the media to promote campaigns did not always reach those for whom it was intended and even with the measles epidemic eradication campaign the Department was not able to raise immunisation consistently to the 95 per cent levels deemed necessary to stave off another epidemic in 1984. Even the Plunket 'Stamp-out Measles' day was not the success it was hoped to be, although Plunket and its network of mothers had direct access to many babies and preschoolers. The use of compulsion, as practised in the United States, had already been ruled out by the Health Department as unacceptable to the New Zealand public. Nevertheless, discounting measles, figures for other childhood immunisations remained at reasonably acceptable levels during this period.

Immunisation policy waxed and waned in importance both for individual vaccines and as a competitor with other health issues. The contribution of GPs, Plunket and the role of parents were other major components in the implementation and acceptance of immunisation policy and their respective roles will be considered in the subsequent chapter.

CHAPTER 8: ‘Crises of Confidence?’

Vaccine controversies and medical and public responses 1973-1990

As memories of the disastrous effects of infectious diseases prior to vaccine use receded, moves to immunise children against potentially non-life threatening illnesses (such as measles and rubella) led some health professionals and parents to reassess the benefits versus the risks of immunisations. Medical researchers have found that ‘once high vaccine uptake and herd immunity are attained, perceived vaccine risks tend to deter individuals from being vaccinated’.¹ This chapter will consider primarily the controversies that occurred during this period in New Zealand and will also set these in context by looking at events in other countries, in particular, Britain and the United States. How the New Zealand Health Department and health professionals dealt with these controversies and their impact on the immunising public will form a key part of the chapter.

By 1973 the Health Department was offering vaccines to protect against an array of diseases, with measles and rubella being the latest additions. In 1974, 55 percent of eligible infants had received the triple vaccine and 59 percent had their polio immunisations.² Nevertheless uptake for measles had been slow; in the Dunedin Health District in 1973 it was found that only 47.8 percent of new school entrants had been immunised for measles, with rubella at 61.9 percent.³ As all these figures were below the desired level the Department wished to increase public confidence in immunisation in order to improve herd immunity. Negative publicity for vaccines was therefore considered undesirable and to be avoided if possible.

Polio Vaccine and SV40 1974

In October 1973 an article was published in the *Lancet* by two New Zealand doctors, Diane Baguley and Gavin Glasgow of the Auckland University Medical School. This article reported that the Salk vaccine used in the 1950s contained the monkey virus

¹ E. J. Gangarosa, A. M. Galazka, C. R. Wolfe, L. M. Phillips, R. E. Gangarosa, E. Miller, R. T. Chen, ‘Impact of anti-vaccine movements on pertussis control: the untold story’, *The Lancet*, 351, 1998, p.360.

² ABQU 632 W4452/913 54679 144/17/10 Sera and Vaccines: Polio: alleged contamination of the polio vaccine, ANZ, Wellington.

³ AAFB 632 W3463/83 47692 144/18/1 Rubella Immunisation 1971-77, ANZ, Wellington.

SV40 and that its administration was linked to the appearance of subacute sclerosing panencephalitis (SSPE), a fatal brain disorder.⁴ This article was prompted by a rise in the number of cases aged between five and 20 of SSPE admitted to Auckland hospital between 1956 and 1969. However, the editorial in the same issue of the *Lancet* and a letter in the December publication questioned Baguley and Glasgow's findings and attributed the rise to other factors, including a measles epidemic in 1952-53.⁵ Baguley and Glasgow also noted that 'early batches of Sabin oral vaccine also contained SV40', but believed that 'infectivity of SV40 by mouth is low', with little risk to the recipient.⁶

The debate was picked up by the *New Zealand Truth (Truth)* in December 1973. However, it concentrated on the administration of Sabin oral vaccine in the early 1960s which contained SV40, rather than the Salk vaccine given in the 1950s despite the conclusions of Baguley and Glasgow regarding the low risk of the oral route. The reason for this was a paper published in 1961 that linked SV40 to the development of tumours in hamsters.⁷ Consequently it had been recommended in the United States that SV40 be eliminated from the Sabin vaccine, although historian C. J. Ritty pointed out that the United States was the only country concerned at that time about the presence of the monkey virus.⁸ Connaught Serum Laboratories of Canada, which had supplied Sabin vaccine to New Zealand and other countries including Japan, in the early 1960s, had by 1962, cleared their vaccine of SV40.⁹ *Truth* alleged that the New Zealand Health Department had made cost its main priority when going to tender in 1961 for a supplier of oral vaccine and secondly, that it had continued to give SV40

⁴ D. M. Baguley, G. L. Glasgow, 'Subacute Sclerosing Panencephalitis and the Salk Vaccine', *The Lancet*, 6 October 1973, pp.763-65. They also thought there might be a link to killed measles vaccine.

⁵ Editorial, *The Lancet*, 6 October 1973, p.772 and also N. McD. Davidson, 'S.S.P.E. in New Zealand', *The Lancet*, 8 December 1973, pp.1332-33. Usually SSPE takes about five to seven years to develop and hence it was argued that a measles epidemic in 1952-53 was more likely to be responsible for cases of SSPE than the SV40 in the Salk vaccine three to four years later.

⁶ D. M. Baguley and G. L. Glasgow, 'Subacute Sclerosing Panencephalitis and the Salk Vaccine', p.765.

⁷ *Report to the Minister of Health of the Special Committee to Investigate the Safety of Poliomyelitis vaccines*, 7 March 1983, Wellington, p.30.

⁸ C. J. Ritty, 'Do something!... Do Anything! Poliomyelitis in Canada 1927-1962', PhD thesis, University of Toronto, 1995, p.376. In the United States from August 1961 all lots of vaccine had to be tested for SV40 by the manufacturer. Any batches that contained SV40 were to be destroyed. See also EAC Minutes 14 March 1974, ABQU 632 W4452/913 144/17 Polio Vaccine 1973-92, ANZ, Wellington.

⁹ Connaught was granted a licence to manufacture the vaccine by the Canadian government on 2 March 1962 with the proviso that the vaccine was free of SV40.

infected vaccine to the New Zealand population (even after the study linking SV40 to hamster tumours had been published) before using the SV40-free vaccine which arrived in early 1963. *Truth* used emotive language in its campaign, arguing that the Health Department had fed nearly two million New Zealanders with ‘dirty vaccine’ rather than purchase a ‘clean’ but more expensive vaccine.

The Health Department had had several months’ warning of the Baguley and Glasgow research when it provided details of the polio vaccine campaigns to the two doctors. Consequently the Department conducted its own inquiry ‘behind closed doors’ regarding the effects of SV40 which led it to conclude the vaccine was ‘safe’.¹⁰ Although press statements had been prepared in advance, the Department was taken aback by the intensity with which *Truth* attacked its subject over 22 weeks from December 1973 to July 1974. Headlines such as ‘2 million candidates for cancer?’¹¹ and ‘Killer Slip? Health men & a dirty vaccine...’¹² abounded for weeks with accusations by *Truth* that the Department was trying to cover up or give different versions of what happened.¹³

When the Department invited tenders for an oral vaccine in October 1961 for the school campaign, two tenders were received, including one from Pfizer Laboratories in Britain. They were only able to produce a monovalent polio vaccine for each of types 1 and 3 which were both SV40-free. However, the Department favoured using a trivalent vaccine containing all three strains of polio, hence making administration easier and more effective. Additionally, a type 1 polio epidemic had commenced in Auckland in March 1961, and this also gave impetus to the importance of the complete protection offered by a trivalent vaccine.¹⁴ The vaccine produced by Connaught Serum Laboratories of Canada was the only trivalent vaccine available at this time (other manufacturers were much further behind in production) and had been used already by the Health Department in the infant campaign of 1961. At this point

¹⁰ *Report to the Minister of Health of the Special Committee to Investigate the Safety of Poliomyelitis vaccines*, 7 March 1983, Wellington, p.49.

¹¹ *New Zealand Truth* (NZN), 5 February 1974, p.5.

¹² NZN, 24 December 1973, p.4.

¹³ NZN, 30 April 1974, p.5 and 11 June 1974, p.18.

¹⁴ W. R. Lang et al, ‘Poliomyelitis in Auckland: A Report on the 1961 Epidemic’, *New Zealand Medical Journal* (NZMJ), October 1961, p.453. The epidemic was at its peak in April and May and had tailed off by July. The first doses of oral vaccine were offered to infants from August 1961.

it was generally believed both in New Zealand and abroad that SV40 was harmless.¹⁵ The two meetings of the Epidemiology Advisory Committee (EAC) held in 1962 made no mention of SV40 even though the tender and subsequent shape of the campaigns were discussed in some detail, thereby demonstrating the lack of importance attached to the issue at this point.¹⁶ It was not until November 1962, after a recommendation by the Director of the National Health Institute, that invitations to tender specified future lots of oral polio vaccine were to be SV40-free.¹⁷ The batches from this tender arrived in New Zealand in February 1963. Nevertheless, under the terms of its Canadian licence, Connaught ought to have been supplying New Zealand with SV40-free vaccine from the latter half of 1962.¹⁸

Apart from *Truth*, newspaper coverage on the SV40 story was non-existent after the publication of the Department's two press releases in December 1973.¹⁹ Nonetheless, other types of media did pick up the story, with Wellington's Radio Windy conducting a talkback with Dr Erich Geiringer, a controversial Wellington GP, in early April 1974.²⁰ Soon after, the *Nationwide* television programme also featured the story which was disparaging of the Department's use of the polio vaccine. The programme maintained that the Health Department knew the vaccine was 'contaminated' and that it was not licensed for general use in Canada.²¹ Geiringer also heavily criticised not just the Health Department, but the Labour government, the National opposition and the national press for implementing 'a conspiracy of silence'.²² He pointed out that the National party had not brought up the matter as they were in government at the time, the Labour government had refused to hold an

¹⁵ *Report to the Minister of Health of the Special Committee to Investigate the Safety of Poliomyelitis vaccines*, 7 March 1983, Wellington, p.56.

¹⁶ EAC meetings, 6 February 1962 and 20 June 1962, H1 29/19 33136 Epidemiology Advisory Committee 1962-8, ANZ, Wellington.

¹⁷ *Report to the Minister of Health of the Special Committee to Investigate the Safety of Poliomyelitis vaccines*, 7 March 1983, Wellington, p.60.

¹⁸ NZT, 11 June 1974. Also 'Sabin Poliomyelitis Vaccine and SV40', ABQU 632 W4452/913 54679, 144/17/10, ANZ, Wellington.

¹⁹ Only the two Auckland newspapers printed the press releases and then did not take the story any further. No other paper published the releases. ABQU 632 W4452/913 144/17, ANZ, Wellington.

²⁰ NZT, 2 April 1974, p. 7. Erich Geiringer had great reforming zeal and was described in a 1995 *Tribute* by George Salmond, former Director-General of Health as 'one of the most significant public health figures in New Zealand in the last half century'.

<http://www.wnmeds.ac.nz/academic/dhp/ippnw/ERICH.HTML>

²¹ *New Zealand Parliamentary Debates* (NZPD), 1982, 449, p.5597. This programme aired on 4 April 1974.

²² *ibid.*

inquiry and the national press was ‘absolutely silent’ on the issue.²³ The Under-Secretary of Labour, Eddie Isbey, who had been a participant in Geiringer’s radio talkback, promised he would talk with Minister of Health Bob Tizard about the issue although there was no satisfactory outcome.²⁴ The wall of silence apparently still prevailed.

To try and rebut the criticisms, Dr John Hiddlestone, the Director-General of Health, appeared on *Nationwide* on 8 April 1974 to defend the role of the Health Department. Under questioning he maintained that ‘In commercial quantities an uncontaminated vaccine was not available at the time’.²⁵ The EAC had issued a statement on 14 March 1974 affirming there was no evidence of a causal relationship between SV40 and SSPE.²⁶ Later, on 23 May 1974 the Department held a press conference and allowed some of the documents relating to the tender to be examined by the press, including *Truth*.²⁷ This still did not satisfy *Truth* which continued to publish inflammatory articles until 9 July 1974 although it did not succeed in provoking a press statement from the Health Minister.

Accusing *Truth* of being a ‘sensational journal’ in Parliament, Tizard ‘claimed that our questions were the sort that could have been properly put to doctors but not by a newspaper to the public...what sort of newspaper would try to carry on a medical discussion through its columns?’²⁸ According to *Truth*, Tizard believed that “‘responsible” journalists keep their mouths shut and their typewriters undercover’.²⁹ Consequently, Tizard had refused to make any comment on the issue apart from inside Parliament, as he believed *Truth* was publicity seeking and trying to raise a scare.³⁰

This was the first time in New Zealand that concerns about the effects of vaccines had been the focus of sustained, even if fairly circumscribed, media attention and

²³ NZT, 2 April 1974.

²⁴ NZT, 9 April 1974.

²⁵ NZPD, 1982, 449, p.5597.

²⁶ ABQU 632 W4452/913 54679 144/17/10, ANZ, Wellington.

²⁷ NZT, 28 May 1974.

²⁸ NZT, 25 June 1974. Also see NZPD, 1974, 391, p.2153.

²⁹ *ibid.*

³⁰ NZPD, 1974, 391, p.2153.

demonstrated that some parts of the press thought that the ‘Public has to know’.³¹ Furthermore, it was the first time that a newspaper was so heavily critical of departmental immunisation policy and it caused the Health Department to assume a very defensive stance, particularly concerning the release of information. In the 1970s it was not prepared to come out publicly and explain its actions; inquiries remained in-house and results were kept confidential.

The Department did not anticipate the sustained campaign orchestrated by the *Truth*, nor did it expect it to feature on a television programme. It was caught unawares, especially after the prepared press releases failed to silence *Truth*. Other newspapers did not report the story following departmental advice and the Health Department had expected *Truth* to follow suit. Sociologist Kevin Dew has pointed out that ‘where journalists do not have the knowledge-base to scrutinize the information they receive they will tend to rely on recognized experts, particularly state-supported ones’.³² This was evident in the reporting, or non-reporting, of immunisation issues which were detrimental to Health Department policy. Indeed, Dr R. Campbell-Begg, who was the Director of the Division of Public Health at the time, commented that the Health Department had very good relations with certain reporters whom it knew could be trusted and who would put forward the Health Department’s point of view. Most of the newspapers, he found, were sympathetic towards the Department.³³ Therefore, in terms of immunisation, the majority of the press in the 1970s and early 1980s were guided by departmental advice, as can be seen quite clearly with the SV40 story, where only *Truth* gave the story exposure.

This prevailing attitude of not feeling the need to give the public information about health issues in general, not just immunisation, was common amongst medical professionals and not unique to the Health Department. As will be shown further in the next chapter, the majority of mothers still accepted the doctor or the Plunket nurse’s advice to have their children immunised without question and were given very little information about the nature of the injections. The Health Department in the case of SV40 continued this policy of providing limited information as it did not

³¹ *ibid.*

³² K. Dew, ‘Epidemics, panic and power: representations of measles and measles vaccines’, *Health*, 3, 4, 1999, p.383.

³³ Interview with Dr R. Campbell-Begg, 23 October 2002.

believe that it was an issue that the public needed to know about although it felt obligated to reply to the *Truth's* allegations with a press conference. It felt, as did the Health Minister, that it was a medical matter, which had originally been raised in a medical journal and that the issue should therefore remain in the medical field and not be debated by lay people. Medical knowledge was the sole domain of professionals who would decide what information should be given to the public; it was not for the public, or the press to decide for themselves. The Department therefore tried to ignore the *Truth* as much as possible, as it had done in the past with the British Union for the Abolition of Vivisection. Nevertheless, it did appreciate the seriousness of the issue that *Truth* was raising, and an in-house inquiry had already been initiated to determine what happened with the vaccine and SV40 in the early 1960s, although the information was not released.³⁴

The attitude of the public to this 'scandal' in 1974 seemed to be one of indifference. A lack of information in the mainstream press was almost certain to have contributed to this, although coverage on the radio and television, even in a limited way, was likely to have raised some consciousness on the issue. Nonetheless, the effect of the 'scandal' was seriously curtailed by the lurid reputation of *Truth*, although its circulation was considerably more in 1974 than the much more mainstream *NZ Listener*.³⁵ It is highly probable that a story raised by *Truth* would not have had the same impact on the public as press statements from the Health Department and a television appearance by the Director-General of Health, John Hiddlestone, who sought to reassure people that the Health Department had acted in their best interests at the time of a polio epidemic. It may also, from the way the story was portrayed in *Truth*, be seen as a story concerning a 'penny-pinching' Department who had been caught out, without the potential implications for health being realised. As immunisation figures for polio did not decrease (as might be expected when confidence in a vaccine is lost), the public appeared to have accepted the assurances of the Department. In 1975 and 1976, 62 and 64 percent of infants were immunised

³⁴ *Report to the Minister of Health of the Special Committee to Investigate the Safety of Poliomyelitis vaccines*, 7 March 1983, Wellington, p.49.

³⁵ *Summary of audited net paid circulations*, New Zealand Audit Bureau of Circulations, Wellington, 1974, p.6. The circulation figures for the *Truth* were 208,481 and for the *NZ Listener* were 140,033. These were both weekly publications. By 1983, when the SV40 scandal was resurrected, *Truth's* circulation had declined to 135,073 but the *NZ Listener* figures were 364,943. *ibid.*, 1983, p.6.

against polio, up from 59 percent in 1974.³⁶ Additionally the incident had occurred over ten years previously and perhaps people believed it was not really relevant to them now. At this point, therefore, the New Zealand public did not want to question the actions of the Health Department; it was just accepted that it had acted in their best interests at the time.

Britain and the Pertussis vaccine controversy

The situation in New Zealand with regard to SV40 and the polio vaccine in 1974 contrasted quite markedly with Britain and the pertussis vaccine issue which occurred around the same time. Concerns about both the safety and the efficacy of the pertussis vaccine had been raised from the 1950s with Justus Strom and later others detailing cases where encephalopathy had been linked to administration of the pertussis vaccine.³⁷ Nevertheless, this debate remained firmly within the medical fraternity up until the early 1970s.

As with SV40 in New Zealand, the pertussis controversy in Britain had been sparked by sudden media interest in a medical article on pertussis vaccine side-effects. In January 1974, three doctors from the Great Ormond Street Hospital for Sick Children, M. Kulenkampf, J. S. Schwartzman and J. Wilson, published a paper discussing neurological reactions in 36 children after administration of the pertussis vaccine over a period of 11 years.³⁸ In March 1974, the paper by M. Kulenkampf et al. became the basis of a television documentary that showed two severely brain damaged adolescents, the alleged victims of the pertussis vaccine.³⁹ This programme and the subsequent media coverage had a huge impact on parents of young children. Dr J. A. McKinnon, Specialist in Community Medicine for Dudley Health Authority, commented that,

³⁶ ABQU 632 W4452/913 54679 144/17/10, ANZ, Wellington. To put this in perspective; immunisation uptake in 1974 for the triple vaccine was 55 percent, in 1975, 63 percent and 67 percent in 1976.

³⁷ For a more detailed discussion concerning the pertussis vaccine in the 1950s and 1960s see Chapter 3, pp.70-73.

³⁸ M. Kulenkampf, J. S. Schwartzman, J. Wilson, 'Neurological complications of pertussis inoculation', *Archives of the Diseases of Childhood*, 49, 1974, pp.46-49.

³⁹ A. H. Griffith, 'Medicine and the Media - vaccination against whooping cough', *Journal of Biological Standardization*, 9, 1981, pp.478-79.

Within days health visitors in Dudley were reporting that mothers, having seen this television programme, were raising queries about whooping cough immunization, making particular reference to the brain damaged teenagers, and a significant number, who had brought their babies for immunization appointments, were withdrawing previously given consent for whooping cough vaccine.⁴⁰

McKinnon reported that before the television documentary 73 percent of children in Dudley had been immunised with the triple vaccine but by the end of 1974 this figure had dropped to under 35 per cent reflecting a nationwide trend.⁴¹ Formidable medical support was added to the debate in May 1974 when Professor George Dick of the British Postgraduate Medical Federation in London and member of the Joint Committee of Vaccination and Immunisation (JCVI), questioned whether the benefits of pertussis vaccination were outweighed by the risks, when he argued that ‘serious brain damage occasionally follows whooping-cough vaccination’.⁴²

Some parents were already concerned about the effect the pertussis vaccine had had on their children and in 1973 formed the Association of Parents of Vaccine-Damaged Children (APVDC) led by Rosemary Fox, chairman and secretary of the organisation. One of the aims of the Association was to gain compensation for children damaged by immunisation as well as pressing for a government inquiry into the use and safety of the pertussis vaccine.⁴³ Rosemary Fox enlisted the help of sympathetic members of the medical profession such as Professor Gordon Stewart of the Department of Community Medicine at the University of Glasgow who published several papers on the effects and efficacy of pertussis vaccine. Stewart argued in the *Lancet* in 1976 that at least one in 60,000 children immunised against pertussis would have ‘subsequent brain damage and mental defect’.⁴⁴

Many in scientific circles, as well as the medical profession, were concerned about the effectiveness and safety of the vaccine. David Kerridge, Professor of Statistics at

⁴⁰ J. McKinnon, ‘The Impact of the Media on whooping cough immunization’, *Health Education Journal*, 37, 1979, p.200. Of children born in 1975, only 32% were immunised against pertussis, yet nearly 83 percent were immunised against diphtheria and tetanus (DT) and polio.

⁴¹ *ibid*, p.198.

⁴² G. Dick, ‘Reactions to Routine Immunization in Childhood’, *Proceedings of the Royal Society of Medicine*, 67, 5, 1974, p.371.

⁴³ R. Fox, *The Lancet*, 19 February 1977, p.420.

⁴⁴ G. T. Stewart, ‘Vaccination against Whooping-Cough. Efficacy versus Risks’, *The Lancet*, 29 January 1977, p.237. He also published a further article, ‘Toxicity of pertussis vaccine: frequency and probability of reactions’, *Journal of Epidemiology and Community Health*, 33, 1979, pp.150-56.

Aberdeen University, who made a study of the effect of pertussis vaccine on the disease, commented that ‘my advice would be to abandon the vaccine’.⁴⁵ In Sweden the loss of confidence in the pertussis vaccine by paediatricians led to its withdrawal by the Swedish Medical Society at the end of the 1970s.⁴⁶ In Britain, Jeffrey Baker argued that the ‘British medical profession itself was deeply divided, reflecting quite real uncertainties surrounding the safety and efficacy of the vaccine’.⁴⁷ The rift went from general practitioners and health visitors right up to George Dick, a member of the JCVI who ‘criticized in print his own committee’s decision to endorse the vaccine in 1974’.⁴⁸ Trust in the vaccine by parents therefore nose-dived partly as a result of medical indecision. To try and restore public (and medical) confidence, the government had to listen to groups such as the APVDC, which had influential support both outside and inside Parliament. Jack Ashley MP, a member of the Labour party, repeatedly pressed the Department of Health and Social Security (DHSS) for compensation for pertussis vaccine-damaged children and for an independent inquiry into the ‘value and safety of the vaccine’.⁴⁹ Questions were tabled in the House and Ashley was at the forefront of the campaign in Parliament for several years. This was in direct contrast to the situation in New Zealand where both the government and the opposition refused to discuss the SV40 issue and members of parliament seemed reluctant to take it up.

One of the most important differences was the role of the media. The press in Britain widely publicised doubts over the safety of the pertussis vaccine, indicating that the DHSS had only minimal influence with journalists. A study of newspaper articles on pertussis immunisation taken from British papers in 1982 was undertaken by C. M. Harding, a Psychology Research Fellow at the University of Exeter. She found that they tended to emphasise the ‘problems associated with the vaccine...rather than

⁴⁵ *The Times*, 13 February 1978, p.2. Times Digital Archive 1785-1985.

<http://web6.infotrac.galegroup.com.ezproxy.auckland.ac.nz/itw/infomark/>

⁴⁶ E. J. Gangarosa et al, ‘Impact of anti-vaccine movements’, p.357.

⁴⁷ J. P. Baker, ‘The pertussis controversy in Great Britain, 1974-1986’, *Vaccine*, 21, 25-26, 2003, p.4003. Dr Jeffrey Baker is the Medical Director at Duke Children’s Primary Care and Assistant Clinical Professor in the Department of Paediatrics at Duke University, North Carolina, United States.

⁴⁸ J. P. Baker, ‘The pertussis controversy in Great Britain, 1974-1986’, p.4007. See G. Dick, ‘Reactions to Routine Immunization in Childhood’, *Proceedings of the Royal Society of Medicine*, 67, 5, 1974,

⁴⁹ T. Smith, ‘The Parliamentary Scene’, *Journal of Medical Ethics*, 3, 1977, p.100. See also Jack Ashley’s letter to *The Times*, 1 March 1977, p.15, in the same vein.

[focus] on its preventative nature' and provided 'poor quality information'.⁵⁰ Harding concluded that 'the greater number of sensationalized articles for this topic coupled with the rather negative approach could influence people adversely'.⁵¹ Media attention in Britain was a significant factor in the decline of pertussis immunisation from 1974 onwards due to the negative picture portrayed of the vaccine and was likely to have persuaded many parents not to immunise their children. A. H. Griffin, the deputy Director of Clinical Research at the Wellcome Research Laboratories, pointed out that 'Newspaper articles, popular press reports on parliamentary debates and Private Member's Bills for compensation, and television and radio reports were regarded as factors which eroded public confidence in the pertussis immunization programme'.⁵² Baker, although arguing that the 'press certainly did play a role in initiating the crisis', opined that it was 'hardly the only factor' and pointed out that divisions within the medical profession and the active role of parental advocacy groups, such as the APVDC, also played important roles in keeping the controversy before the public eye.⁵³ Certainly the combination of these three aspects had a major impact on parental perceptions of the safety of the pertussis vaccine. By 1978, pertussis immunisation rates stood at 31 percent for the country as a whole with some areas as low as nine percent.⁵⁴ This decline was in the face of constant reassurances by the DHSS that the vaccine was safe.⁵⁵ The DHSS had decided, despite the furore, to continue to use the pertussis vaccine and intended to rebuild public confidence. This was in contrast to Japan where a confidence crisis had caused Japanese health authorities to totally abandon the triple vaccine (diphtheria, tetanus and pertussis) although it was later re-introduced for over two's only.⁵⁶

Unfortunately for the DHSS, the decline in vaccine uptake 'was followed in 1977-79 by the largest resurgence of pertussis notifications since 1957' despite more

⁵⁰ *The Times* ran a regular feature called Science Report which provided a synopsis of recent articles from the *British Medical Journal* (BMJ).

⁵¹ C. M. Harding, 'Whooping Cough vaccination: the case presented by the British national press', *Child: Care, health and development*, 11, 1985, p.28.

⁵² A. H. Griffin, 'Medicine and the Media - vaccination against whooping cough', *Journal of Biological Standardization*, 9, 1981, p.479.

⁵³ J. P. Baker, 'The pertussis controversy in Great Britain, 1974-1986', p.4003.

⁵⁴ 'The National Childhood Encephalopathy Study', *Whooping Cough. Reports from the Committee on Safety of Medicines and the Joint Committee on Vaccination and Immunisation*, London, 1981, p.90.

⁵⁵ *The Times*, 19 September 1975, p.16. The DHSS had received advice from its expert committee regarding the safety and effectiveness of pertussis vaccination.

⁵⁶ E. J. Gangarosa et al, 'Impact of anti-vaccine movements', p. 358. Two infants died within 24 hours of receiving a dose of triple vaccine causing the vaccine to be withdrawn.

assurances of safety by the JCVI in 1974 and 1977.⁵⁷ The parental concern over the safety of the pertussis vaccine spilled over into other areas of the immunisation programme, with the consequence that figures for immunisation against polio, diphtheria and tetanus also declined. To try to counter this trend doctors were encouraged to offer parents the double vaccine if they were reluctant to accept the triple.⁵⁸ Partly as a result of public pressure and dissatisfaction within some areas of the medical profession, the government authorised a long-term study into the safety of the pertussis vaccine, the National Childhood Encephalopathy Study (NCES), in 1976. To further allay public fears the British government also asked the Committee for the Safety of Medicines and the JCVI to investigate the vaccine. In addition, the Parliamentary Commissioner for Administration (Ombudsman) reported on the DHSS's handling of the immunisation programme in October 1977. A compensation scheme was established for children who suffered from vaccine damage under the 1979 Vaccine Damages Payment Act.⁵⁹ This had been helped by the fact that several eminent medical professionals had lent their support to providing recompense for vaccine-damage victims.⁶⁰ These measures were to aid the government in proving the safety of the vaccine and restoring public confidence in it as soon as possible.

The NCES reported on its first 1,000 cases in June 1979. It found that the risk of permanent brain damage in previously normal children using the pertussis vaccine was one in 310,000 immunisations and recommended continuing use of the vaccine.⁶¹ However, the report of the Ombudsman found that the DHSS should have given parents advice and information regarding the risks and benefits of immunisation as they were 'in the best position to observe a child's reaction'.⁶² The report recommended that 'Parents should be told everything there is to know about risk'.⁶³ 'Informed consent' was now, therefore, to be a part of the British immunisation programme and the doctors and practice nurses who administered the vaccine were to

⁵⁷ *ibid.*, p.358 and p.88.

⁵⁸ *The Times*, 15 April 1977, p.2.

⁵⁹ 'The National Childhood Encephalopathy Study', *Whooping Cough. Reports from the Committee on Safety of Medicines and the Joint Committee on Vaccination and Immunisation*, London, 1981, p.46.

⁶⁰ *The Times*, 24 January 1977, p.13. Letter from Professor Sir John Stallworthy and Dr Harwood Stevenson, President and Chairman of Council respectively.

⁶¹ 'The National Childhood Encephalopathy Study', *Whooping Cough. Reports from the Committee on Safety of Medicines and the Joint Committee on Vaccination and Immunisation*, London, 1981, p.143.

⁶² *The Times*, 28 October 1977. The Ombudsman was Sir Idwal Pugh.

⁶³ *ibid.*

be educated regarding contra-indications and the kinds of information they should be giving to parents to allow them to make an informed choice. As a parental palliative it was announced in May 1978 that a tax-free payment of £10,000 would be made available to children severely damaged by the pertussis vaccine since that immunisation commenced.⁶⁴ This crisis in Britain signalled the beginning of a change in attitudes towards the information rights of parents when immunising their children. It also publicly demonstrated the underlying responsibility of the government for any consequences of state-encouraged immunisation programmes.

In New Zealand the pertussis crisis in Britain made little impact. The Health Department had already adopted a cautious approach towards the vaccine using a two dose regime only. Figures for the period indicate an increase in the numbers of infants immunised with triple vaccine; in 1974, 55 percent were immunised, and by 1975 and 1976 this had risen to 63 and 67 percent respectively.⁶⁵ Lack of exposure in the press and an unquestioning confidence in the actions of the Department delayed a debate about pertussis vaccine safety in New Zealand until the mid-1980s.

The fall-out from the pertussis vaccine controversy continued for years in Britain with cases for compensation being taken to the High Court. This culminated in the 1988 test case of *Loveday v. Renton and the Wellcome Foundation* where Justice Stuart-Smith ruled that there was insufficient evidence to prove that the pertussis vaccine could cause neurological damage in children. This effectively ended any further court action. Nevertheless the crisis of confidence in the pertussis vaccine had resulted in a pertussis epidemic, compensation for victims, and a carefully controlled study into the effects of the vaccine ordered by the government. There were also recommendations for more effective information for parents regarding the risks and benefits of immunisation. Media interest made the controversy highly visible to the public and the government had to be seen to take action. It was not until nearly a decade later that the New Zealand government operated in this way when the SV40 saga was reopened in 1983.

⁶⁴ *The Times*, 10 May 1978.

