MENDING BODIES: 
POLIO TREATMENT 
IN AUSTRALIA

Kerry Ann Highley

A thesis submitted for the degree of 
Doctor of Philosophy of 
The Australian National University

August 2009
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Keith Vyau Higley

A thesis submitted in fulfillment of the requirements for the degree of
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September 2000
Statement of Originality

This thesis contains no material that has been accepted for the award of any other degree or diploma in any university and, to the best of my knowledge and belief, contains no material published or written by another person, except where due reference is made in the text.

Kerry Highley
August 2009
I express my gratitude to my supervisor Dr John Knott for his calm, wise guidance and encouragement over the past four years while this thesis was taking shape. The other members of my panel, Emeritus Professor F.B. Smith and Dr Anthea Hyslop, read final drafts of the chapters, and offered helpful and perceptive suggestions on its structure. I am grateful to the many librarians and archivists I met in Australia and overseas during the collation of the primary sources used: their knowledge and expertise helped me identify and find many of the documents detailed in the bibliography.

My thanks to Associate Professor Naomi Rogers and her husband Professor John Harley Warner of Yale University, who welcomed me into their home, and to the staff of University House in Minneapolis, Minnesota who made my stay there so productive and enjoyable. I thank my family and friends for their support, especially my husband, Ed Highley, who has encouraged and believed in me from the beginning of this lengthy endeavour.
This thesis examines the social context of a disease during a time of social crisis: the epidemics of poliomyelitis that emerged in the twentieth century. Its focus is on the Australian experience, within the context of what was happening overseas, particularly in the United States of America, England and New Zealand. It investigates the disease of polio and its treatment over a long period, the scientific endeavour that led to the discovery of the poliovirus, and the early studies in virology and immunology that culminated in the production of a polio vaccine. Early histories of medicine were often written from the perspective of the leading medical men and neglected the experience of the patient, who was viewed with increased subjectivity. That approach has changed and, throughout this thesis, the voice of the polio survivor can be heard clearly. The personality of the survivor governed the response to the disease: ethnicity, class, age and gender all mediated the individual reaction. For some polio survivors, feelings of fear, rejection, denial and anger at suddenly finding themselves to be different in a world that valued conformity were universal.

For two generations in the twentieth century, the influence of polio was profound, especially for those who survived their encounter with the virus and were treated for the paralysis that sometimes followed: treatment that generated a fierce debate between medical practitioners and those who advocated alternative therapies. By the 1950s, most Western countries had abandoned the orthodox medical practice of immobilising polio survivors in plaster casts for many months. That was not the case in Australia, where the monopoly of orthodox medicine in the treatment of polio paralysis remained unchallenged until the counterculture and feminist movements, political activism, and the influx of new ideas from around the world transformed Australian society and its formerly unquestioning attitude towards doctors and medicine.
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In the first two decades of the twentieth century, advancements in public health and sanitation improved the morbidity and mortality rates of many of the common childhood diseases. Ironically, those advancements also provided the optimum conditions for the re-emergence of an old foe, infantile paralysis or poliomyelitis. In 1895 an epidemic of polio appeared in Australia and generated panic and fear in families with young children. It arrived silently and suddenly, often with symptoms that could easily be attributed to a chill, or sunstroke, or eating tainted food, or a dozen or so seemingly trivial ailments. For the lucky ones, the encounter with the poliomyelitis virus did not give rise to full-blown symptoms of infantile paralysis and, within a few days, their body returned to a state of health. For the unfortunate, exposure to the virus initiated paralysis in their body, primarily affecting the legs. The poliovirus did not distinguish between rich and poor, or by race or creed, or between those who were physically robust and those who were not, and the suddenness with which apparently healthy children succumbed to the virus meant that the disease was regarded with particular dread.

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1 Poliomyelitis has been known by several names, but all versions have been associated with a disease that manifested as a flaccid, or drooping, paralysis of the limbs. That term as used by scientists refers to the invasion of the grey matter of the spinal cord by the poliovirus. Infantile paralysis referred to the fact that the disease primarily affected young children in the nineteenth century, while 'polio' became the more common term used in the twentieth century. The shorter, more commonly accepted term 'polio' is used in the remainder of this thesis except when 'infantile paralysis' is more appropriate in the historical context.

This thesis details the social context of a disease during a time of social crisis: the epidemics of polio that emerged in the twentieth century. Writing the history of medicine has always been an interdisciplinary endeavour and this thesis is no exception. It analyses the disease of polio and its treatment over a long period, and also the interplay between changes in the understanding and management of the epidemiological and therapeutic dimensions of the epidemics within a context of cultural and social transformation in Australia and overseas. The thesis details how some epidemiological and scientific beliefs about the disease of polio have been adopted, while others have been discarded or modified, over the past fifty years. It aims to inform readers of how the experience of polio affected those who suffered from the disease, their families, and the broader community, and reveals how certain concerns and feelings of fear and denial were universal for the polio survivor. It is also about the practitioners, both sanctioned and censured, who struggled with each other for the right to treat the paralysed, and strived to mend their broken bodies. It was important to understand the relative positions of medical power and influence in Australia in relation to other countries in order to unravel the reasons why an alternative, unorthodox method of treating the paralysed body was largely denied to Australian survivors of polio in the middle of the twentieth century. There were good people on both sides of the debate and, in the end, both the advocates of new methods of polio treatment, and those who opposed them, conceded some ground. However, for the majority of Australians, that reconciliation came too late.

My understanding of the epidemics of polio that occurred in Australia and overseas was enriched by reading works relating to the history of medicine in general, and to more specific works on the epidemics themselves. The most useful

general overview on the history of polio was by the American physician, John R. Paul, A History of Poliomyelitis, (1971). As professor of preventive medicine and epidemiology at Yale University Medical School and an active participant in polio research in the mid-twentieth century, he was uniquely qualified to write such an account. His book documents how the poliovirus was discovered, and its consequent aetiology, pathology and epidemiology, through to the early studies in virology that culminated in the discovery of a vaccine to prevent polio. Paul highlights the tangled path those discoveries took, and how the shortcomings and snobbishness of some highly influential Rockefeller scientists impeded progress towards a vaccine. In the early part of the twentieth century, polio was viewed as a shameful disease, and one associated with dirt and poverty. In her lucid and scholarly account of the early polio epidemics in the United States, Naomi Rogers, Dirt and Disease: Polio before FDR, (1992), illustrated how society and officialdom remained entrenched in their belief about traditional associations between dirt and disease as they struggled to explain the epidemic in New York in 1916. She addressed the confusion that existed at the time about the aetiology of the disease and its causative agent, and described the xenophobic attitude of many Americans to the influx of immigrants to that country in the early twentieth century, as well as official and public attempts to link polio with those who lived in poorer, urban areas, while refuting any possible link between the disease and the middle class.

Polio is an infectious disease and, in Australia, it came within the jurisdiction of the Public Health departments in the various States. The disease is caused by an enterovirus, and it enters the body by way of the mouth, before multiplying first...
in the tonsil area and then in the intestinal lining. The virus is spread by the faecal contamination of food and water. In young children it was most commonly spread at the age when they started to socialise with others from outside the family group, and most often by minor contamination, usually from fingers placed in the mouth. In children with immunity, the exposure to the virus produced no ill effect apart from a general malaise, and was indicated by a rise in antibody level. In the unfortunate few, the virus passed from the intestine into the blood. If it then reached the nervous system it produced effects ranging from a simple headache and fever with some changes in the spinal fluid — non-paralytic poliomyelitis — to paralytic disease which could rapidly become fatal.4

Public health problems in the early years of the twentieth century in Australia were defined by their possible effect on the nation’s health, and the practice of public health was focused on improving community health by the application of sanitation and food standards, by control of communicable disease, and by preventive treatment in the fields of maternal and baby health. Public health is an area of specialisation that has often been undervalued and under-appreciated by other medical specialists, and surveys have shown that the prestige of medical specialities is determined hierarchically. In the 1950s, the curative model of private medicine dominated the preventive model of public health in Australia and in the United States, and there was an escalation of the friction between medical and public health practitioners.5 Sources on public health, epidemiology, bacteriology and

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The history of disease is central to any study of polio, and several works were instrumental to furthering my understanding of the disease process and its effects on the human body, both physiological and psychological. For example, F. B. Smith, The People’s Health: 1830–1910, (1979); Deborah Lupton, Medicine as Culture: Illness, Disease and the Body in Western Societies, (1994); Michael B. A. Oldstone, Viruses, Plagues, and History, (1998) and Charles E. Rosenberg, Explaining Epidemics and Other Studies in the History of Medicine, (1992). Also covered in the first chapter is the scientific experimentation that led to the discovery of a vaccine to prevent polio, and the later vaccination campaigns carried out in the United States of America.
and Australia. Vaccination has proved to be a somewhat controversial public health procedure, and has a history of opposition from diverse groups, including those holding certain religious views, those who oppose restrictions to individual liberty, anti-vivisectionists, and some who question the safety issues around the practice of introducing a foreign substance into a healthy body. The history of vaccination is not one of unqualified triumph over disease. The tragedy surrounding the Cutter incident and the production of the Salk vaccine is witness to the fact that accidents can happen. Today, doubts about vaccination efficacy persist within a more educated public aware of its democratic rights. A plethora of articles exists in medical and scientific journals about the poliovirus, and many were examined for the background to this chapter. Some of the journals consulted were: the Medical Journal of Australia, the Journal of the American Medical Association, the Lancet, the Journal of Experimental Medicine, Science, Scientific American, and the British Medical Journal. Examples of works studied on vaccination and the development of the Salk vaccine were: Saul Benison, Tom Rivers: Reflections on a Life in Medicine and Science. An Oral History Memoir, (1967); Jane S. Smith, Patenting the Sun: Polio and the Salk Vaccine, (1990); Angela Creager, The Life of a Virus, (2002) and David M. Oshinsky, Polio: An American Story, (2005).

One major stumbling block in discovering how the poliovirus was transmitted from person to person was the preoccupation and belief that the nasal cavity was the portal of entry for the virus, probably because the influential and respected Dr Simon Flexner, Head of the Rockefeller Institute for Medical Research in New York, was convinced that such was the case. But Flexner's research and conclusions would be proven flawed because of his dogged adherence to using the rhesus monkey (Macaca mulatta) for experimentation and not the cynomolgous monkey (Macaca fascicularis). Many scientists now believe the focus on the experimental poliovirus developed in the Rockefeller laboratories and its induced
neurotropism impeded the development of an effective vaccine for many years. The reading of several books and articles by scientists and clinicians who worked in the institutions where polio research was conducted proved to be illuminating, insightful and sometimes highly entertaining about lives that were dominated by the bench, the bunsen burner, and the animal house. Most valuable was the oral history on Tom Rivers, an eminent virologist who worked at the Rockefeller Institute from 1926 to 1962. Through the voice of Rivers, we heard of his impressions of many of the famous scientists researching the poliovirus in the United States, people like Simon Flexner, Hideyo Noguchi, Peter Olitsky, and many others. Insights into the relationship between Jonas Salk, the National Foundation for Infantile Paralysis and the Rockefeller scientists were fascinating, especially the revelations of the difficulties faced by those working through the complex process of inactivating and producing the Salk vaccine in the face of enormous public and political pressure to furnish a vaccine to protect America's children and young adults against polio. Equally fascinating were the letters from Jean Macnamara to her family and associates held in the National Library of Australia in Canberra, and letters from Macnamara to other workers in the field of polio research were located in the Rockefeller Archive Center in New York. Other works consulted included F. Macfarlane Burnet, Changing Patterns: An Atypical Autobiography, (1968) and his book on the Institute where he became Director — Frank Macfarlane Burnet, Walter and Eliza Hall Institute, 1915–1965, (1971). Burnet's work in virology dominated most of the primary sources cited for this thesis from the Medical Journal of Australia. Frank Fenner's History of Microbiology in Australia, (1990) and Alfred H. Brogan's Committed to Saving Lives: a History of the Commonwealth Serum Laboratories (1990) gave further insights into

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A major part of this thesis was involved in examining the lives of many of those who were afflicted by polio, and those experiences are detailed in the second and fifth chapters. My research did not confine itself to Australia, for disease knows no borders. It is a transnational phenomenon. The study covered many aspects of the patient experience both in this country and in the United States of America, but also included some vignettes from the United Kingdom and New Zealand. Following a period of neglect, polio epidemics and their treatment have materialised as a compelling subject both in literature and in the social history of medicine. Perhaps the emergence of post-polio syndrome (PPS), and its associated increase in muscle weakness and pain in ageing polio survivors, has been the reason for this renewed interest. Disability studies have gained greater prominence over the past thirty years, and polio survivors have developed a voice. There are many voices to be heard in the history of polio: previously the story was of great men and women and their great deeds, and not about the people who felt the pain, or fought to breathe, struggled to stand unaided and learned how to walk again. The disabled are no longer silent and invisible, but a force to be reckoned with. Many are articulate, educated and

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determined to take control over their own bodies — and their numbers make them a powerful political, cultural and social force for good. As a result, politicians have become aware of the disabled vote, and drug companies made mindful of the fact that they are potential consumers. For studies on disability see, for example: Leonard J. Davis, *Enforcing Normalcy: Disability, Deafness and the Body*, (1995); Mark Priestly, *Disability: A Life Course Approach*, (2003); Sharon L. Snyder and David T. Mitchell, *Cultural Locations of Disability*, (2006) and Paul K. Longmore and David Goldberger, *The League of the Physically Handicapped and the Great Depression: A Case Study in the New Disability History*, (2000).

In bookshops, patient experiences of the illness vie for the attention of the reader alongside the social histories of the disease. In polio narratives, the survivor’s voice gives witness to how the experience and pain of polio has been moulded over time by social, cultural and technological change. Many printed sources contained material about patient stories of experiencing polio, and the most valuable for the American and British context were Daniel J. Wilson, *Living with Polio: The Epidemic and Its Survivors*, (2005); Julie Silver, *Polio Voices: An Oral History from the American Polio Epidemics and Worldwide Eradication Efforts*, (2007) and Tony Gould, *A Summer Plague: Polio and Its Survivors*, (1995). As part of my research I travelled to the United States of America and Canada from September to November, 2006. While there I examined many letters from patients and the parents of children with polio detailing how the experience of having polio had affected their lives and those of their family. The Elizabeth Kenny manuscript collection held at the Minnesota Historical Society was invaluable for also providing insights into polio and its treatment in that country.\(^\text{10}\)

Spoken recollections that rely on memory and memory of events in the recent past can be both incomplete and uncertain, and can suffer from problems

associated with bias and distortion. Historians can establish the chronology, framework and context of events by consulting written and printed records, and can create an imaginative construction of the personalities involved. However, there is much that the printed record can never convey, and that is where oral history greatly enriches our understanding of past circumstances and of the people who were players in those events. As Allessandro Portelli maintained:

> The tone and volume range, and the rhythm of popular speech carry implicit meaning and social connotations which are not reproducible in writing.\(^{11}\)

For my research, I relied on the skill of other interviewers in order to bring to life the stories of those who survived polio. Invaluable for this thesis were the interviews collected and detailed in John H. Smith, 'Fear, Frustration and the Will to Overcome: a Social History of Poliomyelitis in Western Australia', (1997), along with the marvellous collection of tape recordings made by archivist Barbara Rossal-Wynne of interviews with some of the polio patients who had been in Fairfield Hospital, Melbourne during the height of the epidemics (The Bryan Richard Speed Infectious Diseases Collection: Fairfield Hospital 1904–1996).\(^{12}\) In her study of the infantile paralysis epidemic in Tasmania, Anne Killalea, *The Great Scourge: The Tasmanian Infantile Paralysis Epidemic*, (1995) provided many examples of patient recollections of surviving polio.

The oral histories consulted also provided a check for some factual information, as well as a cross-referencing tool for verifying the accuracy of other memories of having polio. A detailed discussion on the problems associated with memory is not appropriate to this thesis, but Richard J. McNally, *Remembering Trauma*, (2003) argued that there is good evidence that the memories of children

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\(^{12}\) A few oral histories on polio are held at the National Library of Australia in Canberra. The ABC looked at polio in, B. Nicholls, *Time Frame*, Episode 11, 'Polio Days'. (Australia: Australian Broadcasting Commission, Social History Unit, 1997).
can be genuine, especially when associated with a traumatic event like separation and isolation from parents and family members, or the experience of severe pain. Furthermore, even as the critics of oral history argue that its fault lies in the impreciseness and subjective nature of the sources, others have argued that same subjectivity can be positive.\(^{13}\) My research has indicated that the transnational commonalities that emerged from the large cross-section of recollections examined have facilitated an authentic coalescence of many of the personal fragments about experiencing polio in the twentieth century.

The science of epidemiology that evolved following the work of John Snow in linking a polluted, public water well to an outbreak of cholera in London in 1854, illustrated how a medical specialty developed at a particular time in response to an exceptional circumstance.\(^ {14}\) The epidemiology of polio in Australia is introduced in the third chapter, and many epidemiological studies on the disease have been published in journals and official reports. Those particularly germane to this thesis are footnoted.\(^ {15}\) In general, the more advanced a country in public health standards of hygiene, the more likely it was to experience epidemics of polio. From the second to the fifth decade of the twentieth century, epidemics were almost entirely confined to Scandinavia, the northern United States, Canada, Australia and New Zealand. In

\(^ {13}\) Portelli, 'What Makes Oral History Different,' p69.


these countries, polio was relatively severe, and involved children aged from five to ten years. The disease showed an increasing tendency to produce severe paralysis in young adults. Polio was, and is, a different disease in infants and adults. This is probably due to the fact that because standards of hygiene in the general community had improved, the age at which children were being first exposed to the poliovirus was becoming progressively later and, if paralysis occurred, the effect was generally more severe. In infants (under three months), exposure to the poliovirus either produced no outward symptoms or a mild, flu-like response. Higher average polio rates are consistently associated with lower average infant mortality rates and vice versa. The contemporaneous notion in the northern hemisphere that polio was noticeably a disease of summer and autumn was found not to be true in Australia, when the severe epidemic of 1938 appeared in winter.

The anxiety that parents felt about polio in mid-century Australia was not misplaced. Polio was the only epidemic disease to record an increased incidence in Western countries in the twentieth century. As the century progressed, the intervals between epidemics in Australia became shorter, indicating that polio was becoming endemic. Some reports by researchers have suggested that the 1937-38 epidemic in south-eastern Australia was the severest, but figures released by the World Health Organization (WHO) in 1954 did not support that conclusion. In Australia, the epidemics from 1951 to 1953 saw the median incidence of polio rise to double that


in 1937–38 (see Table 1). It has been estimated that a minimum of 20,000 to 40,000 Australians contracted paralytic polio from the 1930s to the 1960s, and thousands of survivors worldwide are now experiencing the late effects of having had polio. The figures that were collected during my research support that estimation. (Table 2).

<table>
<thead>
<tr>
<th>Table 1. Global poliomyelitis incidence 1926–1953.</th>
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<td>Country</td>
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All statistics, be they collected at local or federal level, rely on cases reported to the authorities by medical practitioners and, as such, are subject to the inconsistencies and human error associated with such an endeavour. On a global scale, the WHO has conceded that regions like Asia, South Asia, Africa, Arabia and some parts of South America did not have the necessary bureaucratic infrastructure in place in the mid-twentieth century to collate reliable figures on cases of polio. However, the WHO reported that polio was rarely seen in tropical regions where other infectious diseases like dysentery and typhoid were common, and have proposed that the high incidence of diarrhoeal illness within the population would have raised the level of immunity against polio. During the Second World War (WWII), there were no polio epidemics.

19 Payne, 'Poliomyelitis as a World Problem,' pp397–399.

20 Dr Marcia Falconer, a Canadian virologist, has estimated that between one and two million Australians were infected with the poliovirus between 1930–1960. Paralytic cases were approximately 1–5% and the number of subclinical cases estimated between 4 and 8 million. M. Falconer, 'Spectrum of Polio Infection Effects in Australian Population,' Post-Polio Network (NSW) Inc, Post-Polio Network Org February 2004.
<table>
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Source: Reports of the Director General of Health, Commonwealth of Australia for the years 1915–1963
within the densely populated and squalid conditions of the concentration camps of Southeast Asia and the East Indies. Apart from the United Kingdom, countries that experienced epidemics in the twentieth century were faced with their worst outbreaks of polio in the prosperous years following WWII.

None of the facts about the transmission of the poliovirus were known until the early 1950s, and various theories were expounded in Australia and globally about its aetiology and spread. Some experts suspected droplet infection from coughing, sneezing or spitting, while others — inspired by the proven success of research into diseases like malaria and the plague — concentrated their efforts on animal or insect vectors as transmission agents. Miasma adherents continued to theorise about the relationship between noxious vapours and disease right up until the late 1930s, while others concentrated on epidemiological studies to try and unlock the secret of how polio spread from one human to another.  


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Polio epidemics highlighted the difference between new and old medical theories and practices, and they stimulated a fierce debate in Australia and the United States about the role of treatment in the care of the paralysed body, and who was qualified to prescribe new therapies and who was not. In pre-Second World War Australia two women, Dr Jean Macnamara and Sister Elizabeth Kenny, symbolised the rift that existed between accepted medical treatment for the paralysed body, and an alternative treatment. In Victoria, Dr Jean Macnamara followed the orthodox approach using splints, plaster casts and braces to protect and control the body before commencing therapeutic exercise — usually after a period of some months. Initially part of the scientifically knowledgeable strata of the medical profession, by her early thirties Jean Macnamara had become an honorary consultant to the physiotherapy department at the Children's Hospital in Melbourne. She had become a lobbyist for change, and was closely involved in many organisational and political issues surrounding the rehabilitation of the polio survivor. She moved in the right social circles, was a friend of Stanley Melbourne Bruce and Enid Lyons, and published many articles on polio treatment in medical journals.  

During the years from 1915–1961, reports of the Director General of Health, the year books of the Commonwealth of Australia, reports of the Directors General of Public Health for the various states, pertinent reports of the National Health and Medical Research Council, and Parliamentary Papers relating to polio and public health.

contribution to the polio treatment debate is introduced in the third chapter against a general background covering therapeutic practices, particularly the use of serum therapy in treating polio and the influence of contemporary eugenic theory on the selection of blood donors, the emergence of orthopaedics as a medical specialty and the development of physiotherapy.


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Australian perspective on the development of rehabilitation techniques was provided by Phillipa Martyr, (1974).

By the early twentieth century, orthodox medicine had consolidated its authority in all areas of medicine including the allied health professions of nursing, radiography, laboratory technology and physical therapy. Western societies turned to medicine and science as the foremost weapons against disease. Medicine embraced modernity, and the advances in technology, diagnostic techniques, pharmaceuticals, and surgical and rehabilitation techniques learned as a result of the First World War. The medical profession expected that medical knowledge should come only from within its accepted canon of scientific expertise and experimentation and, in particular, that erudition about anatomy and physiology had to be learned from its own texts and from cadavers in the dissection room. No other scholarship was acceptable or permitted. Specialisation in medicine became firmly entrenched, and specialists defended their areas of expertise. Specialists were acknowledged as experts not only by the general public, but also among their medical peers, and that gave them increased social and professional status. John Harley Warner, The History of Science and the Sciences of Medicine, (1995) has written on the cultural authority of science, and of how the links formed with the medical profession helped medicine cement its authority socially, culturally and clinically. Paul Starr, has also written about how popular culture in the United States embraced the idea of medical science and its importance in the therapeutic and diagnostic role of medical practice. The Australian public shared that expectation that medical science would provide the answers to the conundrum posed by the epidemiology and treatment of polio. In Australia, Evan Willis explained how newspapers in the late nineteenth

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25 Defined as 'Various social, economic and cultural forces, and scientific and technical events (from antibiotics to open-heart surgery) that have operated to effect the partial suppression of medical pluralism, both actual and historical.' R. Cooter and Society for the Social History of Medicine, Studies in the History of Alternative Medicine (New York: St. Martin's Press, 1988), pxiii.

century began to swing their support behind orthodox medicine by drawing a
distinction between the merits of scientific medicine and the unscientific methods
used by 'quacks.' For this thesis, local and international newspapers were sampled
for an evaluation of how the disease was viewed by the general public. They included
the Sydney Morning Herald, the Argus, the West Australian, the Adelaide Advertiser,
the Courier Mail, the Truth, the Sun, the Sydney Daily Telegraph, and the New York
Times and the Times, London.

The relationship between patient and doctor has historically been one of
inequality. Many scholars have written on how social and cultural power is achieved
through knowledge of the body. See, for example: B.S. Turner, Medical Power and
Social Knowledge, (1987); Michel Foucault, The Birth of the Clinic: An Archaeology
of Medical Perception, (1973) and Roy Porter and Colin Jones, Reassessing Foucault:
Power, Medicine, and the Body, (1994). Individuals came to the medical profession to
have their illness identified and treated, and they came because they had great faith in
the authority and specialised knowledge of doctors. Over time, that interaction has
become ritualised and conducted within social conventions. Since the nineteenth
century, the individual's subjective account of their symptoms to a practitioner was
the first step in arriving at a diagnosis, but the increasing reliance by medicine on
scientific empiricism meant that none of the symptoms described by a patient could
be accepted at face value. They had to be evaluated within a specific framework in
order to elicit the truth or the reason for an individual's ill health. Once a diagnosis
was established, treatments or therapeutics that had been proven in terms of clinical
experience and observation were then prescribed. Medicine as both art and science
continues to focus first on producing the evidence for a diagnosis, and second
on continuing careful observations to give the clinician a sense of developing
prognosis.

27 E. Willis, Medical Dominance: The Division of Labour in Australian Health Care (Sydney: Allen &
Unwin, 1989).

The health care system in nineteenth century Australia had traditionally been dominated by a curative (as opposed to preventive) ideology that was both male-dominated and defined. Socialised medicine in the guise of publicly funded health services, with salaried practitioners appointed by state or federal government was abhorred. Many practitioners spoke out about the evils of state-controlled medicine, and Gillespie argued that the victory of the 'BMA' over the friendly societies for control of the terms of provision of mass medical care was a watershed for the establishment of fee-for-service consultation that continues to underpin the provision of medical care in Australia today. It is clear from these and other works consulted that many Australian medical practitioners were worried about a potential loss of income and independence if the state gained a greater control over the way the profession governed itself, and about conditions of employment and remuneration for professional services. The idea that medical practitioners were solely driven by altruistic goals and were uninterested in financial gain has no basis in reality. For

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28 The British Medical Association in Australia.


Polio epidemics often began silently. A child complained of a slight cold, or a headache or sometimes an upset stomach accompanied by vague, aching pains in the limbs, symptoms that were characteristic of many of the common childhood illnesses. Many parents ignored their child's grumbling, and sent them off to school, or out to play with other neighbourhood children, or to finish some household or farmyard task. Because the symptoms often seemed innocuous and not a cause for concern, polio spread quickly through a vulnerable community through carriers as well as those who later became ill. Later epidemiological studies suggested that fewer than five percent of cases produced paralysis, but for those who were paralysed, the effect on their lives and of those closest to them, was profound. Many variations exist within the human body: black and white, tall and short, fat and thin, but the dichotomy that appears more exclusionary than any other is that of the disabled and able-bodied. Stereotypic labelling of the disabled body in the early twentieth century often related physical deformity to mental illness. In post-Federation Australia, the language of eugenics was widespread, and many medical and scientific journals actively supported intervention in reproduction to bring about a better future for Australia. Eugenics, and the science of improving the quality of the human race by selective breeding and the forced sterilisation of the 'unfit', was a classification that often included the disabled, both physically and mentally. Polio survivors had to readjust to their changed body and new identity, a task made all the more difficult

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if they had previously harboured discriminatory feelings about the disabled body and its place in society."

People with acute poliomyelitis were admitted to hospital, an institution that has changed from one that primarily provided shelter and care for the sick poor and orphans, to one that has become a symbol of medicine and its specialised knowledge. By the beginning of the twentieth century, most large cities in the Western world possessed both private, public and specialist hospitals including those that admitted patients suffering from infectious diseases. Several histories of Australia's specialist hospitals were read during the writing of this thesis. Most apposite were W.K. Anderson, *Fever Hospital: A History of Fairfield Infectious Diseases Hospital*, (2002); Peter Yule, *The Royal Children's Hospital: A History of Faith, Science and Love*, (1999); Alan Gregory, *The Ever Open Door: A History of the Royal Melbourne Hospital 1848-1998*, (1998) and Janet McCalman, *Sex and Suffering: Women's Health and a Women's Hospital: The Royal Women's Hospital, Melbourne*, (1998). There were high risks associated with being born in colonial Victoria, especially if the mother was unmarried, alienated from family support, and forced to sell her labour in order to survive, all of which factors contributed to a poor survival rate for the newborn. Through the history of this specialist hospital for women, McCalman detailed the demographic change that occurred in fertility rates as the colony moved towards Federation and beyond, and of the changing relationship between husband and wife as men became more involved in the decision of whether or not to have another child, or even when that should occur. However, it was McCalman's use of oral history to draw the reader more deeply into the world of the midwifery nurse, the labour ward, and the mother and her baby, that was especially valuable for writing this thesis.