⁶⁵ ABQU 632 W4452/913 54679 144/17/10, ANZ, Wellington.

Polio Vaccine and SV40 1983

The Official Information Bill brought SV40 back to public and media attention in 1983. Garry Knapp of the Social Credit party introduced the subject during a debate on the Bill in which he focused on the purchase of ‘contaminated’ vaccine by the Health Department, when pure vaccine was supposedly available (although not as a trivalent vaccine).⁶⁶ The most significant aspect of this revival was how both the government of the day and the wider press dealt with it in contrast to the events of 1974. This time there was a ‘champion’ in parliament in the form of Garry Knapp who kept introducing the subject and demanding answers.⁶⁷ In consequence the Minister of Health, Aussie Malcolm, ordered a panel of medical experts to examine the effects of SV40 administered in the polio vaccine and asked the Chairman of the State Services Commission to investigate how the Department operated in matters pertaining to immunisation.⁶⁸ The Department was also ordered to allow *Truth* access to the files.⁶⁹ Aussie Malcolm adopted a totally different stance on this issue to that of Bob Tizard, his predecessor. Malcolm believed his responsibility was ‘to the public, not the Health Department’ and that *Truth* (with whom he was happy to talk) had the role of ‘raising doubts and fears. My role is to get to the bottom of the situation - to either confirm or allay those fears’.⁷⁰ *Truth* again explored the contaminated vaccine issue in February and March of 1983 mainly reporting ‘horror’ stories of people who were allegedly affected by vaccine and accusing the Department of covering-up in 1974.⁷¹ Nevertheless, the story in *Truth* ran only for six weeks as opposed to the extended exposure of the previous campaign.⁷² In contrast to 1974, when the *Truth* reporters came up against a wall of silence, 1983 saw them in the privileged position of being granted an ‘exclusive’ to the story by the Minister. Co-operation by the

⁶⁶ Interview with Dr H. J. H. Hiddlestone, 23 October 2002. Dr Hiddlestone believed that Garry Knapp introduced SV40 again to use as a vehicle to raise his political standing after a heavily contested election in East Coast Bays. Also see NZPD, 1982, 449, pp.5596-97.

⁶⁷ See NZPD, 1982, 449, pp.5596-97 and NZPD, 1983, 450, p.223, pp.279-80 and p.289.

⁶⁸ ABQU W4452/914 144/17/8/2 Administrative Review of newspaper articles 1983, ANZ, Wellington.

⁶⁹ NZT, 9 February 1983.

⁷⁰ *ibid.*

⁷¹ *New Zealand Truth* argued that the Department had said tender documents relating to the purchase of the vaccine had been destroyed when in fact they hadn’t and *Truth* were in possession of a memo verifying this from the Information Officer employed at the time. Additionally, the Department knowingly gave contaminated vaccine to two million New Zealanders when it could have purchased a more expensive, clean vaccine.

⁷² See the weekly issues of *New Zealand Truth* from 2 February to 16 March 1983.

Minister and the instigation of two committees to examine the issue did much to dampen the sensationalism of the story. A good deal of column space had been devoted to the silence of the Department and the Minister of Health in 1974 and theories were expounded as to why this should be so. This could not happen in 1983.

To a lesser extent the *New Zealand Times*, a Sunday paper, also reported on the issue after having been granted permission to view Health Department files. Other newspapers during 1982 and 1983 covered the story although in a much more restrained fashion, tending to confine themselves to the outcome of the committee investigations.⁷³ This was again in contrast to 1974, and demonstrated a wider awareness in the media of items that were of interest and relevance to the public, even if the actions of the Health Department came under scrutiny. The SV40 controversy had been a feature of a talkback show in 1974 and a similar broadcast took place in 1983. However, exposure was much greater, with prominence to the story being given on Radio Pacific. Graeme Colman, the *Truth* reporter who was originally involved with the story in 1974, was part of a talkback on Radio Pacific; Radio New Zealand also featured the story during February 1983.⁷⁴

One strand of the story which was given much more prominence in 1983, as a result of the increased media focus, was whether the vaccine caused cancer and multiple sclerosis. Cancer could allegedly appear many years after the vaccine was administered and was potentially applicable therefore, to the majority of the New Zealand population who had been immunised in 1962.⁷⁵ Public interest in the SV40 controversy became much more marked now that there was the fear of cancer. It became a serious issue, rather than just a tale about a government department losing documents and penny-pinching over twenty years ago. The *New Zealand Times* reported that 'there is concern spreading among New Zealand parents and some doctors that the vaccine could be responsible for brain damage, leukemia and death in some children' and that 'dozens of parents and doctors had phoned and written

⁷³ See *Auckland Star* (AS), 22 December 1982. However, the story was on page 12 next to headlines such as 'Pakuranga to get constable' so it obviously was not seen as very important. Also see *Timaru Herald*, 10 March 1983, *Dominion* (D), 8 March 1983.

⁷⁴ Broadcasts were made on 14 and 17 February 1983. ABQU 632 W4452/915 144/17/10 54680 Polio Contaminated Vaccine 1983, ANZ, Wellington. Graeme Colman was interviewed by talkback host Chris Carter, NZT, 16 February 1983.

⁷⁵ *New Zealand Times* (NZ Times), 30 January 1983.

inquiring about the link'.⁷⁶ Many concerned individuals wrote to the Department giving information about their children or spouses who had received the vaccine in 1962 and had now as adults developed cancer or had had a severe reaction to the vaccine at the time, including a man who had developed a polio-like illness and died a month later.⁷⁷ Furthermore there was even a protest of about 14 people held outside the Health Department in Wellington to publicise the 'contaminated vaccine cover-up'.⁷⁸

Opposition was also encountered from the New Zealand Anti-Vivisection Society (NZAVS) who wrote a letter of support to *Truth* for their 'excellent exposure... [of] the NEW ZEALAND VACCINE SCANDAL'. The NZAVS declared in its publication *Mobilise* that the Committee's report was a 'WHITEWASH' and printed an extract from the Animal Defence League of Canada on the polio vaccine controversy to demonstrate its international repercussions, particularly as the Canadian company Connaught Serum Laboratories was the original supplier of the vaccine.⁷⁹ After a silence of nearly 30 years anti-vivisectionists were again taking an interest in immunisation and opposing it on the same grounds as the earlier British Union for the Abolition of Vivisection had employed, namely, cruelty to animals and the effects of impure vaccines. The arguments had changed little over the years, with emotive and descriptive language still used to emphasise their points.

the overwhelming majority of people vaccinated all over the world against polio have been inoculated with potentially carcinogenic substances i.e. theoretically capable of producing cancer. (Hans Ruesch - Slaughter of the Innocent)⁸⁰

Awareness of the controversy was much greater than in 1974 as the issue had now gone beyond the interests of a fringe newspaper and moved into the public arena. The media's focus was primarily on the link to cancer which evoked alarm, and raised civic awareness of the problem. The actions of the Minister also made the

⁷⁶ *ibid.* *New Zealand Times* did mention that a study conducted in the USA where vaccine had also been administered containing SV40 found that the simian virus was not carcinogenic and did not cause cancer in humans. The term 'children' referred to children who developed these diseases at the time or later as adults as child recipients would be in their twenties by the early 1980s.

⁷⁷ The Department wrote up a list of all correspondence received regarding alleged vaccine after-effects. ABQU 632 W4452/915 144/17/10 54723, ANZ, Wellington.

⁷⁸ NZT, 24 February 1983.

⁷⁹ *Mobilise*, 14, 1986, p.10. From <http://www.nzas.org.nz>.

⁸⁰ *ibid.*, p.11.

controversy more open to the public by making the Department take responsibility for what had happened in 1962 through a committee of inquiry and account for its actions to the State Services Commission. This signalled a huge change in attitude by the Minister of Health, who now believed that the people had a right to know, and was prepared to put his Department under public scrutiny for this to occur. In 1974 an inquiry was held behind closed doors and the Minister was conspicuous by his silence on the subject. Now, the Health Department discovered that the Minister expected it to be publicly accountable for its actions and decisions and, as the British DHSS had found in 1974, to be seen to implement any recommendations whenever possible.

The report of the special committee, headed by Professor Kenneth Newell, to investigate the safety of poliomyelitis vaccines came out on 7 March 1983.⁸¹ It concluded after reviewing all available evidence that ‘SV40 is not pathogenic in man’ and that there had been no evidence of any increase in New Zealand in the ‘levels of acute infections, relevant chronic illnesses, and tumours or cancers, (giving special attention to leukaemias and cancers in children) from before the vaccines were used, up until 1982’.⁸² The committee also concluded that although the EAC knew there was SV40 in the vaccine they ‘considered it to be of little importance and to be something which should certainly be discounted in an epidemic situation’ as polio was progressing in the North Island in early 1961 when the vaccine was being purchased.⁸³ However, the committee criticised the Department for not reviewing the situation in 1962 when firstly, new research had become available showing that SV40 could cause cancer in suckling hamsters and secondly, when new supplies of vaccine arrived which were known to be free of SV40, all remaining stock was still used up first.⁸⁴ Nevertheless, the committee felt that, for the most part, the EAC and the

⁸¹ Professor Kenneth Newell had an international background in epidemiology and public health having worked for the World Health Organization in Geneva and Indonesia and as Professor of Epidemiology at Tulane University School of Medicine in the United States. In 1977 he was appointed Professor of Community Health at Wellington Medical School where he remained until 1983.

http://www.wnmeds.ac.nz/about/Historical_Note.html

⁸² *Report to the Minister of Health of the Special Committee to Investigate the Safety of the Poliomyelitis Vaccines*, 7 March 1983, Wellington, pp.6-7.

⁸³ *ibid.*, p.8.

⁸⁴ Connaught’s vaccine was SV40-free vaccine from 2 March 1962 as a licensing condition. Therefore it is likely that even though the Health Department did not specify vaccine had to be SV40-free until November 1962, vaccine supplied before then did not contain the simian virus. ‘Sabin Poliomyelitis Vaccine and SV40’, ABQU 632 W4452/913 54679 144/17/10, ANZ, Wellington.

Department had acted properly with regard to the purchase and use of the oral polio vaccine.⁸⁵

The State Services Commission report on Health Department procedure followed on 15 March 1983. The review concluded that the Department was ‘soundly based and appropriately organised’ with a ‘very responsible attitude to their work in the field of immunisation’. Hence, there ‘was nothing which would suggest there has been any deliberate attempt to mislead the public of New Zealand or to “cover up” any decisions and actions taken’.⁸⁶

Garry Knapp commented to the press that the report was a whitewash and continued over the following couple of months to raise the issue in Parliament.⁸⁷ However, with the issue of the report and the cessation of articles in *Truth*, public interest rapidly waned. Overall the issue seemed to have little effect on the immunisation levels of children; Public Health nurses who provided a ‘catch-up’ programme for new school entrants reported levels of 95 and 95.5 percent immunised in 1984 and 1985 respectively.⁸⁸ Parents, it appeared, were still happy to consent to have their children immunised.

Dr William Hamilton and SV40

There was one individual who drew the attention of the Health Department, *Truth* and the State Services Commission regarding his role in the SV40 controversy both in 1974 and 1983 and who was the catalyst for the exposure of the story in 1974. Dr William Hamilton was employed as a virologist at the National Health Institute from 1958 and as such was involved with testing both the Salk and Sabin vaccines used

⁸⁵ *Report to the Minister of Health of the Special Committee to Investigate the Safety of the Poliomyelitis Vaccines*, 7 March 1983, Wellington, p.9.

⁸⁶ ‘Department of Health - Administrative Review following newspaper articles on purchase of poliomyelitis vaccine in 1961-62’, State Services Commission 15 March 1983, ABQU 632 W4452/914 144/17/8/2, ANZ, Wellington.

⁸⁷ See NZPD, 1983, 450, p.223, 279-80, 289. *NZ Times*, 9 March 1983.

⁸⁸ *Appendices to the Journals of the House of Representatives*, (AJHR), 1984, E-10, p.26 and AJHR, 1985, E-10, p.23. Public Health nurses were to identify and offer immunisation to children who had not been fully immunised upon entering school. Around 74 percent of children were fully immunised, PHN’s would then raise this to around 95 percent.

during the campaigns of the late 1950s and early 1960s.⁸⁹ He was therefore well aware of the presence of SV40 in these vaccines. Described by Dr Brian Christmas as an ‘individualist whose wit could be as barbed as it was amusing’, he was ‘concerned deeply with people and with issues’.⁹⁰ Hamilton was anxious about SV40 and had since the early 1970s been urging the Department to do some investigative work into the effects of the virus. He had also corresponded with Dr Gavin Glasgow on the subject in late 1973.⁹¹ Not satisfied with the results of the in-house investigation into the effects of SV40 in the autumn of 1973, Hamilton sent a copy of his report, ‘Simian Virus no.40: Contamination of oral Sabin polio vaccine used in New Zealand until April 1963’, to the Prime Minister and to the Minister of Health in January 1974.

Hamilton was concerned with the long-term effects of the vaccine, because as well as SSPE, there had been links to multiple sclerosis, leukaemia and cancer. He was bolstered in his view, he believed, by a paper given by Dr John Reid to the EAC in 1974 on ‘an increased incidence of leukaemia in New Zealand post Sabin vaccine’ which showed a slight rise in the numbers of children acquiring the disease.⁹² Nevertheless, by sending his report to the politicians, Hamilton had overstepped the mark of a civil servant. Under the State Services Act of 1962, section 56 (g) Hamilton had committed an offence by disclosing information acquired during the course of his duties without gaining prior approval.⁹³ The Director-General of Health, John Hiddlestone, wrote to Hamilton advising him not to engage officially in ‘any further investigation into the purchase and administration of the polio vaccine’ and denied him any further access to the relevant files.⁹⁴ He was also instructed in January

⁸⁹ Dr Hamilton was the only virologist until 1972 when Dr Yvette Hermon was employed as a specialist virologist. In 1974 Hermon was put in charge of the virology laboratory and Hamilton was made responsible for special projects of a virological nature including polio, rubella and hepatitis. In 1980 Hermon was promoted to senior virologist above Hamilton. ABQU 632 W4452/914 144/17/8/2, ANZ, Wellington.

⁹⁰ William Hamilton Obituary, NZMJ, 100, 820, 1987, p.193.

⁹¹ *Report to the Minister of Health of the Special Committee to Investigate the Safety of the Poliomyelitis Vaccines*, 7 March 1983, Wellington, p.63.

⁹² *ibid.*, p.11. Dr Reid, when contacted by the Committee, said that although he had no copy of his paper, he thought that the slight rise ‘was not felt to be a significant change’.

⁹³ *New Zealand Statutes*, 1962, 132, p.870.

⁹⁴ *NZ Times*, 30 January 1983. *Truth* also alleged he was charged under the State Services Act in 1974 for this misdemeanour. He was definitely charged in 1983. There was some discrepancy over the memos. The Health Department maintained Hamilton was told to cease work on the Salk polio vaccine, not Sabin in July 1974, *Truth* alleged it was in a memo dated 5 Dec 1973 and did not relate to either type of vaccine. ABQU W4452/915 144/17/10 54680, ANZ, Wellington.

1974 not to talk to the press about the issue. From April that year Hamilton was to maintain a monthly scientific literature review of articles pertaining to the effects of SV40.⁹⁵ He was also to carry out a serological study to investigate infection in the population as a consequence of exposure to SV40, but was unable to comply due to 'inadequate facilities'.⁹⁶ In July 1975, Hamilton again urged his superiors to undertake an investigation into the long-term effects of SV40.⁹⁷

Hamilton felt very strongly about the issue of the polio vaccines and was concerned not just with the contamination of the vaccine and its effects, but also the events surrounding the purchase of the vaccine. He believed the threat from the polio epidemic was over by July 1961 and that 'there was time to wait for the purchase and arrival of pure vaccine, if, as is averred, pure vaccine could not have been purchased earlier in 1961'.⁹⁸ He was concerned again in 1982 that matters relating to certain health issues, like vaccine purchases, could remain official secrets. As a result he sent a submission to the parliamentary select committee which studied the official information bill, alleging the Department wanted the files on mass polio immunisations kept secret because the information held on them 'might be damaging to the Health Department'.⁹⁹ Hamilton appeared before the committee of inquiry into the polio vaccine and also prepared a submission for them. He was however, not happy with the findings of the committee, immediately sending a memo to the Director of the National Health Institute, Dr R. K. Logan, about the 'misinformation propagated by the Committee of Enquiry' regarding the timing and implications of the 1961 polio epidemic.¹⁰⁰ Hamilton had a catalytic effect in terms of the SV40 issue; he refused to let it disappear and was prepared to go outside of the Department for help if he felt it would be of benefit. The establishment of a committee in 1983 was in no small part due to his constant agitation 'behind the scenes' over a ten year period,

⁹⁵ *Report to the Minister of Health of the Special Committee to Investigate the Safety of the Poliomyelitis Vaccines*, 7 March 1983, Wellington, p.49. These reports ceased in January 1976.

⁹⁶ *ibid.*, pp.43-44.

⁹⁷ *ibid.*, p.63.

⁹⁸ W. Hamilton to R. K. Logan, 9 March 1983, ABQU 632 W4452/915 144/17/10 54680, ANZ, Wellington.

⁹⁹ NZT, 2 February 1983. It seemed Garry Knapp had access to Hamilton's submission and was able to use the information in it during a debate on the Official Information Bill in December of 1982. NZPD, 1982, 449, pp.5596-98. Hamilton was of the opinion that whilst the Canadians were using 'clean vaccine' New Zealand was still using contaminated vaccine bought from Canada 'under circumstances that have never been fully disclosed' and described it an 'an atrocity'.

¹⁰⁰ W. Hamilton to R. Logan, 9 March 1983, ABQU 632 W4452/915 144/17/10 54680, ANZ, Wellington.

regarding an issue he believed may have health implications for a number of New Zealanders. It is also probable that he thought the Department might actually have something to hide, a view reinforced by its decision to deny him access to the polio files.

Dr William Hamilton and the Rubella Vaccine 1978-83

SV40 was not the only problem Hamilton was investigating in the late 1970s and early 1980s. A paper published in 1976 by a Japanese scientist, M. Sato, gave Hamilton cause for concern over the Cendehill rubella vaccine used in New Zealand, and manufactured by Smith Klein R. I. T.¹⁰¹ Sato found that when using hamster kidney cells and infecting them with wild rubella virus they released temperature-sensitive rubella virus particles which were distinguishable from the original wild rubella virus. He concluded that the temperature-sensitive rubella virus variant was a hybrid of the rubella virus and a latent virus identified in the hamster kidney cells.¹⁰² As the Cendehill vaccine was isolated on primary green monkey tissue, Hamilton feared there was a possibility that the rubella vaccine virus was a hybrid between the rubella virus and a C type virus which had oncogenic (cancer-causing) potential in a similar way to the polio vaccine and SV40.¹⁰³

He made his concerns known to the Department of Health in July and December 1978. According to Hiddlestone, Hamilton's claims were very carefully researched by the Department and also considered by the EAC. The EAC at that time was still chaired by Cyril Dixon, the world's top smallpox specialist, who also held the post of Professor of Social and Preventative Medicine at Otago. Many of Hamilton's referees were contacted and indicated that Hamilton had placed a different interpretation on their work from the one they had intended.¹⁰⁴ Consequently, the Department felt justified in affirming that the vaccine was safe. Hamilton, however, did not accept

¹⁰¹ M. Sato, T. Yamada, K. Yamamoto, N. Yamamoto, 'Evidence for hybrid formation between rubella virus and a latent virus of BHK 21/WI-2 cells', *Virology*, 69, 1976, pp.691-99.

¹⁰² H. J. H. Hiddlestone, 'Rubella - A safe and necessary vaccine', *NZMJ*, 13 August 1980, p.102.

¹⁰³ W. Hamilton, 'Letter to the Minister - Rubella Vaccination', *GP: Journal of the Society of the GP Society*, 37, December 1979, p.11. Also see ABQU 632 W4452/915 144/18/2 Rubella Vaccine – Dr W. Hamilton and the carcinogenicity of the Cendehill vaccine 1981-85, ANZ, Wellington. The earlier file on this subject ABQU 632 W4622/6 144/18/2 52279 Sera and Vaccines: Dr W. Hamilton and the carcinogenicity of the Cendehill vaccine 1978-1983 had been misplaced at ANZ, Wellington.

¹⁰⁴ Interview with Dr H. J. H. Hiddlestone, 23 October 2002.

this view and it was at this point in September 1979 that he took matters into his own hands and wrote a letter to the Minister of Health as well as to the Leader of the Opposition. His letter was printed in *GP, the journal of the GP society*, which supported Hamilton's position.¹⁰⁵

Although rubella is a mild illness it can have a devastating effect on the developing foetus, including deafness and blindness. The vaccine had been introduced in 1971 to try to prevent pregnant women contracting the disease and was initially targeted at primary school children who were the principal pool of infection. As this did not seem to be working, rubella vaccine policy was changed in 1979 in line with Britain to encompass the immunisation of Form 1 girls - the potential future mothers.¹⁰⁶ Any women intending to become pregnant were also to be offered immunisation after screening to determine whether they were already immune. Initially, Hamilton objected to any use of the rubella vaccine but later modified his views by advocating screening of all Form 1 girls before they were immunised to check their immunity to rubella. He cited Iceland as an example of where this had happened.¹⁰⁷ The Health Department refused to countenance this proposal arguing that 'with a population of 3,000,000 it would be logistically impossible to do screening before immunisation on this age group and we don't do it'.¹⁰⁸ The expense of such a procedure was the main reason seronegativity testing was not carried out. Sandra Coney, writing in the feminist magazine *Broadsheet*, concluded that the Department 'finds the health of as-yet-to-be-conceived foetuses more important than the health of presently living girls'.¹⁰⁹ She pointed out that the Department was proposing to spend \$10 million on 'high-technology hospital hardware' whilst arguing there was no funding for the seronegativity testing.¹¹⁰

Hiddlestone wrote that 'Dr Hamilton's action in presenting his views for publication in the medical press has my fullest support', although he still felt it necessary to write

¹⁰⁵ W. Hamilton, 'Letter to the Minister - Rubella Vaccination', *GP: Journal of the GP Society*, 37, December 1979, p.11.

¹⁰⁶ Reasons for this are discussed in Chapter 7, pp.202-208.

¹⁰⁷ ABQU 632 W4452/915 144/18/2, ANZ, Wellington.

¹⁰⁸ R. Campbell-Begg to Director, PHD, Reykjavik, 8 January 1981, ABQU 632 W4452/915 144/18/2, ANZ, Wellington.

¹⁰⁹ S. Coney, 'Experts disagree on rubella vaccine', *Broadsheet*, 77, 1980, p.8.

¹¹⁰ *ibid.*

his own article for the *New Zealand Medical Journal* rebutting Hamilton's theory.¹¹¹ This was also to reassure those operating within the medical profession that the vaccine they were offering to their patients was safe. Expressing differing opinions within the confines of a medical journal was fully acceptable in the eyes of the Department. Nonetheless, for his actions in writing to the Minister of Health and making his views public, Hamilton was charged under Section 58 of the State Services Act.¹¹² By approaching the Minister and the press Hamilton went outside the accepted boundaries for a state employee. He was also told to cease any further activities regarding vaccines in his role of virologist at the NHI which was also put under review.¹¹³

The Health Department maintained a very defensive stance with regard to Hamilton's theories. It was very keen to reassure parents and health professionals that the vaccine was safe. Campbell-Begg, in his capacity as Director of the Division of Health Promotion, spent a lot of time dealing with the allegations of Hamilton and trying to counteract them.¹¹⁴ This was to be achieved by publicising the safety of the vaccine and emphasising how important it was for women and girls to be immunised against rubella. Hiddlestone pointed out that once people became fearful it was often quite difficult to counteract that fear.¹¹⁵ The Health Department had therefore tried to contain the issue within the Department and medical circles and felt it had answered Hamilton's concerns. Going public with unproven theories was crossing the accepted line of behaviour for a government employee and resulted in Hamilton being charged.

The Department now tried to take steps to contain the issue within the press. It was a testament to their influence that they were able to do this, even by the early 1980s. For the media, TV 1 decided in a 'very responsible manner...that the matter was a "non-issue" and only harm could occur if it was given publicity'.¹¹⁶ The majority of the newspapers' articles on the issue reflected Health Department opinion on the

¹¹¹ H. J. H. Hiddlestone, 'Rubella - A safe and necessary vaccine', NZMJ, 13 August 1980, p.102. Also see 'Rebuttal-Dr Hamilton's article, ABQU 632 W4452/915 144/18/2, ANZ, Wellington.

¹¹² *Waikato Times* (WT), 3 January 1980.

¹¹³ B. W. Christmas, 20 January 1980, ABQU 632 W4452/915 144/18/2, ANZ, Wellington.

¹¹⁴ Interview with Dr R. Campbell-Begg, 23 October 2002.

¹¹⁵ Interview with Dr H. J. H. Hiddlestone, 23 October 2002.

¹¹⁶ H. J. H. Hiddlestone, 'Rubella - A safe and necessary vaccine', NZMJ, 13 August 1980, p.102.

matter.¹¹⁷ Nevertheless, two newspapers, the *Waikato Times* and the *Dominion*, reported the matter in some detail ‘disregarding the advice of departmental officers that there was no evidence to substantiate Dr Hamilton’s theory and that harm would be caused by publication of his views’.¹¹⁸ The *Waikato Times* believed that the public had a right to know, particularly as it was Hamilton who had been involved in the SV40 polio vaccine controversy.¹¹⁹ Nevertheless, despite the intentions of the *Waikato Times* to publicise the issue, the controversy made little overall impact on the immunisation levels of Form 1 girls.

In 1980, 94 per cent of Form 1 girls were immunised, in 1981, a level of 98 per cent was achieved and in 1982, 98.41 per cent received the vaccine.¹²⁰ Although the Department did receive letters from concerned parents about Hamilton’s claims, the majority of parents were obviously satisfied by Health Department reassurances.¹²¹ It was also timely for the Department that the controversy erupted in early January over the school holiday period, when perhaps less interest would be taken in such matters, or forgotten by the time school returned. The Department had been able in this instance to minimise any damage to public confidence in the vaccine through its relationship with the press and its methods of reassuring parents.

Pertussis Vaccine in New Zealand 1984

The tight reins of media control were evident in 1984 when a debate about the safety of the pertussis vaccine was sparked by an article in the *Sunday News* in July 1984.¹²² This was after a decision had been taken by the Health Department on the recommendation of the EAC that from July 1984 it would introduce an extra dose of triple vaccine at age six weeks.¹²³ The article in the *Sunday News* contained a feature

¹¹⁷ AS, 4 January 1980, *Evening Post* (EP), 5 January 1980, *New Zealand Herald* (NZH), 4 and 5 January 1980. The *Evening Post* on 4 January reported on the support of the New Zealand General Practitioners Society for Dr Hamilton.

¹¹⁸ *ibid.*, WT, 3 January 1980, D, 4 January 1980.

¹¹⁹ Editorial, WT, 4 January 1980.

¹²⁰ AJHR, 1981, E-10, p.28, AJHR, 1982, E-10, p.20, AJHR, 1983, E-10, p.21.

¹²¹ See ABQU 632 W4415/345 144/18/1 52684 Rubella 1979-80, ANZ, Wellington for examples of letters.

¹²² *Sunday News* (SN) 8 July 1984 and 29 July 1984.

¹²³ Circular Memo 1984/131, Director DPH to MOH, ABQU 632 W4452/916 144/27/3 79716 Triple Vaccine 1983-89, ANZ, Wellington. This decision was taken due to an epidemic of pertussis in 1982

about a family with a child whose brain-damage was allegedly caused by the pertussis vaccine, as well as mentioning several other families whose children had suffered a similar fate. The main thrust of the article was the lack of information given to parents about reactions to vaccines.¹²⁴ The new Minister for Health, Dr Michael Bassett, publicly supported the idea that immunisation should be by informed consent and promised to pass to his Department concerns that this was not happening.¹²⁵ The Department, however, whilst agreeing with this principle, interpreted the recommendation differently and commented,

In the United Kingdom the Ombudsman was involved and advised that the Department of Health and Social Security should have warned parents of the likely results of immunisation. In New Zealand we do not take this view. Whilst there is mention in departmental pamphlets of the fact that side effects can occur these are not itemised. The department's view is that there should be 'informed consent' at the parent/vaccinator level.¹²⁶

Doctors and practice nurses therefore bore the brunt of responsibility for informing parents about immunisation. Departmental literature was for support purposes only and was not meant to take the place of a discussion between doctor and parent. The debate over the pertussis vaccine and informed consent was picked up by only one newspaper (a Sunday paper) and seemed to have little impact on the New Zealand public, even though the point they were making regarding informed consent (and not just for immunisation) had important implications. Lack of exposure meant the majority of parents were unaware of the dispute. Levels of pertussis immunisation had averaged 71 per cent for the years 1977 to 1982.¹²⁷ A study undertaken in Northland in 1985, which included levels of infant immunisation, revealed uptake at around 73 per cent.¹²⁸ It appeared therefore, that this debate had a minimal effect upon

in which there were an increased number of cases. Some of these patients had received both doses of vaccine. Consequently a third dose was added to offer appropriate protection.

¹²⁴ SN, 29 July 1984.

¹²⁵ SN, 21 August 1984.

¹²⁶ Pertussis (Whooping Cough) Immunisation - proposed response to media, 1 August 1984, ABQU 632 W4452/916 144/27/3 79716, ANZ, Wellington.

¹²⁷ R. Campbell-Begg, 'Pertussis - New Zealand 1982/3', NZMJ, 27 June 1984, p.409. Pertussis was not notifiable and immunisation levels were assessed using claims for immunisation benefit. The effectiveness of immunisation was only at about 54 per cent.

¹²⁸ M. A. Soljak, S. Handford, 'Early results from the Northland immunisation register', NZMJ, 22 April 1987, p.245. It was found that parents who were sent a reminder about their child(ren)'s immunisations were more likely to comply (about 73 per cent) than those who were not (about 63 per cent).

parental confidence in the vaccine; numbers did not fall as would be expected if confidence were lost.

In contrast, the United States had a pertussis vaccine crisis in 1982 initially similar to the one experienced by Britain in the early 1970s. A television programme called 'DPT: Vaccine Roulette' was first broadcast in 1982 in Washington DC.¹²⁹ The programme featured children who had allegedly been damaged by pertussis vaccine and was widely publicised. Mark Geier and David Geier have pointed out that this 'television program raised parents' awareness so much that soon McDowell and Colantoni [the lawyers involved] had literally hundreds of lawsuits to file against the vaccine manufacturers'.¹³⁰ It also contributed to the formation of parental advocacy groups, in particular, Dissatisfied Parents Together formed by Barbara Loe Fisher.¹³¹ In collaboration with Dr Harris Coulter, Fisher also produced *A Shot in the Dark* in 1985, a book which considered the potentially harmful effects of childhood immunisations with particular reference to the pertussis vaccine.¹³² Legislation was also passed in 1987 providing compensation for those damaged by immunisation.¹³³

By the mid-1980s parents in the United States, as a result of media interest, became much more aware of potential vaccine side-effects. They now expected, and received from American health authorities, information on vaccines and their side-effects.¹³⁴ Notably, despite this 'intensification of public interest', Alan Hinman, Director of the Division of Immunization for the Centers for Disease Control in the United States, found that the controversy did 'not appear to have had a major impact on the overall utilization of the vaccine'.¹³⁵ This view was supported by Jeffrey Baker who has argued that, in contrast to British health professionals, the American medical

¹²⁹ In the United States the triple vaccine of diphtheria, pertussis and tetanus is known as DPT. In New Zealand it has been referred to as DTP. Where possible I have used the phrase 'triple vaccine' to avoid confusion.

¹³⁰ D. Geier, M. Geier, 'The True Story of Pertussis Vaccination: A Sordid Legacy?' *Journal of the History of Medicine and Allied Sciences*, 57, 2002, p.272. Dr Mark Geier is the President of the Genetic Centres of America having been a researcher at the National Institutes of Health and a professor at John Hopkins University. He has a special interest in vaccine safety, efficacy, contamination and policy. His son David Geier is President of MedCon, a medical legal consulting firm that helps vaccine injury claimants to try and obtain funding.

¹³¹ *ibid*, p.273.

¹³² H. L. Coulter, B. L. Fisher, *DPT: A shot in the dark*. 1985, San Diego.

¹³³ D. Geier, M. Geier, 'The True Story of Pertussis Vaccination', p.274.

¹³⁴ SN, 21 August 1984. Immunisation was compulsory in many states which may explain why there was little decrease in vaccine uptake.

¹³⁵ A. R. Hinman, 'The pertussis vaccine controversy', *Public Health Reports*, 99, 1984, p.258.

profession was 'strongly supportive' of the triple vaccine and continued to promote its use, thereby averting a public confidence crisis of the type that manifested itself in the United Kingdom.¹³⁶

The pertussis controversy in the early 1980s highlighted the differing attitudes of the New Zealand Health Department, in comparison to British and American health authorities, when it came to providing information on immunisation for parents. Additionally, many parents remained uninformed by the daily press, which, for the most part did not print controversial stories about vaccines; these remained in fringe papers, such as the *Truth* or in Sunday papers such as the *Sunday News*. Many parents were still unaware that there could be side-effects to immunisation. It was not until the late 1980s, with the controversy surrounding the Health Department's Meningococcal A programme, that parents became much more vaccine aware and the Department had to undergo a radical re-think in its approach to dealing with parents and parental information.

Meningococcal Meningitis A Campaign 1987

Following the recommendation of the Communicable Disease Control Advisory Committee (CDCAC) in December 1986, the Department of Health decided to implement an immunisation campaign in the health districts of Auckland, South Auckland and Takapuna against meningococcal meningitis group A.¹³⁷ Acute bacterial meningitis causes inflammation of the membranes around the brain. Symptoms include severe headaches, temperature, muscle rigidity and a rash. Death can result if not treated early. Auckland was currently in the throes of meningococcal meningitis A epidemic, with 125 cases and ten deaths from the disease occurring between July 1985 and July 1986. Children under five were the most frequently affected, with Maori and Pacific Island children 'vastly over-represented compared to their numbers in population'.¹³⁸ As there was no vaccine for meningococcal meningitis A registered in New Zealand it became an urgent priority to find one. The

¹³⁶ J. P. Baker, 'The pertussis controversy in Great Britain, 1974-1986', p.4007.

¹³⁷ The Communicable Disease Control Advisory Committee was the successor to the Epidemiology Advisory Committee. There are several groups of meningitis, A, B and C as well as haemophilus influenzae and pneumococcal meningitis which all induce similar symptoms and outcomes.

¹³⁸ D. Lennon, 'Interim Report on Meningococcal Meningitis, Auckland 1985-86', ABQU 632 W4415/918 67372 144/39 Meningococcal Vaccine 1984-88, ANZ, Wellington.

only company producing a vaccine suitable for children under two was Connaught Serum Laboratories, the Canadian vaccine manufacturing company which was also based in the United States. Menomune A was quickly registered in New Zealand and a campaign prepared to immunise approximately 150,000 children from three months of age to Form 2 (aged 12). The programme commenced on 26 May 1987. Booster doses were to be given to children over three months and under two, all other children received one dose only. The actual vaccine batches sent to New Zealand had been tested by the manufacturer but not by the Federal Drug Administration (FDA), nor were they tested when they reached New Zealand as there were no facilities for doing so.¹³⁹ Nevertheless, as the vaccine had been approved by the FDA for use in the United States and Canada as well as several other countries, the Health Department felt confident of its safety.¹⁴⁰

The pupils at Drury Primary School were immunised on 29 June 1987 near the end of the campaign. As the vaccine had been stored incorrectly (the refrigerator fuse had blown), more vaccine had to be sent for and pupils had to wait about an hour for their injections. Subsequently there were many reports of reactions that included nausea, vomiting and fainting. Some children also complained of headaches, a stiff neck and difficulty in limb movement. The South Auckland Medical Officer for Health, Dr Allan Cowan dismissed these symptoms as vaccine reactions, pointing out that it was a 'psychological thing. From what I can understand, the youngsters got all worked up'.¹⁴¹ Up to this point about 80 to 90 reactions had been reported to District Health Officers.¹⁴² Intense media coverage, much of it negative, and similar results at other schools soon forced the Department to review its decision of dismissing these reactions as a hysterical response.

Unfortunately for the Department, its handling of this crisis did nothing to allay parental anxieties. It had still been adhering to the practice of giving parents little information with regard to immunisation; its leaflet to accompany this campaign was,

¹³⁹ Meningococcal Meningitis Immunisation Campaign in Auckland 1987', ABQU 632 W4415/918 67372 144/39, ANZ, Wellington. The FDA had reviewed batch documentation and analytical results produced by Connaught.

¹⁴⁰ *ibid.*

¹⁴¹ NZH, 1 July 1987.

¹⁴² Meningococcal Meningitis Immunisation Campaign in Auckland 1987', ABQU 632 W4415/918 67372 144/39, ANZ, Wellington.

in the words of George Salmond, the Director-General of Health, ‘very short on information about side-effects of the immunisation’.¹⁴³ In addition, the Department had been aware of about 25 reactions to the vaccine at the start of the programme but had hushed them up ‘as it didn’t want to threaten the campaign’ and ‘unnecessarily alarm parents’.¹⁴⁴

One of the most notable differences in this New Zealand controversy compared with others was the role of the media. This time the media did not ‘toe the line’ as they had previously, nor was just one paper involved as with the SV40 and pertussis issues. The Auckland media in particular, with headlines such as ‘Effects of Vaccine Alarming’ and ‘Vaccination Cover-up’, were keen to expose the story.¹⁴⁵ There was also significant exposure on Radio Pacific as Graeme Colman, the *Truth* reporter who had uncovered the original SV40 story, was now the host of a Radio Pacific talkback show. Consequently, the immunisation campaign featured almost daily providing a focus for anti-immunisation campaigners, especially as Connaught Serum Laboratories had been the company at the centre of the SV40 vaccine row.¹⁴⁶ *Eye Witness News* also featured the controversy which ‘fueled further public discontent with the vaccine and media queries about its history in other countries’, even though Dr John McLeod, Medical Officer of Health for Auckland, was a guest on the programme.¹⁴⁷ The media gave a large amount of publicity to the story, often front page in the case of newspapers, and parents were sought for their side of the story.¹⁴⁸ Parents were seen as having a legitimate cause for complaint against the Department, for not listening to them with regard to their children’s reactions and for not giving them information on vaccine side-effects.

As a result of the public outcry many more parents came forward because their children had experienced reactions similar to those at Drury Primary School. This resulted in the Department backing down on its ‘hysteria’ stance. ‘Official Line on

¹⁴³F. MacDonald, ‘Meningitis: a campaign goes astray’, *NZ Listener*, 29 August 1987, p.18.

¹⁴⁴ *Sunday Star Times (SST)*, 5 July 1987.

¹⁴⁵ NZH, 24 July 1987 and SST, 5 July 1987. The *Auckland Star* also ran a story - see 29 July 1987.

¹⁴⁶ For example broadcasts on May 7, June 25, 14 and 15 July 1987. Anti-immunisation activities in the 1980s will be considered further in Chapter 9, pp.279-83.

¹⁴⁷ ‘Meningococcal Meningitis Immunisation Campaign in Auckland 1987’, ABQU 632 W4415/918 67372 144/39, ANZ, Wellington.

¹⁴⁸ NZH, 1 July 1987.

Vaccine Does U-Turn' was the headline in the *New Zealand Herald*.¹⁴⁹ The *New Zealand Listener* called the Department's actions, 'a lesson in how not to maintain credibility'.¹⁵⁰ A paediatric neurologist, Dr David Jamison, was appointed by the Department to examine the 546 children in whom a reaction had occurred. After reviewing Jamison's findings, the Medical Assessor of the Medicines Adverse Reactions Committee, Professor Ralph Edwards, advised that any child who had suffered any type of reaction to the first injection should not receive a booster 'given that some doubt must now be present'.¹⁵¹ He did conclude 'it was reasonable to continue to offer primary vaccination so long as there is a risk of a child developing meningitis'.¹⁵² He also recommended that the Department should not undertake any more campaigns without 'some prospective method of obtaining information concerning adverse effects'.¹⁵³ The Department had already delayed the booster programme until the results of the assessments were known and the programme did not commence until mid-September. In the primary campaign over 90 percent of eligible children had received a meningitis immunisation before the controversy erupted.¹⁵⁴ However, the booster campaign attracted only a 30 per cent take-up, attributed to the adverse publicity.¹⁵⁵

George Salmond, the Director-General of Health, explained to the *New Zealand Listener* that the epidemic 'sort of sneaked up on us in a way' and that he did not realise it was a significant problem in Auckland until early 1987.¹⁵⁶ This gave only a short time to prepare pre-campaign publicity. Nevertheless, the Department was not keen to share information with parents. Dr John McLeod argued during the campaign that the 'majority of people don't want all that information. Most believe we are out to help them, not destroy them'.¹⁵⁷ It was not until afterwards that both he and Salmond admitted parents should have been given more information with McLeod

¹⁴⁹ NZH, 12 July 1987.

¹⁵⁰ F. Macdonald, 'Meningitis', p.18.

¹⁵¹ 'Report on Clinical Events following Meningitis A vaccination in Auckland', ABQU 632 W4415/918 67372 144/39, ANZ, Wellington.

¹⁵² *ibid.*

¹⁵³ *ibid.*

¹⁵⁴ 'Meningococcal Meningitis Immunisation Campaign in Auckland 1987', ABQU 632 W4415/918 67372 144/39, ANZ, Wellington.

¹⁵⁵ 'Meningococcal Meningitis 'Mop Up' Campaign, Auckland Region, 1988', ABQU 632 W4415/918 67372 144/39, ANZ, Wellington.

¹⁵⁶ F. Macdonald, 'Meningitis', p.17.

¹⁵⁷ SS, 5 July 1987.

commenting that ‘informed consent has to be fully considered in respect of immunisation’.¹⁵⁸ However, during the campaign the Department had found time to organise a draw for prizes such as videos for those children who had been immunised. Details had been included in the promotional kit for parents. The Department had been acting on its tried and tested formula of telling parents as little as possible, and adopting its usual paternalistic attitude. The incentive scheme was an extension of this, by encouraging children (and their parents) to be immunised with the lure of a prize, but without providing full information for parents on vaccine effects. This was described as ‘bribery’ by some parents, particularly as the main recipient of the campaign was South Auckland, which had been hard hit by the meningitis epidemic and was one of the poorest economically.¹⁵⁹ The Health Department had believed, misguidedly, that it would be seen as a ‘fun component...to give children some enjoyment alongside receiving the vaccination’.¹⁶⁰

This controversy was a turning point for the Department in the way it perceived its relationship with parents in terms of immunisation. Although the campaign was quickly drawn up, the Department had just assumed that New Zealand parents would happily comply as they had in the 1960s and 1970s. That parents had become vocal and assertive took the Department by surprise.¹⁶¹ How the Health Department perceived its role was now not in line with views held by the public, parents in particular, and the Department had failed to realise this. Salmond later commented ‘The world is changing...people have become a lot more sophisticated about these things. I think we should be as willing, as we are able to be, to provide a lot more information than we did’.¹⁶²

This controversy demonstrated that New Zealand parents were now willing to make themselves heard and were prepared to challenge the Department if they were unhappy with some aspect of immunisation. There were also significant numbers of

¹⁵⁸ F. Macdonald, ‘Meningitis’, p.18 and J. McLeod, ‘Meningococcal meningitis immunisation campaign in Auckland’, *Doc Brief - Auckland Division of the New Zealand Medical Association*, 7, 1987, p.2.

¹⁵⁹ B. and L. Wakelin to M. Bassett, 7 May 1987, ABQU 632 W4415/918 67372 144/39, ANZ, Wellington.

¹⁶⁰ M. Bassett to B. and L. Wakelin, 26 May 1987, *ibid.* Also see F. MacDonald, ‘Meningitis’ p.17.

¹⁶¹ Reasons for this change will be discussed in Chapter 9.

¹⁶² F. MacDonald, ‘Meningitis’, p.18.

parents now willing to do this, in contrast to previous vaccine problems where only a few might object.¹⁶³ As a result of parent protest, the Health Department changed its policy in the meningitis immunisation campaign by halting the booster programme and calling in an expert to assess the children who had had a vaccine reaction. It also made the Department analyse the way it dealt with parents and the information it provided. The role of the media was crucial in heightening parental awareness of the situation and was certainly, for a time, concerned with parental rights. This was also a new development for the Department which was used to exercising a certain amount of control regarding content for articles on immunisation. In this controversy the Department received much negative publicity due to its actions.

There was also a considerable amount of exposure of the controversy in all media forms, more so than previously, and over a longer period of time. Hamilton's revelations in 1982-83 were barely reported in the press and a television programme was cancelled because of departmental influence. Pertussis vaccine issues in 1984 only made it to the Sunday papers. This time, because a mass campaign had been undertaken with large numbers of children involved in Auckland, the Department was not easily able to dismiss parental concerns regarding side-effects, particularly in light of the extensive media coverage.

The controversy over the meningitis immunisation campaign in 1987 can be compared to the pertussis vaccine controversy in Britain in 1974 and the United States in 1984. All these controversies demonstrated new levels of parental awareness in terms of their acceptance (or not) of immunisation and in their dealings with their country's health authorities. In both Britain and New Zealand, the Health Departments now had to listen to parents and reassure them. In Britain several studies were set up, a Vaccine Compensation Act was passed and the Ombudsman stated that more information on immunisation was to be provided. In New Zealand, despite the crisis being on a much smaller scale, booster shots were halted, an expert called in and the Department concluded that 'we could have done a lot better'.¹⁶⁴ The role played by the media was also comparable in heightening parental awareness, with prolonged exposure in both New Zealand and Britain keeping up pressure on authorities to act.

¹⁶³ Reasons for the development of parental awareness will be discussed more fully in the next chapter.

¹⁶⁴ F. MacDonald, 'Meningitis', p.18.

Additionally, it was in these crises that the general public, particularly parents, can be said to have become truly 'vaccine aware' and did not just passively accept immunisation. Parents in both Britain and New Zealand demonstrated they were prepared to take responsibility and act if they believed it was necessary, or refuse immunisation for their children if they were not confident of its safety.

Conclusion

The SV40 issue of 1974 and its reoccurrence in 1983 demonstrated the change in attitude of the government and Minister of Health in holding the Department to public account over their actions. A refusal to discuss the SV40 issue in 1974 by one Minister was counteracted by another in 1983 who established a committee to look into the matter as the public, he believed, had a right to know. The Health Department could not now, as previously, expect unquestioning public and ministerial support for all decisions taken and implemented.

William Hamilton was instrumental in bringing concerns over both SV40 and the rubella vaccine to the attention of the Department and the public. In both cases, by releasing information to the press he went beyond the accepted limits for a government employee and was eventually charged under section 58 of the State Services Act 1962. Nevertheless, because of his actions the Department thoroughly investigated his claims regarding the rubella vaccine and he gave evidence at the committee considering SV40. The serious concerns raised by Hamilton could not be ignored by the Department even if press coverage was minimised.

The 1974 pertussis controversy in Britain exposed the actions of the Department of Health and Social Security and laid it open to public scrutiny. It was not until a decade later that a comparable situation occurred in New Zealand with SV40 in 1983. Nevertheless, unlike Britain, public confidence was not lost in any of the vaccine controversies in 1980s New Zealand and this was partly due to the support of health professionals for the immunisation programme. The cooperation of the media for the most part in New Zealand, including both newspapers and television, in support of the Department, also assisted in retaining consistent immunisation levels.

The growth of parental awareness regarding immunisation during this period was one of the most important developments. As shown during the meningitis campaign parents now were prepared to make their voices heard if they had concerns about a vaccine and its side-effects. How this awareness developed in the 1970s and 1980s, from the growth of feminism in the 1970s, to the Cartwright Report and its implications for informed consent in the late 1980s, will form the basis of the next chapter.

CHAPTER 9: Empowerment and Expectation:
the changing nature of parental attitudes towards immunisation 1973-1990

The period from the early 1970s to the late 1980s saw significant changes in the attitude of health service consumers, who became more informed and more likely to question rather than accept practitioners' opinions. The spread of health knowledge led to the formation of groups such as the Immunisation Awareness Society (IAS) in 1988 who wanted parents to be knowledgeable about all aspects of immunisation before they made a decision. This chapter will consider the social, economic and political changes that occurred in New Zealand during this period and their impact on immunisation rates. Changes in the attitudes of parents and health professionals in light of the informed consent movement will be discussed. The growth of organised opposition to immunisation and other influencing factors will also be considered.

Health and Immunity

The 1970s and 1980s saw an increasing number of vaccines offered to parents and children yet the continuing decline in infectious disease rates meant that most parents had never encountered a case of diphtheria, polio or perhaps even pertussis. This raised objections not seen in the 1940s or 1950s as parents wondered why they should immunise children against diseases no longer considered to be threatening. Increasing awareness of the potential side-effects of some vaccines left the risks finely balanced in the minds of many parents. Health professionals countered that having your child immunised was for the public good as it raised levels of herd immunity to prevent the disease from reappearing. This argument was also used to promote the increasing number of boosters required for each disease and for the new vaccines added to the immunisation schedule.

In the late 1980s the vaccine for hepatitis B was added to the Health Department's schedule and parents resident in Auckland were also offered the meningococcal meningitis A vaccine during the previous year. The greater change though was in the number of boosters required and the age at which the programme commenced. Immunisations now began at birth with a shot for hepatitis B. This was followed by a second shot at six weeks and a third at 15 months (along with measles). Three shots of

triple vaccine (diphtheria, tetanus and pertussis) were now given at six weeks, three months and five months with a fourth booster of double vaccine (diphtheria and pertussis) given at 18 months. An extra booster was also added for polio at 18 months.¹ The decision to start immunising with the triple vaccine at six weeks had been taken in 1984 by the Communicable Disease Control Advisory Committee (CDCAC) in conjunction with the Health Department, to give babies more protection against pertussis. Hepatitis B had been added in 1988. For parents, this meant allowing their babies to be immunised at a much younger age and taking children for immunisation on two extra occasions, if the hepatitis B was not given in hospital at birth.

Social Change

The period 1970 to 1990 was politically, economically and socially a time of great change in New Zealand. The comprehensive system of state ownership and protectionism in place in 1970 had been overturned by 1990 with the sale of many state-owned enterprises under the Lange Government (1984-90). There were changes in the welfare system, and a necessary diversification of the economy after Britain, New Zealand's main export market at the time, joined the European Economic Community in 1973.²

One obvious change was in the expansion of tertiary education and this was reflected in the qualifications of those who held the office of Prime Minister. In 1972 the country's leader was Norman Kirk, who had not received any secondary education, and there were 35,000 students enrolled at the six universities and one agricultural college.³ In 1984, David Lange, who was a lawyer, became Prime Minister and the number of students attending tertiary institutions had risen to 170,000 by 1981 and to 210,000 by 1995.⁴ The increased awareness brought by higher levels of education enabled people to view society more critically and select services with more discernment than ever before. Historian James Belich has talked of a 'land

¹ See Appendix 1, pp.303-06 for immunisation schedules.

² For further discussion see J. Belich, *Paradise Reforged. A History of New Zealanders*, Auckland, 2001, Chapter 14, and M. King, *The Penguin History of New Zealand*, Auckland, 2003, pp.488-502.

³ K. Sinclair, *A History of New Zealand*, Auckland, 1990, p.301.

⁴ *ibid.*, p.422.

transformed' between 1960 and 2000.⁵ A society that was 'homogenous, conformist, masculist, egalitarian and monocultural, subject to heavy formal and informal regulation' in 1960, had become by 2000, 'one of the least regulated societies in the world, economically even more than socially'.⁶ People felt empowered by the knowledge they had gained and often were keen to learn more, especially about issues such as immunisation which affected themselves or their families. Much of this process was well underway by the 1980s with the growth of the women's health movement and the focus on informed consent.

The Impact of Women's Liberation

During the 1960s a 'second wave' of feminism emerged in the United States from the civil rights movement and anti-war demonstrations centred on the war in Vietnam.⁷ 'Women there, "fighting to free other peoples, found themselves relegated to making tea, typing and providing sexual comforts for men..."⁸ In western countries such as Britain, Australia and the United States, groups of women began a consciousness-raising process designed to challenge and re-invent a woman's role in society.

In the United States by 1969, 'radical activism was transforming the political landscape'.⁹ Beginning with the civil rights movement in 1955 this spawned, amongst others, Black Power, the American Indian Movement and women's liberation. In terms of health awareness, the formation of the Boston Women's Health Book Collective at the end of the 1960s and the publication of their book, *Our Bodies, Ourselves*, 'changed the landscape of women's health care in the United States and throughout the world'.¹⁰ Eight women, discovering their lack of knowledge regarding the workings of their own bodies, set out to rectify this. The research papers they produced on a range of women's health topics were first presented in workshops and then went on to form part of the 1970 publication *Women and their Bodies* later

⁵ *ibid.*, p.463.

⁶ *ibid.*

⁷ First wave feminism emerged 1885-1905 in New Zealand. It was during this period that New Zealand women were given the vote (1893). A more militant suffrage movement in Britain during the same period did not achieve the vote until 1918 for women over 30 and 1927 for women over 21.

⁸ M. King, *The Penguin History of New Zealand*, p.461.

⁹ S. Morgen, *Into Our Own Hands. The Women's Health Movement in the United States, 1969-1990*, New Brunswick, 2002, p.3. Sandra Morgen is the director of the Centre for the Study of Women in Society at the University of Oregon.

¹⁰ S. Morgen, *Into Our Own Hands*, p.5.

becoming *Our Bodies, Ourselves*.¹¹ The success of this book, with 350,000 copies printed by 1973 and millions since, demonstrated that many women both in the United States and elsewhere were keen to learn about and make informed decisions about their own health.¹²

The first feminist groups in New Zealand formed in 1970 with the issue of abortion and a woman's right to choose, quickly becoming the main focus by 1972.¹³ Early collectives, such as the one set up in Dunedin in 1971, featured housewives, students and left-wing women amongst their members.¹⁴ Sandra Coney, a leading feminist and writer, argued that the international concepts of women's liberation fell on fertile ground in New Zealand because of women's "second class" status and the need to strengthen their own identity.¹⁵ One item in the first issue of *Woman*, the Dunedin Collective's newsletter, asked women, 'Do you enjoy being indulged, placated or plainly used or do you value your worth as a human being?'¹⁶ The need to improve their position in society in all respects was therefore of great importance to the early 1970s feminists.

The influence of such groups as the Boston Women's Health Book Collective, and coupled with the growing desire to make informed health choices about their own bodies, led to the formation of the Women's Health Movement in New Zealand in 1972.¹⁷ Feminist and writer, Christine Dann, pointed out that the Women's Health Movement operated on two fronts, the first aiming at 'self-help' and the second at lobbying for change. The goal was to take power and control from a male-dominated

¹¹ The title was changed in 1973 when Simon and Schuster were contracted to publish the book. The previous publisher was New England Free Press. Boston Women's Health Book Collective, *Our Bodies, Ourselves: A Book by and for Women*, New York, 1973.

¹² S. Morgen, *Into Our Hands*, p.5.

¹³ For further discussion on the abortion issue see C. M. Parkes, 'The Battle for Abortion Rights in the 1970s', in S. Coney, ed. *Standing in the Sunshine, A History of New Zealand Women since they won the vote*, Auckland, 1993, pp.140-41. C. Dann, *Up Under. Women and Liberation in New Zealand 1970-1985*, Wellington, 1985, p.16.

¹⁴ See D. Boothe, 'Dunedin Collective for Woman Phenomenon of the Seventies', *Broadsheet*, 108, April 1983, pp.32-34.

¹⁵ S. Coney, 'The Origins and Early Years of the Women's Liberation Movement' in S. Coney, ed. *Standing in the Sunshine. A History of New Zealand Women since they won the vote*, Auckland, 1993, p.142.

¹⁶ D. Boothe, 'Dunedin Collective for Woman Phenomenon of the Seventies', *Broadsheet*, 108, April 1983, p.32.

¹⁷ C. Dann, *Up Under*, p.81.

medical system and give it back to women so that they could ‘control and own their own bodies and thus begin to be free to own and control their own lives’.¹⁸ Armed with increasing knowledge regarding how their bodies worked, women felt more confident in seeking alternative forms of treatment such as homeopathy, and in questioning their doctors.

The Women’s Health Movement wanted women to be fully informed before making any health decision and alternatives to the patriarchal and oppressive doctor/patient relationship needed to be found.¹⁹ These ideas began to slowly permeate women’s groups and organisations during the 1980s. Knowledge about their own health and bodies now led women to desire greater control over their children’s wellbeing through more information concerning the contents of medicines, vaccines and the immunisation schedule, rather than just accepting the doctor’s or Plunket nurse’s advice. Along with other child-related issues such as nutrition, immunisation became a subject for discussion in the later part of the 1980s.

Feminists questioned immunisation, because ‘feminists questioned everything and simply didn’t accept the line “it is good for you”’.²⁰ Athina Tsoulis, who was on the *Broadsheet* collective for nine years, commented, that for feminists, ‘wholesale immunisation was viewed suspiciously because the long-term effects on the population were not discussed’ by the medical establishment.²¹ For feminists who had grown up in the 1960s, immunisation issues became more relevant in the late 1970s as they started to have children of their own and began to apply the concepts of health, knowledge and control of the body to their own families. Athina Tsoulis commented that many of her contemporaries read whatever was available on the subject and made up their own minds whether to immunise. Sandra Coney, a member of the *Broadsheet* collective, had not been immunised herself as a child, and did not have her second child immunised partly due to the influence of her parents’ beliefs

¹⁸ S. Calvert, ‘Knowledge is Power. Reasons for the Women’s Health Movement’, *Broadsheet*, 80, June 1980, pp.26-27.

¹⁹ *ibid.*, p.29.

²⁰ Email correspondence with A. Tsoulis, 27 October 2001 - *Broadsheet* collective member and parent in 1980s.

²¹ *ibid.* *Broadsheet* was a feminist publication started in 1972. See C. Daley, ‘Broadsheet Collective 1972-’ in S. Coney, ed., *Standing in the Sunshine. A History of New Zealand Women since they won the vote*, Auckland, 1993, pp.100-02.

but also because ‘I could not see that injecting foreign substances into my healthy child was desirable’.²² She also commented that during her childhood she had had such illnesses as measles, mumps and pertussis and had remained ‘a very healthy child. I could not see how my health had suffered from these common illnesses’.²³ Athina Tsoulis was very selective about the immunisations she allowed her children to have, only immunising against what she considered to be the ‘killer’ diseases.²⁴ By the 1980s immunisation was widely questioned by feminists, who saw it as another procedure imposed by the medical establishment to be accepted without comment by mothers.

Individual rights vs. public good

With the decline in infectious diseases the Health Department was anxious to keep immunisation figures at sufficient levels to ensure ‘herd immunity’. This is where the number of immune individuals within a community was sufficient to prevent a particular disease from spreading. The Health Department and health professionals put more emphasis on having children immunised for the public good, as a social responsibility. Dr Tom Marshall, an Auckland general practitioner (GP) for over 30 years, commented that if parents questioned him about immunisation he would always appeal to their sense of community responsibility by pointing out the effect of herd immunity.²⁵ Dr John Hiddlestone, Director-General of the Health Department from 1972 to 1983, acknowledged that maintaining immunisation at a level which would prevent the return of disease was an important priority for the Department.²⁶

Nevertheless, some parents were not convinced by this argument. One mother, who had three children in the 1980s, commented that that ‘Health Department info seemed to be very biased - they were always looking at the overall community and not MY individual child that I was responsible for - I didn’t trust them to make a decision based on our circumstances for our child’.²⁷ Some parents felt that the Health

²² Email correspondence with S. Coney, 17 February 2002 - feminist writer and parent in 1960s and 1970.

²³ *ibid.*

²⁴ Interview with A. Tsoulis, 31 October 2001.

²⁵ Interview with Dr T. Marshall, 1 May 2002. He was located in the suburb of Mt. Eden.

²⁶ Interview with Dr H. J. H. Hiddlestone, 23 October 2002, retired Director-General of Health.

²⁷ Email correspondence from T. Barleet, 13 April 2002, parent in the 1980s.

Department asking them to risk vaccine side-effects for the public good was unacceptable when levels of disease were low. Others accepted the Health Department's argument, seeing it as their social responsibility to have their children immunised and thus protect themselves and others.²⁸

The influence of alternative forms of medicine

Public good and a social conscience were some of the reasons why parents chose to immunise their children though others refused, believing that the risk was too high. This argument became much more prominent in the 1970s and 1980s as some parents (and indeed some medical practitioners) began to question whether the risk from side-effects outweighed the benefits from the vaccine. The decline in infectious diseases and the lack of exposure to their effects meant the risks of immunisation took on a much greater significance. The 1980s in particular began to see the growth in popularity of alternative forms of medicine such as homeopathy, which dated back to the mid-nineteenth century in New Zealand.²⁹ Rejection of the medical establishment and its use of antibiotic drugs and chemicals to stimulate the immune system led some parents to advocate homeopathy and consult alternative practitioners. Good diet and a 'healthy lifestyle' were the preventative against infections for those parents who did not wish to immunise their children, and who preferred to use natural remedies rather than the allopathic ones. One mother of two, who had her first child partially immunised and her second not at all, found a doctor who was 'alternative sympathetic' and never questioned her immunisation decision as he knew she had made an informed choice.³⁰

Other mothers, who were selective about immunisation or did not immunise, tended to seek out GPs who were sympathetic or at least tolerant of their views. One mother

²⁸ Interview with C. Geddes, 21 March 2002, parent of two children born 1975 and 1982.

²⁹ Homeopathy had been founded by Samuel Hahnemann, a German physician and scholar (1755-1843) and operated on the premise that a 'substance that will produce symptoms when tested by a healthy person will cure a sick person displaying similar symptoms'. By the 1800s homeopathy had spread across Europe and into America. In New Zealand the first recorded homeopath was William Purdie M.D. who came to Dunedin in 1849. Homeopathy was placed on an official footing with the establishment of the New Zealand Homoeopathic Society in 1951 by Alfred. L. Grove.

<http://www.homoeopathica.org.nz/history.html>, <http://www.backtohealth.co.nz/homeopathy/>
http://farmsupport.co.nz/about_homoeopathy.htm

³⁰ Interview with C. L'Estrange, 24 April 2002, parent in the 1980s.

commented that she attended Green Bay Medical Centre in Auckland where at least one of the doctors was ‘quite well known for the alternative solution...and would look at other ways of getting over whatever the problems were’.³¹

The growth in alternative forms of medicine also sparked the launch of magazines such as *Healthy Options*, which was first published in 1987 and focused on a healthy, natural lifestyle. It featured articles questioning the safety of immunisation, advocating that more funds should be allocated ‘for prevention, health hygiene and improving nutrition for natural immunity’ and that more ‘research on Vitamin C and the success of a Vitamin B complex will go further to prevent unwellness’.³² Other ‘healthy lifestyle’ publications also featured articles opposing immunisation. *Soil and Health*, the journal of the New Zealand Organic Compost Society, included a two-part feature on immunisation emphasising immunisation’s inherent dangers and pointing out the influence of improved hygiene, sanitation and nutrition on the overall decline in disease rates, although many of these articles contained inaccuracies and were written from a particular viewpoint.³³

These magazines were typical of an increasing range of publications that began to be available to parents from the mid-1980s onwards. In addition to the health magazines, parenting magazines also became available and featured articles on immunisation as part of the wide-ranging subject of childcare. One such magazine, *Happy Parenting*, which was available in the Hutt and Wellington regions, published an article on immunisation which was very biased. It quoted individuals and organisations out of context raising fears about vaccine contents and their effectiveness, which brought it to the attention of the Health Department.³⁴ A much more responsible approach was adopted by *Little Treasures* magazine which was careful to feature both sides of the

³¹ Interview with G. Fortune, 1 March 2002, parent in the 1970s.