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The other major personality in this study of polio treatment in Australia was Sister Elizabeth Kenny, and her story and contributions are introduced in the fourth chapter. A great deal has been written overseas about Kenny, much of the older work containing inaccuracies. The most useful works on Kenny's life were by John R. Wilson, *Through Kenny's Eyes: An Exploration of Sister Elizabeth Kenny's Views About Nursing*, (1995) and Wade Alexander, *Sister Elizabeth Kenny: Maverick Heroine of the Polio Treatment Controversy*, (2003). Many of the published works on Kenny are either hagiographic biographies or intended for the children's market. A co-authored autobiographical work by Kenny exists, but my research has revealed that much of it is fanciful. In her clinic in Townsville, Kenny endorsed and practised a method of treatment opposite to that endorsed by orthodox medicine and its foremost advocate, Dr Jean Macnamara. Kenny believed in little or no form of constraint for the paralysed body, apart from sand bags and a foot board, endorsed gentle stretching of muscles in the early, acute stage of the disease, and used hot packs to relieve pain, spasm and tightness in muscles. One of the major reasons that patients seek the help of a medical practitioner is for the relief of pain. The pain of polio was often excruciating, but until Elizabeth Kenny made its relief a priority of her treatment regime, and showed how the lessening of pain could be used as a diagnostic tool, pain was often given token acknowledgment. As a medical practitioner, Jean Macnamara was a member of a special coterie, and as such, her knowledge and opinion expected and commanded respect. Nursing in the twentieth century was seen as an excellent example both of patriarchal subordination and as an ideologically driven exploitation that equated nursing with nurture and mothering, and one that was the natural preserve of women. As a nurse, Elizabeth Kenny was expected to devote herself to the physical and practical aspects of patient care as

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dictated by her medical superiors and not, on any account, to involve herself in the diagnostic or the scientific.

John Wilson\(^{33}\) has argued that the campaign directed by many Australian medical practitioners against Elizabeth Kenny and her clinics was motivated more by disdain for her non-medical status than for the methods of treatment she used. Evan Willis\(^{34}\) supported that view in his examination of how doctors and nurses delineated and defined their 'occupational territories' in the treatment of polio in 1930s Australia. Those 'occupational territories' lay within a hierarchical structure, with medical practitioners occupying the top position and directing subordinate nurses to carry out treatment decisions determined by them. Claudia Thame\(^{35}\) agreed that the real reason for the criticism of Kenny was 'the threat of non-medical interference' into an area of medicine that practitioners considered to be their sole preserve. In 1997, the controversy about Elizabeth Kenny reappeared in *Australian Historical Studies*,\(^{36}\) when a paper by Philippa Martyr argued that, along with a 'deep-seated fear in Australian society of the deformed body', it was the fledgling Australasian Massage Association (AMA) that felt most threatened by Kenny's massage methods, for she was seen as encroaching on its territory. Margaret Denton, a physiotherapist, refuted Martyr's claim\(^{37}\) and maintained that the medical profession opposed Kenny because she was 'not a nurse,' and therefore had no basic knowledge of anatomy and physiology.

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\(^{34}\) E. Willis, 'Sister Elizabeth Kenny and the Evolution of the Occupational Division of Labour in Health Care,' *Australian and New Zealand Journal of Sociology* vol. 15, no. 3 (1979), pp30–38.


Kenny risked a great deal when she challenged medical orthodoxy about the best way to treat the paralysed body and, because she did so, she made a significant difference to the lives of many polio survivors. Her ideas and techniques on treatment marked a turning point in physical therapy, but she would make powerful enemies in the medical world in achieving her goal of having her method accepted as a legitimate alternative to orthodox treatment. In the fierce debate that erupted about the correct way to treat the body paralysed by poliomyelitis, it is important to not lose sight of the fact that both women, Dr Jean Macnamara and Sister Elizabeth Kenny, were motivated first and foremost by a desire to help the crippled child and young adult, a badly neglected section of society during that period of Australia's history. Works consulted about the disabled child and adult ranged from the Commonwealth Department of Health, Report of the Australian Conference on Crippled Children, (1936), through to reports from several societies formed in the early half of the twentieth century aimed at rehabilitation and education.38

Unfortunately, most Australian survivors of polio were denied access to Kenny's treatment because of the dominance of allopathic medicine in Australia, and an unwillingness by medical practitioners to return to the medical pluralism that had flourished in late nineteenth-century Australia. The major player in alternative medicine in Australia had been homeopathy but, by 1930, homeopathy was no longer a provider of mainstream medical care. Its Melbourne hospital was renamed

as Prince Henry's, and orthodox medical staff dominated those prescribing homeopathic remedies.39 Unlike the situation in the United States of America in the 1930s, where 'nearly a quarter of American healers were Christian Scientists, osteopaths, or chiropractors of some stripe,'40 medical pluralism was suppressed in Australia, and other alternative healing techniques like homeopathy, chiropractic and osteopathy were actively opposed. The medical profession in early twentieth century Australia was conservative, and slow to change under the influence of social evolution. Nowhere was that more apparent than in Victoria, where the BMA forbad 'consultation with irregular practitioners'41 and employed the same tactics as it had earlier done with the homeopaths to overwhelm and eliminate the Kenny method of treating polio from within the state, and ultimately from Australia.


41 Willis, *Medical Dominance: The Division of Labour in Australian Health Care*, p73.
Chapter 1

The Virus and the Virologists

There are times when workers of great scientific repute continue to misconstrue the meaning of their data or will not admit inadequacies in the techniques employed by them ... when this happens progress in science may be materially impeded.¹

Most Australians born before 1960 can remember the widespread vaccination campaigns that were initiated against polio with first the Salk, then the Sabin vaccines. The Salk immunisation program introduced into this country in 1956 was heralded as the beginning of the end of the ‘war against polio,’ and populations in countries as geographically widespread as Australia, New Zealand, Canada, Sweden and the United States of America breathed a sigh of relief that science had finally, after years of painstaking research, discovered a vaccine to prevent polio.² No longer would communities in Australia fear the unpredictable and puzzling epidemics that had visited the country with increasing frequency since the turn of the century.

nor would parents fear that a child's sudden rise in temperature and aching limbs heralded a life-threatening attack of polio. Today, those symptoms are more likely to be the sign of a relatively trivial infection.

The search for the truth about the aetiology and transmission of the virus, and the quest for a possible vaccine, was not an easy or a smooth road to success. There were many paradoxes. Epidemics of polio increased as sanitation and public health methods of prevention of disease increased; the disease was known as infantile paralysis, yet by the early twentieth century morbidity and mortality rates in adolescents and adults were increasing; and, by no means least, the conviction that polio was a disease that affected only the nervous system diverted researchers from the truth that polio was primarily a disease of the gastrointestinal system. The history of polio was one characterised by a chronicle of errors, at both the clinical and scientific level — a tortuous journey punctuated by dead ends, scientific obfuscation, time-wasting and expensive deviations, and an inexplicable disregard of some very strong evidence that the mouth was the portal of entry for the virus into the body.¹

In the nineteenth century the miasmic theory as the cause for illness was popular. Defenders of miasma disputed the germ theory, and specifically its claim that a relationship existed between a distinct micro-organism and disease. Large cities like Sydney, Melbourne, New York and London produced copious amounts of human and environmental waste, and there was widespread community apathy about cleanliness and sanitation. The stench from open drains in city streets that overflowed with dead animals, household waste and raw sewage, added weight to the argument of those who claimed that illness was caused by breathing in 'miasma' or foul-smelling air.² Proponents of miasma believed that if the air were foul-smelling from rotting vegetation and corpses, then disease would be even more likely to breed

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in the over-crowded tenements of city slums.\(^5\) Public health reformers campaigned vigorously to get urban dwellers to open their homes to the benefits of the sunlight and fresh air that they believed would kill germs. The influence of miasma adherents like Florence Nightingale was seen in the mid-nineteenth century development of the 'pavilion plan' for hospital design; the underlying rationale being that the improved ventilation in the wards would help reduce the high mortality rate.\(^6\)

From the discoveries of cell physiology, anatomy and pathology in the mid-nineteenth century grew the new science of bacteriology, and it transformed the relationship between the physician and the laboratory. Pasteur, Koch, Lister and others were able to demonstrate that the cause of disease lay within the aegis of the micro-organism. Although some physicians and surgeons were slow to comprehend the potential of the new discoveries, most realised the prospects for improving therapeutic outcomes for their patients, and embraced the new knowledge on teachings as diverse as Listerian antisepsis and pathogenic specificity, to the new techniques of isolation and purification of blood products for transfusion and serum therapy, antibiotic use and chemotherapy.\(^7\) In addition, many people believed that the germ theory and the discovery of the bacteria that caused common diseases such as typhoid, tuberculosis and diphtheria offered a credible alternative to the contemporaneous assumption that dirt and poverty were the principal causes of society's ill health. Furthermore, many hoped that the revolution in bacteriology would provide both the means to prevent disease through isolation and prevention, and improve prognosis of disease outcomes through better, more targeted medical treatment.\(^8\)


\(^8\) Macfarlane Burnet and White, *Natural History of Infectious Disease*, pp70–88.
The discovery of bacteria and fungi provided the basis for new programs of public health that focused on sanitation, quarantine, hygiene, and infectious disease control and notification, as well as stricter guidelines for the supply of food to the public. However, it soon became evident to researchers that common infections like smallpox, chickenpox, measles and influenza were caused not by bacteria, but by other organisms that were too small to be seen by scientists with contemporary microscopes. Viruses were everywhere; the big problem was that scientists could neither see them nor grow them in their laboratories. That conundrum made it impossible for laboratory workers of the period to fulfil Koch's postulates, the classic scientific criteria for establishing a particular micro-organism as the cause of a given disease.9

**Discovery**

The early literature on polio often referred to it as Heine-Medin disease, so named for the two physicians10 who made perceptive clinical observations about the disease in the mid- to late-nineteenth century. Heine noted that the symptoms suggested involvement of the spinal cord and first coined the phrase 'infantile paralysis' to describe the disease that affected mainly young children, for polio at that time was rarely seen in adults. Medin was particularly astute when he noted during the 1887 Stockholm epidemic that paralytic cases were few, and that 'persons with only mild illnesses,' or carriers, were spreading the disease to others.11

In order to demonstrate that a virus was the causative agent for polio,

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9 Koch's postulates state four criteria that must be fulfilled to define a causative organism: (1) the organism must be observed in all cases of the disease; (2) it must be isolated in pure culture or on artificial media; (3) inoculation of the culture into an animal must produce the same disease; and (4) the organism had then to be recovered from the inoculated animal. J.L. Bennington et al., eds., *Dictionary and Encyclopedia of Laboratory Medicine and Technology* (Philadelphia: WB Saunders, 1984), p853.

10 Jakob von Heine of Germany and Oscar Medin from Sweden.

scientists had to find a way of corroborating the link between the suspect agent and the disease. It proved to be a long and difficult process. However, a breakthrough occurred in 1908 when Karl Landsteiner and Erwin Popper succeeded in transferring the virus into two monkeys, one belonging to the species Macacus rhesus. They inoculated each animal via the abdomen with an emulsion of spinal cord from a young boy who had died in the fifth day of an attack of polio and, within six days, one of the monkeys died. The other developed paralysis in both legs, and post-mortem findings in both monkeys revealed that the virus had attacked and destroyed the anterior horn (nerve) cells in the spinal cord responsible for supplying the stimuli for muscle movement. The findings of the two scientists meant that an experimental animal to use in studying the disease was available, as all previous attempts to transmit polio to the usual laboratory animals — guinea pigs, mice and rats — had failed.

The poliovirus is a single-stranded RNA virus and a member of the family of enteroviruses. It enters the human body through the mouth, where it infects the tonsils, cervical nodes and the throat. Following ingestion, it lodges in the lymphoid tissue of the alimentary tract where it is either contained, or passes across the gut lining into the lymph and blood circulatory system where it produces a transient viraemia. If it remains contained within the gut, it first provokes an immune response in tissue, thus producing antibodies and a long-lasting immunity, and is then excreted. The virus is highly resistant to environmental change, such as extremes of temperature, and survives for long periods in faecal matter and sewage. Transmission of the virus in humans is by the ingestion of minute amounts of faecal contamination, usually on the fingers.

12 Ibid., p12.

13 A period when the virus is circulating in the bloodstream and antibodies can be detected.

The poliovirus provokes a response in humans in one of four ways: asymptomatic, abortive, non-paralytic and paralytic. When infected with the virus, ninety percent of cases either do not develop any symptoms, or have a mild to moderate gastrointestinal illness that lasts for fewer than five days. Of the remaining ten percent of cases, approximately eight in ten experience moderate to severe backache and headache with meningeal irritation that does not lead to permanent paralysis. For the unlucky ones, the exposure to the poliovirus results in paralysis, and a loss of muscle function in one or more of the major muscle groups. Paralysis occurs when the nerve supply to a muscle disappears due to disease or trauma and, because the muscle is no longer used, it begins to atrophy. If the nerve cells supplying a particular muscle are destroyed they cannot regenerate, but other nearby cells can be trained to take over the role of stimulating muscle movement. The leg muscles were the ones most commonly affected, but if the respiratory muscles were also involved, breathing became extremely difficult, with death occurring in about five to ten percent of such cases. The Drinker respirator or, as it was more commonly known, the ‘iron lung’, was the preferred treatment for those patients unable to breathe on their own. For those who survived an episode of polio, recovery was complete, partial or absent.

Before the 1930s, physicians relied on their clinical judgement to distinguish

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16 The retraining of muscle cells to take over the role of other damaged cells formed the basis of the "re-education" treatment refined by Sister Elizabeth Kenny in Townsville, Queensland.


18 If the virus affected the nerve cells in the cervical spine and brain stem that controlled breathing and swallowing, then the severe ‘bulbar’ type of paralysis eventuated.


20 A full-body sized iron chamber that functioned as a mechanical bellows.

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polio from similar diseases affecting the central nervous system, but the diagnosis was difficult because of the co-existence of epidemic meningitis, the symptoms of which were often indistinguishable from polio. Doctors also placed increasing reliance on the examination of cerebrospinal fluid (CSF) withdrawn from patients by a spinal tap or lumbar puncture and examined microscopically for the presence of cellular material; any increase in cells indicated that an infection was present. However, whether the infection was caused by polio or another pathogen was not clear. Little was known about how the poliovirus survived within the human body or how it reproduced and, in order to increase their knowledge about polio, researchers correlated the clinical observations of clinicians with post-mortem tissue examination and laboratory analysis of antibody levels. But, despite many past attempts to correlate pre-paralysis symptoms and examination of CSF with a prognosis on the degree of paralysis expected, it has proved impossible to judge or alter the eventual outcome of the disease. Furthermore, to date no antivirals or chemotherapy agents have proved successful in treating a patient who has polio and, as a consequence, the medical care for paralysed patients is mainly supportive.21

The failure of doctors and scientists to explain how and why polio appeared in the population added to public fear and apprehension and, in the 1920s and 30s, press coverage in Australia shaped the way that information about polio was dispersed within the community. Newspapers published the latest statistics on polio notifications and deaths, and compared them with previous years’ figures, and pictures of children and adolescents in iron lungs, or in braces or on crutches, confirmed to parents that their fears about the disease were justified.22


In crowded urban communities where sanitary systems were primitive and polio was endemic, almost all children were exposed to various infections from an early age and, if they were fortunate, they survived and developed an immunity to further infections by the same agent. Improved sanitation, especially of the water supply, meant that common diseases like typhoid became less frequent, but those same advances in public health reduced exposure of infants to the poliovirus. As a result, many children reached adolescence and adulthood without being introduced to the virus and developing antibodies. Without any natural immunity to polio, those susceptible members of the population were then at risk of becoming ill. Furthermore, the likelihood of an epidemic of polio occurring within a community rises as the general level of immunity drops and as contact occurs between the immune and the non-immune in a population. That was what occurred in Australia, New Zealand, Scandinavia, Canada and the United States of America in the early decades of the twentieth century. Large sections of the population lacked immunity to the poliovirus because of improvements in sanitation and, instead of being an endemic disease, polio became epidemic and infected many adults and young children who had escaped exposure in infancy.

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23 In 2007, a 22-year-old student from Melbourne returned to his native Pakistan for a holiday. He had received at least three doses of oral vaccine as a child, but no booster shot before travelling. While in northern Pakistan he was exposed to wild poliovirus and became ill with polio symptoms on his flight back to Australia. He was admitted to Box Hill Hospital and remained there for two months. Not all his contacts from Thai Airways flight TG999 have been traced, and the likelihood remains that an infected passenger could come into contact with non-vaccinated Australians. The risk of another outbreak of polio in Australia from wild poliovirus remains but a plane flight away. Australia has a large migrant population that may not be immune, and Aboriginal and Torres Strait Islanders have shown lower than normal levels of antibody production after vaccination with polio vaccine. R.L. Bruno, ‘Thanks to One Unvaccinated Student, Australia Has Its First Case of Polio in 21 Years,’ New Mobility 2007; Dr Bruce Thorley, ‘Imported Case of Polio Detected in Australia,’ Australian National Poliovirus Reference Laboratory, (Victorian Infectious Diseases Reference Laboratory, 2007).

24 Macfarlane Burnet, Changing Patterns, p171.
As research into the poliovirus proceeded, the laboratory and the scientist thus became important symbols in the eye of the public in the ‘war’ against polio, and many hoped that experimentation would provide answers about the cause and the transmission of the disease. One of the foremost laboratories in that struggle was the Rockefeller Institute for Medical Research, established in New York in 1901 by philanthropist John D. Rockefeller. In 1903 Simon Flexner, Professor of Pathology at Johns Hopkins Medical School was appointed as Director of Medical Research at the Rockefeller Institute, a post he held until 1935. By 1907 Flexner had begun his research into polio, much of which was devoted first to identifying the causative agent, and then to infecting monkeys with the virus. Flexner realised the importance of comparing and contrasting laboratory findings on polio with clinical observations of the disease process in humans, and he arranged for the newly established Rockefeller Hospital to admit acute cases of polio. Because of that collaboration, research carried out in the laboratory was no longer viewed as work done in isolation; on the contrary, it emphasised the growing importance of laboratory investigation as an adjunct to clinical observation and diagnosis of disease and, because of that, research into polio acquired a human dimension, as researchers endeavoured to prove that the disease process that occurred in experimental monkeys was analogous to that in humans.

One hurdle for scientists to overcome in their research was obvious from the beginning. Because the virus could not be ‘grown’ on laboratory media in the classical sense as defined by Koch, the onus was on scientists to produce the disease in one group of monkeys and then infect another group. Louis Pasteur had earlier demonstrated that it was possible to study a suspected agent of disease by ‘passing’ it through live animals, and observing the animal’s reaction to infection. But using experimental animals was expensive and time consuming, and those ‘passes’ also

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26 Macfarlane Burnet and White, *Natural History of Infectious Disease*, p57.
increased the virulence of the microorganism. In 1917, Flexner demonstrated that when the poliovirus was inoculated into the nasal cavity of the rhesus monkey it then entered the nervous system and caused paralysis. However, it was not until a second group of monkeys developed polio after being injected with post-mortem spinal material from the first group, that researchers became convinced that the respiratory system was the portal of entry for the virus in man. Because Flexner was, to all intents, 'growing' the virus on monkey brain tissue, the Rockefeller strain not only became more virulent, it also became neurotropic; that is, it developed a preference for growing and reproducing in nervous tissue. That induced neurotropism of the Rockefeller poliovirus further confused the situation, and added weight to the theory of respiratory transmission and the nasal cavity as the portal of entry.

Further research progress was made when Flexner and his associate Hideyo Noguchi demonstrated that the poliovirus would pass through a filter with pores that were small enough to hold back ordinary bacteria. Thus the term 'filter passer' was adopted to describe biological matter that fulfilled that criterion. The two Rockefeller scientists knew they also had to establish beyond doubt that the filtrate contained infective material and not merely toxins, soluble proteins that are toxic to humans and laboratory animals and are produced by many pathogenic bacteria. They believed that the filtrate contained material capable of inducing polio, for their research with monkeys had proved this to be so; post-mortem findings in the paralysed animals had shown the typical pathological changes of the disease in the brain and spinal column. Because they could not see the virus microscopically, they

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30 The toxin produced by the diphtheria bacillus is a classic example. When modified anti-toxin against diphtheria was introduced as a preventive measure in 1884, it proved an effective weapon in the elimination of that childhood disease.
realised they were dealing with a class of micro-organisms so tiny that they were not within the limits of visibility of contemporary microscopes.31 Only the very largest viruses can be seen under the ordinary light microscope, and the poliovirus is one of the smallest.32 Thus, it was not until the invention of the electron microscope in the 1930s that researchers finally got to examine the morphology of the 'filter passer' they suspected as being the causative agent of polio.

In 1926 Flexner and Noguchi believed they had succeeded in growing the poliovirus under laboratory conditions when they observed under the microscope material they had grown on laboratory media without oxygen (anaerobically).33 Their subsequent claim that the minute, globoid organism they had isolated was the causative organism of polio caused a storm within the research world and, indeed, for a few years the poliovirus was known as Flexner's organism. Other researchers disagreed with the conclusions drawn by the Rockefeller scientists, and argued that the material that had been isolated was an aberrant form of *Streptococcus*. Many of them insisted that it was impossible to grow a virus on non-living material. Tom Rivers was one who did not believe that a virus could be grown or multiply outside a living cell, primarily because he was convinced that it relied on the host cell for its reproduction and viability34 but, during the twenties and thirties, Simon Flexner, along with other notable scientists,35 held sway with their belief that it was possible to cultivate viruses on artificial laboratory media. Eventually, researchers like Rivers in the United States and Frank Macfarlane Burnet in Australia would be proved correct, however, for the minute globoid organism isolated by Flexner and Noguchi turned out to have nothing to do with polio. It soon became increasingly evident that the disease was caused by an agent smaller than bacteria.36

31 Flexner and Noguchi, 'Experiments on the Cultivation of the Microorganism Causing Epidemic Poliomyelitis.'
32 One 40,000th of a millimetre.
34 Rivers, 'The Story of Research on Poliomyelitis.'
35 McCallum and Kendall in the United States and Ledingham and Eagles in England.
The poliovirus is excreted by infected individuals in faeces, a fact that was suspected by Swedish workers as early as 1912, by Dr C. Levaditi of the Pasteur Institute in Paris in 1914, and in 1918 by an Australian, Dr Reginald Webster. Levaditi was convinced that the digestive system was the portal of entry for the virus into the body, and believed that *Macacus cynomolgus* rather than *Macacus rhesus* should be used as the experimental monkey because rhesus could not be infected by feeding the virus. Although Flexner and Lewis had earlier found the poliovirus in the intestinal tract of monkeys as well as in respiratory tissues, they chose to focus on the latter as the likely focus of infection, thus lending weight to the theory that the nasopharyngeal area was the portal of entry. Perhaps the two researchers were influenced by the long-standing belief that infection was commonly passed from one person to another in the air by ‘droplet infection’, a scientific term to describe an everyday event when small drops of bacteria and virus-laden saliva are sprayed into the air by common human activities like talking, coughing or sneezing. Transmission of the virus by droplet infection rather than by faecal contamination due to poor personal hygiene was also more socially acceptable to the sensibilities of that era; especially when the prominent and influential lawyer, politician, and future President of the United States of America, Franklin Delano Roosevelt, became ill with polio in 1921.

At that time, the weight of worldwide scientific opinion supported the findings of Dr Simon Flexner and his co-workers at the Rockefeller Institute in New York. However, not everybody accepted the notion that the virus entered the human body through nerves in the nasal cavity and, in 1936, Simon Flexner

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37 R. Webster, 'Anterior Poliomyelitis,' *Medical Journal of Australia*, vol. 1, no. 7 (1918).

38 During the Swedish epidemic of 1911, Flexner and Lewis detected the virus in mesenteric lymphatic glands, saliva, the nasopharynx and the intestine of acute cases, convalescents and apparently healthy contacts. S. Flexner and P.A. Lewis, 'Experimental Epidemic Poliomyelitis in Monkeys,' *Journal of Experimental Medicine*, vol. 12 (1910), pp227–55.

agreed to consider an alternative point of entry for the virus. He repeated Levaditi's experiment, and fed his *Macacus rhesus* with poliovirus. As expected, he could not duplicate Levaditi's findings for it is impossible to infect *rhesus* orally.\(^{40}\) Flexner then reiterated his belief that the nasal membrane was the obvious choice for the portal of entry of the virus.\(^{40}\)

Across the world in suburban Melbourne, Dr Reginald Webster was working with two *cynomolgous* monkeys in a small pathology laboratory in the Children's Hospital in Melbourne.\(^{42}\) Webster was also convinced that the monkeys could be infected with polio by feeding them the virus, but knew that because his sample size was small,\(^{43}\) his results would be statistically invalid. Nevertheless, he decided to go ahead with his experiment. Infantile paralysis was prevalent in Victoria and the cause of great community concern, especially when the death rate soared to eight percent of cases.\(^{44}\) Webster inoculated one monkey intraperitoneally with an emulsion of spinal cord from a six-year-old boy from Sydney, and when the monkey developed the classic signs of polio paralysis, he was delighted. To Webster it was evidence of a breakthrough in determining how the virus was transmitted. But when he attempted to infect his healthy monkey with material gathered from his diseased monkey, the experiment failed. Discouraged, Webster then decided to abandon his ideas about the oral method of transmission, and to adopt Flexner's protocol of using the *rhesus* monkey and injecting the virus into the brain cavity.\(^{45}\) That decision was unfortunate. Dr Webster, in his small laboratory in Melbourne, was on the right

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\(^{41}\) Flexner, 'Respiratory Vs Gastro-Intestinal Infection in Poliomyelitis,' p209.

\(^{42}\) Webster was appointed as a full-time pathologist in 1913, and the laboratory was 'regarded as the best' in Victoria. P Yule, 'The Doctors 1900–1923,' in *The Royal Children's Hospital: A History of Faith, Science and Love* (Sydney: Halstead Press, 1999), p126.

\(^{43}\) Webster placed an advertisement in the *Argus* in March 1918, offering to buy monkeys. In Ibid., p127.

\(^{44}\) The first polio epidemic in Victoria occurred in 1908, and in 1918, over 300 notifications were received. Webster, 'Anterior Poliomyelitis,' *Medical Journal of Australia*. p124.

\(^{45}\) Ibid.
track. *Cynomolgous* later proved to be the correct choice of experimental monkey for polio research, not *rhesus*, which could be infected only through the nasal route with the neurotrophic Rockefeller MV strain. Moreover, Webster was also correct with his hypothesis that polio was a systemic infection, and that the virus could reach the central nervous system by penetrating the body’s defence mechanism and entering the blood stream. Tom Rivers would later claim that if Simon Flexner had used *cynomolgous* instead of *rhesus* in his experiments, the world would have had the polio vaccine much earlier than it did.46

From the time he graduated, Frank Macfarlane Burnet knew that he wanted to work in medical science. His appointment as a pathology registrar at the Walter and Eliza Hall Institute47 in Melbourne and subsequent association with the Institute's Director Charles Kellaway was the beginning of a long and illustrious research career in virology. When Burnet returned to Australia from two years in London in January 1928, it was a decision that was in keeping with his view that, despite its distance from Europe and America, Australia was the best place for his approach to research. For Burnet, his new position as assistant-director at Walter and Eliza afforded him the best of both worlds: an awareness of ‘what was happening in the great centres of research’ overseas, but also autonomy. In Australia he did not feel ‘overwhelmed by being surrounded with men knowing or seeming to know more than oneself.’48 Challenging an accepted idea is always difficult, especially one advanced by an authority like Simon Flexner, and it is possible that many young researchers felt intimidated by the power and prestige of the Rockefeller scientists. In Australia, Burnet was free to pursue his ideas and, in 1928, Annie Jean Macnamara, a fellow graduate in medicine from Melbourne University, joined him at the Institute. Macnamara was by then a consultant and medical officer to the

46 Rivers, 'The Story of Research on Poliomyelitis.'
Simon Flexner circa 1940. (Florence Sabin Papers, National Library of Medicine).

Reginald Webster (right) with an assistant in the pathology laboratory circa 1923. (Yule, *The Royal Children's Hospital*).

Frank Macfarlane Burnet holding the first monkey paralysed by an Australian polio virus (1929). (Burnet, *Changing Patterns*).

Jean Macnamara 1931, NLA MS2399/5/101
Poliomyelitis Committee of Victoria, and someone integral to any account of the history of polio treatment in Australia. Jean Macnamara was particularly interested in the therapeutic use and long-term viability of human serum taken from polio convalescents. Serum was claimed to possess qualities that gave the recipient protection against paralysis, and was promoted by many scientists as an effective weapon against the effects of the poliovirus. Serum treatment offered hope in a time of uncertainty.