³² K. Drake, ‘Immunization. Get the Facts before You Decide’, *Healthy Options*, June/July 1988, p.4. See also October/November 1988, p.11.

³³ M. Williams, ‘Immunization. Does the medical profession really know the score or are they just dealing out more of the old mumbo jumbo? Part 1’, *Soil and Health: Journal of the New Zealand Organic Compost Society*, September 1990, pp.34-36. Also M. Williams, ‘Immunization. Does the medical profession really know the score or are they just dealing out more of the old mumbo jumbo? Part 2’, *Soil and Health: Journal of the New Zealand Organic Compost Society*, Summer 1990/91, pp.39-41.

³⁴ J. Hodge, ‘Immunisation: Worldwide Facts’, *Happy Parenting*, May/June 1990, pp.8-11. Several health professionals had written to the magazine concerning the article. A. Patel to C. Hailswood, 19 September 1990, ABQU W4452/911 144 68534, Sera and Vaccines 1980-91.

argument.³⁵ This was apparent in the debate over immunisation and cot death in the late 1980s, when letters from Shirley Tonkin, National Co-ordinator of the Cot Death Division Child Health Research Foundation, and Hilary Butler, an anti-immunisation campaigner, were both featured.³⁶ It was also evident that other publications, such as *More*, the *New Zealand Woman's Weekly* and the *New Zealand Herald* sought to present both sides of the argument, thus allowing parents to make up their own minds although some of the articles still reflected the authors' own viewpoint.³⁷ From the mid-1980s parents found there was now a greater variety of publications taking an interest in the subject of immunisation. Consequently these articles provided extra information outside of that issued by the Health Department to assist them in their decision as to whether to immunise their children.

Groups and Organisations

The growing increase in health awareness was reflected in the development and stance of various health consumer groups and organisations. Magazines published by organisations such as Parents Centre dealt with a wide range of child care issues including immunisation. Parents Centre had been established in 1952 to promote practices such as natural childbirth with rooming-in, fathers to be present at the birth and breastfeeding on demand.³⁸ Whilst these ideas seemed radical in the 1950s and 60s, by the 1980s they were commonplace. The *Parents Centre Bulletin*, which commenced publication in 1954, did not feature any articles on immunisation until 1980.³⁹ From the mid-1980s, immunisation became a more visible issue in society and Parents Centre felt it warranted more attention.⁴⁰ Their philosophy was to give a balanced view by looking at both sides and parents were encouraged to do the same, before making up their minds whether or not to immunise.⁴¹ Articles were to

³⁵ *Little Treasures* was started in 1987.

³⁶ 'Cot Death and Immunisation', *Little Treasures*, April/May 1989, p.40.

³⁷ 'What you should know about immunisation', *New Zealand Womans Weekly*, 14 September, 1987, pp.27-32. S. Bennett, 'Giving it her best shot', *More*, October 1987, pp.116-27, K. Warner, 'Is vaccination more risky than the disease?', *New Zealand Herald*, 1 February 1986.

³⁸ M. Dobbie, *The Trouble with Women: The story of Parents Centre New Zealand*, Whatamongo Bay, 1990, p.19.

³⁹ The original title was *Bulletin of the Parents' Centre*, then *Parents' Centre Bulletin* and *Parents Centre Bulletin*. See Editorial, *Parents Centre Bulletin*, 80, 1980, p.6.

⁴⁰ See C. Brown, 'Keeping up with Immunisation', *Parents Centre Bulletin* (PCB), 103, 1985, pp.16-17. Also S. Longdill, 'Hepatitis B. The jab that does the job,' PCB, 113, 1988, p.12.

⁴¹ Telephone conversation with then Parents Centre President, Diane Edwards, 5 April 2002.

encourage discussion by parents, although of the four written on immunisation which appeared in the magazine during the 1980s only one was by a journalist. The others were penned by medical professionals, the editor of *Parents Centre Bulletin*, or were quotes from the Health Department.⁴² All portrayed immunisation in a favourable light, often encouraging it, leaving, in all likelihood, little to contemplate.

Nevertheless, some parents by the mid-1980s were certainly talking about immunisation. Community groups such as Playcentre or more informal playgroups were forums for parents to meet together and discuss topical issues such as immunisation.⁴³ One mother reported attending Playcentre in Mt Eden in Auckland where members were 'educated' women such as lawyers. These women questioned the 'patriarchal' medical system and were interested in the use of natural and alternative medicine.⁴⁴ Local Playcentre mothers in Whitianga brought their children for a rubella injection after seeing an item about it on television and then discussing it within the group.⁴⁵ Awareness was raised for all members by discussion of topics such as immunisation within these community associations.

Homebirth Association

Other associations also became interested in the immunisation debate in the 1980s. The Homebirth Association was formed in Auckland in 1978 to promote homebirths as an alternative to birthing in 'large, centralised, high-tech hospitals' after many rural and cottage hospitals were closed as part of a regionalisation policy.⁴⁶ Womens' dissatisfaction with the way births in hospitals had been taken over by the medical profession and the lack of parental control over the birthing process, led to a growing

⁴² 'Editorial', PCB, 80, 1980, p.6. Rubella on the Increase', PCB, 96, 1983, p.19. C. Brown, 'Keeping up with Immunisation', PCB, 103, 1985, pp.16-17. Colleen Brown was a Senior Plunket Nurse in Dunedin.

S. Longdill, 'Hepatitis B. The jab that does the job', PCB, 113, 1988, p.12. Susie Longdill was a Hamilton journalist.

⁴³ Playcentre evolved informally in the 1930s and 1940s as a support to families which became more structured with the formation of the National Federation in 1948. Original philosophies focused on the importance of child-centred play and parents as child-educators. Most towns boasted a local playcentre and members could attend up to three sessions a week with their children.

See <http://www.playcentre.co.nz/history/>

⁴⁴ Interview with A. Tsoulis, 31 October 2001.

⁴⁵ MacD. Latham to MOH, Hamilton, 31 December 1973, YCBE 1990/238c Measles and Rubella Programme 1977-80, ANZ, Auckland.

⁴⁶ J. Donley, B. Hinton, 'New Zealand Home Birth Association', in A. Else, ed., *Women Together. A history of women's organisations in New Zealand*, Wellington, 1993, p.278.

popularity and support for independent midwives who were prepared to assist women in birthing at home. An interest in alternative forms of medicine and concerns at the effects of allopathic treatments also meant immunisation was a topic for discussion.

One of the founding midwives of the Homebirth Association, Joan Donley, who was a domiciliary midwife for 27 years from 1974, was opposed to immunisation, seeing it as a 'lucrative enterprise promoted by the pharmaceutical empires'.⁴⁷ She certainly had an influence with the mothers she attended. One mother whose parents were both GPs and had been brought up in a 'fairly logical, sceptical...atmosphere' was convinced enough by the literature provided by Donley not to immunise any of her three children against pertussis, although they received all the other recommended immunisations.⁴⁸ She commented 'our midwife was so vehement about the potential side-effects of the whooping-cough vaccine that I never felt completely comfortable...about that vaccine'.⁴⁹ This decision was taken even though she had witnessed a severe pertussis epidemic as a child during which her brother contracted the disease and had to be placed on oxygen.⁵⁰

Immunisation was an issue of importance in the Homebirth Association and, therefore, articles about it were featured in their newsletters.⁵¹ Hilary Butler, a member of the Homebirth Association, and a mother of two children who became an ardent campaigner against immunisation, had written one of these earlier articles. She was invited to speak at the 1989 Homebirth national conference in New Plymouth and conducted a workshop called 'Independent research on Immunisation'.⁵² She repeated the workshop at the following year's conference, entitling it 'Immunisation Awareness'.⁵³ One member who had heard her speak at the Whitianga conference in 1987-88 described her as 'a very vocal anti-immunisation woman...almost a hysteric,' although it was likely she persuaded some people to reassess their views on immunisation.⁵⁴

⁴⁷ Email correspondence with J. Donley, 11 March 2001, midwife.

⁴⁸ Interview with D. Jowitt, 28 March 2002, parent in 1970s and 1980s.

⁴⁹ *ibid.*

⁵⁰ *ibid.*

⁵¹ See H. Butler, 'Cutting the Cord', *Homebirth Association National Newsletter*, 27, 1985. Also March 1987 and September 1987.

⁵² Homebirth Association - Joan Donley Papers, MS 95/20, Auckland Museum Library.

⁵³ *ibid.*

⁵⁴ Interview with D. Jowitt, 28 March 2002.

The Immunisation Awareness Society

The arrival of Hilary Butler on the scene was significant in terms of the history of immunisation. She commented in a magazine article that it was the circumstances surrounding the birth of her first son that had first prompted her to look into the immunisation question.⁵⁵ What she found led her to become a researcher into immunisation and its effects, writing under the name IRONI (Independent Research on Non Immunisation).⁵⁶ Butler believed that the Health Department did not give out balanced information to parents regarding immunisation and she wished to rectify the situation.⁵⁷ She aimed to produce information that was ‘credible, can be verified at source, is as accurate as possible’.⁵⁸ Butler took this one stage further in 1988. In conjunction with another Homebirth Association member, Judi Strid, she set up the Immunisation Awareness Society (IAS) to ensure ‘parents became informed about all sides of the immunisation issue’.⁵⁹ This was a milestone in immunisation history; the IAS was the first anti-immunisation society in New Zealand since the British Union for the Abolition of Vivisection (BUAV) in the 1940s and early 1950s.

The origins of the IAS were, however, very different from the earlier anti-immunisation society. Whereas the BUAV approached immunisation from a ‘cruelty to animals’ standpoint this was not the motivation of the IAS. Its foundation was based on a parent’s right to information and concern about vaccine contents and side-effects, together with a growing empowerment of women who wished to be in control of their own health and that of their children. The IAS was predominantly female in contrast to the earlier BUAV. Hilary Butler acknowledged the influence of the Homebirth Association and the alternative medicine/healthy lifestyle movement in leading her to establish the IAS, rather than any influence from the Women’s Health Movement.⁶⁰

⁵⁵ S. Bennett, ‘Giving it her best shot’, *More*, October 1987, pp.116-17.

⁵⁶ *ibid.*, p.117.

⁵⁷ *ibid.*

⁵⁸ *ibid.*

⁵⁹ *The Immunisation Awareness Society Inc.*, 1, August 1988, p.1.

⁶⁰ Interview with H. Butler, 12 December 2001, former President and founder of IAS.

The IAS membership was relatively small in the late 1980s and early 1990s, with about 300 members.⁶¹ One member who joined as the IAS secretary around 1989, commented that the committee usually numbered about six people who were ‘doing all the work’ writing and publishing the bi-monthly newsletter; and then there was a number of people in support who would find information and do other things as needed.⁶² As well as sending the newsletter to members, copies were distributed to health retailers who were usually sympathetic to the views of the IAS. Additionally, the organisation had a postbox to which people would write with queries about immunisation and the group found information sheets were a useful way to distribute knowledge on various topics, particularly when the same question came up repeatedly. They also tried to put people in the same areas in contact with each other setting up support groups, rather than organising national meetings ‘as there was hundreds of them and only six of us and you just couldn’t do it’.⁶³

The group’s membership remained fairly constant in its early years; however they did receive many enquiries from non-member parents about aspects of immunisation. People wrote or called with problems ranging from advice on whether to have their baby immunised, to those where immunisation was proven to have been responsible for their problems. There was also a ‘good smattering of people who were wondering whether vaccination had something to do with what was wrong with their child’.⁶⁴ Due to the number of these cases, Hilary Butler started to focus purely on research into medical misadventure relating to immunisation.⁶⁵

The IAS could be accessed by telephone or postbox and parents were assured of a response. Notwithstanding this, as an Auckland-based group with only a limited number of members, many parents were unaware of its existence, even those parents who had decided not to immunise their children. One mother who lived in Auckland and had decided against immunising her three children had never heard of the IAS although she had read widely on the subject before making a decision.⁶⁶ Another anti-immuniser with an interest in homeopathy went to a seminar given by Hilary Butler

⁶¹ Interview with D. McKerras, 21 March 2002, former Secretary of IAS.

⁶² *ibid.*

⁶³ *ibid.*

⁶⁴ *ibid.*

⁶⁵ *ibid.*

⁶⁶ Email correspondence from T. Barleat, 13 April 2002.

which persuaded her to seek out more information on immunisation, with the consequence that she decided not to immunise her second child.⁶⁷ Nevertheless, parents who immunised their children were even more unlikely to have heard about the IAS unless they read one of the occasional magazine articles by Hilary Butler or heard about it through their friends. The exposure of the IAS, therefore, to New Zealand parents was extremely small and consequently its impact on raising parental awareness of immunisation issues was negligible.

Despite this the IAS aimed to be a check to the Health Department. Hilary Butler's own view was that the Health Department would push immunisation 'until the cows come home' and she hoped that the information provided by the IAS would counteract the 'almost two facedness about how the Health Department uses information'.⁶⁸ Butler's intentions for the IAS had been stated in the first issue of the IAS newsletter,

It has become increasingly obvious that without some sort of "watch-dog" forum, it is unlikely that the Health Department will change its spots and even under pressure from such a forum, may simply change to stripes instead.⁶⁹

The IAS, in its own view, certainly became the watchdog it desired to be and believed it had become an organisation that the Department had to take notice of and counter if necessary. However, the Health Department did not hold the IAS or its leader, Hilary Butler, in very high regard. In response to the publication of a letter in the *NZMJ* written by Butler on side-effects of hepatitis B immunisation, the Health Department's Nigel Ashworth, who was the Chairman of the Hepatitis B working Group, commented 'Whom is one to believe, the Department of Health and the World Health Organisation on one hand, or a housewife from Tuakau without benefit of scientific or medical training on the other?' The Department's experts were unable to deal with Hilary Butler who, like Alexander Milne before her, was not a professional medical person, even though, according to her supporters, 'when she researches, she knows more, probably than anyone in the world about immunisation and that's just

⁶⁷ Interview with C. L'Estrange, 24 April 2002.

⁶⁸ Interview with H. Butler, 12 December 2001.

⁶⁹ *Immunisation Awareness Society Inc*, 1 August 1988, p.1.

not ok as she's not a professional and people can't cope with that'.⁷⁰ The perception that Department had of IAS members were as 'a bunch of freaks, totally neurotic', and would certainly not have viewed the function of the IAS as that of a 'watch-dog' but as a purveyor of anti-immunisation information.⁷¹

Ten years later, in 1997, the Immunisation Advisory Centre (IMAC) was set up by the University of Auckland in conjunction with the Health Department to 'provide New Zealanders with a local source of independent, factual information, and vaccine-preventable disease'.⁷² Dr Nikki Turner, a regional immunisation co-ordinator, had spearheaded this project, identifying that a much more synchronised approach was needed to communicate the value of immunisation to different groups in society.⁷³ Initially funding was directed at communication but expanded quickly to encompass both education and training. It also developed from a regional into a national contract. By the twenty-first century IMAC had become a 'mixture of coordination, education, research and communication' with the 'underlying base of growing healthy kids'.⁷⁴ Nevertheless, the development of IMAC was not connected to the existence of the IAS; the centre's only interest in 'the anti-immunisation lobby is to correct the misinformation and reduce the dissonance they create amongst New Zealand parents and the media'.⁷⁵

The impact of the IAS was certainly not immediate. Regarded as a nuisance by the Department and later IMAC, it probably made some contribution towards the Department reviewing the type and amount of information it was providing to parents, a process that began in the late 1980s, continuing with greater significance into the 1990s. In terms of immunisation history, the establishment of the IAS was a turning point as its existence demonstrated that immunisation was important enough an issue to warrant the formation of such an organisation by the members of the public.

⁷⁰ *ibid.*

⁷¹ Interview with D. McKerras, 21 March 2002.

⁷² <http://www.immune.org.nz/>

⁷³ Email correspondence with Dr Nikki Turner, Director of IMAC, 12 November 2006. She identified groups who have the most influence over immunisation coverage, firstly, health professionals, then parents and lastly the media.

⁷⁴ *ibid.*, this formed part of the Well Child Services offered by Plunket and GPs.

⁷⁵ Email correspondence from Dr Nikki Turner, 12 November 2006.

Nevertheless the IAS can only be regarded as a 'fringe' group, as with few active members it was unable to exert any real pressure to induce change.

Maori and Pacific Island Parents

Families of low socio-economic status or whose first language was not English were perceived by the Health Department to be those least likely to complete the routine childhood immunisations.⁷⁶ Special attention was given to areas such as South Auckland, especially during immunisation campaigns such as the one for meningococcal meningitis A in 1987.⁷⁷

Health initiatives were increasingly targeted at Maori and extra resources made available, although it was usually areas, not racial groups, that were distinguished. In South Auckland, Plunket was given a contract by the government in 1977 to give care to all children under five years old in an effort to improve standards of health. This included immunisation, and Plunket nurses would either take those children that needed it to their appointments or would administer the necessary shots themselves.⁷⁸

One Plunket nurse, who worked in the South Auckland areas of Otara and Mangere for seven years, commented that it was much more difficult to get children immunised there than in the more affluent, middle-class suburb of Pakuranga where she had worked previously. 'It wasn't that they didn't agree with it, it wasn't really a health issue, but they couldn't be bothered or perhaps we didn't put it over properly but they didn't understand how important it was. We did our best, we talked to them, and a lot would get the injections but quite a lot wouldn't'.⁷⁹ Other issues, such as owing the doctor money for previous visits, (even though immunisation was free), having transport to get to the doctors or clinic, and the lack of a household telephone, all made immunisation much more problematic. A study of attitudes to immunisation in

⁷⁶ See L. Calder, 'What is the best way to inform high-risk groups about Hepatitis B immunisation? A survey by Polynesian community health workers', unpublished paper, 1988. The survey, of predominantly Polynesian people from lower socio-economic suburbs, found that at least 56 percent had not taken their preschoolers for the immunisation.

⁷⁷ See Chapter 8, pp.257-63.

⁷⁸ For further discussion on the South Auckland contract see, *L. Bryder, A Voice for Mothers. The Plunket Society and Infant Welfare 1907-2000*, Auckland, 2003, pp.236-40.

⁷⁹ Interview with J. Young, 9 May 2002, Plunket nurse.

1990 revealed that about 12 percent of parents thought that there was some cost involved, a view that was particularly prevalent among some first-time parents, those in the lower socio-economic scale and Pacific Islanders.⁸⁰

A Public Health nurse who also worked in Mangere around the same time, but dealt with the over-fives, found it was easier to immunise the older children at the school, rather than relying on mothers to bring them in. She commented that during the meningococcal immunisation campaign of the 1980s, she was able to achieve a 99 percent immunisation rate for her two schools, an achievement of which she was very proud.⁸¹ She attributed this to the high levels of motivation within the community because ‘children were dying and people knew people who had lost them’.⁸² The 1980 entrant catch-up immunisation scheme, administered by the Public Health nurses, only usually ‘caught up’ ten percent of children as ‘parents would commonly tick all the way up to five years and we’d just do the polio’.⁸³ There was no time for Public Health nurses to check whether the parents’ recall was accurate and they were often incorrect.⁸⁴ The problem was exacerbated by the lack of a national immunisation register which was not operational in New Zealand until 2005.⁸⁵

Studies undertaken by community workers in areas such as Mangere and Otara revealed that few parents were truly ‘apathetic’ about immunisation, they often either did not understand about the immunisations or there were other limiting factors which prevented them from going to the doctors or the clinic.⁸⁶ It was also found that ‘people were very often still confused about what was being prevented, but simply

⁸⁰ National Research Bureau, ‘Attitudes to Immunisation’, prepared for the Health Department, January 1990, p.9, ABQU 632 W4452/918 144/56, ANZ, Wellington.

⁸¹ Interview with C. Doole, 16 May 2002, Public Health nurse. One school had 100 percent, the other 99 percent.

⁸² *ibid.*

⁸³ *ibid.*

⁸⁴ *ibid.*

⁸⁵ <http://www.moh.govt.nz/moh.nsf/wpg-index/About-NIR+FAQs#11>. The National Immunisation Register roll-out commenced in the Greater Auckland region in April 2005 and was implemented nationwide by the end of 2005.

⁸⁶ For example P. Oliver, H. Scott, ‘Awareness and understanding of meningococcal meningitis and other immunisation programmes, and attitudes to health care and other services’, Research Report, November 1988, ABQU 632 W4415/918 67372 144/39 Meningococcal Vaccine 1984-88, ANZ, Wellington. Also see L. Calder, ‘What is the best way to inform high-risk groups about Hepatitis B immunisation?: A survey by Polynesian community health workers’, unpublished paper, 1988.

knew they had to have their kids vaccinated'.⁸⁷ This confusion was echoed by a Pacific Island community health worker who commented that during the meningococcal meningitis and hepatitis B campaigns 'a lot of other Pacific Island women who spoke very limited English, don't join the school to get information, are not in the health system, there was a lot of confusion and I'm sure all of them never immunised, don't know what's hepatitis'.⁸⁸ She also pointed out that there were not many interpreters available and it was hard to find help.⁸⁹ This view was supported by the findings of independent researchers, Pam Oliver and Heather Scott, who commented in their report for the Health Department that there was a direct correlation between not using English in the home and not having children immunised, especially for Samoan, Tongan and Niuean speakers.⁹⁰ The researchers discovered that personal contacts were the preferred way of receiving information for the majority of Island peoples.⁹¹ Additionally, some parents were 'very upset' when they realised that their children had not been immunised for meningitis, seeing it 'as a failure on their part to provide adequate care'.⁹² However, 'they wanted not just to know what was necessary, but why, and they wanted full explanations, not just directives'.⁹³

A similar study undertaken by Polynesian community health workers for the hepatitis B immunisation also found that lack of information and understanding was a major reason why some children in low socio-economic areas were not immunised, whilst difficulty of access was a contributory factor.⁹⁴ Personal visits by community health workers seemed to reassure people and give them the information they needed to make the decision to immunise. When the records of one immunisation venue for hepatitis B were checked it was found that the turnout of families visited the previous

⁸⁷ P. Oliver, H. Scott, 'Awareness and understanding of meningococcal meningitis and other immunisation programmes, and attitudes to health care and other services', Research Report, November 1988, p.11, ABQU 632 W4415/918 67372 144/39, ANZ, Wellington.

⁸⁸ Interview with T. S. Robertson, 17 July 2002, community health worker. This confusion regarding immunisations was not just limited to Pacific Islanders or non-English speakers, for further discussion see p.288.

⁸⁹ *ibid.*

⁹⁰ P. Oliver, H. Scott, 'Awareness and understanding of meningococcal meningitis and other immunisation programmes, and attitudes to health care and other services', Research Report, November 1988, p.13. ABQU 632 W4415/918 67372 144/39, ANZ, Wellington.

⁹¹ *ibid.*, p.18.

⁹² *ibid.*, p.14.

⁹³ *ibid.*, p.20.

⁹⁴ L. Calder, 'What is the best way to inform high-risk groups about Hepatitis B immunisation?', p.10.

day by a community health worker was very high.⁹⁵ The report concluded that ‘the personal approach...does yield results’.⁹⁶

Those Maori and Pacific Island parents who were interviewed were all in favour of immunisation and had had their own children immunised, although due to the smallness of the sample they could not be classed as representative of their communities.⁹⁷ Nevertheless, most Pacific Island and Maori parents seemed to be happy to have their children immunised once they understood the nature of immunisations and the venue was accessible for them. Certainly in the 1980s, although leaflets had been printed in various Island and Asian languages, the information was not reaching all the parents for whom it was intended. Other methods of promoting immunisation needed to be utilised by the Health Department in addition to general advertising campaigns.

Health Committees

General concerns over the health of Maori and Pacific Islanders in the 1970s and 1980s had led to the establishment of Maori and Polynesian Health Committees. They were to make recommendations to the Health Department on health issues affecting Maori and Pacific Island people, including immunisation.⁹⁸ In addition to the broad social changes of the 1970s and 1980s, these were times of significant change for Maori. By 1986 almost 80 percent of the Maori population were urban dwellers.⁹⁹ This had often resulted in a loss of contact with hapu and iwi and the difficulty in adjusting to the predominantly Pakeha culture in the cities led to the establishment of urban marae to forge new avenues of support. Concerns that Maori culture and tradition were not valued by a European-orientated society, coupled with the influence of international movements such as the Civil Rights campaign in the United States, led to the growth of Maori protest groups in the 1970s and 1980s. Michael King has argued that the subsequent notice taken by Pakeha of Maori culture as it was brought

⁹⁵ *ibid.*, p.11.

⁹⁶ *ibid.*

⁹⁷ Interviews were conducted with five mothers with either a Maori or Pacific Island background.

⁹⁸ *Appendices to the Journal of the House of Representatives (AJHR)*, 1973, E-10, p.21. A Maori Health Committee had originally been set up in the early 1960s along with eight others, but by the mid-1960s only met from ‘time to time’. *AJHR*, 1963, H-31, p.87.

⁹⁹ *ibid.*

to their attention, and the establishment of the Waitangi Tribunal in 1975 to address Maori land grievances, created the climate for a 'Maori renaissance' from the late 1970s onwards.¹⁰⁰ Certainly the rising visibility of Maori culture, and the interest taken in it by Pakeha, led to a greater awareness of Maori themselves and their associated problems. Within the Health Department in the 1980s there were increasing levels of consultation taking place between Maori leaders and health providers to determine how best to provide for Maori health and well-being in ways designed to meet the needs of the community.¹⁰¹

Concern was aired over the results of a survey on child health carried out mainly in the Auckland region in the mid-1970s which uncovered 'a high incidence of skin infestation, obesity, and ear problems in certain schools'.¹⁰² This led to the establishment of the Child Health Committee under the jurisdiction of the Board of Health in 1977. The Committee had the power to recommend measures that would make more efficient use of resources and improve services.¹⁰³ One of its most important acts was to produce a report on child health and the provision of child health services released in 1982 that made 195 recommendations.¹⁰⁴ The implementation of these recommendations was ultimately the responsibility of the Cabinet Committee on Family and Social Affairs, and child health became a designated priority for 1984 to 1985.¹⁰⁵

One aspect of the report focused on child immunisation and reported that levels of immunisation had risen since 1977, although not as high, particularly for measles, as they should have been.¹⁰⁶ Recommendations reflected this concern, highlighting the need for health professionals to encourage immunisation and noting that the improved reporting of immunisation statistics was necessary.¹⁰⁷ Other reports on child health, including immunisation, followed in the late 1980s. A study by the South Auckland

¹⁰⁰ *ibid.*, p.487.

¹⁰¹ See, for example, AJHR, 1985, E-10, p.5. The health initiatives were broad spectrum and as such are out of the scope of this thesis.

¹⁰² AJHR, 1978, E-10, p.44.

¹⁰³ *ibid.*

¹⁰⁴ AJHR, 1984, E-10, p.20. 151 of these recommendations involved the Health Department. See *also Child Health and Services in New Zealand. The Report of the Committee on Child Health*. Report Series, No. 31, Board of Health, Wellington, 1982, p.207.

¹⁰⁵ AJHR, 1984, E-10, p.20.

¹⁰⁶ *Child Health and Services in New Zealand*, p.201.

¹⁰⁷ *ibid.*, p.200.

Development Unit in 1988 on health issues in that locality found that figures for child immunisation ‘fall below that needed to produce widespread immunity and eliminate future outbreaks’.¹⁰⁸ This view was echoed in the ‘Immunisable Diseases’ section of the *Child Health Profile 1989*, a special report compiled by the Department of Health which considered a wide range of child health issues. The report concluded that, with particular reference to pertussis and measles, the ‘present immunisation strategy has failed to achieve these levels [90 percent] so outbreaks of these diseases are continuing to occur. A renewed commitment is needed from health professionals and the community’.¹⁰⁹

There was an increasing focus on child health during the late 1970s and 1980s. This was because of anxieties raised in a number of reports regarding aspects of child health and measures were sought to improve the overall standard of wellbeing. One course was to increase uptake of immunisation as it was revealed that a large minority of New Zealand children were not completing the immunisation programme, which gave rise to concerns regarding the continuation of epidemics of pertussis and measles. Studies such as these helped to make immunisation a much more visible topic to health professionals and the public, and demonstrated to the Health Department that more needed to be done if they wished to achieve the desired levels of immunisation for the community.

Informed Consent

One issue, which had significant relevance for immunisation as well as for other areas, was that of informed consent. The women’s health movement had from the early 1980s raised concerns about the amount of information and detail that women were given about their own health by doctors. This eventually culminated in the establishment of an Inquiry in 1987. Headed by District Court Judge Silvia Cartwright, its brief was to investigate the treatment of cervical cancer cases at National Women’s Hospital in Auckland, and the Inquiry released its findings in

¹⁰⁸ G. Jackson, R. Hoskins, *South Auckland Health Status Review 1988*, Community Medicine, South Auckland Health Development Unit, Manukau, 1988, p.6.15.

¹⁰⁹ G. De Boer, J. Saxby, M. Soljak, *Child Health Profile 1989*, Health Services Research and Development Unit, National Statistics Centre, Special Report 80, Wellington, 1990, p.84.

August 1988. Cartwright's report revealed that the associate professor in the Post-Graduate School of Obstetrics and Gynaecology, Dr Herbert Green, had been conducting an experiment 'to attempt to prove that carcinoma in situ (CIS) of [the cervix] is not a pre-malignant disease'.¹¹⁰ From 1966, Dr Green did not treat women referred to him with CIS but just monitored their progress. 'A significant number' had developed invasive cancer and an 'unknown' number had died.¹¹¹

The Inquiry revealed that 'the great majority of patients did not know, except intuitively, that they were participants' in a trial.¹¹² No information or request for consent to be in a trial had been given to the women and a number did not realise the extent of their condition. Although there were many other aspects to this Inquiry, some of the most important were the recommendations regarding informed consent. Patients were now to be given sufficient information to allow them to make an informed decision and to participate in decisions regarding all aspects of their treatment.¹¹³

This had repercussions in many areas of health management, including immunisation. The Health Department now had to make sure that parents were 'fully informed' before making a decision to allow their child to be immunised. Parents became more aware, particularly due to the publicity surrounding the Cartwright Inquiry, that as consumers they had rights to information before they had their children immunised. There had been some efforts made in the early 1980s towards informed consent but the Cartwright Inquiry and its subsequent report gave the concept much more credibility. It also highlighted that there was a pressing need for its implementation.

Nonetheless, it was not really until the early 1990s that 'informed consent' came into common usage by health professionals and the Health Department. One Public Health nurse commented that the Health Department 'got much, much, better, it was actually between '87 and '92, that they got better', by sending out 'good' information

¹¹⁰ S. Coney, 'Unfinished business. The Cartwright Report five years on', in S. Coney, ed., *Unfinished Business. What happened to the Cartwright Report?* Auckland, 1993, p.20. For further reading on the Inquiry see S. Coney, *The Unfortunate Experiment. The Full Story behind the inquiry into cervical cancer treatment*, Auckland, 1988.