Scientific discoveries build on work done previously by other researchers in the field, and the sharing of material, hypotheses, methodology and results is commonplace, for nothing is accepted without corroboration. Simon Flexner, as head of the Rockefeller Institute, maintained a strict policy of sharing the results of research with other workers in the field and, because the filtrate containing the Rockefeller strain of poliovirus remained viable for at least twelve months if kept refrigerated under 50% glycerine, it could be sent to other laboratories for confirmation or rebuttal of their own findings. When Jean Macnamara wrote to Flexner in 1929 outlining the difficulties she and Macfarlane Burnet had experienced in gathering a sufficient amount of virus material for experimentation, Flexner agreed to send to the Walter and Eliza Hall Institute some of the Rockefeller strain with instructions on inoculating monkeys intracerebrally. From experiments they carried out in July of that year, Burnet and Macnamara realised that the viral material from the Rockefeller Institute was more virulent than the local strain, and that infection with the Victorian virus did not offer protection from the American virus. For Burnet and Macnamara, that singular fact indicated that more than one type of polio existed; that


50 Macnamara to Flexner, 22 January 1929. Correspondence between Simon Flexner and Jean Macnamara, Rockefeller University Archives. 1929–1933. Rockefeller Archive Center, Sleepy Hollow, Tarrytown. Record Group 301.

51 Rockefeller Institute MV, a mixed virus strain that became adapted to monkeys and was neurotrophic.
the Melbourne and Rockefeller viruses were immunologically different. Previously, both Flexner and Noguchi had appeared convinced there was only one type of poliovirus. Both scientists were impressed by Burnet and Macnamara's experiments and conclusion, and asked for a sample of the Victorian virus to be sent to New York when circumstances permitted. Initially, the work by Burnet and Macnamara in 1929 at the Walter and Eliza Hall Institute in Melbourne was ignored, but ultimately proved to be influential, as it marked the beginning of the differentiation of the poliovirus into Types I, II and III.

A later paper by Burnet on the 1937–38 epidemic in Melbourne posed an interesting question on the circumstances surrounding the importation and use of the Rockefeller poliovirus at the Institute. He commented that the characteristics of the epidemic were 'unusual' and did not follow the pattern of previous outbreaks. The epidemic had begun in winter, and the disease was much more contagious than previous episodes had been. Particularly striking was the high level of contagion within the family, and the level of paralysis in those affected, factors that indicated that a different type of poliovirus was now circulating in Melbourne. Was it possible that the Rockefeller virus had escaped from the laboratory and infected the Melbourne population? In the 1930s, laboratory work was performed under conditions that would be regarded as primitive by today's standards of biosecurity. Experimental work was performed at the bench, using test tubes with cotton wool seals, and the flame from a bunsen burner to sterilise inoculation loops. Even simple pieces of equipment such as plastic gloves and fume cupboards were rare — certainly nothing that approaches the sophistication of today's specialist isolation

53 The Rockefeller virus was eventually shown to be Type 2 (Lansing), and the Melbourne strain to be Type 1 (Brunhilde). C. Sexton, The Seeds of Time, 2 ed. (Melbourne: Oxford University Press, 1999), p87.

53 Flexner to Macnamara, 23 September 1929. Correspondence between Simon Flexner and Jean Macnamara, RAC (RU) RG301.

cabinets. In the 1930s, laboratory workers were handling a material that ‘contained a thousand million or more virus units per cubic centimetre’ without any extra protection. Scientists did not know how long a virus could survive without a host to support its growth. If a virus can escape from a highly sophisticated laboratory in the twenty-first century, surely it would be even more feasible almost eighty years ago. In 1931, notifications of polio in Victoria tripled from those of the previous year. When the Melbourne virus arrived at the Rockefeller Institute it was found to cause ‘mild facial paralysis’ in the monkeys who subsequently recovered, whereas the Rockefeller virus killed them.

The Rockefeller Foundation association with the Walter and Eliza Hall Institute was extended when, in 1934, they agreed to contribute funds towards Burnet’s work on using hen eggs as a medium for growing viruses. The Rockefeller grant was a ‘great comfort’ to Charles Kellaway because it ensured that ‘Burnet’s work would not be hampered by the lack of funds that affects the rest of us in the Institute.’ But the poliovirus steadfastly refused to grow in chick embryos, although later experiments to grow the influenza virus proved successful. In America in 1936, Sabin and Olitsky grew the poliovirus in embryonic nervous tissue and further reinforced Flexner’s hypothesis that the pathway of infection was from the nose to the brain. However, because the researchers used the Rockefeller, or neurotrophic form of the poliovirus, those findings were later dismissed. In 1937, two Australians,

55 Macfarlane Burnet, Changing Patterns, p79.
57 From 86 in 1930 to 269 in 1931. See Table 2, Chapter 1, this thesis.
58 The allocation was $US2000pa for three years. The Commonwealth Government contributed £400pa to employ Jean Macnamara as a part-time assistant for clinical and field work. Dr Kellaway to Dr Alan Gregg, Australia Hall Institute 1933–1935. 28 May 1934. RAC, Rockefeller Foundation Archives, Record Group 1.2, Series 410 Australia, Box 2, Folder 15.
59 Dr Kellaway was Director of the Walter and Eliza Hall Institute from 1923 to 1944. F.M. Burnet, Walter and Eliza Hall Institute, 1915–1965, (Melbourne: Melbourne University Press, 1971), pp21–32.
Dr Charles Swan and Dr E. Graeme Robertson, examined the olfactory bulbs in the nasal cavity of eleven children who had died in the Melbourne epidemic and found them to be free of any pathological change. They correctly concluded that the nasal route was not the portal of entry. The following year, researchers in the USA isolated the virus from the faeces of a baby they suspected of being a carrier, or 'abortive' case of polio.

The 1937–38 polio epidemic in Melbourne provided the stimulus to Burnet to focus his attention on polio again, and 1939 proved to be a turning point in his research. Despite the limitations imposed by not having sufficient monkeys, experiments by Burnet and his colleagues at the Institute proved that the cynomolgous monkey was more susceptible to polio infection by the oral route than was rhesus, ending the long-held belief that the respiratory tract gave access to the poliovirus. In addition, Burnet showed that the virus circulated in the blood stream, and thus proved that it was not carried on nerve pathways. In an experiment that would later prove crucial for the development of a vaccine, Burnet and his colleague Dora Lush succeeded in growing the virus in human foetal tissue.

Any form of tissue culture demands that the cells used should be free of contaminating bacteria and, as human embryonic tissue is sterile, it was the obvious choice. But obtaining a supply was difficult. Dr George Simpson was then a member of the Eugenics Society of Victoria and sympathetic to its views on the sterilisation of the unfit. He was also in charge of the contraception clinic at the Women's Hospital.

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63 In 1940 a healthy monkey cost around $US10–15, but the war in the Pacific meant supply was curtailed. Rivers, 'The Story of Research on Poliomyelitis.'
65 Macfarlane Burnet, Changing Patterns, p164
Simpson had graduated from Melbourne University in the same year as Burnet, had been best man at Jean Macnamara’s wedding to Ivan Connor in 1934, and was well known to the two scientists. Simpson had made it known at meetings that the Society ‘should go quietly and just go ahead and send him cases’ [for abortion]. It seems likely that the aborted embryos were then sent to Burnet’s laboratory. However, the supply of human embryos was spasmodic, and monkeys were difficult to obtain, not to mention very expensive. Perhaps that is why Burnet eventually abandoned that line of research.65

Sadly, Burnet and Webster’s story remains one all too familiar in the history of Australian science; a lack of government support and philanthropic funding resulting in promising scientific research either withering or going overseas. Burnet lost interest in working with polio, and turned his attention to developing the technique of culturing the influenza virus in living tissue,66 a process that had been facilitated by the addition of antibiotics to non-sterile body tissue like kidney and liver. This freed up a greater range of tissue for laboratory use and meant that scientists no longer had to rely on the intermittent supply of controversial embryonic tissue.

In the United States, virology studies on polio had been interrupted by the outbreak of World War II and it was not until the defeat of Japan and the victory of the Allied Forces that funds began to flow back into scientific research. In 1949, a team comprising John Enders, Thomas Weller and Frederick Robbins at Harvard University decided to replicate the 1936 experiment of Sabin and Olitsky and grow a fresh strain of Lansing (Type II) poliovirus in embryonic tissue instead of using the neurotropic MV Rockefeller strain. Copious amounts of the virus had been isolated from the faeces of polio patients and the team did not believe that such a

large volume of virus could be manufactured by the nervous system. They decided to have another attempt at growing the virus in non-nervous tissue.® Enders and his colleagues were overjoyed at their results: the Lansing strain grew and quickly multiplied, and convinced them that in vitro® tissue-culture cultivation of the virus was possible in volumes large enough to produce a vaccine. Previously, thousands of monkeys would have been needed to grow an adequate quantity of poliovirus in vivo but, by harvesting the kidney tissue from a relatively small number of animals, a practical solution was achieved — hundreds of cell cultures could be produced from one kidney. As Tom Rivers succinctly expressed it, the paper by Enders and his colleagues “was like shooting off a cannon ... and sure as hell captured everybody’s attention.”

Vaccine

That discovery transformed virus production, and the three men were awarded the Nobel Prize in Medicine in 1954. It is of interest to Australia that when Frederick Robbins was awarded his three-year fellowship in 1947 to study virology, it was with the proviso that his last two years of research should be with Macfarlane Burnet at the Walter and Eliza Hall Institute in Melbourne. However, because the investigations at Harvard at the end of Robbins’ first year were so promising, the National Foundation for Infantile Paralysis (NFIP) agreed he could stay in the


70 From the Latin in vitro meaning ‘within glass.’ Growing the virus outside a living organism under laboratory conditions.

71 Benison, Reflections, p447.


73 By the National Foundation for Infantile Paralysis (NFIP).

74 The Foundation was an organization that evolved from the Roosevelt Birthday Balls in the 1930s to sponsor treatment and research for the fight against polio. It was funded entirely from public
United States. As a result of that decision, we can only surmise the possible outcome for Australian science if the original conditions of that fellowship had remained in force, and Robbins had gone to Melbourne to work with Burnet, described as ‘one of the world’s prominent figures in virology and immunology’. It is entirely possible that the Nobel Prize and associated prestige given the United States for developing the technique for producing a vaccine against polio might have instead been accorded to Australia. Macfarlane Burnet had, after all, developed the technique for tissue culture of viruses with his colleague Dora Lush in Melbourne ten years previously.

When officials from the Rockefeller Foundation visited the Walter and Eliza Hall Institute in 1948 they were impressed with the ‘magnificent building,’ and believed that ‘it possessed no great originality of insight to predict’ that its director, Frank Macfarlane Burnet,

Will sometime come up with a knighthood and a Nobel prize unless something goes seriously awry. Still in his early forties, he is not only an inspired experimenter, but a wise administrator and a very nice person as well.

The succession of bitter controversies that accompanied the story of the development of the polio vaccine began with a well-known disaster, that of the failed Park-Brodie and Kolmer vaccines in 1935. Maurice Brodie, a young Canadian researcher and W.H. Park, an ageing, but renowned bacteriologist, developed a vaccine using formaldehyde to inactivate the virus, and Californian officials gave permission for seven thousand children to be immunised. Although it was never conclusively proven, many scientists believed that several children developed polio support and donations collected in the annual March of Dimes. V. Cohn, ‘Deluge of Dimes Hits White House Mail,’ Minneapolis Morning Tribune, April 1945, pp46–54.


77 Letter to Alan Gregg, General Correspondence Australia. 21 May 1948. RAC, Rockefeller Foundation Archives, Record Group 02.1948, Series 410 Australia, Box 2, Folder 16.

78 Both men worked at the New York City Department of Public Health.
as a result of being given the Park-Brodie vaccine. Rivers remarked that 'the vaccine was made in the most incredibly sloppy manner' and doubted whether any of the children had developed any antibodies to polio as a result of being vaccinated. At the University of Pennsylvanian, John Kolmer also used what he thought to be an inactivated form of the poliovirus to produce his vaccine, and the results were even more disastrous. The inactivation process failed, and several vials of vaccine were subsequently found to contain live, infective virus. In October 1935, James P. Leake of the US Public Health Service presented evidence at a meeting stating that the Kolmer vaccine had caused the death of several children. Using the 'strongest language' Rivers had 'ever heard expressed at a scientific meeting,' James Leake — described as being 'hot under the collar' by Rivers — accused Kolmer of being 'a murderer.' Rivers remembered that after Leake sat down, 'all hell broke loose,' with everybody trying to speak at once. Not surprisingly, 'both vaccines were dead,' and so were the careers of Kolmer, Park and Brodie at the close of the meeting. For two years virologists remained sceptical about the possibility of making a vaccine at all, let alone one that was safe to use.79

Following the end of the 1937–38 epidemic in Melbourne, Macfarlane Burnet and his colleagues in Australia and overseas agreed on one point; that the only way to control epidemics of polio was to have the whole population immunised.80 Quarantine and improved standards of hygiene merely slowed the spread of the disease, they did not prevent an outbreak. Scientific research had to concentrate on finding a safe and effective means of protecting the population through immunisation and, with that goal in mind, a modest research program was set up at the Walter and Eliza Hall Institute that culminated in the debunking of the nasal cavity theory as the point of entry of the poliovirus, and introduced a pioneering technique for tissue culture. Meanwhile, in the United States the work of John Enders and his colleagues

79 Benison, Reflections, pp184–90.
80 Macfarlane Burnet, 'The Epidemiology of Poliomyelitis with Special Reference to the Victorian Epidemic of 1937–1938.'
in developing in vitro tissue culture for growing the poliovirus, had paved the way for the logical extension to their findings — the development of the Salk vaccine.

In the early 1950s, the desire of many scientists to develop a vaccine that would protect children from polio came closer to being fulfilled. They knew, because the virus had been detected in blood, that a vaccine would work. Finding the right one was the problem. American science, through the work of Jonas Salk and colleagues at the University of Pittsburgh,\(^1\) was devoting its energies towards the production of a killed virus, not an attenuated vaccine, which both Burnet and Albert Sabin favoured. The controversy surrounding the issue was considerable: both the attenuated and the killed vaccine had their own advantages, and each had powerful advocates. A killed virus vaccine was technically easier and quicker to produce than an attenuated or weakened one, but the essential difference lay in the way they acted in the body. Live vaccines produced a sub-clinical case of the real disease, with better and longer-lasting immunity, the risk was that the weakened virus would revert to the virulent form, causing vaccine-associated paralytic poliomyelitis (VAPP).\(^2\) A killed virus produced an immunity, but it was only temporary, and booster shots were necessary to maintain an effective level of protection. Finally, a live vaccine posed fewer logistical problems in poorer countries, especially those with continued circulation of the wild poliovirus, and was one of the reasons why the World Health Organization subsequently adopted the Sabin vaccine.\(^3\)

Many in Australia rightly believed that it was vital that the country should

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\(^{2}\) VAPP occurred in about 1 case for every 2.4 million doses of oral poliomyelitis vaccine (OPV) distributed. Two cases of VAPP have been notified in Australia (1986 and 1995).

not fall behind in vaccine research, and Burnet used his connections with Salk and the scientific community in the United States to gain a position for Dr Percival (Val) Bazeley of the Commonwealth Serum Laboratories (CSL) with Salk at Pittsburgh.\textsuperscript{84} At the conclusion of an extensive period of typing\textsuperscript{85} that covered two years from 1949 to 1951, scientists knew that, although there were many strains of the poliovirus, they all fell into three immunological types,\textsuperscript{86} a hypothesis that had been proposed by Burnet and Macnamara in Melbourne as early as 1929. Researchers in the quest for a safe vaccine knew it was vital that all three serotypes of the poliovirus be included for it to be effective — they knew that immunity gained against one type did not protect from infection with the other two.

In July 1952, Jonas Salk began trials of his vaccine using children in two institutions in Pennsylvania. Although he later admitted that he had been worried about injecting the children with his vaccine, and ‘didn’t sleep very well for two or three weeks,’ the results were encouraging.\textsuperscript{87} Over the next few months, the children produced antibodies to the vaccine, there were no sideeffects, and none developed polio.\textsuperscript{88} When the statistics were published the following year about the severity of the latest polio epidemic, and word began to spread that a doctor in Pittsburgh was working on a vaccine to prevent polio, everyone sat up and took notice. No one felt safe from polio. The stage was set for a full-scale implementation of a national field trial to test Salk’s vaccine, despite reservations being expressed by several scientists on the committee established to supervise the immunisation campaign, who wanted

\textsuperscript{84} Bazeley took up the position as chief assistant on technical matters to Salk in 1952 and remained there until his return to Australia in 1955 to set up polio vaccine production at CSL. Macfarlane Burnet, Changing Patterns, p169.

\textsuperscript{85} Since the earliest days of virology, typing of viruses has been an important tool to characterise viral populations and to study their epidemiology. Typing provides information on the relationship among isolates within the same group, species, or genus.

\textsuperscript{86} There are three types of poliovirus, but many strains eg Brunhilde, Lansing and Leon. Benison, Reflections, pp453–54.

\textsuperscript{87} From our New York Office, ‘Crucial Year in the Polio Battle, The Sydney Morning Herald, 5 April 1953, p8.

\textsuperscript{88} Smith, Patenting the Sun: Polio and the Salk Vaccine, pp140–43.
to implement a double-blind placebo trial. Jonas Salk was horrified at the thought of 'intentionally injecting children with a salt solution or some other placebo,' for he believed that all children should receive the benefit of his vaccine. It was, moreover, a 'fetish of orthodoxy' to argue for the use of placebos, enough to make 'Hippocrates turn over in his grave.' Basil O'Connor, Chairman of the National Foundation for Infantile Paralysis (NFIP), was determined to move forward with the trial, for he believed he had to keep faith with the thousands who had donated their dimes and dollars to the March of Dimes campaign for research into polio. He succeeded. Moreover, Salk's argument against an injected control prevailed, and agreement was reached on an observed control plan. Thousands of parents, willing to try anything that promised protection against polio, flocked to volunteer their children as a 'Polio Pioneer' for the trial that would begin in April 1954: results were expected to be published the following year.

On 12 April 1955, amid a 'fanfare and drama far more typical of a Hollywood premiere,' the formal verdict on the vaccine trial was announced. Dr Thomas Francis presented results that were clearly positive against all three types of polio. The atmosphere in the auditorium was electric, and reporters rushed to telephones to contact newspapers, radio and television channels with the news. Their reports hit the airwaves and the streets, and the public rejoiced. The trial of the Salk vaccine was a success. Ushering in the largest public health campaign in America's history,

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90 Eleven States disagreed with Salk, and used a placebo control. In the observed control in the other 36 states, children aged 7–8 were given the vaccine and all children aged between six and ten years were observed for the summer 'polio' season. Ibid.

91 623,972 schoolchildren were injected with vaccine or placebo and more than a million others participated as observed controls. M. Meldrum, 'A Calculated Risk: The Salk Polio Vaccine Field Trials of 1954,' British Medical Journal, vol. 317, no. 7167 (1998), pp1233–36.


93 University of Michigan.

a six-year-old boy from Virginia was injected with vaccine. Coincidentally or not, that day was also the tenth anniversary of the death of the 'polio' President, Franklin Delano Roosevelt.

On 26 April 1955, reports began to filter through to public health officials in California that something had gone terribly wrong with the vaccination program. Five children had become paralysed after receiving the Salk vaccine, and over the following few days, notifications increased until the whole program was halted on 7 May 1955. By then 204 children who had received the vaccine had been diagnosed with polio, 150 were paralysed and eleven had died. Small communities were devastated. All the stricken children had received vaccine manufactured by the Cutter Laboratories in Berkeley, where nine lots were subsequently found to be contaminated with live poliovirus. It was not only the immunised children who became ill with polio: family members and contacts in the community were also infected. Public faith in the safety of immunisation campaigns was sorely tested, a casualty of what many viewed as a too hasty implementation after the success of the field trials. What had been viewed as a miracle of science, a triumph over infectious disease, was now revealed as flawed. The repercussions were enormous, but none more so than for the families of the children who received the Cutter vaccine. Their lives were irrevocably changed by their decision to have their child vaccinated with the Salk polio vaccine in April 1955.

Many scientists and officials blamed Basil O'Connor and his grand vision for the NFIP to conquer the 'crippler of our children' for the haste with which the immunisation program was launched. Everyone involved sought to lay the blame elsewhere. Salk insisted that the manufacturers had 'not followed his procedure properly'; the manufacturers insisted that they had followed the protocols approved by the National Institute of Health; Albert Sabin roundly criticised the whole

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program, but he was hardly an impartial observer; the US Public Health Service 'denied any responsibility' that went beyond the 'act of licensing,' and later criticised the fact that a program normally expected to take years to implement was 'telescoped into months.'" In a barely disguised attack on the NFIP, Dr John Enders responded, 'we must never again allow decisions about essentially scientific matters to be made for us by people without training or insight.'

It was all too quick, said medical colleagues nationwide. Salk had gone public without first publishing everything in the journals. He rushed out a killed-virus serum without waiting for a safe live-virus one, which would have been better. Doctors walked out of professional meetings; some quit the Foundation that funded the testing. Salk was after personal glory, they said. Salk was after money ... Salk was after the big prizes.

In 1954, Macfarlane Burnet had stated that it was unwise to assume that the 'Salk vaccine was certain to be effective and free from all danger' and felt that, because the virus was killed by a 'gentle method' then it was 'possible that a living virus could persist in some batches of vaccine.' That is exactly what occurred at the Cutter Laboratories in California. Opinions were expressed that the NFIP should have handed over responsibility for the program to the US Government following the field trials. After all, editorials thundered, it was the health of the nation's children that was at stake, and many opined that Government, not a charitable organisation dependent on public funding should have been in charge of supply of the vaccine. Bureaucratic obfuscation triumphed, for the question of who was ultimately to blame for the lapse in quality control at the Cutter Laboratories has never been resolved.

98 Annie Dillard quoted in Smith, Patenting the Sun: Polio and the Salk Vaccine), p263.
100 Editorial, 'Vaccine Crisis,' Furman, 'US Blames Own Tests in Cutter Vaccine Incident.'
In 1954, government, medical and public health officials in Australia were well aware that large-scale field trials of the Salk vaccine were being conducted in the USA, and that supplies of the vaccine would not be available for export for at least eighteen months. As was to be expected, America was giving priority to its own citizens before considering the needs of others outside her boundaries. Australian media reports on the overseas research into a polio vaccine had appeared frequently since the early 1950s, and public expectations for a successful immunisation program were high. Nevertheless, many in Australia remembered the previous disasters with vaccines that had occurred in the United States, and parents were understandably anxious about the efficacy of Salk’s ‘creamy white’ vaccine, and its endorsement as ‘the most powerful weapon’ in the ‘worldwide battle against polio.’ Public anxiety and opposition to the vaccine was fanned by ill-informed rumours, prejudice and innuendo. Various interest groups and individuals made a case for special consideration against being immunised, while others pointed to the disaster in America as evidence for the likelihood of a similar flaw occurring in the production process in Australia. Prime Minister Menzies and his Cabinet consulted Macfarlane Burnet on the options available. Burnet stated his belief that, if future trials in the US were successful, and no harmful side effects of the vaccine detected, then Australia should produce its own vaccine. However, Burnet included the proviso that he was doubtful that protection from the Salk vaccine would last more than a few months, for he questioned the likelihood that the antibodies produced by the vaccine would


102 ‘Crucial Year in the Polio Battle.’

create a permanent immunity to polio. Burnet and many others believed that the only way to ensure long-term immunity to polio would be by using a live virus vaccine similar to that being developed by Albert Sabin. Nevertheless, and despite Burnet's reservations, Cabinet believed that it was in Australia's best interest to go ahead with the Salk vaccine, and not wait for what could be many more years for Sabin's vaccine to be produced. As a result, Dr Bazeley and his colleagues at the Commonwealth Serum Laboratories (CSL) in Melbourne were instructed to begin production of the Salk vaccine.

In Australia, by the end of 1955 work had been completed at the CSL on the production laboratory, and the animal house to accommodate the monkeys. Although the Federal Government knew that sufficient supplies of the Australian-produced vaccine would not be available until the first quarter of 1956, that information had not reached local government level and, as early as May 1955, many Sydney councils began to lobby the Commonwealth Department of Health to supply them with the vaccine. Production began in mid-November that year, aimed at making quantities sufficient to begin a nationwide immunisation program in June 1956. Some parents were not content to wait for the start of the campaign and imported the vaccine from the USA with the consent of the Commonwealth. Just how long private citizens were allowed to bring in the vaccine is not clear from the records, but within two years all importation by individuals was banned.

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104. Macfarlane Burnet, 'A review of poliomyelitis.'
108. DA Cameron to Dr Lange, Sydney, 27 May 1957. Correspondence Relating to Diseases-Poliomyelitis, General. Inquiries and Ministerial Representations 1955–1957. NAA, Commonwealth
Large-scale immunisation with the Salk polio vaccine started in Australia in June 1956. Its implementation was not without setbacks and difficulties. The agreement between the Commonwealth and the States had stipulated that enough vaccine for 400,000 doses per month would be available on a pro-rata population basis. It was to be supplied by the Commonwealth at no cost to the States, but each State was responsible for the cost and implementation of its campaign, and the National Health and Medical Research Council (NHMRC) defined priorities for immunisation within the population. Stringent safety measures were implemented at the CSL, testing procedures were carried out at many stages during production, and each completed batch of the vaccine was independently tested by both the Fairfield Hospital and the University of Melbourne.

Despite most parents being terrified at the prospect of their child catching polio, opposition to the Salk vaccine did exist within the community. Some Christian Scientists wanted their children excluded because they 'relied wholly on spiritual healing,' and one mother wrote to the Federal Minister of Health, Dr Earle Page demanding to know why 'if the vaccine is so safe ... were not the Royal children being vaccinated?' The campaign appeared to divide the community. On the whole, the anti-vaccinationists were defending what they believed to be the freedom of the individual to decide on medical intervention, and were also influenced by the fear that immunisation would introduce disease to an otherwise healthy body. The campaign

Department of Health, A1658/1, 259/1/2 Part 1.
109 Ibid.
110 Children under fourteen, pregnant women, and those at high risk from contact (eg family members and health care workers). General Research into Particular Subjects, Poliomyelitis. NAA, National Health and Medical Research Council, A1658/616/5/2.
against the Salk vaccine was at times intensely anti-Semitic. Jonas Salk was described by one writer as the 'Yiddish inventor' who was 'directing the inoculation of millions of American children with this sinister concoction of live polio germ,' while another, no doubt influenced by the political climate existing in 1950s Australia, was convinced that it was 'a communist plot to get the country.'

It appears that the campaign by those opposed to immunisation did have some effect on the Victorian public. In three local government areas of the State, fifty percent of parents asked to fill in consent cards for the Salk vaccine declined to do so, and indicated they would not consent to any future vaccination. Perhaps the reluctance of some Victorians to have either themselves or their children immunised against polio was influenced by official figures that showed that notifications had decreased from 1951 to 1954, during a period when the worst outbreaks were in Western Australia, followed by Queensland, New South Wales and South Australia. However, it does appear to have been a surprising decision by the Victorian community, especially when considering the widespread emotional response to the distress caused by the epidemics of 1937–38 and 1949. Maybe many Victorians believed that the bad days of polio epidemics were behind them. However, across Bass Strait the population was not so confident that polio had disappeared, and Tasmanians recorded the highest consent rate in Australia to vaccination with the Salk vaccine.

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114 Poliomyelitis-General-Propaganda against Poliomyelitis. A1658, 259/1/17.
116 By 1964, 72% of Victorian children under 14 had been immunised with Salk vaccine compared to 83% in NSW, 75% in Queensland, 78% in SA, 79% in WA, and 92% in Tasmania. In those aged 15–44, the response was even poorer, 16% of Victorians were immunised compared with 59% (NSW), 46% (Qld), 46% (SA), 44% (WA) and 52% in Tasmania. The Health Departments had estimated that the acceptance rate would be approximately 70% but it proved to be much higher at around 95%, much higher than any previous public acceptance of vaccination. CE Cook to Prime Minister Menzies, 5 December 1956. Correspondence Relating to Diseases-Poliomyelitis, General. Inquiries and Ministerial Representations 1957–1962. NAA, Commonwealth Department of Health, A1658/1, 259/1/2 Part 3. Commonwealth Statistician, 'Year Book of the Commonwealth of Australia,'
In 1957, the Medical Council of the BMA (Australia) wanted the vaccine made available to general practitioners for them to dispense. It was concerned that the growing reluctance of young adults to line up with schoolchildren to be vaccinated was placing them at risk of contracting polio. The Council believed adults would be more likely to agree to be vaccinated if they could have it 'done by their family doctor.' However, the Federal Minister of Health, DA Cameron, would not consent to the BMA's request, and cited 'administrative and technical' reasons for his refusal. Cameron argued that the Salk vaccine was issued by the Commonwealth 'free of charge' to the States, and he could see no reason to change that arrangement, especially as the National Health and Medical Research Council (NHMRC) had recommended that the Salk vaccine 'should not be made available' to GP's until the State campaigns had finished. Cameron was aided in his resolution by the Victorian Minister of Health, HM Wade who wrote to him in February, 1962.

The fact that poliomyelitis is a very serious disease and the extreme importance of maintaining the potency of the vaccine, have been the main factors which have influenced the policy of the vaccine being distributed through State and local Health Authorities and not directly from the CSL to family doctors. The policy of having available to the public a potent vaccine when required, necessitates storage at a precise temperature, something which cannot be guaranteed by every refrigerator.\(^\text{117}\)

The war of words between Federal Health Minister Cameron and the BMA continued unabated until the end of that year, when very limited permission for GPs to dispense the vaccine was granted.\(^\text{118}\)

A possible reason for government reluctance to allow the Salk vaccine to be given by medical practitioners in Australia may well lie in an earlier immunisation campaign conducted against diphtheria in 1928. Following the introduction in the 1920s of a combined diphtheria toxin-antitoxin (TAT) solution for immunising

\(^{117}\) HM Wade to DA Cameron, 14 February 1962. NAA A1658/1, 259/1/2 Part 3.

\(^{118}\) In New South Wales, the vaccine was stored and distributed from district hospitals to local GPs. WF Sheahan to DA Cameron, 21 October 1957. NAA A1658/1, 259/1/2 Part 2.
children against the disease, the incidence had been falling. Local health authorities in Bundaberg, Queensland decided to conduct a campaign to immunise children with the help of the local Medical Officer of Health, Dr Thomson. In January 1928, twenty-one children received injections of the TAT from a bottle that had been used seven days previously to inject children, and stored at room temperature in a cupboard in Thomson's consulting room. Within thirty-six hours, twelve of the children had died, and the grieving inhabitants of the town struggled to come to terms with a tragedy that was directly associated with a state-initiated public health policy. Investigations later revealed that it was not the diphtheria TAT that was to blame for the deaths of the children, but toxin produced from a common skin bacterium \textit{(Staphylococcus)} that had contaminated the TAT solution. The tragedy occurred because of a complete lack of quality control and ignorance about the use and storage of biological material. Frank Macfarlane Burnet was part of the Royal Commission set up to investigate what had happened at Bundaberg, and he later wrote:

Even in 1928, we were shocked at the idea of leaving a solution in which bacteria could grow for a week at sub-tropical temperatures, and then using it again.

The central issue in the Government refusal to allow medical practitioners to give the Salk vaccine in the 1950s was likely the belief that rigorous quality control standards had to be maintained in a state-initiated immunisation campaign. Thirty years after Bundaberg, public health officials would have remained mindful of the tragedy, and the need to maintain control over the entire vaccination process. They had to get it right with the Salk campaign, and it was vital to the entire operation that trust be maintained between the Government and the community. The Cutter incident in the United States remained fresh in the public's mind, and authorities

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119 Hooker, \textit{Health and History}, 'Bundaberg Tragedy.'
121 Ibid., pp63.
could not afford another tragic mistake. As one historian has argued, 'the Bundaberg tragedy was ... crucial ... in the history of immunisation in Australia.'

Almost immediately after the Salk immunisation campaign commenced in Australia, shortages of the vaccine were reported and by the end of July 1956 there was increasing concern about dwindling supplies. Public health officials organising the immunisation campaigns were mindful of public demand, and their efforts to inoculate as many children as possible led to the vaccine being used as soon as it became available. In the minds of many it became a race against time to vaccinate children before the summer season, and competition was fierce among local councils for the limited amount of vaccine produced by the CSL. Problems of supply of the vaccine continued to trouble health officials until the early 1960s, when the decision that a fourth injection of Salk vaccine would be necessary to maintain immunity levels further exacerbated the situation. Macfarlane Burnet had been correct when he questioned the efficacy of a killed virus in providing long-term protection against polio. By mid-1961, the Government had made the decision to look elsewhere and, in August, vaccine produced at the Connaught Laboratories in Canada was distributed to all States.

Australians had to wait longer than North Americans to get their Salk vaccine but, by 1956, the revised specifications for the manufacturing process ensured it was safe. By the time the immunisation campaign began in Australia, a further 25 million American children had been immunised without any ill effect. Fortunately, due no doubt to the exacting quality controls employed by the CSL,

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122 Hooker, 'Bundaberg Tragedy'.
123 NAA A1658/1, 259/1/2 Part 3.
124 WF Sheahan to DA Cameron, 21 October 1957. Ibid.
125 200,000 units of untested vaccine were imported. These had to be tested by the reference laboratories before being released. Director General of Health, 'Report. July 1 1961 to June 30 1962,' (Canberra: Commonwealth of Australia, 1962), p86.
and the testing of all batches of the vaccine at the Fairfield Hospital and Melbourne University, there were no 'Cutter' incidents in Australia.

Polio notifications throughout Australia fell steadily after the introduction of the Salk vaccine, and public health authorities were optimistic that epidemic polio could be beaten. However, the virus was not to be defeated so easily. A severe epidemic occurred in all States in the early 1960s, prompting health officials to search vaccination records for a possible explanation. Had immunity levels dropped in those vaccinated, or was there some other reason for the outbreak? They discovered that a high proportion of cases admitted to Prince Henry Hospital in Sydney had either not been vaccinated, or had not received the full dose. Officials blamed 'public complacency,' expressing disbelief that 'an outbreak of such proportions should occur in a community in which the highly effective Salk vaccine has been available, free of charge to the public, for five years or more.' When Queensland reported the figures on its epidemic it became clear that there was far more to the outbreak than had previously been suspected. Nearly one-third of the Queensland polio cases had received the full course of Salk vaccine. It was becoming more evident to the government and the scientific community that the fears of Macfarlane Burnet and others about the long-term effectiveness of the Salk vaccine to maintain immunity against polio were proving correct.

126 The Laboratory of Biological Control in the US admitted that it did not have sufficient facilities in 1955 to test every batch of the Salk vaccine produced by the pharmaceutical houses. The responsibility for testing the vaccine lay with individual manufacturers. Fisher, *The Polio Story*, p76.


128 Ibid.

129 It was later discovered that the Type III component in the vaccine lacked potency or the ability to provoke an immune response in the recipient. The Queensland cases were Type III. Ibid.
Sabin vaccine

It was during the period when problems were occurring with the supply of the Salk vaccine in Australia, that moves first took place to replace it with the oral, attenuated vaccine developed by Albert Sabin. His work had captured scientific attention in 1956 when a paper was published by the Yale University polio unit describing limited trials of his vaccine in a children’s home in a small village in Arizona. But Sabin was aware that he would have to conduct large-scale trials to prove that his vaccine worked—the question was, where? By 1957 much of the American population had been vaccinated, Salk was widely accepted, and there had been no further problems with production. Understandably, there was a widespread reluctance by financiers to commit funds to a new vaccine trial but, what was more important, most children already had antibody levels that were too high for another vaccine to be tested. Sabin was fortunate in that he had retained his status as Professor at the University of Cincinnati and was thus able to accept research funds while retaining a high degree of autonomy. He had remained in close contact with colleagues within the Soviet Union, and when they asked him for a sample of his three attenuated vaccine types he agreed. No doubt he recognised the advantages of having a trial conducted within a country where the political system ‘allowed government policy to be carried out with the minimum resistance from the public.’

There would be no double-blind trials using placebos or observation groups: all Soviet children were to be given the vaccine.

The first doses of Sabin vaccine were administered to 3000 children in Leningrad in 1957, but results were not made public until, at a conference in Washington in June 1959, Sabin announced that four and a half million Soviet children had been vaccinated with no ill effect. By September, that number had

131 Fisher, The Polio Story, p76; Benison, Reflections, pp564–73.
132 First International Conference on Live Virus Vaccines, June 1959.
reached six million. Delegates stood and applauded. By the beginning of 1960, a clear scientific consensus in favour of the oral, attenuated polio vaccine had emerged, a shift in position that was hardly surprising considering over seventy million Soviet citizens under the age of twenty had by then been successfully vaccinated.\footnote{Macfarlane Burnet visited Moscow as a guest of the Academy of Medical Sciences in the summer of 1960, and by the end of that year, polio had almost disappeared from the USSR. Macfarlane Burnet, \textit{Changing Patterns}, p172.}

There are several possible reasons why the United States remained reluctant to adopt the Sabin vaccine. The NFIP was fully committed to supporting Jonas Salk and all its research funds had been focused on developing his vaccine. The NFIP would not want to admit that another vaccine was superior, especially when it was their view that the Salk vaccine had not yet been fully established. In addition, the Salk vaccine had been developed in an era that was dominated by the Cold War between the United States of America and the Soviet Union. It was probably inconceivable for politicians and government to entertain the thought that a triumph of American science could be usurped by research tested in a communist country. However, in what was a bitter blow to the NFIP, the Surgeon-General of the United States announced that the Sabin vaccine would be licensed for use in America from April 1961. In May the following year, the NHMRC in Australia recommended that Sabin's vaccine be imported as soon as possible, and within six months over one million units had arrived in the country for use in a possible emergency.

Some of the problems associated with the field trial of the Salk polio vaccine in the United States in 1955 were no doubt due to the politicisation of the research process, and the way in which the results were made public. Many findings were published not in peer-reviewed scientific journals where they could be challenged by other researchers in the field, but in public forums to which members of the media had been invited in a calculated move by the NFIP to generate intense public interest and debate.\footnote{‘New Polio Vaccine Launched’.} On the other hand, researchers were working at a new frontier of virus research with all the associated pitfalls and risks associated with pioneering...
scientific endeavour; ostensibly, the greatest risk to the public was the decision to allow in-house review of quality control by the pharmaceutical companies. With the disasters surrounding previous vaccines still fresh in the minds of researchers and the public, surely it would have been wiser to err on the side of caution and give drug companies time to fully evaluate their production process before launching a national vaccination campaign.

By the end of the 1950s, the debate on the merits of Salk versus Sabin had moved from that of a scientifically motivated debate into one involving a class-based social distinction. The highest vaccination rate with Salk occurred in white, middle- to upper-class neighbourhoods with easy, affordable access to the paediatricians who dispensed the vaccine, while in poorer areas of the country, African Americans, Puerto Ricans and some Native Americans simply could not afford to pay US$15–$30 for the full course of three injections plus a booster. The alternative, three twenty-seven cent doses of Sabin vaccine, were all that was needed to give protection against polio. Sabin's vaccine was not entirely risk-free, for a small, but definite chance existed that, given the right conditions, the attenuated Sabin virus used in the vaccine could regain its virulence.

The fact remains that the Salk vaccine had done its job well, but with the development of Sabin's vaccine, an easier, more natural and efficient method had become available. If the 1950s had belonged to Salk, the 1960s would belong to Sabin. Although Jonas Salk never wavered in his belief that his killed-virus vaccine offered the best hope for eradicating polio, by the mid-1960s the battle for supremacy

136 Benison, S., 'International Medical Cooperation: Dr Albert Sabin, Live poliovirus vaccine and the Soviets, Bulletin of the History of Medicine, 56:4, p480. And it was, of course, far easier to administer Sabin vaccine to a population than to give three injections of Salk vaccine. Dawson, 'Salk Trial, 1954.'
137 Sabin's vaccine used a weakened poliovirus to take advantage of the natural human response to attack by the virus while Salk's method manipulated and changed the poliovirus in a way that altered the normal course of events in the human body.
was over. Albert Sabin was the new victor and the new polio hero. The development of the Salk and Sabin vaccines and their introduction and use in Australia to prevent further epidemics of polio occurring have been crucially important for the people's health. However, those immunisation levels must be maintained to prevent another outbreak. The epidemic that occurred in the 1960s was a warning that vigilance on the part of authorities is essential.¹³⁸

For those who have never suffered from the disease, polio has been consigned to the history books. Amid the victories and bitter controversies that accompanied the search for a vaccine to prevent polio, the lives of those who were affected by contracting the disease and their families has sometimes been forgotten.

For the survivors of polio, that story needs to be told.

Chapter 2

Breaking the Silence: Polio Voiced

I don't know who 'Thomas' was, but he certainly thought up a cruel and frightening treatment. The splint was like a wire frame that I was tied into day and night so that I couldn't move. My arms were stretched out like on a cross and my legs were apart. I couldn't move my head. There was a hole in the frame below my bottom to go to the toilet. It was so embarrassing. I was cold all the time from the metal, but I wasn't allowed to complain. I spent a long time tied in this thing, staring at the ceiling and unable to move at all.¹

Polio often began suddenly. A child complained of a slight cold or a headache, or sometimes an upset stomach accompanied by vague, aching pains in the limbs, symptoms that were characteristic of many of the common childhood illnesses.² Many adults experienced flu-like symptoms — fatigue, nausea, fleeting aches and pains — certainly not severe enough to warrant taking time off work, or to visit the local doctor: ‘Take an Aspro and have a cup of tea, it will soon pass’, they told themselves. But for many the aspirin did not help as the hours passed and, as the mild fever started to worsen, and limbs started to feel weaker, doubts began to surface about exactly what was wrong. It became an effort to sit up in bed to sip the


tea and increasingly difficult to walk to the bathroom. Then it became impossible, as previously strong and healthy legs collapsed, no longer able to bear the load. Pain in the lower back and limbs increased and, for some, it became difficult to breathe, all symptoms that indicated that the acute phase of poliomyelitis had begun.

Writing the history of medicine has changed from the time when it was primarily concerned with the great discoveries and the celebrated men and women involved: now medical history also tells us about social, economic and political change. Personal narrative has a long history — we have spoken, listened and written stories for each other for thousands of years — but narratives about the polio experience span but a few. In the West, epidemic polio appeared and then disappeared within three generations. Over that period, the shifting voice of the narrator brought an understanding of living with a disability to a wider audience. Stories about how polio has affected lives have become more common, especially from the middle class; but, unfortunately, stories of how the poor and the marginalised coped with the disease are few, mainly because their stories lie submerged within case histories in our public hospitals and institutions, buried within statistical analyses of prognoses, treatment and outcomes.

We all like to portray ourselves in a positive light, and memories can often be selective, as well as notoriously unreliable. Reading and listening to the moving and poignant stories of polio survivors who were trying to make sense of what had happened to them, of how they coped with the pain, and of their struggle to come to terms with a different physical body revealed certain patterns in the experience. The polio epidemics were a cruel lesson for many who suddenly became different in a world that valued conformity. Naturally, memories recalled some years after the event are sometimes coloured by an individual’s reflection on how the experience of having polio affected their later life. In What makes oral history different, Portelli maintained.
Oral narrators have within their culture certain aids to memory. Many stories are told over and over, or discussed with members of the community; formalized narrative, even meter, may help preserve a textual version of an event.  

Many polio survivors have shared their story with others in support groups like Paraquad Victoria, and formalised their experience of polio by having it published on the worldwide web. Time and again, these and other interviewees were recalling events that occurred in their childhood, at a time when they had little understanding of what was happening to them and were offered little explanation. For children, hospitalisation was often a terrifying experience, and the memory remained with them for the rest of their lives. Strong feelings of loneliness, bewilderment, and abandonment were common in children, while resentment at losing their independence, and of being ‘treated like a baby’, surfaced frequently in adult accounts. And, of course, there was always the topic of hospital food. 

In past and recent polio narratives published both here in Australia and in the United States of America, the survivor’s voice has described how the experience of the disease was influenced by societal and governmental attitudes. Frequently, those first-hand accounts of experiencing polio are heartbreaking. Some writers told of their childhood, of their fears when no one could explain what was wrong, and of being separated from family members; married couples told of their grief and feelings of loss at being separated from each other and from their children; and


some parents wrote of the guilt they experienced when fundamental beliefs and conceptions about themselves as devoted mothers and fathers were challenged by their child's sudden, life-threatening illness. Emily recalled that after she got polio:

There was a big change in my relationship with my parents, and had a lot to do with that they really couldn't protect me anymore. That innocence stopped and I was really young for it to stop.⁵

Most parents felt responsible, and worried about what they had done wrong. A seemingly simple instruction to a child to ignore a headache or an aching limb, 'it's only growing pains,'⁶ and to carry on as normal later magnified parental feelings of guilt and remorse at a perceived neglect of a critically ill son or daughter. Should they have been more careful in their supervision of their child? Should they have forbidden rather than allowed that visit to the beach to swim, or the purchase of that ice-cream cone, or that trip on the tram to the local picture theatre?

Early symptoms

Early symptoms of polio in children were often vague, sometimes dramatic. In Melbourne in 1913, Ilma Lever's mother didn't believe she was ill and, 'pulled my legs because she thought I was pretending not to be able to walk ... she always blamed herself for my dislocated hips.'⁷ Another child, 'fell down in the yard, and couldn't get up,'⁸ while seven-year-old Gary, 'felt sick and developed a bad headache ... the next morning I tried to sit up but couldn't move ... I felt agonizing pain.'⁹


⁷ Nicholls, 'Polio Days', Time Frame.


⁹ G. Buchanan, 'I Used to Jump Puddles', No. 7, Personal Polio Stories (Kensington: Post-Polio
few days after she went swimming Katherine Pappas ‘couldn’t walk … I kept falling over, but my mum thought I was fooling.’ Pamela was six years old in 1956 and living in Coonabarabran, New South Wales with her widowed mother when she developed:

A sore throat, then I couldn’t talk, then I was paralysed all over. Mum would try to move me and I would scream with the pain — the doctors didn’t know what was wrong with me and they told Mum I was spoilt. It took them three weeks to decide to send me to the Children’s Hospital in Sydney.10

In 1951, Hazel was a ‘happy, healthy wife and mother of three young children’ in the Riverina, 400 miles south-west of Sydney when she was ‘struck with polio’. For six weeks her doctor tried to find a hospital bed for her, anywhere in New South Wales. Eventually, Royal North Shore in Sydney agreed to take her and she spent over five months in a ward flat on her back. In Pennsylvania in 1956, seven-year-old Cindy awoke to the sound of her mother calling her to get up and get ready for school. She remembered:

Being groggy, trying to climb down from what I thought was so high a bed, and falling as soon as I put my feet to the floor. I made my way to the top of the stairs and then I completely lost it. I don’t remember exactly what happened then but I remember finding myself in a crumpled heap at the bottom of the stairs and Mom being rather hysterical.11

Some parents believed the illness to be retribution for some transgression they had committed. ‘It’s God’s will,’ pronounced the pious baker in Noorat, the small Victorian town where young Alan Marshall went down like a ‘pole-axed steer’ with infantile paralysis.12 Many parents tried folk remedies before sending for a


12 C. Bernstein, ‘Mazzy Meets the Dragon’, No. 3, Personal Polio Stories (Kensington: Post-Polio Network (NSW) Inc.).

doctor: ‘in 1952 in rural Minnesota you didn’t go to the doctor the minute you ran a fever … you waited until you were sure that something was wrong.’ Besides, for many families, the cost of sending for a doctor was prohibitive and viewed as a last resort. A number of narratives examined reveal a delay between the onset of symptoms and the correct diagnosis, for many physicians did not know what was wrong. One family doctor told a young boy’s mother, ‘you think it’s polio, but it isn’t. What you’ve got to do is make him do exercises and snap out of it.’ By the time paralysis became evident there remained no doubt about the diagnosis, but for some children it was then too late.

My boy took sick and I called the doctor who diagnosed a cold when he had all the symptoms of polio. I took care of him for five days. He called another doctor who diagnosed it but it was too late, my baby was dying. It’s hard to write this as my heart is broke [sic].

In New Zealand, a two-year-old was diagnosed and treated at home for ‘gastric trouble,’ finally being admitted to hospital after she developed paralysis, but she died four days later. Another baby was treated with saltwater baths because the doctor, ‘did not know what else to do,’ while a young boy with polio ‘was not diagnosed for eight and a half years.’ In early twentieth-century Australia, death rates in childhood were dominated by a high incidence of infant mortality due to gastrointestinal disorders, followed in order by diphtheria, whooping cough and pneumonia. Infantile paralysis was relatively unknown, and it was therefore understandable that a doctor would first suspect gastroenteritis as the cause of a child’s vomiting, pain and raised temperature. In 1908, doctors at the Children’s

14 Wilson, ‘I’m Afraid It’s Polio,’ p21.
18 Malnutrition was common, especially in poorer areas, and if a child survived its first four years, it had a good chance of reaching adulthood. http://www.aihw.gov.au/publications/phe/motca/motca.
Hospital in Melbourne were treating '1000 babies a week for diarrhoea during the summer months,' but there were no laboratory tests to confirm or dismiss a diagnosis of polio until lumbar punctures were introduced in the 1930s. What is surprising is the fact that, fifty years later, cases continued to be wrongly diagnosed.

The local GP didn't recognize my fever and stiff neck as polio ... he gave me M&B tablets and cough mixture ... didn't think it was my place to tell the doc I had polio ... another doctor came a few days later ... just as much of a loss as the first ... my sister, a nurse came to see me and realized I was very ill ... she rang her own GP and a Dr Powell came to see me ... 'Into Fairfield you go' he said.

Other Melburnians described similar experiences. One was ill 'for about a week with a high fever and sore throat' that seemed to subside, before coming back 'much worse,' while another, a twenty-one year-old woman, pregnant in 1949 with her second child, thought that the pains in her limbs were signs of impending childbirth. Una White was admitted on a Friday evening to Fairfield. By the following Monday the staff, who had become 'worried that the baby's heartbeat was getting slower and slower,' induced labour. White remembered that she 'couldn't push, so they moved me to the end of the bed and the doctor sat there with a bucket — 'it was a boy.' The baby developed polio a week later and was admitted to Mt Eliza Hospital. It was rare for a newborn to develop polio from its mother


20 Sulphonamide tablets made by May and Baker.

21 Fairfield Hospital for Infectious Diseases in Melbourne. Interview Vern Draffin by Barbara Rossal-Wynne 21 January 1992, Austin Hospital, Melbourne, The Bryan Richard Speed Infectious Diseases Collection: Fairfield Hospital 1904–1996. Draffin was diagnosed in 1949 when he was eighteen years old.


24 Unfortunately, the mother's medical history has been removed from the Fairfield Hospital Archives. (Author's observation)
as maternal antibodies passed across the placenta and protected the unborn child. Una’s baby was probably infected during birth from minor faecal contamination from his mother who, being in the early, acute stage of the disease, would not have had time to produce sufficient antibodies. She did not see her child again for twelve months. Geoff Golding had ‘a hot lemon and an Aspro and got into bed.’ Two days later, after falling over and being unable to get up, he was seen by his local doctor who ‘tested his reflexes’ and had him admitted to Fairfield the following morning. Within four days he was completely paralysed and had been ‘put into the box.’ As John Smith detailed in his chapter Memories of Polio, approximately fifty percent of polio survivors from the 1950s that he interviewed related how they were initially treated for another complaint. Smith concluded that ‘while one would expect that during the 1950s anyone who presented with a febrile illness would be tested for the disease it was not so.’ For instance, in 1961 Ron Gillam was told, ‘you are too old to have polio, it’s arthritis.’ A physician from Western Australia who himself contracted polio agreed with Smith’s assessment.

Although a lumbar puncture was done, there was no specific test … but mind you, the diagnosis was not, in general, exceedingly difficult to make providing one understood the characteristic features, and did some specific tests… if I hadn’t had medical knowledge there’s no chance I would have survived … I had to give instructions to my medical attendants.

25 Interview of Geoff Golding by Barbara Rossal-Wynne 1 August 1992, Austin Hospital, Melbourne, The Bryan Richard Speed Infectious Diseases Collection: Fairfield Hospital 1904–1996. Although polio survivors in North America, Canada and the United Kingdom refer to the respirator as the ‘Iron Lung’, in Australia the more common usage was either the ‘tank’ or the ‘box.’

26 Smith, ‘Fear, Frustration and the Will to Overcome.’

27 A raised temperature.


29 In the 1930s, serum treatment advocated by Dr Jean Macnamara was based on an interpretation of the results of the examination of spinal fluid. A raised count of leucocytes (white cells) was interpreted as a positive diagnosis for polio, despite the fact that other infections eg bacterial meningitis gave similar results. See Chapter 3 for an examination of treatment methods used in Australia during that period.

30 Interviewees quoted in Smith, ‘Fear, Frustration and the Will to Overcome’, pp263–64.
Gloria was six years old in 1955. She remembered waking up one morning and discovering that she 'could not move her arm,' so her worried mother took her to the Boston City Hospital. After examining her, nursing staff told her mother she 'was constipated ... to take her home and give her an enema.'

The next day I couldn't move my whole left side, so she brought me back. They again told her I was constipated and I needed an enema. She told them, 'There's something wrong with my daughter and I'm not moving.' The doctor examined me and told my mom I had infantile paralysis ... I was in an iron lung for four years.31

Some adult sufferers had difficulty convincing hospital staff they were ill — 'they reckoned I was putting on a bit of an act,'32 — while others were sent home with aspirin to relieve 'severe back pain' and told to 'come back tomorrow if the pain hadn't gone.'33 Occasionally, hospital paramedical staff had reached well-founded conclusions about the diagnosis, but, mindful of the fact that it was the professional responsibility of the doctor to communicate prognoses, were unwilling to encroach on medical territory by offering an opinion. A radiographer in Perth remarked to her patient, 'you look like you've got infantile paralysis to me, but it's none of my business.'34

Most parents sought reassurance from physicians that there was nothing they could have done to prevent the disease, for the majority of parents in the early-to mid-twentieth century still had great faith and trust in the ability of the medical profession. The association of the profession with science and the rise of specialisation had helped Western medicine gain an unassailable position over traditional methods of healing like folk medicine or homeopathy. More and more individuals came to the medical profession in the expectation that their illness would be identified and treated. During the consultation, the doctor listened to an individual's subjective

31 Anon., 'Acute and Convalescent Polio,' in Polio Voices, p54.
32 Interview K. Smith, 'Fear, Frustration and the Will to Overcome'.
33 Interview H. Ibid.
34 'Memories of Polio,' Ibid., p365.
account of their symptoms, drew on sources of specialised knowledge available only within the profession, and arrived at a diagnosis. When the individual handed over responsibility for identification of their illness to another, they also temporarily abdicated responsibility for ‘self,’ and that transition between autonomous thinking and dependency on another marked the point where the ‘person’ became the ‘patient.’ It was also a juncture when the voice of the patient became submerged within that of the practitioner and became a case history. In addition, a breach developed between practitioner and the patient that was delineated by knowledge, power and social prestige because patients were then expected to defer to the superior knowledge of the medical profession and do exactly what was stipulated in the treatment regime.

The public relied on medical and scientific authorities for advice and directives on how to avoid disease and maintain good health, and because those authorities were unable to explain either how polio was transmitted from person to person, or what could be done to avoid catching the disease, the general public soon sensed the confusion and contradictions that existed within the professions and began to lose trust in their power to inform. Fear and anxiety in the population created the need for explanation and reassurance and, if these were not forthcoming, then myths and rumours often abounded. Popular theories in Victoria in 1937 about how polio was transmitted were varied — sometimes plausible, often bordering on the comical. Some Victorians believed sunstroke was the cause, others that it was the fault of domestic animals like dogs and cats, while some miasma adherents in

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35 Examples of that specialised knowledge included the ability of the physician to link the subjective symptoms described by the patient to objective changes observed in the body.

Brighton ‘blamed the foul Elster Creek for carrying and giving off the virus.’

Public health authorities worldwide exhorted housewives to be constant in their efforts to reduce dust because it was a ‘germ carrier’, and to install fly screens to keep ‘filthy flies’ out of the house because ‘they carried polio.’ Tasmanians were nervous about the epidemic across the Bass Strait, and some refused to buy food that had been ‘wrapped in Melbourne newspapers.’ There was a lot of superstition about. A story appeared in a newspaper of a pound note sent by mail from Melbourne to someone in Tasmania, ‘but the person didn’t know … put the envelope inside the kitchen range to disinfect it … the thing caught fire and it burnt … a pound was worth a fair bit of money … you didn’t burn a pound note, no way.’