¹¹¹ *ibid.*, p.21.

¹¹² *ibid.*, p.22.

¹¹³ *ibid.*

for immunisation campaigns in plenty of time, arranging staff to man 0800 number phones and sending someone to organise it all ‘- but certainly in 1987 it was just sort of coming’.¹¹⁴ An Auckland GP confirmed this view, pointing out that the Health Department in the 1980s had the ‘assumption that people would accept immunisation. There wasn’t really enough information around to deal with people who didn’t’.¹¹⁵ A Plunket nurse commented that ‘true informed consent was not around until the 90s. Up until then we called it ‘informed consent’ but some of us felt a little bit uncomfortable about the amount of information we could actually give people’.¹¹⁶

Parental Attitudes to Immunisation

The health professionals interviewed all remarked on the general change in people’s attitudes towards their status as a doctor and to the advice given from the 1980s onwards and particularly in the 1990s.¹¹⁷ Some people were prepared to question their doctor more and not just accept what they were told. This applied to all aspects of health care, not just to immunisation. One doctor, who had worked as a part-time medical officer with the Health Department from 1949 to 1963 and then as an Auckland GP until she retired in the 1980s, commented that ‘earlier no-one questioned a doctor very much at all, but now so many people want to know everything and ask all the questions, quite a different attitude towards your doctor.’¹¹⁸ Another GP who completed his medical training in the early 1980s pointed out that ‘the whole idea of the doctor as God was put to bed in our medical training - 20 plus years ago’.¹¹⁹ Nevertheless, all the health professionals interviewed reported that most parents were receptive to immunisation and that many still would accept it for their children. GPs and practice nurses commented that there would be only a few in their practice who refused to immunise their children.¹²⁰ The growing amount of information available to parents had not translated into a decline in immunisation uptake.

¹¹⁴ Interview with C. Doole, 16 May 2002, Public Health nurse.

¹¹⁵ Interview with Dr P. Hall 3 May 2002, GP in Whangaparaoa.

¹¹⁶ Interview with J. Twiss, 27 May 2002, Plunket nurse.

¹¹⁷ The health professionals interviewed included GPs, Health Department medical officers, Plunket nurses, practice nurses and Public Health nurses.

¹¹⁸ Interview with Dr D. Adams, 26 April 2002, medical officer.

¹¹⁹ Interview with Dr P. Hall, 3 May 2002.

¹²⁰ Interview with Dr P. Hall, 3 May 2002 and interview with J. Patten, 2 May 2002, practice nurse.

To identify attitudes to immunisation in preparation for the launch of the measles, mumps and rubella vaccine (MMR) from 1990 to 1991, the Health Department commissioned a report from the National Research Bureau who interviewed 800 caregivers with children under two.¹²¹ The report classified parents into four main groups: the first were the ‘questioning acceptors’ who were likely to be European, well-educated and from the higher end of the socio-economic and socio-occupational end of the spectrum. They were characterised as accepting immunisation for their children but wanting plenty of information before making an informed decision. The second group, the ‘lapsed by-passers’, tended to be from the lower end of the spectrum and typified as a ‘Pacific Island or Maori caregiver’.¹²² They accepted immunisation was ‘necessary or desirable’ but there were often difficulties in achieving this, coupled with ‘no particular sense of urgency to get their children immunised’.¹²³ The third group consisted of the ‘acceptors’ who accepted immunisation without question and tended to be from the lower end of the socio-economic spectrum. The final group was the ‘rejecting questioners’ usually European, well educated and at the higher end of the scale. These parents believed immunisation was unnecessary and rejected the ‘authority of health professionals’.¹²⁴ Certainly by the late 1980s this seemed a fair representation of parental views on immunisation in New Zealand, although it must be pointed out that the lines were not hard and fast and that there were some people, Maori, Pacific Island and Europeans, who fell into other categories, determined by their education and socio-economic status. One Pacific Island mother of three was well-educated and had had her children immunised but would be classed as a ‘questioning acceptor’ as she had made it her business to find out more about the subject.¹²⁵

The study revealed that 92 percent of parents were in favour of immunisation, believing either that it was necessary (68 percent) or desirable (24 percent).¹²⁶

Notwithstanding, one doctor identified another group of parents, not just Pacific

¹²¹ National Research Bureau, ‘Attitudes to Immunisation’, prepared for the Health Department, January 1990, ABQU 632 W4452/918 144/56, ANZ, Wellington. As MMR was introduced after 1990 it falls outside the scope of this thesis.

¹²² *ibid.*, p.7.

¹²³ *ibid.*

¹²⁴ *ibid.*

¹²⁵ Interview with L. Aumua, 31 July 2002, parent 1980s and 1990s.

¹²⁶ National Research Bureau, ‘Attitudes to Immunisation’, prepared for the Health Department, January 1990, p.9, ABQU 632 W4452/918 144/56, ANZ, Wellington.

Island people, from the 1990s ‘who are totally confused about the issue...they are getting totally contradictory, powerfully stated comments about the issue and they read about it in magazines. They want to make the right decision but they just don’t know. They’re open to immunisation but they are really confused about what to do’.¹²⁷ One Plunket nurse who had her own children immunised some years previously and ‘didn’t think much about it’ commented that she would find it ‘quite hard to make a decision now’ due to all the information available.¹²⁸ During the 1970s and 1980s, although immunisation was still willingly accepted by most parents, the promotion of the concept of informed consent meant people began to request or anticipate receiving information on immunisation, either in written or oral form, an expectation which continued to grow in the 1990s.

Levels of Immunisation

In 1985 a national immunisation survey was carried out to determine levels of immunity to a range of preventable diseases. Almost 3000 children, including 244 Maori, were tested in the survey within the specified age range of five years, ten years and fifteen years. This survey, which looked at the vaccine preventable diseases of diphtheria, tetanus, pertussis, and measles, as well as hepatitis B, found that overall levels of immunisation could be improved in New Zealand, especially for pertussis in the five-year-old group.¹²⁹

Tetanus and diphtheria immunity rates for five year olds were at 66.9 percent and 73.1 percent respectively, declining to 64 percent and 53.7 percent for 15-year-olds as immunity waned.¹³⁰ In contrast, pertussis immunity levels were lowest in five-year-olds at 54.4 percent, whilst more than 71 percent of the ten and 15-year-olds had

¹²⁷ Interview with Dr P. Hall, 3 May 2002.

¹²⁸ Interview with S. Radford, 15 May 2002, Plunket nurse.

¹²⁹ M. Tobias, J. Scadden, J. Clements, A. Patel, ‘Measles immunity in children: the 1985 national immunisation survey’, *New Zealand Medical Journal* (NZMJ), 27 May 1987, pp.315-17.

R. Lau, K. Bettelheim, A. Patel, ‘The 1985 national immunisation survey: diphtheria, tetanus, and pertussis (whooping cough)’, *NZMJ*, 23 November 1988, pp.797-99.

M. Tobias, J. Miller, J. Clements, A. Patel, ‘Hepatitis B in New Zealand children: the 1985 national immunisation survey’, *NZMJ*, 8 April 1987, pp.203-06. This survey recommended the introduction of a universal childhood immunisation programme due to the high rates of hepatitis B in children in New Zealand. Hepatitis B is discussed in Chapter 7, pp.219-29.

¹³⁰ R. Lau, K. Bettelheim, A. Patel, ‘The 1985 national immunisation survey: diphtheria, tetanus, and pertussis (whooping cough)’, p.797.

antibodies to the disease.¹³¹ Measles figures revealed that about 79 percent of five-year-olds, around 74 percent of ten-year-olds and 86 percent of 15-year-olds had immunity to the disease.¹³² These figures demonstrated that approximately three-quarters of all New Zealand children were being immunised according to Health Department recommendations. However the statistics still raised concerns, firstly with the low levels uncovered for pertussis immunity in five-year-olds, and secondly as the Health Department had hoped to achieve 95 percent coverage for measles. The triple vaccine figures also caused some consternation as, since the catch-up programme initiated in 1980, it had been reported that levels of 95 percent coverage were being achieved.¹³³ Public Health nurses relied on parental recall for previous immunisations and it now appeared that many parents were unable to accurately remember these and were inclined to over-estimate the number their children had received.

Research undertaken by Michael Soljak, a Medical Officer for the Whangarei Health District at the time, revealed that of 135 parents questioned about their child's immunisation status, 91.1 percent claimed the child had received all four of the early childhood immunisations. When this was checked against immunisation benefit claims by the child's GP, it was found that only 34.9 percent of children had received all four injections, although as Soljak pointed out, 'many children miss one or two immunisations rather than a few missing most'.¹³⁴ He concluded that 'Present levels of monitoring may therefore tend to over-estimate the level of full immunisation' as a result of the inaccuracy of parental recall.¹³⁵ These figures indicated that about a quarter of New Zealand children were not receiving their full childhood immunisations.

A study carried out by the National Research Bureau for the Health Department regarding caregiver attitudes to immunisation concluded that only about three percent could be considered to be anti-immunisers.¹³⁶ Further clarification was revealed in

¹³¹ *ibid.*

¹³² M. Tobias, J. Scadden, J. Clements, A. Patel, 'Measles immunity in children: the 1985 national immunisation survey', p.316.

¹³³ R. Lau, K. Bettelheim, A. Patel, 'The 1985 national immunisation survey: diphtheria, tetanus, and pertussis (whooping cough)', p.799.

¹³⁴ M. A. Soljak, 'How many children are fully immunised?', NZMJ, 25 January 1984, p.37.

¹³⁵ *ibid.*

¹³⁶ National Research Bureau, 'Attitudes to Immunisation', prepared for the Health Department, January 1990, p.9, ABQU 632 W4452/918 144/56, ANZ, Wellington.

research carried out by F. T. Shannon, a professor in paediatrics at the Christchurch Clinical School of Medicine, who considered immunisation in the first year. This study concluded that ‘Failure to provide the child with the recommended course of immunisation was most common amongst families of non-European ethnic origin, single parent families and families with depressed living standards’.¹³⁷ Nonetheless, it should be noted that a similar study carried out in Dunedin that focused on immunisation of five-year-olds, ‘did not show a significant relationship between the parental characteristics studied and immunisation status’.¹³⁸ It was concluded that ‘this may have been a reflection of the different SES [socio-economic status] and racial composition of the Dunedin sample, or the ages of the children’.¹³⁹

A British study, which looked at the uptake of infant immunisation based on two English Health Authorities, Salford and Lancaster, came to conclusions similar to the Christchurch study.¹⁴⁰ A country with triple vaccine rates akin to New Zealand, Britain had levels of 75 percent for the triple and polio at the end of 1988 (it was 87 percent for the double vaccine). The study found there were four significant factors which influenced immunisation. A sick child usually precluded immunisation, an increasing number of children meant younger ones were unlikely to be completely immunised, mothers with only secondary schooling and those who were single parents were more likely to have an unimmunised child.¹⁴¹ Transport and accessibility of clinics, particularly when more than one child had to be taken was carefully considered by parents when deciding whether to complete an immunisation appointment.¹⁴² One aspect that was highlighted in the authors’ conclusion was that ‘most parents in this study had very strong views indeed about immunisation and appeared to have received plenty of advice, both from professionals as well as from a range of other sources, including friends, family and the media’.¹⁴³ Nevertheless, it was not necessarily informed guidance that was given. An awareness and knowledge

¹³⁷ F. T. Shannon, D. M. Fergusson, M. A. Clark, ‘Immunisation in the first year of life’, NZMJ, 12 March 1980, p.169.

¹³⁸ P. A. Silva, S. M. Williams, A. C. Stewart, ‘Immunisations in the fifth year of life: a report from the Dunedin Multidisciplinary Child Development Study’, NZMJ, 25 March 1981, p.181.

¹³⁹ *ibid.*

¹⁴⁰ S. J. New, M. L. Senior, “‘I don’t believe in needles’”: qualitative aspects of a study into the uptake of infant immunisation in two English Health Authorities’, *Social Science and Medicine*, 33, 4, 1991.

¹⁴¹ *ibid.*, pp.511-12.

¹⁴² *ibid.*, p.515.

¹⁴³ *ibid.*, p.516.

of immunisation issues was not shown by many in the Dunedin study, as 42 percent of parents questioned were unable to correctly answer why rubella immunisation was necessary.¹⁴⁴ This did not however translate into determining rubella immunisation status as parents still had their child immunised even if they did not fully understand the reasoning.

This apparent difference in knowledge may be accounted for by the pertussis controversy in Britain in the 1970s and its massive exposure that meant parents in Britain were much more conscious of immunisation 'per se' than parents in New Zealand, as has been argued previously.¹⁴⁵ Informed consent had also been a feature of DHSS policy since the controversy, unlike the New Zealand Health Department, which was only beginning to implement this by the end of the 1980s.

Conclusion

Most New Zealand parents during the 1970s and 1980s were still content to immunise their children according to the immunisation schedule of the Health Department and after a discussion with a health professional, be it a GP, Plunket or Public Health nurse. Nonetheless, during this period a rebirth of organised objection to immunisation led to the formation of an anti-immunisation society, the IAS. Although a landmark in immunisation history, the IAS was just one of a number of alternative health forums forming during the 1980s as a reaction to a 'patriarchal' medical establishment. The Homebirth Association was another such group that promoted taking control of the birthing process from doctors and placing it back in the hands of women. It is important to note that the changes in attitudes to immunisation that took place were part of more widespread changes within New Zealand society. During the 1970s and 80s it became more commonplace for people to question health professionals about issues affecting their health, rather than accepting what they were told. This had implications for immunisation as parents began to ask for and expect more detailed information on vaccine effects and risks.

¹⁴⁴ P.A. Silva, S. M. Williams, A. C. Stewart, 'Immunisations in the fifth year of life', p.181.

¹⁴⁵ For a full discussion on the pertussis controversy see Chapter 8, pp.239-44.

The assertion of the right to full information became more extensive within the public domain after the Cartwright Inquiry, which highlighted the disturbing results that can occur when people are not fully informed about their condition and treatment.

Through the feminist movement of the 1970s, the Women's Health Movement of the 1980s and the Cartwright Inquiry, women had become more conscious of their own bodies and own health. As the primary caregivers for their children, this responsiveness often translated into assuming more responsibility for their children's health, including immunisation.

The greater awareness of health in the 1980s, particularly for children, was strengthened by a number of initiatives focused on child health during this period. Studies highlighted particular problems with child health, including the less than desirable levels of immunisation. The development of parenting magazines such as *Little Treasures* also placed emphasis on the importance of care and development of children. Although not a new concept, a government committee on child health was established to make recommendations although there was no guarantee they would be implemented. Immunisation, as part of child wellbeing, became much more visible to parents in the 1980s and hence, for a gradually increasing number, became an issue worthy of discussion with friends, family and partners.

The consequence of this was that the Health Department and health professionals now had to take account of parental expectations and certainly in the case of the Health Department there was a time lag before information matched requirements. It was not until the early 1990s that detailed information on immunisation began to be produced, as the Department gradually assimilated and acted upon the changes in parental expectations.

By the end of the 1980s immunisation began to acquire an increasingly important focus for parents as immunisable diseases declined and side-effects achieved a greater prominence as the risks of vaccines became a more significant factor. Nevertheless, although parents might by this time have discussed immunisation, rather than just blindly accepting it, the majority were still motivated to have their children immunised.

CHAPTER 10: Conclusion

Childhood immunisation in New Zealand altered considerably between the early 1920s and 1990. The introduction of the diphtheria vaccine marked the beginning of a voluntary immunisation programme for children which continued to expand and develop as more vaccines became available and were added to the programme by the Health Department. Consequently, immunisation touched the lives of an increasing number of New Zealanders over the decades; either as parents making an immunisation decision for their children, as vaccine recipients or as health professionals deciding on and implementing vaccine strategies.

It was during the early 1920s that a limited diphtheria immunisation programme in schools was launched, although typhoid vaccine, which was available at the same time, was targeted at Maori children only. The 1940s and 1950s saw pertussis, polio, tetanus and BCG vaccines added, with measles and rubella vaccines appearing in 1970. In the 1980s, meningococcal meningitis A and hepatitis B vaccines were included, although meningococcal meningitis A was a temporary addition. Schedules setting out the timetable for immunisations became available from the early 1960s and examples can be found in Appendix 1.¹ A table summarising the dates of introduction of each vaccine in New Zealand can be found in Appendix 2.²

By the end of the period of study, the immunisation schedule for children in New Zealand included vaccines against diphtheria, pertussis, tetanus, polio, hepatitis B, measles and rubella with meningococcal meningitis A available during epidemics and BCG for those in a high-risk group. Further additions included a combined vaccine for mumps, measles and rubella which was introduced in 1992. In 1994 a vaccine against haemophilus influenzae type b was added and in 2004 a vaccine against meningococcal meningitis B was included as part of a special programme.³ Pneumococcal vaccine will be incorporated into the schedule from June 2008.⁴

¹ Appendix 1, p.303.

² Appendix 2, p.307.

³ New Zealand Immunisation Schedule from 1 February 2006, Immunisation Advisory Centre (IMAC).

⁴ 'New Schedule 2008', *ImmNuZ*, 49, 2007, p.1.

My thesis has discussed the introduction and development of various immunisation programmes in New Zealand since the 1920s, the reasons for the paths taken and the choices made. It has also explored the responses of the general public and most specifically parents to those public health initiatives.

One of the most important questions to be considered was how effective overall immunisation was in doing the job required of it by the New Zealand Health Department, namely, preventing infectious disease. However, answering such a question raises several issues as there are a number of other factors which also play important roles in improving health and longevity. Good nutrition and housing, suitable sanitation methods and medical advances can all make a significant contribution to the promotion of health. Coupled with the natural decline in the severity of infectious disease evident over the twentieth century, assessing the contribution of a single factor accurately becomes extremely difficult, if not impossible.

This problem became apparent with the historical debate which was initiated by Thomas McKeown. His thesis considered the roles of various factors in the decline in the death rate from infectious disease in the industrialised world.⁵ He argued that nutrition was the most significant reason, however historian Simon Szreter disagreed and emphasised the importance of sanitation and health education.⁶ These assessments did not include a discussion of immunisation as both McKeown and Szreter agreed the latter was not important in Britain until after World War Two.

Despite the apparent difficulty in reaching an assessment, it is possible to draw general conclusions regarding the effectiveness of immunisation in New Zealand. Before World War Two immunisation in New Zealand was sporadic and its impact fairly localised. It was not until after the war, when the diphtheria programme was implemented nationwide and other vaccines, such as pertussis, became available that immunisation started to make its mark. For immunisation to be effective there has to

⁵ T. McKeown, *The Modern Rise of Population*, London, 1976. His research dates from around 1770 to the present.

⁶ S. Szreter, 'The importance of social intervention in Britain, mortality decline c. 1850-1914: a reinterpretation of the role of public health', *Social History of Medicine*, 1988, 1, 1-38.

be a significant portion of the population immunised, known as herd immunity, in order to prevent the spread of the disease within the community. This did not occur in New Zealand until the late 1940s.

Alongside the increasing use of immunisation was the natural decrease in the acuteness of some infectious diseases over the course of the twentieth century. Scarlet fever, pertussis and measles all declined in severity over the course of the twentieth century; scarlet fever to the extent where it is now regarded as only a mild childhood infection. For scarlet fever this phenomenon occurred without recourse to immunisation as no vaccine was ever developed. This example has illustrated that the role of immunisation should not, therefore, be overstated and that the milder nature of infectious diseases has also played a part in their decline independently of immunisation.

Another issue was that each type of vaccine administered does not induce the same level of immunity. The two polio vaccines together were effective enough to virtually eradicate polio from New Zealand by 1962 and diphtheria was reduced by immunisation to the very occasional case. Nonetheless, the measles and pertussis vaccines were much less effective and epidemics still occurred despite quite extensive immunisation over a long period. However, the results of non-immunisation were clearly evident. In 1978 there was a serious pertussis epidemic in Britain after several years of low immunisation uptake. Similarly, in the United States more cases of measles began to occur after the measles immunisation programme had its funding cut. In New Zealand in the late 1980s an epidemic of meningococcal meningitis A was controlled by immunisation and the use of the hepatitis B vaccine halted the spread of the disease in schools. Consequently, for most vaccine-preventable diseases immunisation was regarded by the Health Department and health professionals as an effective measure although its efficacy did vary for each vaccine. Therefore, notwithstanding the input made by a range of other factors, immunisation has appeared to have made an important contribution overall to the declining child morbidity and mortality rate for infectious disease over the second half of the twentieth century in New Zealand.

My thesis has focused on the role of the Health Department of New Zealand in promoting immunisation. The Department was, from the introduction of the diphtheria vaccine, pro-immunisation although it was very cautious and careful regarding vaccine strategy. Up until the 1950s immunisation policy was determined by the Department with some initiatives suggested and acted upon by general practitioners (GPs). The 1950s, however, marked a watershed in immunisation policy determination in New Zealand. This decade signalled increasing departmental dependence on the recommendations of the World Health Organization (WHO) and later the Epidemiology Advisory Committee (EAC) which comprised of New Zealand specialists. As a consequence immunisation policy was shaped mostly by independent specialists and experts and the Health Department displayed absolute trust in their advice. The considerable influence of these two bodies has been visible throughout the period and has contributed towards departmental immunisation policy remaining predominantly reactive and cautious.

The Department was also dilatory in taking on board attitude changes within society during the period and updating its views accordingly. This was most clearly evident during the 1970s and 1980s when New Zealand society underwent a transformation in terms of attitudes. The Department was unable to absorb and integrate the new image of the immunisation consumer who was more assertive and more informed which was apparent during the side-effects issues of the meningococcal meningitis A immunisation campaign of the 1980s.

Immunisation policy was implemented by the Health Department either through school-based campaigns or by using GPs. From the introduction of the diphtheria vaccine, the routine immunisation of infants and preschoolers has been carried out by GPs. This was always a contentious issue as the numbers of children immunised were not as high as the Health Department would have liked due to the parental cost involved in visiting the doctor. The situation became a serious matter of concern by the 1960s with the result that the 1969 Royal Commission to Inquire into Social Security recommended that immunisation be made free. This measure did improve uptake. However, other factors such as accessibility and money owing from a previous visit still inhibited immunisation for some children. GPs were also used by the Department to immunise preschoolers during an immunisation campaign or as part

of booster or top-up programmes. These rarely achieved their aims; the booster campaign of the meningococcal meningitis campaign in 1988 achieved less than ten percent coverage and the introduction of the measles vaccine via GPs in 1970 was poorly subscribed to by parents. During the period, the policy of using GPs for routine immunisation has become fairly effective, made more so after immunisation became free. Much less successful was the utilisation of GPs during campaigns where the overall contribution to numbers immunised was well below the level required.

There were a number of other influences which may have had a bearing on the shaping of immunisation policy within New Zealand during the period. Ethnicity was one such determinant. Typhoid immunisation was literally imposed upon the children of the Maori section of the population from the 1920s without the legally required parental consent. The collusion of the governments of the time were eventually needed to continue such a seemingly unethical strategy. From this injudicious beginning ethnic immunisation policy gradually evolved from imposition to one of growing consultation by the 1980s in order to identify the specific needs and requirements of ethnic groups. Programmes were put in place to try and raise the numbers of Pacific Island and Maori children immunised with the scheduled vaccines. This met with some success, although figures were still low in comparison to Pakeha. The concern raised by Maori communities over the hepatitis B vaccine in the 1980s that the Department was not taking the issue seriously enough demonstrated, however, that further consultation processes needed to be put in place. Ethnicity therefore played an important role in determining immunisation policy, an influence which had a major shift in focus over the course of the twentieth century as more account began to be taken of the needs and requirements of different ethnic groups, responding to broader shifts within society.

Opposition to immunisation could also be an important issue as was evident in Britain in the 1970s with the pertussis vaccine. However, New Zealand did not have a history of mass, vocal opposition such as was evident with smallpox vaccination in nineteenth-century Britain. Additionally in New Zealand, unlike some other countries, there was little religious opposition. Most opposition came from outside the Health Department, although there was some from within. Concerns raised within

the medical arena, for example, over the rubella vaccine, were taken seriously by the Department and investigated and did occasionally result in changes. Nonetheless, public opposition groups during the period, in the form of the British Union for the Abolition of Vivisection (BUAV) and later the Immunisation Awareness Society (IAS) were viewed as irritants by the Department and had no impact on policy. The groups' influence on public opinion was also negligible. Membership of both the BUAV and the IAS were small and hence publicity and exposure were limited. Opposition was difficult in a country where immunisation was viewed positively by most of society and where scientific and medical advancements were revered. Therefore, those who did object to immunisation were marginalised in such an environment and it was this situation which has prevailed over the course of the twentieth century.

This positive attitude towards immunisation was shared by the major political parties and consequently party politics had little bearing on the determination of immunisation policy. Likewise overseas immunisation crises, such as the pertussis controversy in Britain, made little impact on policy or public opinion. However, the availability of resources and how these were allocated by the government and its agent and then by the Health Department were the most significant factors in determining when, if and how immunisation programmes and campaigns could be realised during the period.

The New Zealand Health Department tried to stay abreast of happenings with immunisation overseas. Britain exerted the most influence during the early to mid-part of the twentieth century, as its cautious approach to immunisation was most akin to New Zealand's and most vaccines were purchased from there because of rigorous safety testing. However, Britain was not the only inspiration and the New Zealand Health Department attempted to reflect strategy that was in the best interests of the country. Policies from other countries, such as the United States, Australia and Canada were also given serious consideration by the Department and EAC before a programme for New Zealand was implemented. By the latter part of the twentieth century, given the unique circumstances of some of New Zealand's disease and immunisation issues, such as meningococcal meningitis A and hepatitis B, New

Zealand began to forge some of its own paths in terms of vaccine development, strategy and implementation.

The reactions and responses of parents to immunisation policy over the period have changed considerably. Parents now consider immunisation from a different perspective than parents from the 1920s or even the 1950s when disease prevention was of paramount importance. Side-effects and whether individual immunisations are all necessary have become of more concern. It has been possible to map the responses of New Zealand parents to immunisation into three phases. The 1920s and 30s signalled a period of vaccine distrust amongst parents after several vaccine tragedies overseas which gradually evolved into grudging acceptance by the 1940s. The 1950s was the 'golden age' for immunisation, a time when people had faith in the preventative and curative powers of medicine and health professionals. For immunisation the 1950s was the 'piece de resistance' with the defeat of polio in many western countries by the Salk and Sabin vaccines – a triumph of modern medicine. From the mid-1960s this belief in the value of immunisation gradually diminished, eroded by the health movements of the 1980s and the decline in infectious disease which meant parents began to place more emphasis on the risks of immunisation rather than the benefits. Some parental anxieties in the 1920s and 30s regarding side-effects were becoming evident again in the concerns of parents in the 1980s and 90s.

By the end of the period there had been a shift in power from the health professional (particularly GPs) to the consumer which had an important impact on the balance of the doctor/patient relationship. The family GP, whose advice was once accepted without question, could now expect to be queried about many health issues and treatment, including immunisation, by the client. Over the years an increasing number of health consumers became more assertive with regard to their own and their family's health. This especially applied to women, who were usually the family's immunisation decision-makers. This shift in powerbase has narrowed the gap of knowledge between client and GP with the effect that the relationship became more balanced between the two in stark contrast to earlier in the twentieth century. The history of immunisation has therefore highlighted the changing nature of social interactions between health professionals and parents.

The decision to immunise or not to immunise was by the end of the period made from a position of greater knowledge than at any time previously. This was a consequence of the growing proliferation of immunisation information and increasing vaccine awareness. Parents could no longer be treated ‘en masse’, they requested differing amounts and types of information about immunisation and might have even refused to immunise at all if they were not satisfied. Linked to health consumer assertiveness and the growth of information was the increasing use of informed consent. Adopted from the 1970s in Britain, it was not until the 1980s in New Zealand that the concept began to be taken on board in medical circles and was implemented more fully in the 1990s. In respect to immunisation, parents were now to be fully informed of all aspects of immunisation before making a decision, a long way from the early permission forms when little if any information was included. This was an important development and one that was reflected in other health sectors, not just immunisation. It had considerable implications for the Health Department and health professionals who had to assimilate and act upon these changes for the benefit and education of the public.

These shifts in attitude and power did not lead to lower levels of immunisation and herd immunity was maintained at a time when there was a danger of falling uptake due to both the decline in infectious disease and concerns about vaccine safety. From the 1970s onwards, figures for scheduled immunisations stabilised at around 75 percent although measles did not reach this level until the late 1970s. In comparison, in 2005 77 percent of two-year-olds were fully immunised.⁷ Parents were able to make a more informed choice than ever before regarding immunisation and over three-quarters were still deciding that it was of benefit for their children. Of concern to the Health Department is, and was, the 20 percent of children who are only partially immunised or have not been immunised at all. As has been pointed out during this thesis, the situation was not new and the Department of Health has long been trying to persuade these parents of the benefits of immunisation, in order to reach the 95 percent target deemed necessary for immunisation coverage.⁸

⁷ ‘Coverage’, *ImmNuZ*, 48, August 2007, p.2

⁸ *ibid.*

There is still much scope for more research on the history of immunisation both inside and outside New Zealand. From 1990 in New Zealand there was a good deal of further development in terms of informed consent and parental awareness, the introduction of the measles, mumps and rubella vaccine (MMR) in 1992 and the launch of the Immunisation Register in 2005. Elsewhere, in countries such as Britain, there has been increasing controversy regarding immunisation with concerns raised over MMR in the 1990s. Some vaccines, such as the oral polio vaccine, have been replaced in several countries such as New Zealand and the United States, because of side-effects. Other countries, with their differing social policies and other influences, have also demonstrated different ideas and practices regarding immunisation making comparative studies of particular importance in this field.

From a historical perspective the story of immunisation was most usually told within the wider framework of the narrative of a particular disease. My thesis has attempted to present a more comprehensive picture of the history of immunisation by focusing on it in its own right. As such, my work has aimed to contribute to both the New Zealand and international historiography as little has previously been written about immunisation. My thesis has also placed the New Zealand experience into an international context which many studies in this field have not tried to do. Furthermore, it has attempted to provide a valuable social insight into one country's experience with immunisation.

APPENDIX 1 : Immunisation Schedules 1960-1988

1960

AGE	PROGRAMME
3 months	Triple vaccine
4 months	Triple vaccine
5 months	Triple vaccine
7 months	Salk polio vaccine - given by Health Department
8 months	Salk polio vaccine - given by Health Department
15-18 months	Salk polio vaccine - given by Health Department
5 years	Double vaccine
13 years	BCG

From: BAAK A358 122c General Vaccines, Archives New Zealand, Auckland.

1964

AGE	PROGRAMME
3 months	Triple vaccine
4 months	Triple vaccine
5 months	Triple vaccine
6 months	Oral polio
7 months	Oral polio
12 months	Oral polio
5 years	Double vaccine
13 years	BCG

From: BAAK A358 82a Child Health 1959-69, Archives New Zealand, Auckland.

1968

AGE	PROGRAMME
3 months	Triple vaccine and oral polio
4 months	Triple vaccine and oral polio
5 months	Triple vaccine and oral polio
18 months	Double vaccine and oral polio
5 years	Double vaccine
13 years	BCG

From: *Health*, 20, 1, p.9.

1974

(i) AGE	PROGRAMME
3 months	Triple vaccine and polio
5 months	Triple vaccine and polio
10 months	Measles
18 months	Double vaccine and polio
4-5 years	Double vaccine and rubella
13 years	BCG
	Tetanus booster every 10 years

From: *Health*, 26, 1, 1974, p.15.

1978

AGE	PROGRAMME
3 months	Triple vaccine and polio
5 months	Triple vaccine and polio
12-15 months	Measles
18 months	Double vaccine and polio
5 years	Double vaccine and rubella
13 years	BCG

From: *Health*, 30, 1, p.16.