Camphor bags worn ‘around the neck’ were believed by some to offer protection against the virus, while others remained wary about ‘handling money in the till’ or ‘speaking on a public telephone.’ Others believed that diet was to blame: popular targets included processed flour and sugar, preservatives in food and pasteurised milk. In the United States the most popular theory of causation blamed ‘ice-cream, candy, soft drinks and summer fruits’ while sharks, rubbish tips, insects, spiders, electricity, plant pollen, feather pillows, cemeteries, uncircumcised males and, inexplicably, tickling of children also had their adherents. In 1937, the discovery of the virus in faeces gave added impetus to the directive by

40 Interview D. Smith, ‘Fear, Frustration and the Will to Overcome’, p.388.
41 Killalea, The Great Scourge, p.98.
43 Gould, A Summer Plague, pp.20–21.
44 See Chapter 1, this thesis.
health officials to avoid swimming pools during epidemics, and added to concern about contamination of water supplies. Twenty years later, bizarre theories about transmission of the virus still proliferated. For example, a Queensland mother was convinced that 'breast milk and cabbages' possessed vitamins that prevented polio, based on her observation that all the cases detected in her area had been 'bottle-fed.'\textsuperscript{45} Sadly, she did not elaborate on her evidence for including cabbage in the diet. When parents realised their child was not getting better but worse, they often took matters into their own hands. Alan Marshall’s father drove him the twenty miles to the small hospital in town on 'the brake, the longshafted, strongly built gig in which he broke the horses'\textsuperscript{46} while another child was taken to hospital in a 'hearse, it doubled as an ambulance.'\textsuperscript{47}

Frequently, doctors were reluctant to deliver a verdict until they were absolutely sure it was polio, because they knew the traumatic effect their decision would have on families. No doctor wanted to make an incorrect diagnosis. Margot Ashton was nine years old, and the only child of working-class parents in Port Melbourne when she contracted polio. She clearly recalled:

The doctor sitting by my bed as we waited for the ambulance to come. The worried look on his face is still with me today, I know he was preparing my parents for the worst … the entire family was shocked … they wondered if I would live.\textsuperscript{48}

In his classic case study in Baltimore of parents of children diagnosed with polio Fred Davis argued that the 'doctor's unwillingness to make a firm diagnosis of polio seemed to serve several purposes.' First: 'it afforded the doctors some protection in the event that the tentative diagnosis was proved wrong;' second: 'it relieved the


\textsuperscript{46} Marshall, I Can Jump Puddles, p9.

\textsuperscript{47} MHS 143.E.10.9b.

doctor to some extent of the unpleasant task of breaking the bad news to the parents; and third, some felt that the diagnosis would be better handled by the family if there was a brief interval between seeing the patient and the delivery of bad news.\textsuperscript{49}

When families were finally confronted with the truth of the situation, men and women alike ‘wept and broke down … my grandmother told me years later that she had never seen my father cry except on that day.’\textsuperscript{50} Some parents could not look at each other ‘without bursting into tears … all we could think about was the twisted body of our beautiful boy.’\textsuperscript{51} The adult Gary could still remember the look on his mother’s face when she said to him, ‘Don’t move and I’ll get help.’\textsuperscript{52} Images of ‘crippling, iron lungs, and death’ dominated parental responses to the news and, for many, the diagnosis of polio challenged basic conceptions and fundamental beliefs about their role as devoted and caring parents.\textsuperscript{53} For others, finally knowing what was wrong with their child was better than the uncertainty that had existed previously, and meant they could move on to the next phase of doing something to help: that is, until they were confronted with the reality of the strict and unyielding face of a hospital bureaucracy that removed participation by parents in any decision-making, and insisted on total control over the body of the patient. Hospital staff disclosed little about progress and prognosis, to avoid committing themselves to a deadline for recovery, and to keep the decision-making process about rehabilitation within the confines of the hospital. With people disabled through polio, that dependence, lack of autonomy and medicalisation of the body extended beyond the hospital to the domain of after-care treatment.


\textsuperscript{51} MHS 143.E.10.9b.

\textsuperscript{52} Buchanan, ‘I Used to Jump Puddles’.

\textsuperscript{53} Davis, \textit{Passage through Crisis}, pp30–32.
Hospitals have changed over time from institutions that primarily provided shelter for the homeless, the sick and orphans to the specialised centres for training doctors and for conducting research that exist today. Traditionally, clinical medicine was the most difficult subject to teach and, because of their large number of patients, charitable or volunteer hospitals provided the main opportunity for students to study the effect of disease and trauma on the living body.\(^5^4\) Thus, as Michel Foucault argued, through the development of that ‘constant gaze upon the patient,’\(^5^5\) people admitted to hospital became a medical exhibit to be observed and studied by doctors, and their bodies transformed into an object that provided clinical training.\(^5^6\) Charitable hospitals banned the admission of the chronically ill (including the disabled), the mentally ill, children, pregnant women and people with infectious diseases. Until the creation of specialist hospitals or isolation wards within existing institutions, hospitals refused to admit infectious cases for the simple reason that, because they could not be isolated from other patients, the risk of contagion and cross-infection was too great.\(^5^7\)

Before the diagnosis was pronounced, some parents might have contemplated the possibility that their child had caught polio, but many did not want to think about the likelihood, or voice their concern to a doctor. It was almost

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as though the feeling existed that until the symptoms were 'named', then the patient, the parents and, to some extent the family doctor could deny the possibility of polio. Optimism one minute and pessimism the next was common in parents. However, once the diagnosis was confirmed, emotions intensified over the following days as families were catapulted from a state of relative security and confidence about the health of family members into one of fear and uncertainty. To see a child healthy and active one day, and next day to be confronted with the likelihood of death or permanent severe disability was traumatic, and difficult for parents to cope with.

Admission

Because the majority of polio patients in the twentieth century were treated in an infectious-diseases ward and then later in a convalescent hospital, the experience of illness for the patient was transformed. No longer would it be lived out within the confines of the family home, but in an institutional setting. For those who were critically ill, the journey to the hospital signified the beginning of the separation process from family, as few parents or spouses were allowed inside the ambulance. 'My first memory … pain, my mother and tears … I was in an ambulance, alone … and I was being taken away.'

Paradoxically, although the experience was frightening for many children, for others it was strangely exciting: 'I asked the man to turn the siren on … that's the last thing I remember.'

Some children believed that catching the disease was 'a terrible thing that happened to you if you disobeyed your parents' or 'if you didn’t finish your meal' or 'fought with your brothers and sisters', or if you went swimming, 'swimming

59 Buchanan, 'I Used to Jump Puddles'.
60 Silver, Polio Voices.
61 Wilson, 'I’m Afraid It’s Polio'.

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was definitely the way to catch polio." When one young boy saw his mother for the first time since being admitted to the ward he yelled out, "Momma, I’m sorry," because he felt responsible for catching the virus. A four-year-old taken to Fairfield Hospital in Melbourne remembered feeling that she must have been ‘very bad … and for my punishment I was taken away from my family and sent to this strange place that was full of fear.’ Another recalled:

I didn’t understand this world or why I had been taken there, but I learned to be good and quiet and do as I was told. I learned that I was all alone.

The young boy responded to his situation by becoming subdued and withdrawn, reflecting his despair at being separated from his parents. Hospital staff may have misinterpreted his reaction as a sign that he was settling into life on the ward, but it was more likely that he had suffered emotional damage from his hospitalisation that could likely be long term.

Symptoms in the acute phase of polio were often terribly painful. Skin became hypersensitive to the touch of others. Charlene Pugleasa recalled that when her brother ‘touched my skin it hurt really bad … with a piercing pain.’ When the doctor came he lifted her neck from the pillow causing her to ‘scream with pain.’ Charles Mee felt ‘relentless pain for days, like the pain of a tooth being drilled without novocaine, but all over my body.’ Painkillers were refused because medical staff feared that the medication might cause additional damage. In Tasmania in 1937, Nita Lawes-Gilvear remembered hurting ‘all over’ when nursing staff walked near

65 Thomas, ed. A Story to Break the Silence.
67 Mee, A Nearly Normal Life, p17.
68 Ibid., p18.
her bed: ‘the vibration sent pains shooting through my whole body.’ In Kentucky
in 1944, a thirteen-year-old boy lay on his parent’s bed in the ‘blast-furnace hot
sun’ while waves of ‘muscular spasms and pains’ swept over him ‘repeatedly,
unremittingly.’

It is important to remember that polio patients retained full sensory
awareness throughout the acute phase of their illness. Unlike patients who suffered
spinal cord injury, polio sufferers could feel the pain in their limbs, and quantifying
the extent of that pain to outside observers was fraught with misinterpretation.
As Naomi Rogers has observed, some physicians believed that ‘pain was usually
present only when movement is a factor, and was always relieved by immobilisation’
of limbs: moreover, ‘some physicians … admitted that they had frequently denied
the significance of pain in polio, and it was a matter of reproach that we have so long
evaded the questions raised by this striking symptom.’ From early in her career,
Elizabeth Kenny recognised that pain was a significant factor in polio, and her first
task was to try and lessen it with the use of moist heat packs on affected limbs.

Once admitted to hospital, patients were usually given a spinal tap or
lumbar puncture to confirm the diagnosis, a procedure that many thought was
painful, while others barely noticed it. Those who did experience pain never forgot
it.

A nurse came in with an enormous needle, and it was so terrifyingly long that I
thought they had made a mistake, that surely it was a veterinarian’s needle meant
for horses. It was like driving a wooden stake into my back, and was so painful that I

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70 Michael WR Davis in F. Robbins and T. Daniel, ‘1944 Kentucky Polio Epidemic,’ in Polio, ed. T.M.
71 N. Rogers, ‘Silence Has Its Own Stories: Elizabeth Kenny, Polio and the Culture of Medicine,’
72 Performed by passing a long needle through the spinal vertebrae into the lumbar space that
enclosed the spinal cord. Cerebrospinal fluid (CSF) was then removed for diagnostic studies.
fainted. I was afraid it would go all the way up into my brain.

An ambulance took me to Fairfield Hospital and I was put into a bed. A nurse came in with an enormous needle. She told me it would not hurt but the agony nearly made me jump out of bed.

However, as is the case with any painful experience, the reaction varied with the individual and some practitioners were more skilful with the procedure than others. Geoff Golding remembered feeling the pressure of the needle going in, but it was not painful ... I was lucky, Dr Kett was marvellous ... don't remember any pain at all.

Thomas Daniel was a senior medical student in Boston in 1954, and part of his duty roster at the local infectious diseases hospital was to admit suspected polio cases and do a spinal tap. On many occasions, the patient was a sick and frightened child. Through trial and error, he realised that the severe headache that often followed the procedure could be avoided if the patient remained flat for several hours, but recalled that many of the children were so 'agitated and upset, that telling them to lie flat was about as effective as telling an angry mule to stop kicking the walls.'

The process of admission to hospital was followed by isolation in an infectious diseases ward, far away from the support of family and friends. Many young children remembered the emotional trauma associated with the separation. One boy recalled that when he was separated from his mother she 'cried hysterically' and told him 'Don't say goodbye, that means I'll never see you again.' Some

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73 D.J. Wilson, 'The Crisis of Acute Poliomyelitis,' in Living with Polio, pp41-42; Mee, A Nearly Normal Life, p15.


75 Interview of Geoff Golding by Barbara Rossal-Wynne 1 August 1992, Austin Hospital, Melbourne, The Bryan Richard Speed Infectious Diseases Collection: Fairfield Hospital 1904–1996.


77 Ted Kellogg, Silver, Polio Voices, p23.
children pleaded with their parents not to 'leave me here.' Separation was recalled as 'absolutely horrendous ... and you were punished if you cried, and put in a cubicle because you upset the other children.' Some children felt completely 'overwhelmed by the sight of so many sick and crying children, enclosed in row upon row of small, white cots.' Many young children were filled with fear.

Things happened so quickly. My world turned upside down, things spun out of control. Mum and Dad disappeared and all these strangers took over and they took me away. I was put in a room with high ceilings. There were all these other children there and all sorts of terrible things were happening to them. Some were in boxes that hissed and wheezed while others were tied up in bed and couldn't move. I started to cry, I wanted my mother. But they were cross and told me to be quiet.

Parents had to leave crying, often hysterical children in the care of nursing staff. Some children became quiet and withdrawn, traumatised by the separation.

Several years ago my mother told me tearfully of her anguish at that time because when I came out of isolation I wouldn't look at or speak to either of my parents for quite a while, but just turned away from them and stared at the wall.

Many overworked nurses were upset because they did not have the time to comfort distraught children properly. One Melbourne child remembered, 'in the hospital ward every single kid was crying' and, in England six-year-old David, 'cried myself to sleep. When you'd wake up there would be another little boy crying in the next cubicle. It was awful.'

Sister Woodruff nursed at Caulfield Convalescent Hospital during the 1937 epidemic and recalled,

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78 Mike Pierce. Ibid., p45.
80 Medlyn-White, 'Your Stories'.
81 Thomas, A Story to Break the Silence.
82 Swann, 'Polio Story'.
83 Thomas, A Story to Break the Silence.
There was only one nurse on duty at night in a ward of thirty children ... our case load was so heavy. If you couldn't pacify one then you'd move it to another room ... because one crying would wake up the others. It must have been terrifying for the kids ... it gives me the horrors to think about it now. It was so cold in Melbourne and we couldn't keep them warm under the bed frames. I preferred working at Royal North Shore Hospital in Sydney where the Kenny treatment was used.85

The 1937–38 polio epidemic

All medical and nursing staff worked hard during the polio epidemics, and conditions did not vary greatly between one generation and the next, whether in Australia or in the United States. The first case of polio admitted to Fairfield Hospital in Melbourne in the 1937 epidemic was on 12 July.86 By the end of August, four additional wards had been allocated to polio patients, nine respirators were in use, and the Medical Superintendent, Dr E.V. Scholes, had requested that ‘all mild cases of diphtheria and scarlet fever be isolated at home,’87 so that beds could be re-allocated to the polio wards. Hospital authorities quickly realised they had an epidemic on their hands, and one that was gathering pace. By December, it had peaked. Nine hundred cases had been admitted, and forty-eight people had died. There were twenty-one respirators available, and thirty-four children were each being given a few hours inside an iron lung — Scholes remarked ‘that’s all they required.’ Exhausted Fairfield Hospital staff tried as best they could to cope with a ‘very heavy workload,’ and the Superintendent recalled how he had ‘crawled over cases lined up in hospital corridors, to fall into bed.’ His report to the Commonwealth Director General of Health, Dr JHL Cumpston, painted a vivid picture of conditions at Fairfield in October 1937.

85 P. Kerr, Interview with Dr Woodruff, Author of ‘Two Million South Australians’. 1988. Canberra. Personal collection, Dr Anthea Hyslop, ANU.

86 A nine-year-old girl from rural Victoria who had been ill for four days. She died ten days later.

87 Report Book (No. 13) of the Medical Superintendent, Dr JV Scholes. 1937. Austin Hospital, Melbourne, The Bryan Richard Speed Infectious Diseases Collection: Fairfield Hospital 1904–1996.
The polio epidemic is going strong, the northern and western suburbs are being hit now, Footscray and Brunswick being the worst. Coburg, Preston, Northcote and other populous working class suburbs have so far been hardly touched, so we have a long way to go yet. We have now topped the 500 mark, and nearly 440 have been admitted to Fairfield. The place looks like a battlefield.88

Worried authorities in other states asked Scholes for permission to send medical and nursing staff from their hospitals to gain experience in nursing acute cases of polio, a request that he agreed to without hesitation. With over nine hundred patients, and thirty-four of them sharing respirators, every spare pair of hands helped.90 Dr Scholes noted that a related but unexpected feature of the epidemic was a drop in reported cases of diphtheria and scarlet fever to the lowest for many years, which he attributed to the fact that 'children from Melbourne were not mixing freely.'91 Obviously, many parents were keeping their children at home. By July of the following year the epidemic had disappeared almost as quickly as it had appeared, in all 1277 cases had been admitted with polio, and seventy-six had died — a mortality rate of 5.95 percent. Medical and nursing staff breathed a sigh of relief and focused their attention on a large number of new admissions suffering from measles.

Across Bass Strait, nurses working in the Infectious Diseases Hospital in Launceston in 1937 'worked seventy-two hours' per week, with one medical officer remarking, 'we worked like blazes, on duty virtually twenty-four hours.'92 No one had the time to sit with a frightened child, however much they wished they could do. Launceston Hospital had one of the few Kenny-trained nurses in Australia,

88 Medical Superintendent of Fairfield Hospital to Dr JHL Cumpston, Commonwealth Department of Health. General Research into Particular Subjects, Poliomyelitis. National Archives of Australia, National Health and Medical Research Council, A1658/616/5/2.
89 Sisters and senior nurses from Sydney's Royal Alexandra Hospital for Children, the Royal North Shore Hospital and Prince Henry all attended Fairfield Hospital. Dr Scholes, Report Book, Fairfield Hospital Archives.
90 By 13/7/1938, 1277 patients had been confirmed as having polio with 76 deaths (a mortality rate of 6%). Ibid.
91 Ibid.
Ambulance used during the 1937–38 epidemic. One was lined with rubber for the transport of up to six children (Fairfield Hospital archives).

Children in gendered iron lungs, (Yule, *The Royal Children’s Hospital*).

Child in iron lung, Fairfield Hospital 1937 (Fairfield Hospital archives).

Polio patients 1908, (Yule, *The Royal Children’s Hospital*).
Sister Alison Grueber who worked in its respirator ward. In *The Great Scourge*, Anne Killalea painted a vivid picture of the frantic pace on Grueber's first day at work.

Arriving for work after a five-hour train journey, the Public Health nurse was met by a scene of 'pandemonium.' The wards — one entirely emptied in readiness for fresh cases — were very hot, children were crying, electricians and carpenters were noisily installing two new respirators, and rows of children on the verandahs, in four different stages of infection, were hot, dirty and uncomfortable ... Finding basins and towels by herself, Sister Grueber began sponging children ... found other patients in smaller rooms, and cleaned thirty-two children, most with fever. Finally off-duty about 9pm to have a meal, unpack and undress, she was called to re-dress in her uniform and help lay out one of two patients who had died. No sooner was that done than a third expired. In bed at 4 am, Grueber managed two hours' sleep before her second day began at 6 am.93

Some children found that the Kenny 'Blue Sisters'94 seemed to have more time to spend with them, 'more affectionate, because they held you more, whereas in the ward the treatment was very distant and unpleasant.'95 Seven-year-old Shirley, a patient in Hampton recalled:

The warmth and loving care of the 'Blue Sisters': The physical contact involved in the bathing, massage and passive exercise fulfilled a child's need for human contact. Funny how things have moved on — the hugs I received from those wonderful women would probably not be allowed now.96

Many children were bewildered, 'afraid I was going to die ... because no one would say what was wrong.'97 One survivor of polio remembered, 'I used to think it was funny that nobody would come [to see me in hospital] ... and I had

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93 Ibid., p91.
94 Elizabeth Kenny decided in 1932 that nurses trained in her method would abandon the traditional white and instead wear a cornflower-blue uniform. She felt it was not as frightening for the children. A. Steele, L. Cooper, and M. Barron, Heritage Collection. John Oxley Library, State Library of Queensland, Brisbane. Matron Barron. Letters on Sister Kenny, February 1934 to April 1935, TR1829/1/16.
97 Wilson, 'I'm Afraid It's Polio.'
two nurses who used to come in all dressed in white with masks ... but nobody would say why.' For eight-year-old Gary the relief at seeing his mother again was overwhelming: ‘one day as I just lay there the ward sister came in with my mum, the nearest I had been to her for weeks ... I remember crying as I felt mum's hand on my arm. Older patients also felt the pain of separation, but could understand what a diagnosis of polio meant and the risk they posed to other family members.

It appears that little changed in the strategy of preparedness for polio epidemics over the following twenty years. Administrative, medical and nursing staffs were still caught unawares and unprepared for the rapid spread of the disease once it became established within a population. The Medical Superintendent of Fairfield Hospital was not the only one to use a military metaphor of a 'battlefield' in 1937 to describe working conditions during a polio epidemic, the doctor in charge of the epidemic in Tasmanina was described as managing it with ‘military precision.’ In Launceston Hospital the pressure of work on medical staff, ‘eventually took its toll.’

Dr Lewis, hurrying across to the ID (Infectious Diseases Ward) one night, slid to the bottom of a frosty path, and broke his leg. He slept for the next month or so in the ID where ... the noise of the respirators was ‘frightful.’ While this same doctor managed the strain by occasionally throwing himself down on a patch of lawn for twenty minutes, another was invalided for ten days with exhaustion. Dr Fulton caught the disease he was treating.

In Minnesota a young resident medical officer recounted how it was ‘like being in combat, you had to be on the ball and ready to go all the time. We were tired, exhausted, and frightened at the same time. We didn’t want to get polio ourselves ... or bring it home.’ The death of a child was singularly traumatic for many of

98 Interview J. Smith, 'Fear, Frustration and the Will to Overcome'. p393.
99 Buchanan, 'I Used to Jump Puddles'.
100 Drs Lewis, Gollan, and Redmond quoted in Killalea, The Great Scourge, p89.
the medical staff, 'it really bothered me terribly for many weeks that I couldn't save that small child ... the memory of that day and the child's name remains with me forever.' In 1955, Dr Berenberg, a paediatrician at the Children's Hospital in Boston, described 'a busy night' during the epidemic.

The hysteria in the city was beyond description. We'd get 150-200 people at the same time because families had to wait until Dad got home from work with the car. The police would keep them in an orderly line, and we used to do a lot of our preliminary screening in the automobile ... if the kid looked ok they stayed in line ... the ones who were obviously in respiratory distress or couldn't move an arm we would give them a card so they could move up to the head of the line. On the worst night that line went back more than half a mile. Another doctor and I spent the whole night just going back and forth.

The 'Box'

Those patients in respiratory distress from paralysed chest muscles were not only in severe pain, but also unable to breathe on their own. In most cases, that meant adapting to a new life in a respirator, which were in short supply in Australia in 1937. Some were 'jerry-built' by the Mt. Lyell Company in Tasmania, with the rest being produced by Professor Aubrey Burstall of the University of Melbourne. The portable, wooden respirator produced by Adelaide inventor Edward Both was introduced in 1938. The 'Both' respirator was subsequently modified and produced in England at the Morris Cowley car works by the philanthropist Lord Nuffield, who then distributed them free to hospitals in Britain and throughout the Commonwealth. Many survivors recalled their fear when they first glimpsed the machines, and Tony Gould was one of those. He was an officer in a Gurkha regiment in Hong Kong when he contracted polio in 1959, and he remembered 'screaming

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102 Dr Greenberg, 1950s. Silver, Polio Voices, p56.
with pain’ when lifted from his stretcher to the bed in the isolation ward. For Gould, ‘worse was to follow.’

They lay me down between the jaws of a yawning box which had appeared from nowhere. For a moment I thought they were going to operate on me without an anaesthetic and I swore at them … I couldn’t believe what was happening to me. Now my head was sinking backwards towards the floor. Suddenly it came to me that they had made a terrible mistake, that this was a coffin and that they were burying me alive. ‘I’m not dead’ I wanted to shout, but all I could do was pull my head away from their clutching hands.105

Gould was febrile and probably delirious, so his panic and confusion about his circumstances were understandable. Many children and adults found the placement in the respirator106 a frightening experience, but for an equal number the welcome relief from the effort to breathe was almost instantaneous. Geoff Golding thought it ‘felt bloody wonderful going into the tank … it took hold of you like a lover’s embrace, and took a great load off you because you didn’t have to think about breathing … besides, I felt too sick to be bloody scared.’107 Chest muscles that had strained to draw breath started to relax:

The weight, the unbearable weight on my chest continued for a few breaths; then, as the dials were regulated, it lifted as if death itself were lifting from my body and soul.108

While many patients viewed the respirator as an ‘Angel of Salvation’, for others it was a prison, and they longed to be out of it, and to be free again. One thought that although it was ‘scary initially,’ once she ‘got used to the rhythm of it, it

106 The respirator or iron lung worked by negative pressure ventilation, created in a chamber enclosing the body of the patient except for the head. A motor blew air into the enclosure, forcing the chest wall and the lungs to collapse. When the air was sucked out of the chamber, the air pressure around the patient’s face was now higher than the pressure around the chest, and air was forced into the lungs. The rhythmic breathing normally produced by a person’s chest and lungs was now generated by the machine. Developed by Philip Drinker, an engineer at the Harvard School of Public Health. Daniel and Robbins, Polio, p10.
107 Geoff Golding, Fairfield Hospital Archives.
was all right.'

Although the respirators were often described as 'noisy, like living in a tin can,' and 'uncomfortable ... I remember waking and thinking someone was trying to strangle me but it was [the collar on the] iron lung,' most realised that, although being in an iron lung 'was not a great place to be' that 'it kept you alive.'

A Perth doctor who was a sufferer of polio in 1950 credited the respirator for saving his life. However, he believed it was due more to luck, rather than medical expertise, that he survived.

Being treated in an iron lung is a fate almost worse than death ... there was no management of anything to do with respiration ... everything was based on clinical management ... once you were placed in an iron lung, it was miraculous if you ever came out of it and survived the experience.

Most patients in the respirators had 'sandbags laid along each side' of their body to keep them immobilised, but that immobility caused other problems. Nursing patients in a respirator was constant and painstaking work, and access to them was limited to portholes on the side of the tank. Throughout the day, nurses inserted and removed bedpans and urinals, made observations of temperature and blood pressure, suctioned airways, bathed bodies, cleaned teeth and attended to bedsores, but opening the portholes meant that the delicate balance of air pressure was upset, and often left a patient gasping for air. Those unfortunate enough to have bulbar polio had to contend with the added complication of not being able to swallow, thus placing them in real danger of drowning in their own secretions. Their plight was

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113 Interview B. Smith, 'Fear, Frustration and the Will to Overcome', pp403–04.

not helped by having to lie flat on their backs. To lessen the likelihood of choking, the head of the tank was lowered to help drain the chest through a tracheotomy but, as a result, the patient often slid up to the head of the tank. Occasionally that led to pressure on exposed skin, causing bedsores: ‘I got four ... one on each shoulder and my elbows plus a carbuncle on my back ... I think the thing that saved me from dying was the penicillin ... every six hours in my bottom ... it was pretty painful.’

In the United States the situation was similar. Kathryn Black described the room where her mother lay.

Wards of tank respirators looked something like the boiler rooms of giant ships, with the blur of gauges, tubes, latches, and dials. The six-foot metal cylinders that breathed for patients lay like coffins on stands that raised them to table height. Intravenous bottles hung from aluminium poles next to the respirators, and at one end of each lay a head. Polio had not left Mother lying prettily against fluffed white pillows, but palsied, in a torpor. A rubber collar separated her head from her body, her brown hair was matted from perspiration and fell back from her face, and her long, slender neck was marred by a raw, sunken hole, with a metal fixture holding a rubber tube.

The respirators saved the lives of many who would otherwise have died, but some patients did die in the machines. Nursing staff did their best to spare others from the knowledge that a fellow sufferer had succumbed, but for those whose lives were dominated by the rhythmic thumping and wheezing of the respirator bellows, the signs of death were unmistakable — the rapid footsteps of nursing staff to the bedside, the swishing sound of curtains being drawn, the sudden silence, and then the squeaking of the mortuary trolley as it was wheeled into the ward. Occasionally, nursing staff turned the mirrors above the tanks away so that 'patients couldn't watch while a body was wheeled out in a now silent machine.' Nita Lawes-Gilvear would sometimes ‘wake up in the night and hear the trolley being wheeled in to take another girl away ... you didn't know if you might be next ... I just dreaded the sound

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115 Interview F. Smith, 'Fear, Frustration and the Will to Overcome', p404.
117 Ibid., p64.
of trolley wheels in the night.' In New York, ten-year-old Edward remembered when 'a couple of kids died':

We were told by the nurses, 'Their mother came and picked them up during the night.' Even at that age I wasn't buying it. We used to talk about that, 'Do you think your mother would come here in the middle of the night?'

The sound of the iron lung whooshing and thumping was not the only distinctive sound in the acute care ward. Some of the patients who could not talk would summon the nurse’s attention by ‘clicking’ with their tongues.

When an emergency occurred, like a machine malfunction or the power went down and a child began to smother, there was pandemonium. Feet came running, then more and more feet. The kids who were able to called for help, but most were so weak that their voices didn’t carry, so they clicked for attention with their tongues. That mysterious sound was how they communicated. Sometimes the whole room clicked to get attention, and my own heart pounded, listening for the rescuing feet. Afterwards, if it was something really bad that happened, a mother could be heard crying in the hallway for the rest of the night.

The realisation that their lives depended on the respirators brought added fears for patients. Most hated the feelings of imprisonment, helplessness and total dependency on nursing staff. Some men felt emasculated: ‘I loathed being treated like a baby … dressed in a nappy and given soft, mushy food to eat.’ Others deeply resented the loss of privacy.

People would capriciously and suddenly enter my most private spaces to do what was ‘best’ for me, they were like hostile invasions, and I felt violated … they would enter the most personal and private parts of me as they reached inside to move a leg or an arm, or insert a needle or a bedpan.

As much as they despised the lack of independence and privacy, most feared what could happen when they were removed from the respirator. A process

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121 Wilson, 'The Crisis of Acute Poliomyelitis,' p50.

of weaning patients usually commenced when fever had subsided and the spread of paralysis had ceased. Initially for a few minutes, then building up to several hours a day, they were given the opportunity to see if they could breathe unaided.

The weaning process was quite brutal. It was with a stopwatch, literally. It was perfect behavioural conditioning. They would give little prizes for each advance, 'Three minutes, all right, you can have a football.'

Medical staff believed that gradual removal from the respirator would encourage previously paralysed chest muscles to work on their own and become stronger and, for most patients, that process took somewhere between three and five months. Some never left the tank. Another great fear for respirator patients was what would happen to them if a power failure occurred in the hospital, and that ever present risk was another reason that medical staff encouraged patients to attempt to breathe on their own, albeit briefly. Every minute counted for those in the respirators as hospital personnel raced to operate the manual pumps.

Members of the staff of the Fairfield Infectious Diseases Hospital today saved the life of a twelve-year-old girl in an iron lung by operating the respirator after storms had cut off the hospital's two sources of power ... they worked in relays for over three hours to operate the hand pump.

During the period of isolation, gowned and masked parents were sometimes allowed in to the bedside for a brief visit, but more often had to make do with a glimpse of their child through a glass window. Sometimes children were not told the reason their parents were not allowed to visit them in isolation: 'I assumed that I had been rejected and abandoned.' Another child 'wondered why everyone had deserted me, except for these strange people dressed in white.' One young boy remembered feeling 'like I had the plague ... it was very scary.'


124 Australian News Bulletin, 5 February 1947; Dr Scholes in Fairfield Hospital Archives.

125 Thomas, A Story to Break the Silence.

126 Wilson, 'I'm Afraid It's Polio,' pp11–34.

127 MHS 143.E.10.9b.
Although it appeared that the initial acute phase of polio was not as traumatic for the adult sufferer because they could understand what was happening to them, the convalescent period seemed far worse for adults than for the children. On the whole, other family members did the best they could to take over the role of the sick parent and care for the rest of the family, but for those in hospital the enforced separation from their children was frightfully hard. One woman sadly recounted that, because she was 'in hospital for months on end, I never saw my babies ... it nearly broke my heart ... wondered if I'd ever see them again.' She cried for her children 'for months.' When finally they were allowed to return home many recounted that, although they had 'survived' the experience of polio, they had paid a terrible price, for their children 'didn't know' them.

Polio also imposed a financial burden on families, especially if the breadwinner contracted the disease. In some cases, the loss of income was only temporary, but for those who faced permanent disability, the future was bleak. In the United States, the National Foundation for Infantile Paralysis developed a program that was funded by the annual 'March of Dimes' drive to assist patients and their families with medical and hospital expenses. No such scheme operated in Australia. As Claudia Thame noted, 'only if the community at large was threatened by the ill-health of a person, was the disease of public interest' thereby justifying the need for additional public expenditure. Diseases and health problems that were not perceived as being important for the health of the nation were judged to be the responsibility of the individual. Sufferers from tuberculosis frequently infected other members of their own family and the community, and many hid their condition for fear of social opprobrium, but it was not possible for polio sufferers

128 Interview H. Smith, 'Fear, Frustration and the Will to Overcome,' p377.
129 Ibid., pp371–75.
to do the same because hospitalisation was generally necessary. It is a shameful fact that fifty years ago, the disability allowance for polio survivors in Australia was less than half that for tuberculosis. That discrepancy was probably due to the fact that the convalescent tubercular patient was still infectious, and therefore a risk to the health of the nation.

In 1951, representations were made to the Federal Minister of Health seeking an increase in the disability allowance for polio sufferers, but the acting minister H.L. Anthony refused, stating that while it was ‘unfortunately true’ that anxiety about financial loss was often part of chronic illness, polio could not be compared to tuberculosis. In the case of tuberculosis, it was of ‘national importance that sufferers should restrain their natural inclination to work until all risk of recurrence had passed’. Anthony added that he could see no valid reason why the disability payment for a polio survivor should be increased. But he was mistaken: virologists were already aware that individuals recovering from polio could be infectious for up to six weeks following the onset of the disease. They were just as likely to infect others as were sufferers from tuberculosis. As a result of that decision on pension payments, more spouses were forced from the home to seek full-time work, causing increased physical and emotional stress for all concerned. Families had become increasingly aware of the financial burden if a child or breadwinner became ill with polio, and when commercial insurance against contracting the disease was introduced to the United States in 1949, the demand was unprecedented. The cost was $US10 for cover of $US5000 over two years.

131 A married man with tuberculosis received £6/10/- per week with nine shillings for each child under sixteen years, while the polio survivor collected £2/5/- per week plus five shillings for each dependent child. Correspondence Relating to Diseases–Poliomyelitis General 1948–1956. National Archives of Australia, Commonwealth Department of Health, NAA 1658/1.


Customers lined up outside the insurer’s offices from early morning and the police were often called in to keep the queue orderly. Applications flowed in at such a rate that the clerical staff could not process them quickly enough.134

That same year, the NSW Government announced that it had set up a committee to investigate the polio epidemic, and people were advised they could take out insurance against polio for 24 shillings a year. The premium would provide cover of £1000, paid at the rate of £10 per week for one year. If, at the end of the year, ‘the person was not cured, then the balance of £480 would be paid out.’135

Hospitals during the mid-twentieth century had restricted visiting hours, a practice that Wilson argues was ‘done to facilitate control over the patient.’136 The prevailing belief was that children were less likely to cooperate with hospital staff if parents visited frequently, but Fred Davis has argued that curtailed visiting hours were an attempt to loosen a child’s ‘ties with home’, thus substituting parental authority with that of hospital staff, and immersing ‘the child in the hospital’s subculture of illness.’137 No child under seventeen years of age was allowed inside the hospital and, as a result of that policy, some young children ‘hospitalised for years forgot they had brothers and sisters.’138 Perhaps the saddest part about this attitude to children in hospital and their parents was that it was accepted as normal by almost all nursing and medical staff. But conditions in the wards were difficult for all concerned, and overworked and exhausted staff did their best. Wards were often chaotic after parents left, with children crying and refusing to eat or go to sleep.

I always recall Sundays in hospital for the torrent of tears that followed the departure of parents, and the vomiting of jelly and custard afterwards.139

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136 Wilson, Living with Polio, p60.
137 Davis, Passage through Crisis, pp68–69.
139 S. Sherson, Being There: Nursing at ‘the Melbourne’ Victoria’s First Hospital (Melbourne: The
Understandably, hospital administrators were worried about cross-infection between wards, and the risk of visitors carrying the virus back into the community; but, paradoxically, nursing, medical and ancillary staff moved freely between the hospital and the outside world, and had no restrictions placed upon their movements. Personal possessions of patients were confiscated, even clothing, ‘if you dropped a book on the floor, it was never picked up … it was swept out and we lost them.’

One young boy, whose parents had spent hard-earned money on purchasing him a ‘new suit’ to wear into hospital, ‘had it taken from me, and when I asked for it they said, ‘It's got wogs on it and you can’t have it.’’ Administrators may not have been worried about the virus being carried outside hospital walls, but many people in the community were concerned, and they regarded hospital staff with trepidation.

If the sisters and nurses wanted a seat on the bus they pinned their Fairfield Hospital badge to their lapels and the bloody bus emptied!

Many families felt ostracised by their community, ‘parents and friends of my mother walked on the other side of the road and they were treated something terrible.’ After his small daughter was admitted to hospital with polio, Mr Parker recollected that ‘we weren't allowed to go into the shops in Sale or to walk through the general part of the hospital. We had to go around the side to the infectious diseases ward.’ Another father remembered that ‘neighbours wouldn’t walk near our front door, they would cross the street. We were a pest house, a plague house, no one

Graduate Nurses’ Association of the Royal Melbourne Hospital, 2005).


141 Interview D. Smith, ‘Fear, Frustration and the Will to Overcome’.

142 Geoff Golding, Fairfield Hospital Archives.

143 Ibid.

visited.'

Twenty-six year old Margaret ‘didn’t have any visitors in the hospital, even my father didn’t come, everyone was so fearful of polio.’ Some schools destroyed students’ possessions.

The school called to tell my parents that everything I had in my locker was gone. They had burned them. And they had burned my desk … and all my school books and they had fumigated my locker. My mother told me years later how awful that made her feel.

Edna was eleven years old when she contracted polio in the 1937 Melbourne epidemic, and her mother was so concerned that her dressmaking business would be ‘ruined, if people saw the ambulance outside the shop and knew that someone had infantile paralysis’ that she arranged for it ‘to come to the back entrance.’ Such was the level of ignorance in the community about the transmission of the disease that, as late as the 1950s, many believed that rehabilitated patients were infectious.

Once we got back to walking a bit we were allowed to walk around the block. [outside the hospital] But people would see us coming and they would all cross the street.

In contrast, some families were overwhelmed by the kindness of others: ‘the whole neighbourhood pitched in, they would take turns cooking dinner so that every evening my mother did not have to worry about the next meal, or where it was coming from.’

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146 Margaret Stephens. Ibid.
149 Interview J. Smith, 'Fear, Frustration and the Will to Overcome.'
150 Silver, Polio Voices.
Nursing care

As is the case in every profession, there was a marked variation in the standard of nursing care. Some nursing staff were viewed as being particularly harsh, terms like 'appalling', or 'abusive' or 'sadistic' were used by some patients to describe their experience in hospital. One boy remembered being 'put out in the sun and just left there. I ended up with severe sunburn.'\(^{151}\) After Beatrice was put into bed, 'the nurse, a sadistic woman, arrived and pulled me down to the footboard, then she told me "we keep our feet on footboards here."'\(^{152}\) Eileen recalled that her first memory of Hampton Hospital\(^{153}\) was when she was, 'wheeled into a spare ward, and left there all day because I wet the bed, and of the nurse who slapped my face for doing it.'\(^{154}\) Lynne was a patient in Prince Henry Hospital\(^{155}\) in suburban Sydney in 1951. She recalled:

One Sister who was a real martinet. She would not allow patients to have family photographs on their bedside lockers. All that she would permit was a bowl of fruit or possibly, but grudgingly, a bunch of flowers. We were not allowed to have screens around the bed when using a bedpan. It was 'too much work for the nurses' she would say. We weren't allowed to have baths either ... quite often Sister would stand at the door of the ward and announce 'I hate polios' ... she left us in no doubt that we were a dreadful nuisance.'\(^{156}\)

At variance with those memories there were many patients who remembered nursing staff as 'lovely and kind.'\(^{157}\) George particularly remembered one kind nurse


\(^{152}\) Beatrice Nail. *Polio Voices*.

\(^{153}\) Convalescent home in Victoria.


\(^{155}\) Originally known as the Coast Hospital, Prince Henry was designated as an infectious diseases hospital in 1881.


\(^{157}\) William Wesson, Fairfield Hospital Archives; Interview of Edna Thilby by Barbara Rossal-Wynne 16 April 1992, Fairfield Hospital Archives.
who ‘read books to me every day.’ Some young nurses empathised with other girls who were the same age, and in pain. Valda remembered one nurse who ‘would cry with me and rub my arms when I sobbed getting treatment.’ Marguerite was a four-year-old patient in Fairfield Hospital in 1951, and retains:

Vivid memories that are branded into my soul of the isolation and loneliness and the kind nurse who came and sat next to my bed and helped me to relax by getting me to watch the shadows of the leaves on the wall, and to see if I could see the fairies there. The next night I called out again, hoping that she would come. But a very grumpy nurse came and told me sharply to be quiet and go to sleep.

Life on the ward

The overwhelming number of complaints by Australian polio survivors was firstly about the food provided in hospitals, and secondly about alternatively freezing or sweating in a bed with only a thin, hard, coconut-fibre mattress between them and a fracture board. Many suffered from bedsores because of immobilisation in splints.

They had these long prams like trolleys to wheel us about on, and we were picked up and put on them, frame [Thomas splint] and all. We were often taken outside but the people seemed to forget about us and left us there when it was raining, or too hot.

Hospital policy for long-term patients favoured verandah accommodation with canvas blinds that were rolled down at night, and back up when the day shift came on duty. Balconies or verandahs were a legacy of Victorian miasmic theories about the need for fresh air and sunlight in wards, but were subject to extremes of temperature. Pauline was in Bendigo Base hospital, and her bed:

158 George Smothers. Silver, Polio Voices.
159 Valda Millie Heath, Fairfield Hospital Archives.
160 Swann, ‘Polio Story’.
161 Thomas, A Story to Break the Silence.
Was on the verandah, hot in summer and freezing cold in winter ... the rain would come in under the canvas blinds ... I got pneumonia four or five times. There was little to compensate for being exposed to the elements ... our beds faced a brick wall ... the really scary thing was the big, black spiders that used to fall on our beds as we lay still on our backs.¹⁶²

Conditions were the same at Fairfield Hospital. In winter, ‘it was very cold on the verandah at Fairfield, I had seven blankets on my bed to keep me warm,”¹⁶³ while in summer, ‘ancillary staff did their best to lower the temperature on the verandahs ... I remember that the gardener used to come and hose down the tin roof in summer.’¹⁶⁴ In Tasmania, winters were even colder than on the mainland.

There was no heating in the aftercare ward. We began to feel the cold, especially on the frosty nights because you could not put your hands under the bedclothes when they were in splints. The plate of metal that our feet were bandaged to was extremely cold. So groups of ladies started knitting woollen socks and covers for our hands. They made coloured rugs that were placed over our chest and tucked in round our shoulders at night. They were a help but many nights we would wake up shivering with the cold and everyone seemed to be getting bad colds. Some got pneumonia and died.¹⁶⁵

For Australians hospitalised during the epidemics, the food in hospital was usually appalling, tasteless, and lacking any nutritional balance. Little in the way of fibre was given, no fresh fruit and just a few vegetables which, if offered at all, were more often in the guise of unpalatable slurry. In The Great Scourge, Anne Killalea gave an example of a typical hospital menu in Tasmania in 1937.

Bread constituted breakfast, and bread and custard for tea. Lunchtime alternated between a choice of tripe or mince.¹⁶⁶

For some in-patients, doing something to avoid eating the unpalatable food provided some relief from the boredom of life on the polio wards. In Fairfield

¹⁶⁴ Valda Millie Heath, Fairfield Hospital Archives; William Wesson, Fairfield Hospital Archives.
¹⁶⁵ Lawes-Gilvear, Living with Polio, pp31–32.
¹⁶⁶ Killalea, The Great Scourge.
Hospital, young Brian did not like hard-boiled eggs, so we'd wrap them up and lob them up into the ventilating shafts ... they are probably still there, while Edna, who 'hated porridge' used her tin plate to 'fling it out onto the lawn, it must have been thick with porridge, ghastly, lumpy stuff. We had porridge seven days a week for breakfast, and that's all we got.' Also in Fairfield, Marguerite remembered being given 'baby food through a bent glass straw before graduating to grated apple mixed in with almost liquid mashed vegetables.' Another remembered jelly that was 'so rubbery' that we used to throw it at each other. Some children were physically ill after being forced to eat food they did not like.

I could not eat that milky hospital food. The nurses would feed me rhubarb and custard, one would stand one side and hold me, and the other would shove food into my mouth. Then I would vomit. I lost a lot of weight.

Ian loathed the fact that he was a 'prisoner to hot milk — with this bloody little jug thing coming towards you. It looked like a teapot, but it was for pouring milk into people's mouths.' Many parents and visitors were appalled by the quality of food provided, and brought in supplies from outside. Sometimes they had to smuggle these past a hawk-eyed Ward Sister: one woman remembered lowering down a rope 'so our husbands could send up meals we'd ordered.' Grandparents were enlisted to help: one devoted couple came in to visit several times a week carrying 'a baking dish full of rice pudding,' while other parents 'lobbed chocolates over the hospital walls' for the more mobile to retrieve and share with others. More

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167 Brian Caulfield, Fairfield Hospital Archives.
168 Edna Thilby, Ibid.
171 Valda Millie Heath, Fairfield Hospital Archives.
172 Ian Drury, Gould, A Summer Plague, p231.
173 Wilson, Living with Polio, p122.
174 Mary-ann Liethof, Stories 2008.
often than not, the junior nurses joined in the rebellion against hospital food and 'would take the hat around, and one would go to the corner shop and buy eggs and make us scrambled eggs.'\textsuperscript{175} Sometimes bribery was used to cajole patients to eat: 'we were allowed to listen to the radio in the afternoon if we ate our supper. One day I didn't eat my green beans and the nurse wouldn't let me listen.'\textsuperscript{176} Many patients hospitalised in Fairfield during the 1950s had trouble swallowing the food and were fed by nasal-gastric tubes for long periods. Noel Spurr recalled that the first food he 'could keep down was 'Cheddarette' biscuits, and when I came home people said I was like something out of a concentration camp.'\textsuperscript{177}

**Challenging institutional power**

For all involved, challenging the power of the institution in small ways gave a feeling of empowerment, a means of regaining their image of themselves as a person and not merely a patient. Frequently, those who were in hospital regained some sense of independence by working out means of subverting the authority of the system, whether it was by working out how to wriggle out of a Thomas splint at night after staff had done their rounds, 'I very soon learned that by turning my hand around I could get my arms out,'\textsuperscript{178} — or by 'doctoring' urine specimens by pouring in 'fizzy drink' into bedpans before using them.\textsuperscript{179} Life on the wards was not all bad: a genuine camaraderie often developed amongst those in the 'tanks'; and it was usually the young and inexperienced nurse who was the target for practical jokes.

\textsuperscript{175} G. O'Reilly, *Post-Polio Post* (Kensington: Post-Polio Network (NSW) Inc., 2001).
\textsuperscript{176} Mike Pierce. Silver, *Polio Voices*, p45.
\textsuperscript{177} Spurr, *Spurr of the Moment: The Story of Noel Spurr OAM*.
\textsuperscript{178} Edna Thilby, Fairfield Hospital Archives.
\textsuperscript{179} Silver, *Polio Voices*.
In those days the nurses were pretty scared too ... they tried hard to be self-confident and sometimes we played a trick on them ... pretended to choke, or have a fit ... and the poor girl would put her head out the door and yell 'Nurse' ... but generally the nurses seemed to enjoy working with us.\(^{180}\)

Some patients rejoiced in the idea that they were viewed as difficult by staff, it gave them a sense of autonomy, but sometimes it was at a price. Rewards for given for compliance with hospital rules, and those rewards could easily be withdrawn. Amy Fairchild argued that some polio patients were termed 'bad' by hospital authorities because they 'vied with medicine for power and authority over their bodies and the terms of their recovery.'\(^{181}\)

Having polio in the mid-twentieth century usually meant an extended stay in hospital, generally around twelve months and sometimes as long as four or five years. Some, like June Middleton in Victoria, never went home.\(^{182}\) Those who had made the successful transition from respirator to a rocking bed, or who had learned how to 'frog breathe,'\(^{183}\) then joined other patients in the convalescent ward and settled, willingly or unwillingly, into the routine of hospital life. Most hoped that the move would prove a significant step in the road to recovery, but some were disappointed to discover they were still paralysed after the fever and pain had disappeared. For all polio survivors, many months would be spent in exercising weakened muscles and, in Australia, treatment usually followed one of two methods that were as different and controversial as the two women who promoted them. In Australia in the 1930s, some adherents swore by the unorthodox method of treatment devised by Sister Elizabeth Kenny in Queensland, while those who advocated the

\(^{180}\) Interview F. Smith, 'Fear, Frustration and the Will to Overcome', p403.


\(^{182}\) June has been an in-patient, first in Fairfield and now in the Austin Hospital, Melbourne, for almost sixty years. Interview June Middleton by Barbara Rossal-Wynne 3 September 1992, Austin Hospital, Melbourne, The Bryan Richard Speed Infectious Diseases Collection: Fairfield Hospital 1904–1996.

\(^{183}\) Glossopharyngeal breathing.
conventional approach of orthopaedic medicine followed the treatment regime supported by Dr Jean Macnamara in Victoria. Kenny’s treatment advocated early, passive treatment of muscles in the acute phase of the illness, the use of heat packs to alleviate pain and tightness, and no immobilisation and splinting of affected limbs. Macnamara followed the more accepted treatment method of using splints to prevent contractures and deformities in limbs and then physical therapy once the patient had entered the convalescent phase and pain had subsided. Orthodox treatment gave medical practitioners and therapists the active role in treatment, whereas the Kenny method encouraged patients to reject their passive role and to retain agency over their body by working with the therapist to facilitate recovery. Whichever method of rehabilitation was followed, the recovery period was long, arduous, often very painful and imposed further stress on families and patients traumatised by the polio experience.
Chapter 3
Silent Traveller: Polio in Australia

It is a major embarrassment for the Commonwealth Government that enlightenment about how polio spread and what control measures should be taken could not be clearly enunciated by health authorities. A definitive statement on the transmission of the virus and methods of controlling its spread is needed in order to shield government departments from misguided criticism and impatient agitation.¹

Poliomyelitis has been recognised as a communicable disease since the end of the nineteenth century, but its epidemiology² and mode of transmission continued to mystify scientists until the latter half of the twentieth. Polio was a disease that was subject to unpredictable peaks of intensity. Exactly why, or how, different individuals or populations were immune to the disease while others succumbed or, in other words, what distinction existed between polio as an infection, and polio as a disease, was the key to the epidemiological conundrum.³


² The branch of medicine that deals with the incidence, distribution and possible control of diseases and other factors relating to health.

When the poliovirus (the infection) appeared in a community and spread freely, the number of cases (morbidity rate) depended largely on the ratio existing between those who already possessed some level of immunity and those who did not. Polio was the only epidemic disease to record an increased incidence in Western countries in the twentieth century, and countries that had prided themselves on their high sanitation levels, where cleanliness was often viewed as a type of religion, faced a higher incidence of polio in children and young adults than countries with lower levels of sanitation and public health measures in place. Scandinavia, the United States, Canada, New Zealand and Australia had the lowest general death rates, but the highest incidence of polio in the world. Viruses and bacteria are everywhere; they are part of the normal dirt and grime of everyday life, and infants in ‘cleaner’ countries and communities were increasingly being reared in quasi-sterile environments that failed to stimulate immunity to normal endemic bacterial and viral flora. Infectious diseases leave footprints in the form of serum antibodies in humans, and a rise in antibody level indicated that exposure to a specific disease had occurred. What distinguished polio from other infectious diseases of humans was the paradox that, as sanitation improved and other communicable diseases were conquered, the incidence of polio increased. Antibody levels to polio in many communities were found to be either low or absent.

Before 1880 there was no record of infantile paralysis or polio in Australia. Edward Ford’s bibliography made no reference to either disease, but did quote one


5 Normal flora is a microbiological term used to describe the more or less permanent residents of the human body and its environment. Sometimes called indigenous flora, it is native to a particular place or country. The so-called ‘traveller’s tummy’ is often a response by the body to encountering a new set of indigenous flora. (Author’s note).

source by Charles Reeve in 1858 who wrote of the existence of 'diseases of the spinal cord and its membranes and the various forms of paralysis arising therefrom.\textsuperscript{7}

Although the first official epidemic of polio in Australia was recorded in 1895\textsuperscript{8} in the fishing port of Port Lincoln in South Australia, some experts later came to the conclusion that 'sporadic cases of polio had probably been occurring for some considerable time'\textsuperscript{9} and that polio was most likely endemic in Australia.\textsuperscript{10} Polio is a notifiable disease and, as such, came within the jurisdiction of the Public Health departments in the various States.\textsuperscript{11} Several of the early classifications are no longer recognised, for as diagnostic techniques evolved, many nosological entities changed. For example, until 1938 polio was also classified in some states as epidemic cerebro–spinal fever, meningitis, infantile paralysis or acute anterior poliomyelitis.

**Notifiable disease**

Notification became compulsory for a series of diseases in the early years after Federation, and cases of polio\textsuperscript{12} were added to the list in New South Wales, Victoria and Tasmania in 1911, Western Australia in 1916, and South Australia in 1922. Once notification became binding, doctors were required to report their


\textsuperscript{10} Later studies within the Aboriginal population in the Northern Territory bore this out. J. Miles, 'Observations on Serum from Aborigines in the Northern Territory of Australia,' *Medical Journal of Australia*, vol. 2, no. 21 (1953), pp773–76; I. Stokes, 'Observations on Serum from Aborigines in the Northern Territory of Australia: iii Antibodies against Brunhilde (Type 1) and Leon (Type 3) Poliomyelitis Viruses,' *Medical Journal of Australia*, vol. 2, no. 12 (1955), pp433–38.

\textsuperscript{11} Data were published in the *Medical Journal of Australia* from 1917–1922; in *Health* the Journal of the former Commonwealth Department of Health from 1924 to the Second World War; and after the war in the *Commonwealth Year Book*.<www.health.gov.au/internet/main/publishing.nsf/ > Accessed March 2008.

diagnosis to a central authority for collation of statistics and epidemiological analysis. Data were collected nationally from 1917, but before that year some States reported cases of infantile paralysis. Queensland and Tasmania reported five and three cases, respectively, in 1912 (see Table 2, Introduction). States had the power to inspect private dwellings and impose periods of isolation if the disease was present, and health officials also reported their findings on general household cleanliness and sanitary arrangements in place. The control of plague, tuberculosis and diphtheria had traditionally been the major problem for health authorities, and the outbreaks of plague in Sydney during the periods 1900–1909 and 1921–1922 did more than any other single event to bring about radical improvements in the insanitary conditions that had prevailed. However, public health control methods that had been successful in controlling other diseases did not appear to work against polio and, by 1915, the disease was beginning to cause concern. At the end of 1917, cases of an illness that exhibited marked cerebral symptoms began to appear in some country towns in NSW, causing considerable alarm among residents. Local newspapers dubbed it "The Mysterious Disease."

When a major epidemic of polio broke out in New York in 1916, health officials instigated a vigorous campaign based on hygiene and quarantine. Patients and all contacts were quarantined for six weeks, and only the attending physician and nurse, health officer and representatives of the State Board of Health were permitted to enter or leave the infected building. A card warning that polio was present was fixed to an outside wall, and flyscreens were attached to windows. Family members

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14 Later scientific study revealed that polioviruses are highly resistant to environmental changes, and can survive for long periods in faecal matter and sewage.

15 Epidemics recorded in Broken Hill in 1916 and 1917. Department of Public Health New South Wales, 'Notification of Infectious Diseases,'

over the age of sixteen could leave after being treated with disinfectant, and younger children could leave on the understanding that they would have no contact with other children for two weeks. Food was delivered to the quarantined house and left at the front door, mail was forbidden, and all books and toys burned. Dogs, cats and birds were treated and removed from the house and any animals found roaming in the vicinity of the quarantine area were destroyed. If the patient died, the funeral had to be kept private — family members were not permitted to gather together to offer sympathy and support. Schools were closed, and public meetings banned. Communities outside the affected area tried to prevent inhabitants from fleeing. Despite all their precautions, the epidemic continued to spread. Naomi Rogers has argued that the social response to the epidemic in New York was constructed within an atmosphere of fear — fear of dirt, of the poor and of the immigrant. One of her key points is that before Franklin Delano Roosevelt contracted polio in the 1920s the image of polio was different:

> It was associated with the poorest, dirtiest children, not affluent adults in the prime of life, and with immigrants in slums, not Yankees from long established families.

Rogers showed how some health officials were unwilling to relinquish their historic assumptions concerning the link between dirt, morality and disease, and resorted to traditional methods of control — quarantine, fumigation and disinfection to attempt to control the epidemic in New York in 1916, because they believed that the source of the disease lay within the crowded tenements of the inner-city slums. Clean up those areas and the disease would disappear, they reasoned. Officials identified flies as a target for their role in ‘carrying the disease from working-class to middle-class’ families, and implemented enthusiastic anti-fly campaigns that exhorted the housewife to be especially vigilant to keep ‘filthy, polio carrying flies’

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18 Ibid., p1.
from the house. Rogers argued that it was not until Roosevelt became a survivor of the disease, and gave polio a new social meaning, that public and medical perception began to change about the association between dirt and disease, and to accept that the incidence of polio was not defined by class or race. When Australian officials studied the epidemiological findings published on the New York epidemic they realised they were dealing with a similar set of circumstances: the incidence of polio was greater in scattered country populations than in the crowded city slums, and public health control measures like quarantine that had been so successful in controlling other infectious diseases did not appear to work.