1984

AGE	PROGRAMME
6 weeks	Triple vaccine
3 months	Triple vaccine
5 months	Triple vaccine and polio
12-15 months	Measles
18 months	Triple vaccine
5 years	Polio
Form 1 (girls only)	Rubella
15 years	Tetanus (booster every 20 years)

From: *Health*, 36, 3, p.16.

(ii) AGE	PROGRAMME
At birth	Hepatitis B
6 weeks	Triple vaccine and hepatitis B
3 months	Triple vaccine and polio
5 months	Triple vaccine and polio
15 months	Measles and hepatitis B
18 months	Double vaccine and polio
5 years	Polio
Form 1 (girls only)	Rubella
15 years	Tetanus
	(booster every 20 years after that and after some serious injuries.)

From: *Immunisation means they won't catch it*, Department of Health, 1988.

APPENDIX 2 : VACCINE INTRODUCTION

Name of Vaccine	Year introduced into New Zealand	Date of use by Health Department for child immunisation programme
Diphtheria	1919	1924
Typhoid	1913	1919
Pertussis	1941	1942
Combined Vaccine	1948	1948 (withdrawn), 1953
Tetanus	1953	1953
BCG	1948	1951
Triple Vaccine	1954	1960
Inactivated Polio Vaccine	1956	1956
Oral Polio Vaccine	1961	1961
Measles Vaccine	1967 (limited access)	1967 (limited access) 1970 campaign
Rubella Vaccine	1970	1970
Hepatitis B	1985	1985 (limited access) 1988 campaign
Meningococcal Meningitis A	1987	1987

BIBLIOGRAPHY

Primary Sources - Unpublished

Archives New Zealand - Auckland

1. BAAK Auckland Health Department

A358/82a	Child Health 1959-69
A358/82b	Child Health 1969-77
A358/122c	General Vaccines
A358/125a	Diphtheria
A358/126b	Enteric (Typhoid) Fever 1939-56
A358/127b	Measles 1939-78
A358/130c	Rubella 1939-71
A358/131a	Tuberculosis - BCG and Tuberculin Testing 1958-68, 1970-74
A358/135a	Polio 1956-58
A358/135b	Polio 1958-61
A358/135c	Polio newspaper cuttings
A358/135d	Polio Immunisation 1964-70
A358/138b	TB General 1948-50
A358/138c	TB General 1950-53
A358/139a	TB General 1954-61
A358/140a	TB General 1963-66
A358/147d	Public Health Nursing 1943-70
A358/148a	Public Health Nursing 1975-78

2. YCAS Auckland Area Health Board

A740/532d	62/3/4	Salk and Sabin Vaccine 1955-56
A740/532e		Salk and Sabin Vaccine 1957-74
A740/533f	62/7	Diseases - Diphtheria 1941-77

3. BCAA Waikato Health Board

1990/419a	Diphtheria immunisation 1944-54
1990/430b	Polio Vaccination Programme Organisation 1956-8
1990/437a	Polio Vaccination Programme Organisation 1959
1990/442b	Objections 1948-60
1990/454a	Oral Polio 1962
1990/455b	Polio Vaccination Programme Organisation 1959-62
1990/474b	Whooping Cough immunisation 1943-64
1990/484c	Schick Testing 1949-65
1990/485a	Polio Vaccinations 1956-65

1990/501b	Diphtheria 1954-66
1990/503a	Tetanus 1954-66
1990/537b	T.A.B. immunisations 1936-67
1990/538a	Polio Diseases 1955-67
1990/538b	Polio Newspaper Clippings 1955-67
1990/550d	Booster Dosing 1951-68
1990/564c	Polio Newspaper Clippings 1968-70
1990/574c	Tetanus immunisation 1967-73

4. YCBE Waikato Health Board

1990/22e	B.C.G. Returns 1955-71
1990/23a	B.C.G. General TB
1990/31b	Measles 1945-71
1990/31c	Measles/Rubella Campaign 1970
1990/32b	Tetanus 1942-69
1990/61a	TB General 1968-73
1990/80a	Schick Testing 1967-74
1990/80b	Polio vaccination 1968-74
1990/80c	Immunisation General 1950-74
1990/81b	Immunisation Research Work 1956-68
1990/172a	Rubella (Measles) 1970-80
1990/238c	Measles and Rubella Programme 1977-80
1990/263a	TB B.C.G. Vaccination Neonates 1980-84
1990/275c	Whooping Cough immunisation 1949-84
1990/297a	Polio General 1974-84
1990/297c	Schick Testing 1974-83
1990/306a	Measles and Rubella 1944-86
1990/306b	Meningitis 1944-86

Archives New Zealand - Wellington

1. H1: Health Department Registered Files

29/19	33136	Epidemiology Advisory Committee 1962-68
34/1/2	35358	Work and Correspondence - Listener
34/2/2	15421	Publicity 1943-45
130	22478	T.B. 1946-49
131/11	B.92	Diphtheria in Schools 1924-35
131/11/6	B.92	Diphtheria in Schools 1928-33
131/11/6	B.99	Diphtheria in Schools 1933-39
131/11/6	11076	Diphtheria in Schools 1939-42
131/11/6	16143	Diphtheria in Schools 1941-46
131/11/6	19514	Diphtheria immunisation in Schools 1946-47
131/11/6	24116	Diphtheria immunisation in Schools 1949-53
131/11/6	34981	Diphtheria immunisation in Schools 1962-69
131/53	30729	Tetanus 1960-65
131/156/4	29958	Crippled Children's Society 1957-64

144/17	25622	Polio Vaccine Committee 1955-56
144/17	25843	Polio Vaccine 1956-57
144/17	26133	Polio Vaccine 1957-58
144/17/1	35354	Polio Vaccine Committee 1956-57
144/17/1	35355	Polio Supplies and Orders
144/17/1	35357	Polio Vaccine Campaign Procedure 1961-68
144/17/3	31042	Polio Vaccine: Progress Returns 1958-66
144/18	34759	Sera and Vaccines: Measles Vaccine 1968-69
144/18/1	35788	Sera and Vaccines: Rubella Vaccine 1968-70
144/18/1	36182	Sera and Vaccines: Rubella Vaccine 1970
144/18/1	W2676 Box 57	Sera and Vaccines: Rubella Vaccine 1970-71
144/24	20094	T.A.B. Vaccine
144/27/3	29319	Sera and Vaccines: Triple Vaccines 1953-63
169/24/21	26886	B.C.G. Vaccination 1953-56
246/34	27683	T.B. 1956-61
246/64	34419	B.C.G. Vaccination 1956-69
NA 478		B.C.G. General Policy - Napier
NA W2400	132	Immunisation Polio - General
NA W2400	487	Polio Immunisation - General 1949-68
H 26	W2386	Reading Room Photos

2. AAFB 632: Health Department Registered Files

W3463/83 144/18/1 47692 Rubella Immunisation 1971-77
W3464/49 246/64/15 24834 B.C.G. 1949-54
W3464/106 144/17/3 26431 Polio Vaccine 1956-57

3. ABQU 632: Health Department Registered Files

W4415/263 13/4/1 57734 Enteric Fever inoculations 1946-72
W4415/266 131/18/1 51380 Rubella Immunisation 1978-81
W4415/267 131/18/1 52352 Rubella Immunisation 1981
W4415/275 131/128 54669 Whooping Cough 1931-83
W4415/275 131/128/1 55580 Whooping Cough Immunisation 1935-87
W4415/345 144 50663 Sera and Vaccines: General 1978-80
W4415/345 144 53140 Sera and Vaccines 1980-81
W4415/345 144 55316 Sera and Vaccines 1981-83
W4415/345 144/18 50984 Measles Vaccine 1978-80
W4415/345 144/18/1 50136 Rubella vaccine 1977-79
W4415/345 144/18/1 52684 Rubella 1979-84
W4415/346 144/27/3 56028 Triple D.T.P. 1974-84
W4415/522 246/64/3 52638 B.C.G. Dunedin 1955-79
W4415/522 246/64/4 52639 B.C.G. Gisborne 1952-75
W4415/522 246/64/6 52640 B.C.G. Hamilton 1953-79
W4415/522 246/64/13 52643 B.C.G. Wellington 1953-80
W4415/522 246/64/14 52644 B.C.G. Whangarei 1952-80

W4415/522 246/65/1 57984 NZ Federation of T.B. Associations 1962-84
 W4550/48 246/64 55983 T.B. B.C.G. General 1975-80
 W4550/48 246/64/1 52637 B.C.G. Auckland 1952-78
 W4452/665 131/171/4 63302 Hepatitis B Department of Health Immunisation
 Programme 1988
 W4452/666 131/18 58959 Measles/Rubella Vaccine 1980-85
 W4452/684 131/128 68454 Whooping Cough 1983-90
 W4452/701 131/171/4 61770 Hepatitis B Department of Health Immunisation
 Programme 1984-85
 W4452/701 131/171/4 62751 Hepatitis B Department of Health Immunisation
 Programme 1987
 W4452/702 131/171/4 62752 Hepatitis B Department of Health Immunisation
 Programme 1984-87
 W4452/702 131/171/4 63088 Hepatitis B Department of Health Immunisation
 Programme 1987-88
 W4452/702 131/171/4 64447 Hepatitis B Department of Health Immunisation
 Programme 1987
 W4452/702 131/171/4 64448 Hepatitis B Department of Health Immunisation
 Programme 1988
 W4452/702 131/171/4 64449 Hepatitis B Department of Health Immunisation
 Programme 1988
 W4452/703 131/171/4 66639 Hepatitis B Department of Health Immunisation
 Programme 1989
 W4452/705 131/171/4 67517 Hepatitis B Department of Health Immunisation
 Programme 1986-90
 W4452/705 131/171/4 67518 Hepatitis B Department of Health Immunisation
 Programme 1990
 W4452/705 131/171/4 69791 Hepatitis B Department of Health Immunisation
 Programme 1990
 W4452/707 131/171/4 75588 Hepatitis B Department of Health Immunisation
 Programme 1986-88
 W4452/911 144 68534 Sera and Vaccines 1980-91
 W4452/912 144 58671 Sera and Vaccines 1982-85
 W4452/913 144/17 Polio Vaccine 1973-92
 W4452/913 144/17/10 54679 Sera and Vaccines: Polio: Alleged contamination of
 polio vaccine
 W4452/914 144/17/8 38840 Oral Polio 1967-71
 W4452/914 144/17/8/2 Administrative Review of newspaper articles 1983
 W4452/915 144/17/10 54680 Polio Contaminated Vaccine 1983
 W4452/915 144/17/10 54723 Polio Contaminated Vaccine 1983
 W4452/915 144/18 Measles 1980-92
 W4452/915 144/18/1 Rubella Vaccine 1981-92
 W4452/915 144/18/2 Rubella Vaccine - Dr W. Hamilton and the
 caruogenicity of the Cendehill vaccine 1981-85
 W4452/916 144/27/2 Double vaccine 1952-89
 W4452/916 144/27/3 79716 Triple Vaccine 1983-89
 W4452/917 144/35 MMR 1971-92
 W4452/917 144/39 Meningococcal vaccine 1988-92
 W4452/918 144/39 67372 Meningococcal vaccine 1984-88
 W4452/918 144/56 Immunisation Programme - General 1988-90

Auckland Museum Library

Homebirth Association - Joan Donley Papers

MS 93/7 Box 1 NZ Homebirth Assn Auckland Branch Newsletter No 1-35 (1978-87)

MS 93/7 Box 2 NZ Homebirth Assn National Newsletter No 1-40 (1980-1988)

MS 93/7 Box 3 NZ Homebirth Assn National Newsletter No 1-40 (1980-1988)

MS 95/20 NZ Homebirth Association papers

Reports and Papers

Arthur, A. 'Paediatric Society History 1947-1993'. Property of Paediatric Society.

Calder, L. (1988). 'What is the best way to inform high-risk groups about Hepatitis B immunisation?: A survey by Polynesian Community Health Workers'. Unpublished paper.

Harris, A. (1999). 'Tribal (Maori) Committees after the War'. NZHA – Missing Dimensions, Forgotten Peoples, Waikato University.

Lennon, D. (1986). 'Interim Report on Meningococcal Meningitis, Auckland 1985-86'. Auckland.

Martin, J. (1988). 'The half dose decision'. Wellington, July.

National Research Bureau. (1990). 'Attitudes to Immunisation'. January.

Oliver, P., Scott, H. (1988). 'Awareness and Understanding of meningococcal meningitis and other immunisation programmes, and attitudes to health care and other services'. Research Report, November.

Theses

Cox, E. L. (1996). 'Plunket Plus Commonsense: Women and the Plunket Society 1940- 1960'. MA, Victoria University of Wellington.

Day, A. S. (1998). 'The Maori Malady: the 1913 Smallpox Epidemic and its nineteenth century background'. MA, University of Auckland.

Dow, N. A. (2000). 'A survey of parent opinion on polio immunisations and other child care practices'. MPH, University of Otago.

Egan, T. E. (1989). 'Analysis of adverse events reported after Hepatitis B vaccination in pre-school children. Results of surveillance during the national pre-school immunisation campaign March to September 1988'. MPharm, University of Otago.

Ross, J. C. (1993). 'A History of Poliomyelitis in New Zealand'. MA, University of Canterbury.

Simpson, D. J. (1993). 'A persistent cloud on the human horizon. Polio in the Auckland Region 1925-62'. MA, University of Auckland.

Stanton, J. M. (1995). 'Health Policy and Medical Research: Hepatitis B in the UK since the 1940s'. PhD, University of London.

Rutty, C. J. (1995). 'Do Something!... Do Anything! Poliomyelitis in Canada 1927-62'. PhD, University of Toronto.

Vivier, P. M. (1996). 'National Policies for Childhood Immunization in the United States: A Historical Perspective'. PhD, John Hopkins University.

- Webb-Pullman, J. (1990). 'The Hepatitis B Preschool Immunisation Programme – A Case Study in Institutional Racism'. Dip.CH, Victoria University of Wellington.
- Tyler, P. J. (1998). 'An Irreproachable Instrument? The Board of Health and Public Health Administration in New South Wales, 1881-1973'. PhD, University of New England.

Public Health Theses

- Aickin, D. R. (1957). 'Whooping Cough - A study of Immunization and Incidence in Dunedin'. PMD, University of Otago.
- Arthur, A. B. (1957). 'Immunization in the Modern Community'. PMD, University of Otago.
- Betteridge, J. H. (1968). 'Attitudes to Measles and its Prevention by Vaccination. A Survey conducted in the Gisborne and Dunedin districts'. PMD, University of Otago.
- Bierre, T. H. (1950). 'An Epidemiological History of Diphtheria in the Provinces of Otago and Southland, 1901-1948'. PMD, University of Otago.
- Bourke, S. D. (1961). 'Parents Attitudes to Immunisation'. PMD, University of Otago.
- Chong, A. H. (1962). 'Parental Attitudes to Immunisation Procedures'. PMD, University of Otago.
- Craig, W. B., Hare, J. F., Hurrell, T. A. (1945). 'Diphtheria Prophylaxis. Immunisation of George St Children carried out as part of the course of preventative medicine'. PMD, University of Otago.
- Jarvis, W. J. and A. P. (1950). 'Whooping Cough Immunisation in Dunedin 1944-49'. PMD, University of Otago.
- Levene, C. (1951). 'An Inquiry into Diphtheria Immunisation in Auckland, with special reference to the attitude of parents to this subject'. PMD, University of Otago.
- McLeod, J. G. (1947). 'Diphtheria in Timaru'. PMD, University of Otago.
- Meech, P. R. (1967). 'Tetanus Immunization'. PMD, University of Otago.
- Paterson, J. K., Burns Watson, I. (1945). 'Diphtheria Prophylaxis in the Holy Name Convent and Kelsea Kindergarten Schools'. PMD, University of Otago.
- Pullon, D. H. H., Walker, N. D., Patterson, D. I. (1945). 'Report on Diphtheria Immunisation in Normal School, Dunedin North Sept-Oct'. PMD, University of Otago.
- Purves, E. C. (1966). 'Non-Immunization of Children'. PMD, University of Otago.
- Rawley, F. P. (1953). 'B.C.G. Vaccination in Dunedin'. PMD, University of Otago.
- Stevens, J. B. (1963). 'Parental knowledge of, and attitudes towards, immunization procedures'. PMD, University of Otago.
- Weblin, J. E. (1953). 'The Prevention of Tetanus in the Gisborne Health District 1952-3'. PMD, University of Otago.
- Waddell, G. A., Cook, V. B. (1947). 'Pertussis Vaccination. A study of the immunisation against whooping cough carried out by the Medical School Health Clinic in Dunedin during the period 1944-1946'. PMD, University of Otago.
- Young, H. R., Graham, B. M., Dignan, A. M., Duncanson, F. R. (1946). 'Anti-Diphtheria Immunisation at Columba College, Dunedin'. PMD, University of Otago.

Personal Interviews

Russell Kerse - NZCCS	30 January 2001
Zoe During - Medical Officer	19 October 2001
Athina Tsoulis - Broadsheet	31 October 2001
Betty White - mother 1950s	7 December 2001
Noelene Troop - mother 1950s	7 December 2001
Maud Beaven - mother 1940s	7 December 2001
Hilary Butler - IAS	12 December 2001
Alison Taylor - mother 1950s	18 December 2001
Gay Fortune - mother 1970s	1 March 2002
Lee Cowie - mother 1970s/80s	6 March 2002
Val Hollier - mother 1960s	6 March 2002
Barbara Batt - mother 1960s	8 March 2002
Ola Petrie - mother 1940s	10 March 2002
Gertie Dowsing - mother 1940s	10 March 2002
Irene Kindleysides - mother 1940s	10 March 2002
Maxine Kelsey - mother 1979/90	13 March 2002
Gwen Robinson - mother 1940s	14 March 2002
Barbara Ramsbottom - 1970s/80s	14 March 2002
Pauline Simes - 1960s	14 March 2002
Arna Mountain - 1970s/80s	20 March 2003
Claire Geddes - mother 1975/82	21 March 2002
Else Bryder - mother 1950s	21 March 2002
Daphne McKerras - mother 1960s/70s, IAS	21 March 2002
Andrea Barrie - mother 1980s	24 March 2002
Carmena Wong - mother 1988/92	28 March 2002
Deborah Jowitt - mother 1970s/80s	28 March 2002
Margaret Pye - mother 1950s	4 April 2002
Diane Edwards - Parents Centre	5 April 2002
Helen Harte - mother 1980s	10 April 2002
Anne McKinnon - GP/Medical Officer	12 April 2002
Kate Prebble - mother 1980s	12 April 2002
Margaret Maxwell - GP	14 April 2002
Catherine L'Estrange - mother 1980s	24 April 2002
Valerie Dickens - Midwife	26 April 2002
Daphne Adams - Medical Officer/GP	26 April 2002
Tom Marshall - GP	1 May 2002
Shirley Tonkin - Medical Officer	2 May 2002
Herbert Murdoch - GP	2 May 2002
Jocelyn Patten - Practice Nurse	2 May 2002
Peter Hall - GP	3 May 2002
Jean Young - Plunket Nurse	9 May 2002
Arthur Batt - GP	10 May 2002
Lance Ashton - GP	10 May 2002
Mary Prebble - mother 1940s/50s	15 May 2002
Sue Radford - Plunket Nurse	15 May 2002
Claire Doole - Public Health Nurse	16 May 2002
Lynne Edwards - Public Health Nurse	17 May 2002

Judy Twiss - Plunket Nurse	27 May 2002
Margaret Connell - Public Health Nurse	31 May 2002
Alice Hirini - mother 1970s	26 June 2002
Suni Robertson - mother 1960s/70s	17 July 2002
Linda Aumua - mother 1980s/90s	31 July 2002
John Hiddlestone - Director-General of Health	23 October 2002
R Campbell-Begg - Director of Health Promotion	23 October 2002

Written and Electronic Correspondence

Athina Tsoulis - Broadsheet	27 October 2001
Sandra Coney - Feminist	17 February 2002
Joan Donley - Midwife	11 March 2002
Mary Dobbie - Parents Centre	15 March 2002
Sharyn Robertson - mother 1980s	2 April 2002
Trish Bartleet - mother 1980s	13 April 2002
Pat Bryce - Public Health Nurse	April 2002
Fale Leilua - mother 1980s	July 2002
Nikki Turner - IMAC	12 November 2006

B. Primary Sources - Published

Government and Health Department Reports

- Board of Health, (1982). *Child Health and Child Health Services in New Zealand. The report on the committee on child health.* Wellington, Board of Health.
- Committee on Child Health. (1982). *Child Health and Services in New Zealand. The Report of the Committee on Child Health.* Report Series No. 31. Board of Health.
- Committee of Inquiry. (1928). 'Prevention and Treatment of Pulmonary Tuberculosis in New Zealand'. *Appendices to the Journal of the House of Representatives*, H-31a.
- Deem, H., Turbott, H. B. (1938). 'Preliminary Report on a Diphtheria Immunization Campaign, South Auckland Health District'. Appendix C, *Appendices to the Journal of the House of Representatives*, H-31: 96-98.
- Deem, H., Turbott, H. B. (1939). 'Diphtheria Immunization in South Auckland Health District, New Zealand, 1937 to 1938'. Appendix C, *Appendices to the Journal of the House of Representatives*, H-31: 114.
- Department of Health, (1984). *Recording Child Health and Development. Handbook for professionals using the Health and Development Record.* Wellington Department of Health.
- Department of Health, (1989). *Hepatitis B Preschoolers Immunisation Campaign (1988) Process Evaluation Preliminary Delivery Report: 1 February 1989.*
- Hunn, J. K. (1961) *Report on the Department of Maori Affairs: with statistical Supplement.* 24 August 1960. Wellington, Government Printers.
- Jackson, G., Hoskins, Richard (1988). *South Auckland Health Status Review 1988.* Manukau City, South Auckland Health Development Unit.
- Pomare, E. (1985). *Hepatitis B. Report to the Minister of Health on the Eastern Bay of Plenty immunisation programme,* Wellington. *Report to the Minister of*

- Health of the Special Committee to investigate the Safety of Poliomyelitis Vaccines*. 7 March 1983, Wellington, Government Printers.
- Turbott, H. B. (1940), 'The control of Diphtheria in a Rural Health District'. Appendix A, *Appendices to the Journal of the House of Representatives*, H-31: 50.
- Turbott, H. B. (1940). 'Progress in Prevention of Typhoid fever in Maoris'. Appendix B, *Appendices to the Journal of the House of Representatives*, H-31: 51.

Government Publications

- Appendices to the House of Representatives 1920-1990
New Zealand Gazette
New Zealand Parliamentary Debates 1920-1990
New Zealand Statutes Reprint 1908-1957
New Zealand Statutes 1948, 1968
Statutes of New Zealand 1920
Summary of Audited Net Paid Circulations 1972-1986
New Zealand Yearbook 1941-1989

Periodicals

- Broadsheet
Health Magazine
Healthy Options
ImmNuZ
Immunisation Awareness Society Inc.
Little Treasures
Metro
More
NZ Listener
New Zealand Woman's Weekly
Next
Parents Centre Bulletin
Parent and School
Time Magazine
Collection of newspaper articles in the care of Hilary Butler

Medical Journals (main ones consulted)

- British Medical Journal
New Zealand Family Doctor (later New Zealand Family Physician)
New Zealand Medical Journal
New Zealand Nursing Journal
The Lancet
Medical Journal of Australia

Newspapers

- Auckland Star
Christchurch Press
Christchurch Sun

Dominion
Evening Post
New Zealand Herald
New Zealand Times
New Zealand Truth
Otago Daily Times
San Francisco Chronicle
Sunday News
Sunday Star Times
Sydney Telegraph
Timaru Herald
Waikato Times
Wanganui Chronicle
Wanganui Herald

New Zealand Biographies

The Dictionary of New Zealand Biography, Vol. 4, 1921-40, Wellington, 1998.
The Dictionary of New Zealand Biography, Vol. 5 1941-60, Wellington, 2000.
URL <http://www.dnzb.govt.nz>

Internet

The Times Digital Archive
URL <http://web6.infotrac.galegroup.com.ezproxy.auckland.ac.nz/itw/infomark/...>
The Knowledge Basket - Legislation New Zealand
URL <http://gpacts.knowledge-basket.co.nz.ezproxy.auckland.ac.nz>

C. Secondary Sources

Books and Articles

- Aftimos, S. (1986). 'BCG osteitis: a case report'. *New Zealand Medical Journal* **99**(800): 271-73.
- Alexander, S. (1987). 'Vaccination Campaign'. *NZ Listener* **October 3**: 13.
- Andre, F. E. (1989). 'Trial of SKF r DNA hepatitis B vaccine - reply'. *New Zealand Medical Journal* **102**(866): 198-99.
- Anon, (1968). 'Measles Vaccination'. *New Ethicals and Medical Progress* **June**: 7-9.
- Apple, R. D. (1987). *Mothers and Medicine. A Social History of Infant Feeding 1890-1950*. Madison, Wisconsin, University of Wisconsin Press.
- Arnup, K. (1994). *Education for Motherhood. Advice for Mothers in Twentieth Century Canada*. Toronto, University of Toronto.
- Aickin, D. R. (1958). 'A Study of Incidence and Immunisation Against Whooping Cough in Dunedin'. *New Zealand Medical Journal* **August**: 633-37.
- Ashton, B. M. (1959). 'Diphtheria - Still a Danger'. *New Zealand Family Doctor* **3**(5): 32-33.
- Ashton, B. M. (1959). 'A Killer has been Arrested'. *New Zealand Family Doctor* **3**(10): 32-33.
- Ashworth, N. (1988). 'The Hepatitis B Immunisation Programme'. *New Zealand Health Review* **8**(1): 16-17.

- Ashworth, N. (1988). 'Hepatitis B immunisation - reply'. *New Zealand Medical Journal* **May 11**: 244-45.
- Ashworth, N. (1988). 'Hepatitis B immunisation'. *New Zealand Medical Journal* **101**(851): 518-19.
- Baguley, D. M., Glasgow, G. L. (1973). 'Subacute Sclerosing Pancephalitis and Salk Vaccine'. *Lancet* **ii**(October): 763-65.
- Baker, J. (197?). *The Care of Babies and Small Children. A book for Polynesian Parents in New Zealand*, Plunket Society.
- Baker, J. P. (2000). Immunization and the American Way'. *American Journal of Public Health* **90**(2): 199.
- Baker, J. P. (2003). 'The pertussis vaccine controversy in Great Britain, 1974-1986'. *Vaccine* **21**: 4003-10.
- Bandaranayake, D. (1987). 'Pertussis in New Zealand'. *Communicable Disease New Zealand* **12**: 2-4.
- Barnett, N. T. (1960). 'Immunisation and the Control of Disease'. *Health* **12**(4): 13.
- Bassili, W., Stewart, G. T. (1976). 'Epidemiological evaluation of immunisation and other factors in the control of whooping-cough'. *Lancet* **i**(February): 471-74.
- Bates, B. (1992). *Bargaining for life. A social history of Tuberculosis 1876-1938*. Philadelphia, University of Pennsylvania Press.
- Beatson, D. (1987). 'An injection of confidence'. *NZ Listener* **August 15**: 9.
- Beck, A. (1960). 'Issues in the Anti-Vaccination Movement in England'. *Medical History* **4**: 310-21.
- Begg, N. C. (1958). 'Immunisation Procedures in Infancy'. *New Zealand Medical Journal* **August**: 372-73.
- Begg, N. C. (1959). 'Schedule of Immunization for Children'. *New Zealand Medical Journal* **August**: 531-32.
- Begg, N. C. (1970). *The New Zealand Child and his Family*. Christchurch, Whitcombe & Tombs.
- Begg, N. C. (1972). 'Yesterday and Tomorrow in Child Health'. *New Zealand Medical Journal* **75**: 263-66.
- Begg, N. C. (1975). 'Child Health and Sickness'. *New Zealand Medical Journal* **81**: 100-05.
- Begg, N. C. (1992). *The Intervening Years. A New Zealand account of the years between the last two visits of Halley's Comet*. Dunedin, John McIndoe.
- Belich, J. (2001). *Paradise Reforged. A History of New Zealanders from the 1880s to the Year 2000*. Auckland, Penguin.
- Bennett, Sioux. (1987). 'Giving it her best shot'. *More* **October**: 116-27.
- Berg, J. M. (1958). 'Neurological Complications of Pertussis Immunization'. *British Medical Journal*, **ii**(July): 24-30.
- Berridge, P. (1987). 'Improving immunisation compliance'. *New Zealand Family Physician* **14**:139.
- Berridge, V. (1999). *Health and Society in Britain since 1939*. Cambridge, Cambridge University Press.
- Berridge, V. (1992). 'Health and Medicine in the Twentieth Century: Contemporary History and Health Policy'. *Social History of Medicine* **5**(2): 307-16.
- Berridge, V. (1999). 'History in Public Health.' *Hygiea Internationalis* **1**(1): 23-35.
- Birch, A. C. (1973). 'The Schick Test.' *Practitioner* **210**(155): 843-44.
- Bierre, T. H. (1971). 'Immunisation of School Children with Rubella Vaccine'. *New Zealand Medical Journal* **74**: 8-11.
- Blatz, P. K. (1990). 'Craftsmanship and Flexibility in Oral History: A Pluralistic

- Approach to Methodology and Theory.' *The Public Historian* **12**(4): 7-22.
- Boer, G. de., Saxby, J., Soljak, M. (1990). *Child Health Profile 1989*. Wellington, Health Services Research and Development Unit.
- Boothe, D. (1983). 'Dunedin Collective for Woman Phenomenon of the Seventies'. *Broadsheet* **108**: 32-34.
- Boston Women's Health Book Collective. (1973). *Our Bodies, Ourselves: A Book by and for Women*. New York, Simon and Schuster.
- Bouchier, D. (1985). 'Hepatitis B vaccine and neonates'. *New Zealand Medical Journal* **October 23**: 918.
- Bowker, S. L. (1980). 'Letter to the Editor Immunisation Changes'. *GP: Journal of the General Practitioners Society* **40**: 19.
- Boyd, M. (1990). 'New Zealand and the other Pacific Islands' in Sinclair, K. ed. (1990). *The Oxford Illustrated History of New Zealand*. Oxford, Oxford University Press.
- Boyle, W. (1958). 'Keeping him Healthy when he goes to School'. *New Zealand Family Doctor* **February**: 10-11.
- Bradley, V. S. (1987). 'Rubella immunity in 14-18 year old females: an assessment in a city practice'. *New Zealand Medical Journal* **100**: 320-22.
- Bretherton, I. (1992). 'The origins of attachment theory: John Bowlby and Mary Ainsworth'. *Developmental Psychology* **28**: 759-75.
- Brogan, A. H. (1990). *Committed to Saving Lives. A History of the Commonwealth Serum Laboratories*. Melbourne, Hyland House.
- Brown, C. (1985). 'Keeping up with immunisation'. *Parents Centre Bulletin* **103**: 16-17.
- Bryder, L. ed. (1991). *A Healthy Country. Essays on the Social History of Medicine in New Zealand*. Wellington.
- Bryder, L. (1998). *Not Just Weighing Babies: Plunket in Auckland 1908-1998*. Auckland, Pyramid Press.
- Bryder, L. (1999). 'We shall not find salvation in inoculation. BCG vaccination in Scandinavia, Britain and the USA, 1921-1960'. *Social Science and Medicine* **49**: 1157-67.
- Bryder, L. (2003). *A Voice for Mothers: The Plunket Society and Infant Welfare 1907-2000*. Auckland, Auckland University Press.
- Butler, H., Tonkin, S. (1989). 'Cot Death and Immunisation'. *Little Treasures* **12**: 40.
- Butler, H. (1985). 'Cutting the Cord'. *Homebirth Association Newsletter* **27** (March).
- Butler, H. (1988). 'Hepatitis B immunisation'. *New Zealand Medical Journal* **101**: 464.
- Burnett, F. M. (1955). 'The Salk Poliomyelitis Vaccine'. *Medical Journal of Australia* **April**: 660.
- Butterworth, K. P. ed. (1994). *Mind over Muscle. Surviving Polio in New Zealand*. Palmerston North, Dunmore Press.
- Cable, M. (1975). *The Little Darlings. A History of Child Rearing in America*. New York, Charles Scribner's Sons.
- Calvert, S. (1980). 'Knowledge is Power. Reasons for the Women's Health Movement'. *Broadsheet* **80**: 26-30.
- Calcinai, V. (1988). 'Immunisations- how safe are they?' *Health* **40**(4): 4-5.
- Campbell-Begg, R. (1979). 'Rubella Immunisation'. *New Zealand Medical Journal* **89**(634): 322.
- Campbell-Begg, R. (1981). 'Rubella Vaccine'. *New Zealand Medical Journal* **93**(684): 356.