Polio epidemics in Australia

The anxiety that parents felt about polio in Australia was not misplaced, and many viewed the prospect of a child becoming paralysed and suffering permanent disability as especially terrifying. Polio could transform the sufferer into the ‘Other,’ and that ‘Other’ was seen as a contradiction to an ideal of a healthy childhood, followed by adolescence and successful adulthood. Epidemics in New South Wales and Queensland in 1904, and in Victoria in 1908, followed the outbreak of polio at Port Lincoln. That same year Alan Marshall had just started school in the small town of Noorat in south-western Victoria when he came down with the disease. Parents in neighbouring districts were worried when they heard the news about the young boy’s illness, for many local people believed that sufferers of infantile paralysis were mentally as well as physically handicapped. Marshall recalled that ‘Parents called their children in earlier, wrapped them more warmly and gazed at

21 Southcott, Crosby, and Stenhouse, ‘Epidemiology of Polio.’
them anxiously when they coughed or sneezed; while many whispered anxiously to each other: ‘Have you heard if his mind is affected?’ The origin of congenital defects was still shrouded in mystery and superstition, and there was no distinction made between an inherited or acquired disability. All were lumped under the one heading, and that was ‘cripple’. In 1932, H.T. Parker gave a different reason for the apparently common correlation of physical with mental disability, rightly concluding that a lack of mental stimulation for the child was the problem, and not the disease itself.

Without doubt, physical defects, whether inborn or the result of accident or disease, are not uncommonly correlated with mental disabilities ... physical defects could result in a lack of normal mental stimulus of the young child ... restricting intellectual development.

There were epidemics of polio in the eastern states during the years of the First World War. Queensland suffered the most. In the epidemic at the end of 1915 the state reported the highest number of cases for the war period with a mortality rate of fourteen percent. Whether the rate was as high for other States is not clear, because deaths from polio were not classified separately until 1922, unless a special report was produced, as was the case in Queensland. In the 1937–38 epidemic, the death rate varied from six to ten percent throughout the affected States. Severe epidemics occurred in New South Wales in 1916, and Victoria in 1918, and there was a moderate outbreak in Tasmania in 1930, and a mild one in South Australia in 1922. Western Australia experienced a mild outbreak in 1925, and the first major epidemic occurred in 1948. Each epidemic brought a rise in notifications of the

24 Cumpston, Lewis, and Dept. of Community Services and Health, Health and Disease in Australia: A History, p326.
26 JHL Cumpston, Health and Disease in Australia and ‘Poliomyelitis Notifications’ in Commonwealth Year Books for the years 1931–1964; Medical Journal of Australia for the years 1917–1922.
disease. The post-war years were the worst for all states except Tasmania,\textsuperscript{27} and the decade between 1950 and 1960 also saw increased notifications of polio in the Australian Capital Territory and the Northern Territory.

In the summer of 1931–32, an extensive outbreak occurred in NSW and public health officials noted that the ‘disease appears to be more feared by parents than any other’ and that the press and public had made ‘unusual demands for information about polio.’\textsuperscript{28} But worse was to come. In the winter of 1937 an epidemic appeared in the bayside suburbs of Melbourne that proved devastating for the population of Victoria, and provoked panic on the eastern seaboard of Australia.\textsuperscript{29} Hilda Bull\textsuperscript{30} realised almost immediately that the epidemic possessed several ‘unusual and startling features.’ Cases were ‘very severe,’ and the disease seemed to be extremely contagious. Great efforts were made by authorities to quarantine children in the area affected, but it spread quickly through residential areas into the city and the docklands. Parents became very alarmed, and authorities tried to prevent them from sending their children to the country, but many did leave.\textsuperscript{31} Streets where children usually played were deserted, ‘picture shows and shops’ were empty and, by the end of July 1937, all schools in Melbourne within a 50 mile radius had been closed.\textsuperscript{32} Worried parents flocked to the Children’s Hospital, unwittingly exposing

\textsuperscript{27} Polio notifications per state 1947–1956. NSW 4742; Victoria 3222; Queensland 1996; South Australia 4723; Western Australia 1477; Tasmania 550; Northern Territory 14 and Australian Capital Territory 94. Tasmania reported 2176 cases in the prewar period and 550 post war. J. White Commonwealth of Australia, ‘Public Health and Related Institutions,’ Reports of the Director General of Health for the years 1947–1958, (Canberra: Government Printer).


\textsuperscript{29} Western Australia’s first major epidemic was in 1948, and in 1954 notified 436 cases of polio.

\textsuperscript{30} Medical Officer, Department of Health, Melbourne City Council. H.W. Bull, ‘Poliomyelitis in the City of Melbourne 1937–1938,’ Medical Journal of Australia vol. 1, no. 23 (1940), pp809–12.

\textsuperscript{31} The Infectious Disease Regulations for Victoria in 1932 stated that ‘every person suffering from poliomyelitis was to be isolated and detained in isolation until the MO of Health is satisfied that such a person is no longer liable to convey infection … all contacts attending school were to be isolated for 21 days … other contacts were to be kept under surveillance;’ Board of Health, VPRO 8971/P001.

\textsuperscript{32} All of Sandringham and most of Caulfield, Oakleigh, Mordialloc and Moorabbin, portions of Brighton and Malvern and a small section of the Mulgrave Shire. Anon., ‘Closing of All Schools in Wide Area Is Advised, The Sun, 24 July 1937. 116
their children to a greater risk of catching the disease.

There were apparently four 'foci' in the city, chief of which was the outpatient department of the Children's Hospital.\(^{33}\)

Fear during the epidemic was intensified by ignorance of how the disease spread. In 1928, John Dale\(^{34}\) wrote of his apprehension about polio because he had ‘little to guide him’ about how best to ‘combat’ an epidemic whose behaviour was ‘so uncanny’ and unpredictable. Little changed over the ensuing ten years. However, by 1937 health authorities were aware that it was rare for hospital staff to become ill or for cross-infection to occur in wards — factors that suggested to them that the contagious period was short, and had passed before patients were admitted. The role of disseminating information on rapidly changing areas of quarantine, restrictions on travel and advice from public health authorities on transmission of the virus became the preserve of the media.\(^{35}\) Parents were advised that children should not ‘catch trams and buses unless absolutely necessary’,\(^{36}\) and popular myths about the transmission of the virus circulated. Theories ranged from sunbaking to animals as the culprit. As the panic about polio had spread in New York in 1916, 276,683 domestic cats and dogs were killed in the ‘lethal chamber’ of the Society for the Prevention of Cruelty to Animals.\(^{37}\) Although a letter writer had suggested that ‘cats transmitted the virus’, it appears that Victoria’s cats and dogs did not suffer a similar fate.\(^{38}\)

\(^{33}\) Bull, ‘Poliomyelitis in the City of Melbourne 1937–1938.’


\(^{36}\) Ibid., p53.


Despite the rapid spread of the epidemic in Victoria, NSW remained comparatively free of the disease for some months, but health authorities were aware that social contact between the immune and susceptible members of the population had to be prevented. They approached the Commonwealth Government for help, but the Federal Minister of Health W.M. Hughes refused to nominate Victoria as an infected area, declaring that it was 'constitutionally and legally impossible.' In response to Hughes, NSW officials acted quickly and amended the Public Health Act to impose certain restrictions on inter-state travel. Tasmania and South Australia did likewise. Up to twenty crossings into NSW were patrolled by police who were also stationed at railway stations, aerodromes and bridges over the Murray River. Cars and trucks were stopped and checked and, unless those in charge could prove that any child under sixteen travelling in the car had not had contact within the previous 21 days with any known source of the virus, or had not attended a school closed because of the epidemic, permission to cross the border was refused. In Tasmania, family members of polio patients were isolated for three weeks, infected houses were fumigated, and travel permits introduced for internal journeys from north to south on the island. Epidemics in Queensland in 1924 and 1932 caused 'great alarm' in the population. Officials noted that the disease spread along lines of communication throughout the State, and correctly deduced that it spread through personal contact.

Public unease in 1937 to news that 'an epidemic of great violence had erupted in the South' prompted the Minister to set up a committee to advise the

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41 Anon., 'Closing of All Schools in Wide Area Is Advised'.

Department of Public Health on how best to respond to the emergency. Queensland Health made the decision not to impose quarantine, concluding that 'although these measures were employed in several instances elsewhere at very great cost ... nothing would keep the disease out.' In the Northern Territory, the isolation period was extended to six weeks after a minor outbreak in the Aboriginal population at Alice Springs and Hermannsburg, but 'very little infection' occurred. Two cases were reported at Alice Springs and one at Tennant Creek from 1937 to 1939. Health authorities were interested in the 'apparently low incidence of infantile paralysis' in the Aboriginal population and believed that it was due to either 'racial resistance' or 'early immunisation' and approached the Native Affairs Branch in Darwin for permission to 'collect blood' from 'natives of selected age, sex and habitat' following 'suitable inducement or incentives for the natives to subject themselves to the necessary blood-letting.

The results proved interesting, and added weight to the theory that Aboriginal children had been exposed to the virus at an early age and developed immunity. Over ninety percent of Aborigines in all age groups had antibodies to the Type II Lansing poliovirus. Four years later another study was conducted against the two remaining types of poliovirus, and showed that those two types were not endemic among Aborigines in the Northern Territory. What the study also proved was that antibodies produced as a result of exposure to one type of poliovirus did not extend immunity to the others. In 1951 there was an epidemic among the white

43 Department of Public Health Queensland, 'Anterior Poliomyelitis.' In line with the south, schools were closed if a case occurred, and theatres and swimming pools closed, but only for children under sixteen. 160 cases were reported in 1937–38 in Queensland. Ibid.
45 A.J. Metcalfe, Director-General of Health to Secretary, Department of Territories, 7 May 1952. Poliomyelitis in Aborigines. National Archives of Australia, National Health and Medical Research Council, A452/1952/179.
46 Miles, 'Observations on Serum from Aborigines in the Northern Territory of Australia.' Blood was taken from both nomadic and settlement dwellers, and indicated that contact with white settlers made no difference to antibody levels.
47 Type 1 Brunhilde and Type III Leon.
population in the Territory, but no cases were reported amongst Aboriginals. Moreover, despite extensive travel throughout the Territory in 1955, the team from Adelaide managed to locate just one Aboriginal who showed signs of residual paralysis, indicating that, although the disease was endemic, the paralytic form of the disease was rare. Some historians have commented on the low incidence of polio in Australia during the war years, a fact that is borne out by consulting the official figures. However, in Queensland the figures for communicable diseases were 'affected by war conditions, especially the great increase within our State of populations not subject to the Laws of the Commonwealth or the State, which had contributed to rendering the maintenance of general sanitation and the control of infectious disease very difficult.' As a consequence, no statistics were collected during that period.

In 1940, Frank Macfarlane Burnet commented on the 'great change' that had taken place in the age incidence of polio since the early years of the century. In 1937–38, polio was no longer a disease of infants and young children, the peak incidence was occurring in the five to ten age group, with increasing numbers of teenagers and young adults affected. The ratio of cases between urban and country areas was no longer biased towards the rural. Previously, healthy carrier adults had arrived in country areas to spread polio from endemic urban areas. Now the disease was spread by contact between children, and the ratio of urban and rural cases reported was almost even.

48 Eight cases reported. Commonwealth of Australia, 'Public Health and Related Institutions.'
49 An elderly man near Alice Springs with a history suggestive of polio in 1925. He had residual paralysis of one upper limb. Stokes, 'Observations on Serum from Aborigines in the Northern Territory of Australia: Antibodies against Brunhilde (Type 1) and Leon (Type 3) Poliomyelitis Viruses.'
50 Ibid.
53 Macfarlane Burnet, 'The Epidemiology of Poliomyelitis with Special Reference to the Victorian
Jean Macnamara

Several therapeutic methods were used against polio in Australia during the 1920s and 30s. The favoured method in Australia was serum treatment, and its most forceful proponent was a graduate of the medical faculty of the University of Melbourne, Dr Jean Macnamara. She was born on 1 April 1899 to an Irish Catholic father and a diminutive, ‘red-haired, freckle-faced’ Scots Presbyterian mother in Beechworth, north-eastern Victoria. John and Annie Macnamara, like so many of their fellow emigrants from Britain, had acclimatised themselves to the harsher environment of their adopted country, but were nevertheless delighted when John was posted as Clerk of Courts to that prosperous town in the Victorian high country. Plantings of European trees and shrubs had been transforming parts of south-eastern Australia into landscapes more reminiscent of Europe, especially during autumn and winter when deciduous trees turned vivid reds and yellows before shedding their leaves to receive an occasional blanket of snow. It was so unlike the behaviour of the native eucalypts, acacias and melaleucas of the Australian bush that remained green throughout the year, that Jean recalled her excitement at seeing a ‘view of a snow-clad Mt Buffalo, and the Town Crier on a frosty night as he walked the streets proclaiming the news of upcoming meetings or flower shows.’ Her childhood, and that of her elder sister, appeared idyllic, protected as they were within the cosy, private world of a comfortable, middle-class family where both parents enjoyed the admiration and respect of the local community.

In 1905, John Macnamara was appointed as Clerk of Courts at Camberwell

Epidemic of 1937–1938.’

54 Macnamara graduated in March 1922 as MBBS (Honours). She gained a First in Anatomy, Medicine, Obstetrics, Gynaecology and Surgery, and a Second in Physiology.


57 For details on Jean Macnamara’s early life see Zwar, The Dame pp1–8.

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in suburban Melbourne, and the family moved to Wattletree Road, Malvern, where Jean and her sister Mary (Molly) were enrolled in the Spring Road State School. Jean first won a scholarship to the Presbyterian Ladies College, and later one to Melbourne University to study medicine. In 1922, she received her degree in company with such luminaries as Frank Macfarlane Burnet, George Simpson, Kate Campbell and Reg Mackellar-Hall, the orthopaedic surgeon from Western Australia who would later incur her wrath when he used the treatment methods of Sister Elizabeth Kenny in the wards of the Royal Perth Hospital and the Children's Hospital. In May, Macnamara was appointed along with Campbell and Kate Mackay as an RMO at the Melbourne Hospital, a position that would give the women great clinical and surgical experience.

The future for the girl from Beechworth looked bright. Jean Macnamara's career would evolve in a period that marked the consolidation of the prestige of the practice of medicine, reinforced by a general air of esotericism and deference. Following European settlement, medical care to the colony was provided by salaried surgeons working for the colonial government and, despite a guaranteed income, by 1820 there were approximately three medical practitioners per ten thousand inhabitants in New South Wales. By the mid-nineteenth century, the number of doctors in NSW and Victoria had increased four-fold, with a high proportion of them working on the goldfields. Many medical customs and practices came to Australia from Britain and, as the association of the urban practitioner with the well-to-do in Australia opened up new social and political contacts, those linkages also increased their status within the profession, and in the general community.

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58 Resident Medical Officer.


Successful physicians and surgeons became extremely wealthy and influential men. In 1846, a group of medical men in the Port Philip District formed a medical association and, in 1855, combined with others to form the Medical Society of Victoria. The first issue of the Australian Medical Journal was published in 1856, and was seen as another step towards the goal of professional accreditation. A process of self-regulation began with the licensing of practitioners and registration with the Medical Board. However, that tightening of the rules did not prevent ordinary members of the public from practising medicine or surgery. Many simply erected a shingle to offer their services, placed a ‘Dr’ in front of their names’ and went about the business of tending to the sick and infirm. Over seventy-five percent of those who practised medicine in the colony in the nineteenth century were not qualified doctors or physicians, but chemists, dentists, midwives, homeopaths, herbalists and other alternative providers.\textsuperscript{51}

The Medical Act of 1908 and the associated legal framework established the market dominance of the medical profession. It also laid the foundation for the control that the British (later Australian) Medical Association\textsuperscript{62} would exercise over other health professionals, in particular, nurses and physiotherapists. Tony Pensabene’s study outlined how the previous guidelines governing supply and demand for medical services changed in Victoria when the profession gained control over the new knowledge of scientific medicine, and over the supply and working conditions of doctors. He argued that the beginning of the twentieth century was when the medical profession in Australia attained true respectability, mainly as a result of the strength of its professional organisation — one dubbed by Gillespie as

\begin{footnotesize}
\begin{itemize}
\item \textsuperscript{51} Nichol, ‘The Medical Profession in New South Wales.’
\item \textsuperscript{62} The Victorian Branch of the BMA was formed in 1879, and was seen as being more representative of different categories of medical practitioners than the Medical Society of Victoria, which had been criticised for representing ‘only the elite of the profession’ and not the ‘rank and file of general practitioners.’ E. Willis, Medical Dominance: The Division of Labour in Australian Health Care (Sydney: Allen & Unwin, 1989), p144.
\end{itemize}
\end{footnotesize}
'the most powerful trade union in the British Empire'." T.S. Pensabene adopted a more Marxist view in his analysis of the rise of the medical profession in Australia, and argued that political and social issues played the dominant role in the rise of medical dominance, and that the possession of complex knowledge was also important, but played a lesser role. Willis believed that the profession achieved its dominance in Australia in the early 1930s.\(^64\)

By the late nineteenth century, Melbourne had become a complex and sophisticated city of some 500,000 residents. It was a metropolis that mirrored British social order, with pockets of great wealth, juxtaposed with slums and poverty. However, despite the claims of being modern and civilised, Melbourne was an unhealthy city.\(^65\) Health authorities soon came to realise that the city's hospital system could not cope with increased rates of infectious disease, and that a specialist hospital would have to be constructed. The question was, how was it to be funded? Most of the financial support for Melbourne hospitals came from voluntary contributions and charitable donations, and this did not allow for large capital expenditure like the construction of new buildings.\(^66\) Both the Melbourne Hospital and the Children's Hospital had earlier adopted a policy of not admitting


\(^{66}\) In 1922, Frank Apperly, Lecturer in Pathology at Melbourne University wrote to the Rockefeller Foundation asking for financial support to construct a new hospital and medical school at Parkville. He was seeking funds from the Foundation so that the endowment would not become 'the playing of political parties' like the 'present situation in Victoria.' According to him, 'this important university has struggled along for 70 years always in a state of poverty' with almost 'non-existent facilities' and 'despite the fact that Australia can produce the brains,' the university had become a 'degree shop' and its best graduates were going overseas to do research work. Stressing that his letter had been written 'out of love for his university' he hoped that his appeal to them 'would not be in vain.' However, the Foundation later rejected his request stating they did not grant endowments for building construction. F.L. Apperly, 1.1 Projects, 410 Australia. 12 March 1922. Rockefeller Archive Center, Sleepy Hollow, Tarrytown. Rockefeller Foundation Archives, Box 1, Folder 7. W. Carter, 1.1 Projects, 410 Australia. 29 June 1923. Rockefeller Archive Center, Sleepy Hollow, Tarrytown. Rockefeller Foundation Archives, Box 1, Folder 8.
anyone with an infectious disease, notification of which had become compulsory in
the early years of Federation.

Diphtheria is nursed only now and then in the Children's Hospital, there being
no department for the general treatment of disease. Children suffering from any
contagious complaint have to be turned away ... their condition being more pitiable
since there is no other children's hospital in the colony.67

However, despite the ruling that 'children suffering from infectious diseases
were no longer to be admitted', diphtheria and scarlet fever were a common sight
in the wards, probably because many children were asymptomatic when admitted
for other reasons, and later developed full-blown symptoms of those infectious
diseases.68 In 1880 the Children's Hospital69 erected a separate pavilion to isolate
infectious children.70

No communication was permitted with the main hospital except at a very respectful
distance ... now and then one of the maids would take watch for an hour [over the
patient] allowing me a few turns in the sunny garden; but this was rarely.71

When the Melbourne Hospital began erecting tents in the grounds to
quarantine infectious cases, the Central Board of Health took a dim view of that
practice, and urged Melburnians to dig deep and raise funds for the building of a
'fever hospital' as soon as possible.72 In 1904, The Queen's Memorial Fund Hospital,
or Fairfield Hospital for Infectious Diseases as it became known, was opened. It
was funded by a pro-rata levy on municipal councils, thus illustrating a new focus

67 G.J. Carmichael, Hospital Children: Sketches of Life and Character in the Children's Hospital
68 P. Yule, 'The Doctors 1900–1923,' in The Royal Children's Hospital: A History of Faith, Science
and Love (Sydney: Halstead Press, 1999), p59 For example, a medical report from May 1889 quoted
by Yule details one Henry Owens who while 'under treatment for Typhoid developed Diphtheria ...
and was removed to the Pavilion and died.' Another child admitted 'suffering from Diabetes' also
'developed Diphtheria and died'.
69 At that time the hospital was known as the Melbourne Hospital for Sick Children.
70 P. Yule, Faith, Science and Love, p78.
71 Carmichael, Hospital Children: Sketches of Life and Character in the Children's Hospital
Melbourne).
72 By 1897, £16000 had been raised. W.K. Anderson, Fever Hospital: A History of Fairfield Infectious
on infectious disease as a public health problem, and not the responsibility of the individual. During 1937 all cases of polio from the metropolitan and central country areas of Victoria were admitted to Fairfield.

The Children's Hospital in Melbourne had been sympathetic to the idea of appointing women resident medical officers to the staff, but official policy following the end of the First World War dictated that preference be given to male doctors returning from active service. However, in May 1923 that attitude towards the appointment of women 'softened' and one of the two resident clinical assistants accepted was Jean Macnamara. By the time she arrived on the wards, Victoria had experienced three particularly severe epidemics of polio. Treatment of paralysis at that time was mainly supportive: prolonged rest and the splinting of affected limbs was the accepted method of treatment, a regime that would persist unchallenged for over ten years.

Orthopaedic medicine

Treatment of polio paralysis fell within the jurisdiction of orthopaedic medicine, a field that had emerged in the middle of the eighteenth century as a medical specialty dealing with crippling diseases of childhood and that, by the end of the nineteenth, had expanded to include fractures and other injuries caused by trauma to the human body. In 1889, the French surgeon Lucas Champonnière had

73 Ibid.
74 Ibid., p88
75 Yule, Faith, Science and Love, p122.
posed that immobilisation led to stiff joints and deformity, and that gentle massage and passive exercise would relieve pain, reduce swelling and help bone to heal. Despite that, most surgeons and physicians believed that it was best to allow Nature to perform its healing work by prolonged rest and immobilisation. No movement or massage was allowed and splints were devised to restrain the affected limb.

World War I accelerated the growth of orthopaedics as a specialty within medicine, for the conflict provided an abundance of casualties needing surgery and rehabilitative treatment. Bodies mangled by the new technologies of mechanised violence returned to Australia to begin the arduous process of learning new ways of living with a body changed by war, and those bodies were highly visible on the streets of Australia's cities and towns. The use of explosives and heavy guns resulted in missing limbs, shattered bones, torn muscles, damaged nerves and paralysis. Joanna Bourke's study of the impact of the Great War on the male body detailed how:

Orthopaedic teams, consisting of doctors, nurses and voluntary workers, were established to provide for the treatment and aftercare of the disabled ... thus, the wartime economy created an army of people whose livelihood was dependent on maintaining a supply of cripples.

The medical infrastructure that had evolved to care for the crippled child was strengthened by 'extraordinary therapeutic, rehabilitative, and surgical technologies for all cripples — male and female, adult and child, soldier and civilian.' Hospitals cared for children and adults who had been admitted with polio, and those institutions were training centres for physicians, surgeons and, to a lesser extent, nurses and physiotherapists. Hence, the polio patient was transformed into an object that provided medical training or, as Foucault expressed

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it, the sick and the disabled became a medical exhibit. With polio patients, this dependence, lack of autonomy and medicalisation of the body continued beyond the realm of hospital-based treatment. When the economic climate of the 1930s intervened and disabled patients were moved from hospitals, control over the individual body was transferred to outpatient clinics and convalescent homes. In 1930, an editorial in the Medical Journal of Australia was strongly critical of the formation of the Australian Orthopaedic Association. It regretted what it viewed as the 'formation of another extramural association' and the consequent removal of orthopaedic practice from the auspices of the BMA in Australia. In the Journal's view, surgeons were more than capable of dealing with demands for orthopaedic surgery and no special organisation was, in their view, needed. What seems clear from that statement, is that the BMA resented any interference with its authority, even from within its own ranks.

Sir Neville Howse, Director General of the Australian Medical Services in World War I, recognised that significant numbers of returning servicemen would require orthopaedic treatment, and arranged for a number of medical officers to attend a special course given by Sir Robert Jones at the University of Liverpool before they returned to Australia. By 1920, there were around five specialist orthopaedic surgeons in Australia and one of them was Colin Mackenzie of Victoria. He advocated lengthy rest and immobilisation by splinting or plaster casts as treatment for polio paralysis and believed that treatment in the acute or febrile phase would increase the severity and likelihood of ongoing paralysis. Mackenzie believed that recovery

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82 Born of Welsh parents in 1857, Sir Robert Jones specialised in treating crippled children. With Dame Agnes Hunt he developed an open-air hospital for crippled children in Oswestry, Shropshire. Over the years, many Australian orthopaedic surgeons trained there, and Jean Macnamara visited it in 1931.
83 In 1920 Mackenzie said that limbs were to be placed in a 'zero' position (muscles at anatomical rest) and a plaster of Paris cast applied immediately. At that stage he believed that the value of massage was
from polio could take years. In addition, he coined the term ‘muscle re-education,’ the orthodox treatment recommended by orthopaedic specialists and carried out by massage therapists. In 1928, a paper by Jean Macnamara on the early treatment of polio was published in the *Medical Journal of Australia*.

Patients should be nursed on a hard bed with a firm mattress and a cradle to support the weight of bed clothes, and encased in a plaster bed or boots that extended above the knee with the feet at right angles. Immediate splinting should be started in the acute phase and morphia given if backache is severe.

Thus, the standard pattern of treatment for Australian patients was to isolate and immobilise them in an infectious diseases hospital or isolation ward of a general hospital for two or three weeks until the acute, or febrile phase of the disease had passed. Warm saline baths were then given daily, and re-education of muscles with graduated exercises commenced. Treatment of polio was then, as today, aimed at treating the effects of the virus, and not the virus itself.

Some hospitals, like the Children’s Hospital in Melbourne, introduced heliotherapy or exposure to sunlight as another form of therapy. Polio survivors were given access to the ‘simple magic of sunlight and clean, clean air,’ and nurses ‘slathered them with coconut oil’ as their bodies were ‘burned to various artistic shades of brown.’ Clearly, the dangers of skin cancer had not yet been recognised.

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85 Gradual exercises of muscles to regain strength.

86 Known as ‘rubbers’ in nineteenth century Britain, the term changed to ‘masseuse’ or massage specialist early in the twentieth century. Later, physiotherapist was used (physical therapist in the United States).


88 At the annexe at Hampton, near Brighton Beach.


90 Ibid., p194.
Dr Mackenzie was a supporter of massage as a therapy, and lectured the therapists as part of their training. In Britain, the revival of massage or medical 'rubbing' had been attributed to an influx of men and women from Sweden in the mid-nineteenth century. However, a scandal had erupted in the 1890s when the popular 'penny press' ran a salacious exposé of some 'houses of ill-fame' that advertised their services under the name of 'Massage Establishments.' To the horror of the legitimate masseurs, in 1893 the British Medical Journal saw fit to warn readers against the use of massage on account of the number of 'unscrupulous persons practising it.' The members decided that an accredited association was the only way to fight the smear campaign against their profession. In Australia, the massage therapists were more concerned with the threat to their professional standing by untrained operators who were free to advertise their services because there were no regulations in place to prevent them. Dr Jean Macnamara gave her support to the therapists in 1934 when they made a formal protest to their Registration Board against Sister Elizabeth Kenny, 'an untrained, unauthorised person who was practising what she called 're-education of muscles.' Macnamara's support for the therapists gave them professional respectability because of her position as a leading member of the medical establishment and a leading spokesperson on matters relating to poliomyelitis. Although the polio epidemics presented an enormous challenge to the fledgling profession of physiotherapy, they also created an opportunity for wider recognition of its expertise in the treatment of paralysis.

92 Ibid., p 25.
94 Australasian Massage Association, 'Special General Meeting of the Queensland Branch to Consider the Matter of Miss Kenny, *The Australasian Nurses' Journal* (1934).
Resident Medical Officers at the Children's Hospital in 1924. Jean Macnamara is on the left (Yule, The Royal Children's Hospital).

Mostyn Powell, (Yule, The Royal Children's Hospital).

Papoose board recommended by Jean Macnamara as a standard crib for all babies aged two months to two years. NLA MS2399/5

Jean Macnamara (right) and friends at Mount Royal, Montreal. August 1932. NLA MS2399/5/248
Physicians and scientists were subjected to pressure by the public and anxious parents to do something to either prevent or lessen the effect of the poliovirus on the body. Developments in cell and germ theory during the latter part of the nineteenth and early twentieth century had led to many advances in therapeutic ways of treating bacterial disease, and vaccines against smallpox and typhoid had raised the hopes of many scientists about the prospects for prophylactic medicine. In 1895, two assistants of bacteriologist Robert Koch in Berlin developed an animal serum that worked against the toxins produced by the diphtheria bacillus and, although the mechanism of passive immunity was not fully understood until the work of Frank Macfarlane Burnet and other immunologists in the 1950s and 1960s, the use of serum therapy in that pre-antibiotic era proved very popular. In Paris in 1915, Professor Arnold Netter was the first scientist to use serum collected from patients recovering from polio in an attempt to prevent paralysis developing in new cases. He based his theory on a belief that convalescent serum contained viricidal properties that could be harvested and reused. Across the Atlantic, scientists at the Rockefeller Institute in New York were also hard at work developing various sera for therapeutic

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95 An action taken to prevent disease. Its origin is mid-nineteenth century from the Latin pro [before] and the Greek phulaxis [act of guarding]. Oxford Dictionary.


purposes, and when Simon Flexner reported in 1917 that his laboratory work using monkeys to develop and test a serum against polio had proved 'very promising', other researchers throughout the world decided to investigate the therapeutic use of serum in the prevention of polio paralysis.