- Campbell-Begg, R. (1982). 'Immunisation Against Pertussis'. *New Zealand Medical Journal* **95**(717): 710-11.
- Campbell-Begg, R. (1984). 'Pertussis - New Zealand 1982/3'. *New Zealand Medical Journal* **June 27**: 408-11.
- Candau, M. G. (1968). 'Health in the world of tomorrow'. *Health* **20**(1): 8-9.
- Carey, H. E. (1960?). *New Zealand Crippled Children Society History 1935-1960*. Taranaki Newspapers Limited, New Plymouth, New Zealand Crippled Children Society.
- Carr, N. D. (1976). *Proceedings of a Symposium on Attitude Change in Relation to Health Education*, University of Otago, Dept of University Extension.
- Carroll, P. (1965). 'The work of the New Zealand Crippled Children Society'. *Health* **17**(2): 16.
- Carter, R., Miller, J. (1991). 'Hepatitis B Immunisation. Problems and practicalities in a primary school'. *New Zealand Nursing Journal* **August**: 19.
- Caughey, J. E., Douglas, A. M., Spears, G. (1956). 'A Study of Immunity to Poliomyelitis in New Zealand'. *New Zealand Medical Journal* **55**(308): 281-89.
- Caughey, J. E., Miles, J. A. R., Austin, F. J., Spears, G. (1956). 'Immunity to Poliomyelitis in New Zealand. Maori and European Compared'. *New Zealand Medical Journal* **57**: 242-50.
- Champtaloup, M. A. (1939). 'Adult Serum in the Prevention of Measles. A report on its use in New Zealand'. *New Zealand Medical Journal* **38**: 206-09.
- Cherry, J. D. (1989). 'Pertussis and the Vaccine Controversy' in Root, R. K., McLeod Griffiss, J., Warren, K. S., Sande, M. A. eds. (1989). *Immunization. Contemporary Issues in Infectious Diseases Volume 8*. New York, Churchill Livingstone.
- Christie, A. B. (1980). *Infectious Diseases: Epidemiology and Clinical Practice*. London, Churchill Livingstone.
- Clark, H. (1993). 'Women and Health' in Women's Electoral Lobby. eds. (1993). *Walking Backwards into the Future*, Hamilton.
- Clements, C. J. (1982). 'Lower Immunisation Rates in the UK'. *New Zealand Medical Journal* **95**(717): 710-11.
- Clements, C. J. (1984). 'Polio immunisation: live or inactivated vaccine'. *New Zealand Family Physician* **11**: 24-25.
- Clements, C. J., Patel, A. C., Pearce, N. E. (1989). '1988 New Zealand national immunisation survey: methodology'. *New Zealand Medical Journal* **102**: 320-322.
- Cliff, A., Haggett, P., Smallman-Raynor, M., (1993). *Measles. A Historical Geography of a Major Human Viral Disease From Global Expansion to Local Retreat, 1840-1990*. Oxford, Blackwell.
- Clark Nelson, M., Rogers, J. (1992). 'The Right to Die? Anti-Vaccination Activity and the 1874 Smallpox Epidemic in Stockholm'. *Social History of Medicine* **5**(3):370-88.
- Cohen, V. (1975). *Sister Kenny. The Woman who Challenged the Doctors*. Minneapolis, University of Minnesota Press.
- Cole, D. (1982). 'Doctrinal deviance in New Zealand medical practice: some historical comments', *New Zealand Medical Journal* **July 10**: 543-44.
- Collier, L. H. (1978). 'Reactions after pertussis vaccine'. *British Medical Journal* **1**(6118): 985-86.
- Collinson, H. (1954). 'Untoward Local Effects of Immunisation with the Bacillus

- Calmette-Guerin (BCG). 'A Report of Ten cases'. *New Zealand Medical Journal* **53**: 170-76.
- Collins, C. M. (1974). 'Stop Tetanus'. *Health* **26**(4): 15.
- Coney, S. (1980). 'Experts disagree on Rubella Vaccine'. *Broadsheet* **77**: 8.
- Coney, S. (1988). *The Unfortunate Experiment. The full story behind the inquiry into cervical cancer treatment*. Auckland, Penguin.
- Coney, S. (1993). 'Parents Centre New Zealand 1952-' in Else, A. ed. (1993). *Together. A History of Women's Organisations in New Zealand*. Historical Branch, Department of Internal Affairs, Wellington.
- Coney, S. ed. (1993). *Standing in the Sunshine. A History of New Zealand Women since they won the vote*. Auckland, Penguin.
- Coney, S. (1993). 'The Origins and Early Years of the Women's Liberation Movement' in Coney, S. ed. (1993). *Standing in the Sunshine. A History of New Zealand Women since they won the vote*. Auckland, Penguin.
- Coney, S. (1993). 'Unfinished Business. The Cartwright Report Five Years On' in Coney, S. ed. (1993). *Unfinished Business. What happened to the Cartwright Report?* Auckland, Women's Health Action.
- Coney, S. ed. (1993). *Unfinished Business. What happened to the Cartwright Report?* Auckland, Women's Health Action.
- Cook, R. B. (1987). 'Measles vaccination'. *New Zealand Medical Journal* **August 26**: 539.
- Cooter, R. ed. (1992). *In the name of the child. Health and Welfare 1880-1940*. London, Routledge.
- Coulter, H. L., Fisher, B. L. (1985). *DPT: A shot in the dark*. San Diego, New York, London, Harcourt Brace Jonavanich.
- Crofton, W. M. (1939). *The cure of acute and chronic infections by active immunisation*. London, John Bale Medical Publications.
- Cullen R. M., Walker, W. J. (1997). 'Pertussis hospitalisations and mass vaccination in New Zealand 1948-1996'. *New Zealand Family Physician* **24**(6): 45-48.
- Cullen R. M., Walker, W. J. (1999). 'Poliovirus in New Zealand 1915-1997'. *New Zealand Family Physician* **26**(3): 48-51.
- Cullen R. M., Walker, W. J. (1996). 'Measles epidemics 1949-91: the impact of mass immunisation in New Zealand'. *New Zealand Medical Journal* **109**(1039): 400-02.
- Cumpston, J. H. L. and edited by Lewis, M. J. (1989). *Health and Disease in Australia. A history*. Canberra, AGPS Press.
- Daniels, W. L. (1988). 'The risk of hepatitis B'. *New Zealand Medical Journal* **101**(854): 614.
- Daly, C. (1993). 'Broadsheet Collective 1972-' in Else, A. ed. (1993). *Together. A History of Women's Organisations in New Zealand*. Historical Branch, Department of Internal Affairs, Wellington.
- Dann, C. (1985). *Up Under. Women and Liberation in New Zealand 1970-1985*. Wellington, Allen & Unwin.
- Dare, T. (1998). 'Mass Immunisation Programmes: Some Philosophical Issues'. *Bioethics* **12**(2): 125-50.
- Davenport-Hines, R. P. T. S. J. (1992). *Glaxo. A History to 1962*. Cambridge, Cambridge University Press.
- Davidson, M. McD. (1973). 'S.S.P.E. in New Zealand'. *Lancet* **ii**(December): 1332-33.
- Davidson, V. D. (1974). 'Children at Risk'. *Health* **26**(1): 15.

- Davidson, W. C. 'The Mantoux Tuberculin Test in Tb detection'. *Health* **8**(1): 4-5.
- Davis, P. (1987). 'Measles'. *New Zealand Medical Journal* **100**(827): 424.
- Deem, H., Fitzgibbon, N. (1945, 2nd revised edn, 1953). *Modern Mothercraft: A Guide to Parents. Official Handbook of the Royal New Zealand Plunket Society for the Health of Women and Children. Dunedin, Plunket Society.*
- Department of Health. (1960). 'Immunisations: Triple Antigen now supplied Free'. *New Zealand Medical Journal* **59**: 501-02.
- Department of Health. (1964). 'Prevention of Tetanus'. *New Zealand Medical Journal* **63**: 161.
- Department of Health. (1982). 'Immunisation'. *New Zealand Nursing Journal* **October**: 9-10.
- Department of Health and Social Security. (1981). *Whooping Cough: Reports from the Committee on Safety of Medicines and the Joint Committee on Vaccination and Immunisation.* London, HMSO.
- Derek Taylor, C. N. (1968). 'Measles Vaccination - letter'. *New Zealand Medical Journal* **68**: 126.
- Dew, K. (1995). *The Measles Vaccination Campaigns in New Zealand, 1985 and 1991: The issues behind the panic.* Wellington, Victoria University of Wellington.
- Dew, K. (1999). 'Epidemics, panic and power: representations of measles and measles Vaccines'. *Health* **3**(4): 379-98.
- Dick, G. (1974). 'Reactions to Routine Immunization in Childhood'. *Proceedings of the Royal Society of Medicine* **67**(5): 371-72.
- Dick, G. (1978). 'The whooping cough vaccine controversy', in Volter, A., Friedman, H. eds. (1978). *New Trends and Developments in Vaccines.* Lancaster, MTP Press.
- Dickson, N. (1987). 'Measles'. *New Zealand Medical Journal* **100**(827): 424-25.
- Diphtheria Prevention Commission, (1932). *Saving Children's Lives. Diphtheria Prevention in the City of New York.* New York, Dept of Health.
- Dixon, C. W. (1965). 'Prevention of Tetanus'. *New Zealand Medical Journal* **64**: 377-80.
- Dobbie, M. (1990). *The Trouble with Women. The Story of Parents Centre New Zealand.* Whatamongo Bay, Cape Catley.
- Dodge, J. S. (1977). 'The Changing Pattern of Infectious Diseases'. *New Zealand Hospital* **Aug-Sept**: 11-14.
- Dodge, J. S. (1977). 'Infectious Diseases: the changing pattern'. *Health* **29**(1): 8-9.
- Donley, J., Hinton, B. (1993). 'New Zealand Homebirth Association 1978-' in Else, A. ed. (1993). *Together. A History of Women's Organisations in New Zealand.* Wellington, Historical Branch, Department of Internal Affairs.
- Donovan, J. W. (1969). 'A study in New Zealand Mortality: 6. Epidemic Diseases'. *New Zealand Medical Journal* **70**: 406-15.
- Donovan, J. W. (1970). 'A Study in New Zealand Mortality: 7. Infectious Diseases (Concluded)'. *New Zealand Medical Journal* **71**(143):143-47.
- Dow, D. A. (1995). *Safeguarding the Public Health. A History of the New Zealand Department of Health.* Wellington, Victoria University Press.
- Dow, D. A., Mansoor, O. (1996). 'New Zealand immunisation schedule history'. *New Zealand Medical Journal* **109**: 209-12.
- Dow, D. A. (1999). *Maori Health & Government Policy 1840-1940.* Wellington, Victoria University Press.
- Drake, K. (1988). 'Immunization. Get the Facts Before You Decide'. *Healthy Options*

June/July: 2-4.

- Duffey, J. (1990). *The Sanitarians. A History of American Public Health*. Chicago, University of Illinois Press.
- Dunstall, G. (1992). 'The Social Pattern', in Rice, G. ed. *The Oxford History of New Zealand*, 2nd edn. Auckland, Oxford University Press.
- Durbach, N. (2000). 'They Might As Well Brand Us: Working-Class Resistance to Compulsory Vaccination in Victorian England'. *Social History of Medicine* **13**(1): 45-62.
- Durbach, N. (2005). *Bodily Matters: The Anti-Vaccination Movement in England, 1853-1907*. Durham, Duke University Press.
- Dwork, D. (1993). 'Childhood,' in Porter, R. ed. *Companion Encyclopaedia of the History of Medicine*. London, Routledge. **2**: 1072-91.
- Earnest, G. (1964). 'Targets for Tetanus Attack'. *New Zealand Family Doctor* **8**(6): 21.
- Editorial (1949). 'B.C.G. Vaccination in New Zealand'. *New Zealand Medical Journal* **48**(265): 261-63.
- Editorial (1980). *Parents Centre Bulletin*, **80**: 6.
- Editorial (1972). 'Paediatric Society of New Zealand'. *New Zealand Medical Journal* **May**: 303.
- Editorial (1973). 'N.Z. and S.S.P.E.' *Lancet* **ii**(October): 772.
- Editorial (1977). 'Immunisation for Children'. *New Zealand Medical Journal* **April 13**: 283.
- Editorial. (1955). 'Poliomyelitis Immunisation'. *Journal of the New Zealand Association of Bacteriologists* **10**(2): 13-16.
- Ehregut, W. (1978). 'Whooping-cough vaccination. Comment on the Report from Joint Committee on Vaccination and Immunisation'. *Lancet* **i**(February): 370-71.
- Elliot, R. B. (1977). 'The Importance of Immunisation'. *Health* **29**(1): 10.
- Ellis-Pegler, R. B. (1987). 'Meningitis vaccination in New Zealand'. *New Zealand Medical Journal* **100**(829): 501.
- Ellis-Pegler, R. B. (1989). 'Vaccination for children: so many changes'. *New Zealand Medical Journal* **102**(871): 342-44.
- Else, A., ed. (1993). *Together. A History of Women's Organisations in New Zealand*. Historical Branch, Department of Internal Affairs, Wellington.
- Epidemiology Advisory Committee. (1960). 'Tetanus'. *New Zealand Medical Journal* **59**: 551.
- Essex, C., Tuohy, P. (1993). 'How to treat... immunisation'. *New Zealand Doctor* **April**: 27-34.
- Faed, J. M. (1985). 'Cutting corners with hepatitis B vaccination'. *New Zealand Medical Journal* **December 11**: 1055.
- Farmer, K., Armstrong, L. V. (1969). 'The Serological Response of Neonates to Oral Poliovirus Vaccine'. *New Zealand Medical Journal* **70**: 168-70.
- Farmer, K., Gunn, T., Woodfield, D. G. (1985). 'Passive immunoprophylaxis of hepatitis B virus infections in newborn infants'. *New Zealand Medical Journal* **98**: 851-53.
- Feery, B. (1981). 'Impact of immunization on disease patterns in Australia'. *Medical Journal of Australia* **II**: 174.
- Feldberg, G. (1995). *Disease and Class. Tuberculosis and the shaping of modern North American society*. New Brunswick, New Jersey, Rutgers University Press.

- Findlay, K., Parker, C., Westaway, J. (1987). 'What you should know about Immunisation'. *New Zealand Woman's Weekly* **September 14**: 27-32.
- Forsell, P. (1972). 'Diphtheria immunity in Victoria'. *Medical Journal of Australia* **1**: 1023-26.
- Fox, R. (1977). 'Letter to the Editor'. *Lancet* **February 19**: 420.
- Francis, R. S. R., McMiken, J. B. (1938). 'The Prevention of Tuberculosis Infection, with Special Reference to Hospital Nurses in New Zealand'. *New Zealand Medical Journal* **37**: extract.
- Francis, R. S. R. (1952). 'B.C.G. Vaccination'. *New Zealand Nursing Journal* **December 15**: 201-03.
- Frost, S. (1991). 'Immunisation in general practice'. *New Zealand General Practice* **July 9**: 33-34.
- Gamble, W. A. (1948). 'Immunisation Is A Proved Safeguard'. *Health* **1**(1): 7.
- Gandevia, B. (1978). *Tears often Shed. Child health and Welfare in Australia from 1788*. Rushcutters Bay, NSW, Pergamon Press.
- Gangarosa, E. J., Galazka, A. M., Wolfe, C. R., Phillips, L. M., Gangarosa, R. E., Chen, R. T. (1998). 'Impact of anti-vaccine movements on pertussis control: the untold story'. *Lancet* **351**: 356-61.
- Gastel, B. (1973). 'Measles: A potentially finite History'. *Journal of the History of Medicine and Allied Sciences* **28**: 34-44.
- Geier, D., Geier, M. (2002) 'The True Story of Pertussis Vaccination: A Sordid Legacy?' *Journal of the History of Medicine and Allied Sciences*, **57**: 249-84.
- Glass, W. I. (1960). 'Tetanus'. *Health* **12**(1): 11.
- Glen Killeen, M. (1968). 'Eradication of Diphtheria as a major infectious disease'. *New Zealand Journal of Medical Laboratory Technology* **22**: 27-30.
- Goldsmid, J. (1988). *The Deadly Legacy. Australian History and Transmissible Disease*. Kensington, New South Wales University Press.
- Goldwater, P. N. (1983). 'The cost of hepatitis B vaccine: money or morbidity?' *New Zealand Medical Journal* **96**(736): 588.
- Gould, T. (1995). *A Summer Plague. Polio and its Survivors*. London and New Haven, Yale University Press.
- Griffith, A. H., McKeown, T., Hooper, P. D., Mithal, A., Rivers, D. (1975) 'Letters on whooping cough vaccination'. *British Medical Journal* **4**(5992): 347-48.
- Griffith, A.H. (1981). 'Medicine and the media - vaccination against whooping cough'. *Journal of Biological Standardization* **9**: 475-82.
- Griffith, A.H. (1989). 'Permanent brain damage and pertussis vaccination: is the end of the saga in sight'. *Vaccine* **7**(3): 199-210.
- Grimshaw, M. (1995). 'Scientific Specialization and the Poliovirus Controversy in the Years before World War II'. *Bulletin of the History of Medicine* **69** (1): 44-65.
- Grist, N. R. (1977). 'Letter on Whooping-cough Vaccination'. *Lancet* **i**(February): 358.
- Guerin, L. (1985). 'Undercover Epidemic'. *NZ Listener* **August 31**: 16-18.
- Gustafson, B. (1990), 'The National Governments and Social Change (1949-1972)' in Sinclair, K. ed. (1990). *The Oxford Illustrated History of New Zealand*. Oxford, Oxford University Press.
- Guy, C. (1993). 'Maori Women move to the cities - Ngati Poneke was our Turangawaewae' in Coney, S. ed. (1993). *Standing in the Sunshine. A History of New Zealand Women since they won the vote*. Auckland, Penguin.
- Guy, C., Coney, S. (1993). 'Suppression of 'Quackery' and Unorthodox Practitioners' in Coney, S. ed. (1993). *Standing in the Sunshine. A History of New Zealand*

- Women since they won the vote*. Auckland, Penguin.
- Hamilton, D. G. (1979). 'Whooping Cough Immunization'. *Medical Journal of Australia* **II**(15 December): 651.
- Hamilton, W. (1961). 'Oral Poliomyelitis Vaccine'. *Health* **13**(3): 4-5.
- Hamilton, W. (1979). 'Letter to the Minister - Rubella Vaccination'. *GP: Journal of the GP Society* **37**: 1.
- Hammonds, E. M. (1999). *Childhood's Deadly Scourge. The campaign to control diphtheria in New York City, 1880-1930*. Baltimore and London, John Hopkins University Press.
- Harding, C. M., Bolden, K. J. (1982). 'Whooping cough vaccination: A review of the controversy'. *Maternal and Child Health* **7**: 319-24.
- Harding, C. M. (1984). 'Verbal probability and expected frequency of expressions used in relation to immunisation'. *Health Education Journal* **42**(4):104-08.
- Harding, C.M. (1985). 'Whooping-cough vaccination: the case presented by the British national press'. *Child care, health and development* **11**: 21-30.
- Hardy, A. (1993). *The Epidemic Streets. Infectious disease and the Rise of Preventative medicine 1865-1900*. Oxford, Clarendon Press.
- Hardy, A. (1997). 'Poliomyelitis and the Neurologists: The view from England, 1896 1966'. *Bulletin of the History of Medicine* **71**(2): 249-72.
- Hardyment, C. (1983). *Dream Babies. Three Centuries of Good Advice on Child Care*. New York, Harper & Row.
- Harris, B. (1995). *The Health of the Schoolchild. A history of the school medical service in England and Wales*. Buckingham, Open University Press.
- Harrison, G. P., Durham, G. A. (1992). 'The 1991 measles epidemic: how effective is the vaccine?' *New Zealand Medical Journal* **105**: 280-82.
- Hardy, I. R. B., Lennon, D. R., Mitchell, E. A. (1987). 'Measles Epidemic in Auckland 1984-85'. *New Zealand Medical Journal* **100**(823): 273-75.
- Hart, G. R. (1945). 'N.Z. Must Battle Against TB'. *N.Z. National Review*, **28**(8): 7-8.
- Hay, I. (1989). *The Caring Commodity. The Provision of Health Care in New Zealand*. Auckland, Oxford University Press.
- Health. (1954). 'The Fight Against Diphtheria is on again in New Zealand'. *Health* **6**(1): 3.
- Health. (1961). 'Tetanus can be prevented'. *Health* **13**(1): 7.
- Health. (1961). 'Polio In Retreat'. *Health* **13**(4): 4-5.
- Health. (1962). 'Oral Polio Vaccine Programme Extended'. *Health* **14**(1): 13.
- Health. (1963). 'The Birth of the Bacillus Calmette Guerin'. *Health* **15**(2): 10, 13.
- Health. (1965). 'Prevention of Tetanus'. *Health* **17**(1): 13.
- Health. (1976). 'Tuberculosis'. *Health* **28**(2): 14.
- Health. (1979). 'Rubella - a change in policy'. *Health* **31**(1): 16.
- Health. (1979). 'Rubella'. *Health* **31**(2): 6.
- Health. (1979). 'Changes to the Immunisation Programme'. *Health* **31**(4): 12.
- Health. (1980). 'Diphtheria - Down but Not Out'. *Health* **32**(2): 14.
- Health. (1987). 'Immunisation: the New Zealand scene'. *Health* **39**(1): 3-8.
- Health. (1988). 'Hepatitis B'. *Health* **40**(2): 10.
- Health. (1988). 'Hepatitis B. Why we have to immunise'. *Health* **40**(3): 3.
- Hendrick, H. (1994). *Child Welfare. England 1872-1989*. London, Routledge.
- Hercus, C. E. Shore, R. A., Barrett, H. E., North, J. H. (1929). 'An epidemiological study of diphtheria in a remote New Zealand community'. *Journal of Hygiene* **29**: 243-58.
- Hercocock, F. (1999). *Alice. The Making of a Woman Doctor 1914-1974*. Auckland,

- Auckland University Press.
- Hickling, S. (1963). 'Tuberculosis in New Zealand, Past, Present and Future'. *New Zealand Medical Journal* **62**: 221-29.
- Hickling, S. (1966). 'Immunisation against Diphtheria, Tetanus and Whooping Cough in Childhood'. *New Zealand Medical Journal* **65**: 357-62.
- Hickling, S. (1969). 'Immunisation in Childhood'. *New Zealand Medical Journal* **February**: 108-09.
- Hickling, S. (1977). 'Tetanus Immunisation'. *New Zealand Medical Journal* **86**(601): 529-30.
- Hiddlestone, H. J. H. (1980). 'Rubella - A safe and necessary vaccine'. *New Zealand Medical Journal* **August 13**: 101-04.
- Hinman, A. R. (1984). The Pertussis Vaccine Controversy'. *Public Health Reports* **99**(3): 255-59.
- Hodge, J. (1990). 'Immunisation: Worldwide Facts'. **May/June**: 8-11.
- Holdaway, M. D. (1974). 'Viruses and Vaccines'. *New Zealand Journal of Physiotherapy* **4**(6): 15-19.
- Hollingworth, J. R., Hage, J., Hanneman, R. A (1990). *State Intervention in Medical Care. Consequences for Britain, France, Sweden, and the United States, 1890-1970*. Ithaca and London, Cornell University Press.
- Holt, L. B. (1950). *Developments in Diphtheria Prophylaxis*. London, William Heinemann.
- Hood, D. A., Edwards, I. R. (1989). 'Meningococcal vaccine - do some children experience side-effects?' *New Zealand Medical Journal* **102**(862): 65-67.
- Hooker, C. (2000). 'Diphtheria, Immunisation and the Bundaberg Tragedy: A Study of Public Health in Australia'. *Health and History* **2**: 52-78.
- Hooker, C., Bashford, A. (2002). 'Diphtheria and Australian Public Health: Bacteriology and Its Complex Applications, c. 1890-1930'. *Medical History* **46**: 41-64.
- Holden, J. M., Strang, D. U. (1965). 'Reactions to Tetanus Toxoid: Comparison of Fluid and Adsorbed Toxoids'. *New Zealand Medical Journal* **62**(398): 574-77.
- Hopley, E. (1998). *Campaigning Against Cruelty. The hundred year history of the British Union for the Abolition of Vivisection*. London, British Union of Abolition.
- Horsley, M. (1996). 'Informed Consent and Vaccinating Children'. *Primary Health Care New Zealand* **November**: 57-58.
- Hudson, D.B. (1959). 'Innoculations - How and When?' *New Zealand Family Doctor* **3**(9): 39.
- Humphrey, A. R., Matson, N. B. J., Lala, S., Cook, R. B. (1988). 'Hepatitis B vaccination in Tauranga'. *New Zealand Medical Journal* **101**(851): 518.
- Hursthouse, R. (1987). 'Immunisation recall'. *New Zealand Medical Journal* **September 9**: 569.
- Illingworth, R. S. (1981). *Infections - and the immunisation of your child*. Edinburgh, Churchill Livingstone.
- Immunisation Awareness Society. (1988). 'Hepatitis B immunization'. *Healthy Options* **October/November**: 11.
- ImmNuZ. (2004). 'Pertussis Epidemic Escalates', *ImmNuZ* **38**(November): 3.
- ImmNuZ. (2005). 'Latest Cases', *ImmNuZ* **41**(August): 2.
- ImmNuZ. (2006). 'Practice Nurse Survey', *ImmNuZ* **46**(November): 3.
- ImmNuZ. (2006). 'CFS and Immunisation', *ImmNuZ* **46**(November): 1.
- Kattani, H. (1977). 'Tuberculosis'. *Health* **29**(1): 11.

- Kawharu, I. H. ed. (1975). *Conflict and Compromise. Essays on the Maori since Colonisation*. Wellington, A. H. & A. W. Reed.
- Kennedy, D. P. (1960). 'Tetanus'. *New Zealand Medical Journal* **59**: 551.
- Kennedy, E. L. 'Telling Tales: Oral History and the Construction of Pre-Stonewall Lesbian History' in Perks, R., Thomson A. eds. (2006). *The Oral History Reader*. 2nd edition, New York, Routledge.
- Kershaw, K. (1987). 'Protecting the Children'. *New Zealand Nursing Journal* **March**: 24-25.
- King, C. R. (1993). *Children's Health in America. A History*. New York, Twayne.
- King, F. T. (1913, reprinted until 1932. Revised and enlarged in 1940). *Feeding and Care of Baby*. London, Macmillan.
- King, M. (1991). 'Between Two Worlds' in Rice, G. ed. (1991). *The Oxford History of New Zealand*, 2nd edn. Auckland, Oxford University Press.
- King, M. (2003). *The Penguin History of New Zealand*. Auckland, Penguin.
- Klajman, A., Sternbach, M., Drucker, M., Geminder, D., Sadan, N. (1974). 'Severe complications of measles vaccination'. *Modern Medicine of New Zealand* **August 5**: 57-58.
- Kleinman, L. C. (1992). 'To end an epidemic. Lessons from the History of Diphtheria'. *The New England Journal of Medicine* **326**(11): 773-77.
- Knights, H. T. (1961). 'The value of T.A.B. Inoculation'. *New Zealand Nursing Journal* **54**(9): 20-21.
- Kulenkampff, M., Schwartzman, J. S., Wilson, J. (1974). 'Neurological complications of pertussis inoculation'. *Archives of Diseases of Childhood* **49**: 46-49.
- Kuttner, J. (1988). 'Hepatitis B immunisation'. *New Zealand Medical Journal* **May 11**: 244.
- Lancaster, H. O. (1952). 'The Mortality in Australia from Measles, Scarlet Fever and Diphtheria'. *Medical Journal of Australia* **II** (23 August): 272-76.
- Lane, M. R., Lee, S. P., Yeong, M. L., Woodfield, D. G. (1985). 'Hepatitis B viral infections: clinical, pathological, serological features and treatment'. *New Zealand Medical Journal* **98**: 57-61.
- Lang, W. R., Rowatt Brown, A., Swan, F. H., Howden, C. W., Manning, R. R., Orpin, M. G. (1961). 'Poliomyelitis in Auckland. A Report on the 1961 Epidemic'. *New Zealand Medical Journal* **60**: 450-54.
- Lang, W. R. (1968). 'Measles Vaccine'. *New Zealand Medical Journal* **May**: 570-71.
- Langford, D. (1981) 'Rubella Vaccine'. *New Zealand Medical Journal* **93**(683): 315.
- Lau, R. C. H., Bettelheim, K. A., Patel, A. C. (1988). 'The 1985 national immunisation survey: diphtheria, tetanus, and pertussis (whooping cough)'. *New Zealand Medical Journal* **101**(858): 797-800.
- L. D. F. (1965). 'I know that polio cripples'. *New Zealand Family Doctor* **9**(10): 5-7.
- Leggat, N. (1991). 'Measles on Elm Street'. *Metro* **December**: 93-103.
- Le Marquand, M. (1964). 'Tetanus. A deadly disease that is hard to cure but easy to prevent.....' *Health* **16**(1): 8-10.
- Lennon, D., Reid, S. (1994). 'Childhood immunisation in New Zealand'. *New Zealand Medical Journal* **May 11**: 171-72.
- Levy, F. (1985). 'Monday - Measles Day'. *New Zealand Woman's Weekly* **November 18**: 63.
- Lewis, J. (1986). *What price community medicine? The philosophy, practice and politics of public health since 1919*. Brighton, Wheatsheaf books.
- Lewis, J. (1986-87). 'The prevention of diphtheria in Canada and Britain, 1914-1945'. *Journal of Social History* **20**: 168-76.

- Lindner, U., Blume, S. S. (2006). 'Vaccine Innovation and Adoption: Polio Vaccines in the UK, the Netherlands and West Germany, 1955-1965'. *Medical History* **50**(4): 425-46.
- Little Treasures. (1989) 'Cot Death and Immunisation'. *Little Treasures*, **May/June**: 40.
- Longdill, S. (1988). 'The jab that does the job'. *Parents Centre Bulletin* **113**: 12.
- Maclean, F. S. (1964). *Challenge for Health. A History of Public Health in New Zealand*. Wellington, R. E. Owen.
- Maclean, F. S. (1953). 'The World Health Organization and its Work'. *New Zealand Medical Journal* **December**: 469-74.
- McLeod, J. (1987). 'Meningococcal meningitis immunisation campaign in Auckland'. *Doc Brief- Auckland Division of the New Zealand Medical Association* **7**: 2.
- McLeod, R. (1980). 'Only bits and foetuses'. *GP: journal of the GP Society* **39**: 17-18.
- McClure, M. (1998). *A Civilised Community. A History of Social Security in New Zealand 1898-1998*. Auckland, Auckland University Press.
- McCready, J. R. (1968). 'Population Growth and Urbanisation', in Schwimmer, E. ed. (1968). *The Maori People in the Nineteen-sixties*. Auckland, Blackwood & Janet Paul.
- McCuaig, K. (1999). *The Weariness, the Fever, and the Fret. The Campaign against Tuberculosis in Canada 1900-1950*. Montreal and Kingston, McGill-Queens University Press.
- Macdonald, F. (1987). 'Meningitis: a campaign goes astray'. *NZ Listener* **August 29**: 16-18.
- Mackay, J. (1972). 'The Contribution of the Department of Health to Child Health'. *New Zealand Medical Journal* **75**: 299-302.
- McKendrick, M. W., Gully, P. R., Geddes, A. M. (1980). 'Protection against pertussis by Immunisation'. *British Medical Journal* **28**: 1390-91.
- McKeown, T. (1976). *The Modern Rise of Population*. London, Edward Arnold.
- McKinnon, J. A. (1979). 'The impact of the Media on whooping cough immunization'. *Health Education Journal* **37**: 198-202.
- McNamara, F. N. (1965). 'New vaccines against measles and other viruses'. *New Zealand Medical Journal* **64**: 442-43.
- Malmgren, B., Vahlquist, B., Zetterstrom, R. (1960). 'Complications of Immunization'. *British Medical Journal* **ii**(December): 1800-01.
- Mande, R. (1968). *B.C.G. Vaccination*. London, Dawsons of Pall Mall.
- Martin, A. (1977). 'Whooping cough. Duty of care'. *Nursing Times* **73**(32): 20.
- Mansoor, O, Durham, G., Tobias, M. (1997). 'Can New Zealand eliminate measles?'. *New Zealand Medical Journal* **110**(1054): 387-89.
- Mary Anne. (1956). 'Polio Injections', *New Zealand Woman's Weekly* **December 3**: 3.
- Medical Journal of Australia. (1971). 'Immunization against measles'. *Medical Journal of Australia* **1**(May): 939-40.
- Medical Research Council. (1956). 'Vaccination against Whooping-cough'. *British Medical Journal*. **ii**(August): 454-62.
- Medical Research Council. (1959). 'Vaccination against Whooping-cough'. *British Medical Journal*. **i**(April): 994-1000.
- Medical Research Council. (1968), 'Vaccination against Measles'. *British Medical Journal*. **1**(5589): 395-96.
- Medical Research Council. (1968). 'Vaccination against Measles: Clinical Trial of

- Live Measles Vaccine Given Alone and Live Vaccine Preceded by Killed Vaccine'. *British Medical Journal* **2**: 449-52.
- Meech, T. D., Wright, C. C. (1990). 'Hepatitis B vaccination campaign problems'. *New Zealand Medical Journal* **103**(886): 137.
- Melnick, J. L. (1978). 'Vaccines and Vaccine Policy: The Poliomyelitis Example'. *Hospital Practice* (January): 41-47.
- Mendelsohn, R. S. (1984). *How to raise a healthy child in spite of your doctor*. New York, Ballantyne Books.
- Mercer, W. B. (1928). 'The Responsibilities and Duties of the State and of the Community in regard to Infectious Diseases'. *New Zealand Medical Journal* **27**: 375-81.
- Meredith, H. C. (1972). 'The workload and morbidity in a country general practice'. *New Zealand Medical Journal* **76**(485): 247-51.
- Miles, J. A. R. (1956). 'Patterns of Poliomyelitis Immunity'. *New Zealand Medical Journal* **55**: 184-88.
- Miles, J. A. R. (1959). 'Polio Vaccine - The Full Story'. *New Zealand Family Doctor* **3**(3): 14-15.
- Millen, J. (1991). *Glaxo. From Bonnie Babies to Better Medicine*. Palmerston North, Glaxo New Zealand Limited.
- Miller, C. L. (1967). 'Measles - The present status of vaccination'. *The Practitioner* **199**: 607-15.
- Miller, C. L., Pollock, T. M. Clewer, A. D. E. (1974). 'Whooping-cough Vaccination. An Assessment'. *Lancet* **ii**(August): 510-13.
- Miller, D. L., Ross, E. M., Alderslade, R., Bellman, M. H., Rawson, N. S. B. (1981). 'Pertussis immunisation and serious acute neurological illness in children'. *British Medical Journal* **282**: 1595-99.
- Miller, J., Kuttner, N. S., Hermon, Y. E. (1982). 'The 1980 rubella outbreak in New Zealand'. *New Zealand Medical Journal* **June 9**: 385-87.
- Milne, A. (1980). 'Viral hepatitis in the eastern Bay of Plenty'. *New Zealand Medical Journal* **92**: 87-91.
- Milne, A., Allwood, G. K., Moyes, C. D., Pearce, N. E., Lucas, C. R. (1985) 'Prevalence of hepatitis B infections in a multiracial New Zealand community'. *New Zealand Medical Journal* **98**(782): 529-32.
- Milne, A., Allwood, G. K., Moyes, C. D., Pearce, N. E., Lucas, C. R., Krugman, S. (1986). 'Low dose hepatitis B vaccination in children'. *New Zealand Medical Journal* **99**(795): 47-49.
- Milne, A. (1987). 'Hepatitis B vaccination'. *New Zealand Medical Journal* **100**(819): 152.
- Milne, A., Moyes, C. D., Dimitrakakis, M. (1988). 'Low dose hepatitis B vaccination in children: benefit of low dose boosters'. *New Zealand Medical Journal* **101**(847): 370-71.
- Milne, A. (1988). 'Hepatitis B vaccines'. *New Zealand Medical Journal* **101**(859): 831.
- Milne, A. (1989). 'Trial of SKF rDNA hepatitis B vaccine'. *New Zealand Medical Journal* **102**(866): 198.
- Milne, A. Heydon, J. L., Hindle, R. C., Pearce, N. E. (1989). 'Prevalence of hepatitis B in children in a high risk New Zealand community, and control using recombinant DNA vaccine'. *New Zealand Medical Journal* **102**(866): 182-84.
- Milne, A., Moyes, C. D., Waldon, J., Pearce, N. E., Krugman, S. (1989). 'Mass vaccination against hepatitis B in preschool children: immunogenicity after

- three reduced doses'. *New Zealand Medical Journal* **102**(874): 429-30.
- Milne, A, Waldon, J., Moyes, C. D., Pearce, N. E. (1990). 'Hepatitis B vaccine boosters: further studies in children'. *New Zealand Medical Journal* **103**(901): 539-41.
- Mitchell, E. A., Williams, P. (1985). 'Measles immunisation in South Auckland'. *New Zealand Medical Journal* **November 27**: 1016-17.
- Morgen, S. (2002). *Into Our Hands. The Women's Health Movement in the United States, 1969-1990*. Piscataway, Rutgers University Press.
- Moody, W. (1978). *The Dynamic Doctor: Arthur Moody of Otago*. Auckland, Richards and William Collins.
- Moyes, C. D. (1988). 'Hepatitis B vaccines: use in childhood'. *New Zealand Medical Journal* **April 13**: 165-66.
- Muraskin, W. (1988). 'The Silent Epidemic: the social, ethical, and medical problems surrounding the fight against Hepatitis B'. *Journal of Social History* **22**: 277-98.
- Muraskin, W. (1990). 'Individual Rights Versus the Public Health: The Controversy over the Integration of Retarded Hepatitis B Carriers into the New York City Public School System'. *Journal of the History of Medicine and Allied Sciences* **45**: 64-98.
- Muraskin, W. (1993). 'Individual Rights Vs the Public Health: the Problem of the Asian Hepatitis B Carriers in America'. *Social Science and Medicine* **36**(3): 203-16.
- Muraskin, W. (1995). 'Bucking the Establishment: Alexander Milne and the fight for a New Zealand Hepatitis B immunisation programme'. *Social Science and Medicine* **41**(2): 211-25.
- Murphy, A. W. (1955). 'Studies on the Epidemiology of Poliomyelitis in New Zealand. Neutralising Antibodies present in the Sera of 100 Children'. *New Zealand Medical Journal* **51**: 256-61.
- Musgrove, J. P. (1971). 'Measles Vaccine'. *New Zealand Medical Journal* **May**: 309.
- National Health and Medical Research Council. (1975). *Immunisation Procedures*. Canberra, Australian Government Publishing Service.
- New, S. J., Senior, M. L. (1991). "'I don't believe in needles": qualitative aspects of a study into the uptake of infant immunisation in two English Health Authorities'. *Social Science and Medicine* **33**(4): 509-18.
- Newman, J. (1987). 'Meningitis vaccination in Auckland'. *New Zealand Medical Journal* **100**(833): 636.
- New Zealand Hospital. (1988). 'High incidence of Hepatitis B prompts mass immunization campaign'. *New Zealand Hospital*. **May**: 23-24.
- New Zealand Nursing Journal. (1913). 'Antityphoid inoculations amongst nurses'. *New Zealand Nursing Journal* **6**(3): 126.
- New Zealand Nursing Journal. (1914). 'Anti-typhoid inoculation'. *New Zealand Nursing Journal* **7**(4): 181.
- New Zealand Nursing Journal. (1941). 'Prevention of Diphtheria. A New Zealand Wide Campaign for Protection'. *New Zealand Nursing Journal* **34**(4):118-19.
- New Zealand Nursing Journal. (1943). 'The Value of Immunisation'. *New Zealand Nursing Journal* **36**(2): 35.
- New Zealand Nursing Journal (1948). 'Bacillus Calmette-Guerin'. *New Zealand Nursing Journal* **41**(1): 14.
- New Zealand Nursing Journal. (1949). 'Experiment to fight TB'. *New Zealand Nursing Journal* **42**(4): 99.

- New Zealand Nursing Journal. (1963). 'Immunisation Programme in New Zealand'. *New Zealand Nursing Journal* **56**(11): 30.
- New Zealand Nursing Journal. (1970). 'Rubella Vaccine - Press Release'. *New Zealand Nursing Journal* **63**(1): 28.
- New Zealand Nursing Journal. (1970). 'Tender accepted for Rubella Vaccine'. *New Zealand Nursing Journal* **63**(7): 14.
- New Zealand Parent Teacher Association (1988). 'Department of Health Hepatitis B Immunisation Programme'. *Parent and School* **19**(3): 33.
- New Zealand Pharmacy. (1988). 'Genetically engineered vaccine for Hepatitis-B'. *New Zealand Pharmacy* **8**(5): 10.
- North, E. A. (1949). 'Immunisation against Tuberculosis and its Application to Indigenous Pacific Peoples'. *New Zealand Medical Journal* **48**: 274-82.
- Nursing Gazette. (1946). 'Diphtheria Immunization, North Auckland District'. *Nursing Gazette* **March 1**: 12.
- Nursing Gazette. (1947). 'Official Instructions. The School Public Health Programme: Duties of Nurses'. *Nursing Gazette*. **March 1**: 10-12.
- Offit, P. A. (2005). *The Cutter Incident. How America's First Polio Vaccine led to the growing Vaccine Crisis*. New Haven and London. Yale University Press.
- Oldfield, L. I. (1944). 'Diphtheria Immunisation. Reply to Dr Turbott'. *NZ Listener* **10**(257): 22-23.
- Olssen, E. (1992). 'Towards a New Society' in Rice, G. ed. (1992). *The Oxford History of New Zealand*, 2nd edn. Auckland, Oxford University Press.
- Oshinsky, D. M. (2005). *Polio. An American Story. The Crusade That Mobilized the Nation Against the 20th Century's Most Feared Disease*. New York, Oxford University Press.
- Overell, B. (1995). 'Brief History of Anti-Vivisection in New Zealand'. *Mobilise* **43**: 6-7.
- Parents Centre Bulletin. (1983). 'Rubella on increase in NZ'. *Parents Centre Bulletin* **96**: 19.
- Parkes, C. M. (1993). 'The Battle for Abortion Rights in the 1970s' in Coney, S. ed. (1993). *Standing in the Sunshine. A History of New Zealand Women since they won the vote*. Auckland, Penguin.
- Parish, H. J. (1965). *A History of Immunization*. Edinburgh, E. & S. Livingstone.
- Parish, H. J. (1968). *Victory with Vaccines. The story of Immunization*. Edinburgh, E. & S. Livingstone.
- Parry, N., McNair, D. eds. (1983). *The Fitness of the Nation*. Leicester, The Society.
- Paul, J. R. (1971). *A History of Poliomyelitis*. New Haven and London, Yale University Press.
- Paul, C. (1980). 'Rubella Immunisation'. *New Zealand Medical Journal* **92**(673): 440.
- Pilson, J. (1963). 'New Zealand and Health Education'. *New Zealand Nursing Journal* **October**: 9-10.
- Porter, R. (1985). 'The Patient's View: Doing Medical History from below'. *Theory and Society* **14**(2): 175-98.
- Porter, R., Porter, D. (1988). 'The Politics of Prevention: Anti-Vaccinationism and Public Health in Nineteenth-Century England'. *Medical History*. **32**: 231-52.
- Porter, D. (1999). *Health, Civilization and State. A history of public health from ancient to modern times*. London, Routledge.
- Porter, D. (1999). 'The history of Public Health: Current themes and approaches'. *Hygiea Internationalis* **1**(1): 9-21.
- Porter, D (1979). 'Rubella Immunisation'. *New Zealand Medical Journal* **March 14**:

- 187-88.
- Porter, M. (1987). 'Vaccination Campaign'. *NZ Listener* **October 3**: 13.
- Poutasse, E. J. (1994). 'Dial-1-800-history. (the first word - mnemonic telephone number)'. *American Heritage* **45**(1): 30.
- Proust, A. J. ed. (1991). *History of Tuberculosis in Australia, New Zealand and Papua New Guinea*. Curtin, ACT, Brolga Press.
- Public Health Laboratory Service. (1969). 'Efficacy of Whooping-cough Vaccines used in the United Kingdom before 1968'. *British Medical Journal* **iv**(November): 329-33.
- Public Health Laboratory Service. (1973). 'Efficacy of Whooping-cough Vaccines used in the United Kingdom before 1968'. *British Medical Journal* **i**(February): 259-62. (final report).
- Raffel, M. W. (1965). 'A Consultative Committee on Infant and Preschool Services'. *New Zealand Journal of Public Administration* **28**(1): 37-79.
- Rei, T. 'Tatau tatau - let us be united!' in Coney, S. ed. (1993). *Standing in the Sunshine. A History of New Zealand Women since they won the vote*. Auckland, Penguin.
- Rei, T. (1993). 'Te Ropu Wahine Maori Toko i te Ora - Maori Women's Welfare League 1951-' in Else, A. ed. (1993). *Together. A History of Women's Organisations in New Zealand*. Historical Branch, Department of Internal Affairs, Wellington.
- Reid, J. S. (1984). 'Childhood Immunisations: a recall system is worthwhile'. *New Zealand Medical Journal* **97**: 688-89.
- Research Defence Society. (1957). *B.C.G. Vaccination against Tuberculosis. Outstanding questions posed and answered by the Research Defence Society*. London, Research Defence Society.
- Rice, G. (1988). 'The making of New Zealand's 1920 Health Act'. *New Zealand Journal of History* **22**(1): 3-22.
- Rice, G. (1992). 'A Revolution in Social Policy' in Rice, G. ed. (1992). *The Oxford History of New Zealand, 2nd edn*. Auckland, Oxford University Press.
- Richardson, D. (1993). *Women, Motherhood and Childrearing*. New York, St. Martin's Press.
- Riseley, R. C., Smith, A. H., Laugesen, M., Chapman, C. J. (1983). 'Computer assessment of alternative rubella strategies in New Zealand'. *New Zealand Medical Journal* **96**(729): 235-38.
- Rogers, L., Deer, B. (2004). 'Scientists desert MMR Maverick', *The Sunday Times* **1** (March 7): 11.
- Rogers, N. (1989). 'Germs with Legs: Flies, disease and the new public health'. *Bulletin of the History of Medicine* **63**: 599-618.
- Rogers, N. (1989). 'Dirt, Flies and Immigrants'. *Journal of the History of Medicine and Allied Sciences* **44**(October): 486-505.
- Rogers, N. (1990). *Dirt and Disease. Polio before FDR*. New Brunswick, New Jersey, Rutgers University Press.
- Rogers, N. (1995). 'A Disease of Cleanliness: Polio in New York City 1900-1990' in Rosner, D ed. (1995). *Hives of Sickness. Public Health and Epidemics in New York City*. New Brunswick, New Jersey, Rutgers University Press.
- Rose, B. S. (1962). 'Maori Health and European Culture'. *New Zealand Medical Journal* **61**: 491-95.
- Rose, R. J. (1960). *Maori-European Standards of Health*. Wellington, Department of Health.

- Rose, R. J. (1972). *Maori-European Comparisons in Mortality*. Wellington, Department of Health.
- Rosen, G. (1993). *A History of Public Health*. Baltimore, John Hopkins University.
- Rosenthal, S. R. (1957). *BCG Vaccination against Tuberculosis*. London, J. & A. Churchill Ltd.
- Rosier, P. (1989). 'Being well and feeling better. Alternative health remedies under the microscope'. *Broadsheet* **168**: 20-21.
- Rosier, P. ed. (1992). *Broadsheet. Twenty Years of Broadsheet Magazine*. Auckland, New Women's Press.
- Russell, L., Dawson, B., Perera, S., Trout, F. (1981). 'Public Health Nursing from a Combined Base'. *New Zealand Nursing Journal* **July**: 5.
- Rutty, C. J. (1994). '40 Years of Polio Prevention! Canada and the Salk Vaccine trial of 1954-55'. *Abilities* **19**(26): 28.
- Rutty, C. J. (1996). 'Connaught and the Defeat of Diphtheria'. *Conntact* **9**(1).
- Rutty, C. J. (1996). 'Epidemic Polio and the Canadian State 1936-37'. *Canadian Bulletin of Medical History* **13**: 277-314.
- Rutty, C. J. (1996). 'Herculean Efforts. Connaught and the Canadian Polio Vaccine Story'. *Conntact* **9**(3).
- Sabbage, L. (1989). 'Shots in the Dark. Sizing Up Immunisation'. *Broadsheet* **171**: 16-19.
- Salmond, A. (1976). *The Life Story of a Maori Woman. Amiria. Amiria Manutahi Stirling as told to Anne Salmond*. Birkenhead, Auckland, Reed books.
- Salmond, A. (1980). *Eruera The teachings of a Maori Elder*. Auckland, Oxford University Press.
- Sato, M., Yamada, T., Yamamoto, K., Yamamoto, N. (1976). 'Evidence for hybrid formation between rubella virus and a latent virus of BHK 21/W1-Z cells'. *Virology* **69**: 691-99.
- Schwimmer, E. ed. (1968). *The Maori People in the Nineteen-sixties*. Auckland, Blackwood & Janet Paul.
- Scott, D. J., Wiles, R. O., Kirby, I. D. (1987). 'A general practice audit of childhood morbilli vaccination'. *New Zealand Family Physician* **14**: 126-27.
- Scott-Vincent, R. (1985). 'Measles...Again!' *New Zealand Woman's Weekly* **April 15**: 17.
- Scott-Vincent, R. (1985). 'In the wake of tragedy parents make special plea'. *New Zealand Woman's Weekly* **May 13**: 44-45.
- Seville, P. (1988). 'The dose of hepatitis B vaccine'. *New Zealand Medical Journal* **101**(857): 774.
- Shannon, F. T., Fergusson, D. T., Clark, M. A. (1980). 'Immunisation in the First Year of Life'. *New Zealand Medical Journal* **91**(655): 169-71.
- Silva, P. A., Williams, S. M., Stewart, A. C. (1981). 'Immunisations in the fifth year of life: report from Dunedin Multidisciplinary Child Development Study'. *New Zealand Medical Journal* **93**(680): 180-81.
- Sinclair, K. (1991). *A History of New Zealand*. 4th edn. revised. Auckland, Penguin.
- Sinclair, K. (1990). 'Hard Times' in Sinclair, K. ed. (1990). *The Oxford Illustrated History of New Zealand*. Oxford, Oxford University Press.
- Sinclair, K. ed. (1990). *The Oxford Illustrated History of New Zealand*. Oxford, Oxford University Press.
- Smith, F. B. (1979). *The People's Health 1830-1910*. London, Croon Helm.
- Smith, F. B. (1988). *The retreat of Tuberculosis 1850-1950*. London, Croon Helm.
- Smith, F. B. (1993). 'Tuberculosis and Bureaucracy - Bacillus Calmette et Guerin: its

- troubled path to acceptance in Britain and Australia.' *Medical Journal of Australia* **159**: 408-11.
- Smith, H. (1980). 'Measles Again'. *British Medical Journal*, March 15: 766-69.
- Smith, J. S. (1990). *Patenting the Sun. Polio and the Salk Vaccine*. New York, William Morrow.
- Smith, K. (1987). 'Vaccination Campaign'. *NZ Listener* **September 19**: 12.
- Smith, T. (1977) 'Whooping cough vaccine'. *Journal of Medical Ethics* **3**: 100-01.
- Soljak, M. A. (1984). 'How many children are fully immunised?' *New Zealand Medical Journal* **97**: 37-39.
- Soljak, M. A., Handford, S. (1987). 'Early results from the Northland immunisation register'. *New Zealand Medical Journal* **100**: 244-46.
- Soljak, M. A. (1987). 'Immunisation registration'. *New Zealand Medical Journal* **October 28**: 666.
- Sorrensen, M. P. K. (1990). 'Modern Maori: The Young Maori Party to Mana Motuhake' in Sinclair, K. ed. (1990). *The Oxford Illustrated History of New Zealand*. Oxford, Oxford University Press.
- Spittle, B. J., Pollock, M., O'Donnell, T. V. (1973). 'Tetanus occurring in spite of Immunisation'. *New Zealand Medical Journal* **77**(491): 250-51.
- Spock, B. (1945). *The Commonsense Book of Baby and Childcare*. New York, Duell, Sloane and Pearce.
- St George, I. M. (1979). 'Immunise your child! - The impact of World Health Day 1977 in Dunedin'. *New Zealand Medical Journal* **89**(629): 91-93.
- St George, I. M. (1981). 'Rubella Immunisation'. *New Zealand Medical Journal* **93**(676): 58.
- Stanley, D. (1964). 'When counter measures count'. *New Zealand Family Doctor* **8**(1): 25-27.
- Stanton, J. (1994). 'What shapes Vaccine Policy? The case of Hepatitis B in the UK'. *Social History of Medicine* **7**(3): 427-47.
- Steele, B. T. (1973). 'Measles in Auckland 1971-72'. *New Zealand Medical Journal* **77**(492): 293-97.
- Stewart, G. T. (1977). 'Vaccination against Whooping-cough. Efficacy versus risks'. *Lancet* **i**(January): 234-37.
- Stewart, G. T. (1979). 'Toxicity of pertussis vaccine: frequency and probability of reactions'. *Journal of Epidemiology and Community Health* **33**: 150-56.
- Stroobant, M. I. (1956). 'Polio Vaccination'. *NZ Listener* **35**(893): 5.
- Stroobant, M. I. (1956). 'Polio Vaccination'. *NZ Listener* **35**(900): 25.
- Strom, J. (1960). 'Is Universal Vaccination against pertussis always justified?' *British Medical Journal* **ii**(October): 1184-86.
- Sutherland, I., Fayers, P. M. (1971). 'Effect of measles Vaccination on Incidence of Measles in the Community'. *British Medical Journal* **1**(March): 698-702.
- Swann, K. E. (1961). 'The World Health Organization'. *Health* **June**: 7.
- Szreter, S. (1988). 'The importance of social intervention in Britain, mortality decline c.1850-1914: a reinterpretation of the role of public health', *Social History of Medicine*, **1**: 1-38.
- Taylor, A. (1992). 'A Shot in the Dark'. *Next* **February** 102-07.
- Taylor, C. A., Pullar, T. H. (1949). 'Specific Immunisation against Tuberculosis and its Application in New Zealand'. *New Zealand Medical Journal* **48**: 264-73.
- Tennant, A. A. (1969). 'A Recent Schick Survey in the Wellington District'. *New Zealand Medical Journal* **69**: 85-90.
- Tennant, M. (1991). 'A Suitable Niche for Women: The Role of Women in the New

- Zealand School Medical Service 1912-1940' in Pybus, M. ed. (1991). *Fourth International Congress on Women's Health Issues. New Zealand Papers*. Massey University, Palmerston North.
- Tennant, M. (1991). 'Missionaries of Health: The School Medical Service During the Inter-war Period' in Bryder, L. ed. (1991). *A Healthy Country. Essays on the Social History of Medicine in New Zealand*. Wellington, Bridget Williams Books.
- Tilyard, M. W., Carey-Smith, T. K., Finlayson, J. W. (1988). 'Whooping cough in a suburban general practice'. *New Zealand Family Physician* **15**: 57-58.
- Time. (1968). 'Infectious Diseases: Rubella Vaccines'. *Time*, **November 1**: 62-63.
- Thompson, A. W. S. (1953). 'The Last Days of Poliomyelitis - Perhaps'. *Journal of New Zealand Royal Sanitary Institute* **14**: 260-74.
- Thoms, D., Sedgwick, C. (1997). *Understanding Aotearoa/New Zealand Historical Statistics*, Palmerston North, Dunmore Press.
- Thomson, A. 'Fifty Years On: An International Perspective on Oral History'. *Journal of American History* **85**(2): 581-95.
- Tobias, M., Miller, J. A., Clements, C. J., Patel, A. C. (1987). 'Hepatitis B in New Zealand children: the 1985 national immunisation survey'. *New Zealand Medical Journal* **100**: 203-06.
- Tobias, M., Scadden, J., Clements, J., Patel, A. (1987). 'Measles immunity in children: the 1985 national immunisation survey'. *New Zealand Medical Journal* **100**: 315-17.
- Turbott, H. B. (1944). 'Immunisation for Diphtheria'. *NZ Listener* **10**(249): 18.
- Turbott, H. B. (1953). 'Diphtheria'. *Health* **5**(2): 12.
- Turbott, H. B. (1954). 'N.Z. tackles the problem of Tuberculosis'. *Health* **6**(2): 6-7.
- Turbott, H. B. (1954). 'The Facts about Diphtheria'. *NZ Listener* **31**(782): 20.
- Turbott, H. B. (1954). 'Tetanus'. *NZ Listener* **31**(792): 18-19.
- Turbott, H. B. (1955). 'Tuberculosis – a Changing Scene'. *NZ Listener* **32**(822): 22.
- Turbott, H. B. (1955). 'Poliomyelitis'. *Health* **7**(4): 4-5.
- Turbott, H. B. (1956). 'Polio Vaccination'. *NZ Listener* **35**(886): 26.
- Turbott, H. B. (1956). 'The Safety of the Polio Vaccine'. *NZ Listener* **35**(889): 27.
- Turbott, H. B. (1956). 'Questions on Tb'. *NZ Listener* **35**(894): 24.
- Turner, B. (1989). 'Hepatitis B vaccination'. *New Zealand Medical Journal* **102**(862): 83.
- Tytler, W. H. (194-). *Memorandum on B.C.G. For the Consideration of the Aneurin Bevan, Minister of Health and Joseph Westwood, Secretary of State for Scotland*.
- Vosburgh, M. G. (1978). *The New Zealand Family and Social Change: A Trend Analysis*. Wellington, Victoria University.
- Voss, L., Lennon, D., Gillies, M. (1989). 'Haemophilus Influenzae type b disease in Auckland children 1981-87'. *New Zealand Medical Journal* **102**(865): 149-51.
- Walzer Leavitt, J. (1996). *Typhoid Mary. Captive to the Public's Health*. Boston, Beacon Press.
- Walker, R. (1991). 'Maori People since 1950' in Rice, G. ed. (1991). *The Oxford History of New Zealand*, 2nd edn. Auckland, Oxford University Press.
- Wakefield A. J., et al (1998). 'Ileal-lymphoid-nodular hyperplasia, non-specific colitis, and pervasive development disorder in children', *Lancet* **351**(9103): 637-41.
- Warner, K. (1986). 'Is vaccination more risky than the disease?' *New Zealand Herald* **February 1**.

- Wehrle, P. F., Top, F. H. Snr, eds. (1989 9th edn). *Communicable and Infectious Diseases*. St Louis, The C. V. Mosby Company.
- Webster, C. (1983). 'The Health of the School Child during the Depression' in Parry, N., McNair, D. eds. (1983). *The Fitness of the Nation, Physical and Health Education in the nineteenth and twentieth centuries. Proceedings of the 1982 annual conference of the History of Education Society of Great Britain*. Leicester, The Society.
- Weindling, P. (1992). 'From Isolation to Therapy: Children's hospitals and diphtheria in Fin siecle Paris, London and Berlin', in Cooter, R. ed. (1992). *In the Name of the Child. Health and Welfare 1880-1940*. London, Routledge.
- Weindling, P. (1993). 'The Immunological Tradition' in Porter, R. ed. (1993). *Companion Encyclopaedia of the History of Medicine*. London, Routledge. **1**: 192-204.
- Westbrook, J. (1958). 'Tetanus can be Prevented'. *New Zealand Family Doctor* **2**(7): 32-33.
- Wherret, G. J. (1977). *The Miracle of the Empty Beds. A History of Tuberculosis in Canada*. Toronto and Buffalo, University of Toronto Press.
- Williams, M. (1990). 'Immunization: Does the medical profession really know the score or are they just dealing out more of the old mumbo jumbo? Part 1'. *Soil & Health* **49**(3): 34-36.
- Williams, M. (1990-91). 'Immunization: Does the medical profession really know the score or are they just dealing out more of the old mumbo jumbo? Part 2'. *Soil & Health* **49**(4): 39-41.
- Williams, U. (1949). *Health and Healing in the New Age*. 5th edn. Wellington, A. H. & A. W. Reed.
- Williams, U. (1956). 'Polio Vaccination'. *NZ Listener* **35**(897): 5.
- Wilson, D. J. (1998). 'A Crippling Fear: Experiencing Polio in the Era of FDR'. *Bulletin of the History of Medicine* **72**(3): 464-95.
- Wilson, G. S. (1947). 'The value of B.C.G. vaccination in the control of tuberculosis'. *British Medical Journal* **2**(855).
- Wilson, J. (1975). 'Whooping cough vaccine'. *British Medical Journal* **4**(5994): 459-60.
- Wilson, T., Gostling, J., Ounsted, C., Grundy, P., Malleson, P., Fox, R. (1977). 'Letters to the Editor. Vaccination against whooping cough'. *Lancet* **1**(8008): 419-20.
- Wogan, J. M. (1955). 'Tuberculosis control in New Zealand'. *New Zealand Medical Journal* **54**: 241-50.
- Wilson, J. R. (1963). *Margin of Safety. The story of the Poliomyelitis Vaccine*. London, Collins.
- Women's Electoral Lobby, ed. (1993). *Walking Backwards into the Future*. Hamilton, Women's Electoral Lobby.
- World Health Organization. (1958). *The First Ten Years of the World Health Organization 1948-1957*. Geneva, World Health Organization.
- World Health Organization. (1968). *The Second Ten Years of the World Health Organization 1958-1967*. Geneva, World Health Organization.
- World Health Organization, (1972). *Measles Vaccination. Report on a working group, 25-29 April 1972*. Copenhagen, World Health Organization.
- Wright, A. E. (1943). *Studies on Immunisation. First Series*. London, William Heinemann.
- Wright-Sinclair, R. E. (1987). *A History of the New Zealand Medical Association*.

Wellington, Butterworths.

Young, B. (1970). 'Blitzkrieg in the war against measles'. *New Zealand Woman's Weekly* **July 13**: 22.