The use of serum as a method of preventing polio paralysis rose to prominence in Victoria in 1925 following the outbreak of another polio epidemic. Wilfrid Selwyn Kent Hughes, member for Kew in the Victorian Parliament, persuaded the Melbourne City Council to set up a *Joint State and Municipal Campaign against Poliomyelitis*, and proposed that funding for the Campaign be met equally by the State Government of Victoria and by pro-rata contributing councils. The views of Kent Hughes on unemployment relief and support for the concept of 'work for sustenance' were well known, as was his support for 'benevolent cases', including the 'physically decrepit', to be transferred from Government responsibility to the charities. Those views probably ensured his sympathy and support for any campaign that was likely to reduce the numbers of the disabled in the community who, in his opinion, were 'not entitled to the same rights as someone who had laboured for twenty or thirty years in the service of the State'. Some conservative Members of Parliament held similar views about the pension rights of the disabled, and voiced the opinion that it was simply 'bad luck if Providence had sent a man into the world with a frail constitution' and, as a consequence, the 'State owed him nothing.'

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100 The *Joint State and Municipal Committee for Combating Infantile Paralysis* in Victoria was formed as a result of a conference of State and Metropolitan Authorities. Its purpose was to provide serum following consultation with a polio specialist. The State agreed to fund serum for the 'poor and indigent' to a maximum of 10/6d by paying the medical practitioner on receipt of proof of service provided. Polio Campaigns 1930–1933. Public Record Office Victoria, Melbourne. General Correspondence Files, VPRS 6345, P0000/327/279.

101 Some councils were in favour of the scheme, while others like St Kilda, Oakleigh, Richmond, and Fitzroy were against it. Malvern and Sandringham agreed to contribute up to £20, but no more. Ibid.


103 T.H. Kewley, *Social Security in Australia: The Development of Social Security and Health Benefits*
Acting on the advice of his father, Hughes appointed Jean Macnamara MD as Medical Officer to the Committee advising the campaign.\textsuperscript{104} She was twenty-six years old and, through experience gained at the Children's Hospital, was already acknowledged within medical circles as having a special knowledge of the clinical and laboratory methods of diagnosing polio. It was a feather in her cap to secure a position that would prove to be professionally, as well as financially, rewarding.\textsuperscript{105} Macnamara was concerned about the aftercare treatment of paralysed children, but by 1924 had decided to concentrate her efforts on investigating and implementing a preventive approach to paralysis using a vaccine or serum treatment. Physicians then, as now, usually chose either a research career based at the bench or a clinical career divided between consulting room and hospital ward.

As Medical Officer for the Committee, Jean Macnamara was responsible for serum supplies and for their distribution within Victoria and interstate. New South Wales set up a similar scheme in 1926, and Queensland in 1931, but few medical practitioners applied for serum.\textsuperscript{106} Collecting serum for therapeutic purposes had been attempted during the polio epidemic in Melbourne in 1918, when the pathologist at the Children’s Hospital, Dr Reginald Webster, sent out a circular letter to the parents of thirty-five previous polio patients asking for blood to be donated. However, the response to his request was poor.\textsuperscript{107} Seven replies were received from

\textit{from 1900 to the Present} (Sydney: Sydney University Press, 1965), p85.

\textsuperscript{104} Poliomyelitis Council of Victoria, 1930–1932. Public Record Office Victoria, Melbourne. Town Clerk’s Correspondence Files, VPRS 3183P0000/70.

\textsuperscript{105} Her initial salary from the Committee was £7 per week plus 9d a mile expenses. For the financial year ending June 1926, the costs of the campaign were £638/11/0, and Macnamara’s fees totalled £420/2/0, approximately £8 per week. That sum was equal to the yearly wage paid to the Medical Superintendent of the Children’s Hospital (Gregory, \textit{Ever Open Door}), p198) and in 1925, the basic wage was £4/4/0 for a 44 hour week. In addition, Macnamara would have been receiving fees from her private practice in Little Collins Street. Poliomyelitis Council of Victoria Minute Books. Public Records Office Victoria, Melbourne. Town Clerk’s Correspondence Files, VPRS 3183P0000/71.

\textsuperscript{106} N.S.W. Department of Public Health, ‘Notification of Infectious Diseases,’ Report of the Director General of Public Health, (Sydney: Government Printer, 1926–1929; Department of Public Health Queensland, ‘Annual Statement of Notifiable Diseases During Calendar Year.’

mothers of the children, but only four agreed to come in. When Webster attempted to remove blood from the four small children, each became so distressed that he abandoned the idea, and instead decided to test his theory about the efficacy of serum treatment on monkeys. His experiments aimed at proving that human serum collected from polio sufferers would provide protection against the virus were non-conclusive, but Webster was more concerned that the procedure of administering serum intrathecally could prove counter-productive, even fatal to the patient, if the delicate tissues surrounding the spine were damaged. Injection of the serum required considerable expertise, and Webster believed that inexperienced doctors could cause increased trauma to the spinal cord, thus making it ‘easier for the poliovirus to travel to the brain.’ His view was that violating the spinal column was not a procedure to be taken lightly, as the risks for the patient were very high. It was accepted that the procedure should be performed by an experienced practitioner, hence the appointment of Jean Macnamara in Victoria.

If a general practitioner suspected polio they contacted the Committee, and it was Macnamara’s duty to travel to the patient’s home with her instruments for lumbar puncture, and a microscope to either confirm, or reject, the tentative diagnosis. If the test was positive, and paralysis had not yet occurred, the patient was admitted to hospital and given warmed serum very slowly, either intrathecally or intravenously. In August 1925, a nine-year-old boy received serum at the Children’s and recovered, adding further weight to claims about its efficacy. However, later results were mixed: some cases responded, others did not, and some patients went into shock after being given serum because of the introduction to their body of a foreign protein.

108 Through the spinal column.
Joan W, a female aged 2 years admitted to the hospital on 12 January. She had been ill for five days previously with fever and vomiting, and after two days became drowsy, irritable and feverish, falling over repeatedly. The Spine Sign [patient asked to bend the head to the knees without pain occurring] was marked. Given 26cc of serum intrathecally and 44cc intravenously. She developed paralysis of right quadriceps, which recovered with rest in a splint and re-education over two to three months.

Dorothy D, aged 4 years was admitted to another hospital on 8 January 1929 after 36 hours of illness. She complained of headache and pain in the back of her neck. Twelve hours elapsed before serum was given, 25cc intrathecally, 45cc intravenously and 20cc intramuscularly. On 10 January widespread paralysis of all four limbs developed. She was splinted in a splint of Double Thomas pattern with foot pieces, head piece and malleable arm pieces. A corset was applied to prevent stretching of abdominal muscles, and moulded hand splints to keep the thumbs in opposition.111

The problem with basing a diagnosis on lumbar puncture was that polio was not the only disease that gave a raised leucocyte (white cell) count, and it is probable that patients suffering from other diseases like meningitis or Guillain–Barré syndrome were mistakenly given serum. In 1918, Dr Douglas Stephen had concluded that an increase in leucocytes in the cerebrospinal fluid occurred before the onset of paralysis, but the following year Dr Reginald Webster was equally convinced that it was impossible to distinguish between meningitis and polio by examining spinal fluid.112 However, Jean Macnamara agreed with Dr Stephen and, for several years, based her diagnosis of polio on the results of the lumbar puncture. By using her microscope at the bedside of the patient, Macnamara reinforced the belief that the new relationship between science and medicine as a ‘source of social, moral, and technical betterment’, would be a partnership that would bring great benefit to both physician and patient, because of the evidence science provided to reinforce a medical diagnosis. Bringing the laboratory into the home was an example of ‘how science — as an ideal and as a body of knowledge — entered the physician’s workaday

111 J. Macnamara, Correspondence 1923–1968. NLA, Canberra. MS 239911/60.

112 Guillain–Barré syndrome is an uncommon inflammatory disorder in which the body’s immune system attacks the nerves, typically causing severe weakness and numbness that usually starts in the extremities and quickly worsens. Whole-of-body paralysis can eventuate. Recent research has proposed that President Franklin D Roosevelt was a victim of this disease and not poliomyelitis. <http://www.mayoclinic.com/health/guillain-barr–syndrome/DS00413> Accessed August 2006.

Additionally, the diagnosis made possible by the use of the microscope was often an irrevocable step in altering a person's view of themselves. As Rosenberg has argued:

> From the patient's perspective, diagnostic events are never static. They always imply consequences for the future and often reflect on the past. They constitute a structuring element in an ongoing narrative, an individual's particular trajectory of health and sickness, recovery or death.\(^{115}\)

The influence of newspapers and magazines in bringing the use of serum therapy to the attention of the public was such that many physicians were viewed as failing in their duty of care if they did not use serum once the diagnosis of polio had been made.

By April 1926, notifications of polio in Victoria had dropped and, although it was decided to abandon the campaign for the time being, the work of collecting serum from donors continued. To guarantee a constant supply of volunteers, Macnamara included those who had contracted polio some years previously as well as recent convalescents. Small children were not spared: parents were approached for donations and, as a further inducement, donors were offered £5 per pint plus travelling expenses. However, despite the lure of receiving a sum for donating their blood that exceeded the average weekly wage, many refused. One young woman from Geelong wrote to Macnamara and agreed to donate blood on the proviso that 'she could be done at home' because she had to help her mother 'to make up for some of the expense' incurred by her family during her stay in hospital, and could not afford the time to travel to Melbourne. Another family considered that the trauma involved for one of their children 'was not worth it' because their daughter Nellie had cried 'hard when we ask her, so we will not go against her will on any account.' Furthermore, the parents believed that it was unfair to ask their other daughter Margaret because she had already 'done her share.' Although they were sorry


‘to disappoint you [Macnamara] again’ the family believed ‘it wasn’t any good forcing’ their daughters to donate blood. Some donors were fearful of a procedure they viewed as painful. One wrote that she ‘really suffered last time … thought I would lose my arm,’ and another, obviously alerted by another outbreak of polio and to the possibility of another appeal for blood, preempted Macnamara by writing to say that he ‘hoped for the good of everyone concerned that there will be no more need of my life blood this year.’ Mrs Finch of Richmond flatly refused to let her son Arthur give ‘any more blood,’ bluntly stating that he ‘was not yet walking, and is very thin.’

In Victoria, the selection of donors was based on other criteria besides recent exposure to polio, suitable subjects were those with ‘a good family history,’ or the ‘right type’ of person. Scientists and the public have long known about hereditary diseases of blood, and the threat from being exposed to contaminated blood through transfusion. Blood has always occupied a very special place in the human psyche, it is essential to maintain life and has deep cultural significance. A problem with one’s blood, be it from disease or loss, is a problem with life. Metaphors about the significance of blood abound in the English language. Christians who believe in transubstantiation understand that Christ’s blood possesses the power

116 Letters from Thelma C, Thomas K, Mrs Finch. Letters to Jean Macnamara. 23/10/1929; 18/11/1930; 25/11/1930. National Library of Australia, Papers of Jean Macnamara, MS 23997/5. In 1929, Jean Macnamara was paid £1/1/- per hour by the Council for taking blood. VPRO 3183/P000/000071.

117 Professor F.B. Smith's opinion was that a ‘good family history’ would be one where there was no TB, venereal disease or alcoholism within the family (Personal communication to author, July 2009). Dr Greenham, Corryong to Macnamara, 8 July 1931. J. Macnamara, Notebooks, 1925–1966. 11/11/1930. NLA, Canberra. MS2399 7/5.

118 For example, Haemophilia (a sex-linked clotting defect passed from mother to son) and Thalassaemia (Mediterranean disease, anaemia caused by a defect in the haemoglobin molecule) and AIDS.

119 Hepatitis A and the auto-immune deficiency virus for example.

120 For example, ‘blood brothers,’ ‘bad blood between them,’ ‘my heart bleeds’ and ‘blood is thicker than water.’
of redemption, and certain religious groups have steadfastly opposed the transfusing of blood from donor to recipient. In contrast to modern usage, where blood lost by disease or trauma is replaced by transfusion, bloodletting from a vein as a cure for disease was, in the past, common practice and, despite there being no evidence to support the use of phlebotomy or bloodletting as an aid in recovery of a patient, physicians would often reach for the lancet to 'open a vein' before they considered other treatments.

Myths and traditions about blood are not confined to the past. In the twentieth century, physicians in Nazi Germany forbade the collecting of blood not only from Jewish donors, but also from all non-Aryan races, thus condemning their armies to chronic shortages of blood for transfusions, and their soldiers to an increased risk of dying from wounds sustained in battle. In 1935, the Nazis passed the infamous Law for Protection of German Blood and German Honour to maintain 'the purity of German blood' by prohibiting marriage, or any relationship between Jews and Germans, and Jewish households were banned from employing Germans or those of 'kindred blood.'

At the dawn of the twentieth century, eugenic theory enjoyed popular support, and adherents to the eugenics movement ranged over a wide field; from those who endorsed state-sanctioned population control, to others who championed community health programs aimed at education, social welfare and environmental reform. The eugenic movement in Australia had its roots in Britain in the early

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121 Transubstantiation reflects Roman Catholic faith that bread and wine are transformed in the Mass to the body and blood of Christ. J. Duffin, 'Why Is Blood Special?', in History of Medicine: A Scandously Short Introduction (Toronto: University of Toronto Press, 1999).

122 Jehovah's Witnesses.

123 The association between the lancet and modern medicine continues, the title of the pre-eminent medical journal in Britain today is the Lancet.


125 <http://www.mtsu.edu/~baustin/nurmlaw3.html>

126 Dr Harvey Sutton wanted to 'strengthen the body of the white urban child in Melbourne by promoting 'good posture, a balanced diet, fresh air and physical exercise' and, like his fellow racial
1880s, especially through the work of Francis Galton who concluded that the position of the ruling class in British society was due to a superior, biologically based inheritance — a class that was born to rule. Eugenic movements captured the imagination of many in post-Federation Australia, especially in the period following World War I, when the loss of so many young men on the battlefields of Gallipoli, France and Belgium led to concern about the weakening of the remaining population by genetically inferior stock. The language of eugenics was widespread: medical and scientific journals actively supported intervention in reproduction to bring about a better future for Australia, while members of various Eugenics Societies ‘sought to discourage breeding of the physically unfit and feeble minded’ and recommended sterilisation for ‘hopeless degenerates.’

Consternation was expressed about the relative lack of fecundity within the upper and middle classes. Eugenic thinking was not confined to the fanatics, and eugenic theory enjoyed popular support in Australia. Many scientists, doctors, psychiatrists and politicians subscribed to the belief that countries and nations survived through fitness and that, as a consequence, the fittest and best in the population should be encouraged to reproduce and the unfit discouraged from marriage and parenthood.

At the University of Melbourne, Jean Macnamara had studied under, and worked as an anatomy demonstrator for Professor R.J.A. Berry, a committed supporter of eugenics and the campaign for segregation and state intervention to

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limit reproduction by ‘unfit’ members of the population. There is no doubt that she was influenced by hereditary determinism. After visiting a home for disabled children on Rhode Island in 1933, she wrote back to Australia that ‘it was lavishly endowed, [but] some of the children were epileptic and spastic, and would be better knocked on the head than being treated like millionaires.’

In 1931, Isobel Hodge was appointed as almoner to the Children’s Hospital and, as well as duties that involved following up on the welfare of discharged patients and encouraging parents to bring their child to outpatient clinics for therapy, she also compiled reports for Jean Macnamara on suitable blood donors, and noted the family background and circumstances of the convalescent children. Hodge worked from ‘4pm to 9pm’, a time when most parents would be home from work, and her reports gave detailed descriptions about the family.

Wooden house … clean and well kept … in a good locality … single-fronted semi-detached brick house … wooden house in factory locality … neat wooden house in a good locality, father is a carpenter … very respectable family … newly painted … a good home, father refused permission for child to be a donor … neat house, large closed car … house untidy at 4pm … mother busy vacuuming … the patient did not make a good impression, but gave his consent.

Obviously, Jean Macnamara was concerned with the suitability or otherwise, of potential blood donors, and children from respectable working-class families or the middle class were those she deemed suitable.

Fewer and fewer former polio sufferers were agreeing to donate blood, and the scarcity prompted Jean Macnamara to begin research with Macfarlane Burnet at

130 Macnamara, NLA MS 2399.
132 Isobel Hodge to Macnamara I. Hodge, Correspondence 1923–1968. NLA, Canberra. Papers of Jean Macnamara, MS 23997/5.
the Hall Institute to see if serum could be safely stored for longer periods. In January 1929, she wrote to Simon Flexner in New York asking for reprints of Rockefeller University findings on the use of serum therapy as a prophylactic to prevent paralysis in polio. While lamenting the fact that Australia's 'isolation' denied her 'the stimulus' of conversation with other researchers in the field, Macnamara sought Flexner's advice on applying for a Rockefeller scholarship to study polio in the United States. In the Pacific region, epidemics of polio were not confined to Australia and New Zealand. An outbreak of polio in New Guinea in August 1929 graphically illustrated the havoc the virus could wreak on a population with little or no natural immunity. During the four months to December, six hundred New Guineans contracted polio, and twenty eight percent of them died. In those who survived, the incidence and severity of paralysis was highest in the young adult population. Two Europeans also fell ill, but recovered. Macnamara was disappointed that she was not notified of the outbreak early enough by the Commonwealth Department of Health, and regretted that 'such a unique opportunity for studying the effect of serum therapy with controls in human patients' had been missed. Her idea was to give one group of 'villagers' human serum, and to use another untreated group as a control. Shortly afterwards she wrote to Flexner to inquire if the Rockefeller Institute would fund a similar experiment if another outbreak of polio occurred in a 'native population' in any of 'Australia's mandated Territories.' If the Institute agreed to


134 In 1917 Flexner had reported that his experiments using serum on monkeys were 'very promising'. Cox, A Review of Recent Literature on Typhoid Fever and Acute Anterior Poliomyelitis), p62.

135 Flexner advised her to contact Dr Richard Pearce of the Department of Medical Education, Rockefeller Institute, New York. Flexner to Macnamara, June 1929. Correspondence between Simon Flexner and Jean Macnamara, Rockefeller University Archives. 1929–1933. Rockefeller Archive Center, Sleepy Hollow, Tarrytown. Record Group 301.

136 A 'Virgin soil' epidemic. The disease was said to have spread from nearby Solomon Islands.

137 Reprint of letter from FE Cox, Chief Quarantine Officer, Victoria, 10 February 1929. Correspondence between Simon Flexner and Jean Macnamara, RAC (RU) RG301.

138 Macnamara to Flexner, 2 March 1930. Ibid.

139 Ibid.
her proposal, she would 'stir up the Commonwealth Government' and make sure she was notified promptly of an outbreak. That opportunity never eventuated. Macnamara continued her experiments at the Walter and Eliza Hall with Burnet, although they were unable for 'financial reasons' to purchase enough monkeys for their research.140 Macnamara corresponded regularly with Simon Flexner, and in 1930 she was awarded a visiting Fellowship to investigate 'the living organism at a molecular level' at the Institute of Physico-chemical Biology in Paris.141 That same year, the Medical Journal of Australia threw its considerable influence behind the 'admirable success' of the serum treatment advocated by Macnamara. According to the MJA, serum treatment would 'reduce mortality' and 'prevent paralysis altogether' if given early enough. Furthermore, the 'whole medical profession acknowledged her achievement' and her 'mastery over a disease that still plays havoc with young lives.'142

Criticism

In June 1931, Jean Macnamara addressed members of the Tasmanian Parliament on the benefits of serum, and it was probably around that time that she became friendly with Enid Lyons, wife of the Labor MP Joseph Lyons.143 She was already part of a Melbourne social elite that included former Prime Minister

140 Macnamara to Flexner, 11 March 1931. Ibid.
141 The Rockefeller Foundation was established and endowed by John D Rockefeller in 1913 and launched its philanthropic work in the field of public health medicine. The International Health Division was the main operating arm and conducted worldwide campaigns against various diseases including malaria, yellow fever and hookworm. Queensland was a major beneficiary of funds for hookworm research in the early part of the century. As well as medicine, the Foundation created a Division of Humanities and a Fellowship program to give researchers from foreign countries the opportunity to increase skills or gain research experience in the United States. By the end of 1952, the Foundation had expended over US$28m on various Fellowships. Address by Dean Rusk, President, the Rockefeller Foundation. 1954. RAC. Rockefeller Foundation ArchivesSeries 200/37/303. See also J. Macnamara, Correspondence 1923–1968. NLA, Canberra. MS 23991/18d.
Stanley Melbourne Bruce and Lady Somers, wife of the Governor of Victoria.\textsuperscript{144} Her position on the benefits of serum therapy was clear: if serum was administered 'the illness was of short duration' and, if it was not, splinting for 'as long as six years' was necessary. According to her, serum offered sufferers of polio the hope that they would not become, 'hopeless, distorted cripples.' Instead, the majority could, 'by careful patient treatment,' avoid paralysis and the prospect of prolonged treatment and, of even greater importance to the Commonwealth, this would mean a large reduction in pension payments.\textsuperscript{145} Macnamara believed that any cost to the state for the supply of serum was based on sound economics, and as serum was the only safe weapon against polio, she noted how pleased she was to see the 'gratitude of young adults in Hobart' after they had been given it, and their willingness to donate their own blood to add to the stock of serum.\textsuperscript{146}

However, criticism of the use of serum treatment for preventing polio paralysis was beginning to gain worldwide momentum. In New York in 1932, Maurice Brodie published results showing there was no difference between normal and convalescent serum\textsuperscript{147} and, in 1935 concluded that serum therapy held 'little value' because 'increasingly large amounts' were needed. Moreover, Brodie doubted that the 'antibody could ever reach the virus.'\textsuperscript{148} In 1932, the New York Academy of Medicine released the results of an experiment to test the efficacy of serum treatment in polio and concluded that "it was no use at all."\textsuperscript{149} The same year, Dr W.H. Park

\textsuperscript{144} Ever conscious of the advantages of having powerful and influential friends, in 1932 Macnamara asked her mother to insert a notice in the social pages of \textit{The Argus} to inform readers that she was convalescing from her appendectomy at Eastnor Castle as the guest of Lady Somers.J. Macnamara, Correspondence 1923–1968, NLA, Canberra. MS 2399 1/1/310–373.

\textsuperscript{145} Estimated at £34,000. \textit{The Mercury}, Hobart, 30 June, 1931. Newspaper Cuttings, 1933–1968, Ibid., MS23994/1.

\textsuperscript{146} 'Poliomyelitis in Hobart,' \textit{The Australasian Nurses' Journal} vol. 29 (1932).

\textsuperscript{147} M. Brodie, 'A Comparison between Convalescent Serum and Non-Convalescent Serum in Poliomyelitis,' \textit{Journal of Experimental Medicine} vol. 56 (1932), pp507–19.

\textsuperscript{148} M. Brodie, 'The Role of Convalescent Serum in Preparalytic Poliomyelitis,' \textit{Journal of Immunology} vol. 28 (1935), pp353–61.

judged that 'patients treated with serum did no better than those not treated.' By mid-1933, some medical practitioners in Australia were also expressing doubts about serum therapy. In New South Wales, Dr Karen Helms concluded that 'it was not possible to conclude that the recovery rate in people treated with serum was due to that alone.' Not long after her report appeared in the Medical Journal of Australia, both NSW and Queensland ceased the use of serum treatment. Despite this, Jean Macnamara remained convinced that serum therapy was an effective therapeutic tool for the prevention of paralysis, and cited Webster's research as well as that carried out by Flexner in New York to promote its use. The Poliomyelitis Committee in Victoria decided to carry on with collecting blood and dispensing serum in spite of mounting evidence against its use from colleagues of Macnamara such as Mostyn Powell and Robert Southby, who concluded in 1935 that 'serum had no effect on either paralysis or recovery', and from Brodie in New York and F.M. Walshe in London.

In 1937 the Committee appointed Frank Macfarlane Burnet to advise them on the use of serum. Some members were upset that Jean Macnamara was 'obtaining serum for her own private use' and expressed the view that the 'collection of serum was for the general use of the public and not for the benefit of an individual.'

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150 W. Park, 'Serum Treatment in Poliomyelitis,' Public Health vol. 45 (1932), pp284–86.
152 Medical Journal of Australia, Vol 1, 1933, p43.
153 In 1917 Flexner had reported that his experiments using serum on monkeys were "very promising". Cox, A Review of Recent Literature on Typhoid Fever and Acute Anterior Poliomyelitis, p62.
154 Mostyn Powell was appointed as MO to the Committee in December 1936, and reported his findings that he doubted whether serum was of any use, but it was harmless and probably gave comfort to sufferers and their families. VPRS 3183 P0000/71.
156 Walshe was against the use of serum in any form, it was a 'rosy possibility that had not been fulfilled' and was useless. VPRS 3183 P0000/71.
Burnet’s recommendation was unequivocal. In his opinion the use of serum was based originally on a wrong interpretation of experimental work in monkeys, and later experiments both in Australia and overseas had revealed that it was of no therapeutic value. Furthermore, Burnet believed that if a medical practitioner wanted to use ‘something for which there is no scientific basis’ then ‘he should be prepared to pay for it.’ He doubted whether any ‘municipal or government body was justified in spending public money to provide serum.’ The Committee then resolved that no further serum would be collected from the public and, in May 1939, the Commonwealth Serum Laboratory (CSL) purchased the remaining stock.158

Some of Macnamara’s supporters used serum on the basis that it ‘did no harm,’ and instead brought comfort to patients and their families that something was being done to fight the disease. There is no doubt that there was a rapid transition from experiments with serum treatment in monkeys to human trials, a progression that would be unthinkable by today’s experimental standards but, in the early twentieth century, researchers and clinicians were encouraged by the efficacy of serum as an antimicrobial therapy, and believed that it would be equally effective as a therapeutic agent against polio. As new scientific knowledge evolved in the 1930s — particularly that dealing with virology and immunology — the difficulties associated with serum therapy for polio became more clearly understood. Nevertheless, Jean Macnamara remained convinced about its efficacy, and persisted with the use of serum therapy both publicly and in her private practice until 1938.

In 1971, Dr John Paul noted:

The demise of serum therapy after so many years of crude trials on which claims of its value had been made by so many physicians, a number of whom were acknowledged authorities and occupied high places in the medical hierarchy, must have been a bitter pill to swallow, if such a metaphor is appropriate.159

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158 Interview with Frank Macfarlane Burnet. Public Record Office Victoria, Minutes, Poliomyelitis Council of Victoria, 1931–1938, VPRS 3183/P0000/71.

159 Paul, A History of Poliomyelitis, p198.
Serum therapy was not the only form of prophylaxis used against the poliovirus. Frank Macfarlane Burnet reflected in 1968 that it had been ‘active dogma in the 1930s’ that the virus entered the body through nerves in the nasal cavity, and spread from there throughout the body and,\(^{160}\) because of research that supported that view, a campaign was launched both in this country and in the United States, where ‘thousands and thousands of children’ had their ‘high nasal passages’ sprayed with a solution containing zinc sulphate and picric acid. The scheme was a failure, not only because researchers had concluded that the only way to effectively apply the spray was to ‘turn a child upside down’,\(^{161}\) thus provoking loud screams and physical resistance from the children, but also because the chemical used in the spray ‘caused burns and terrible headaches.’\(^{162}\) Some children permanently lost their sense of smell from the injury caused to their nasal cavity.\(^ {163}\) During the Melbourne winter of 1937, a public health official observed that ‘strikingly few’ children admitted to hospital with polio showed ‘any signs of a cold’, and proposed that if a child had a blocked nose then perhaps the virus could not gain entry. A ‘chance remark’ from Macfarlane Burnet to a colleague that ‘a simple way of testing that theory’ was to invent a nose clip, inspired the scientist to construct one. But when his children were shown the clip, they ‘flatly refused to appear in public wearing such things.’ And that, wrote Burnet, was the end of that exercise.\(^ {164}\) Nasal sprays were used in Hindmarsh, South Australia, until February 1938, when health authorities finally warned the public against buying ‘worthless preparations’ and declared nasal sprays as a prophylaxis against polio ‘useless.’\(^ {165}\) In Queensland, the Department of Health declared that the spray was ‘ineffectual and impracticable.’\(^ {166}\)

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\(^ {162}\) Smith, ‘Victorian Polio Epidemic, 37–38.’


\(^ {164}\) Macfarlane Burnet, *Changing Patterns*, p158.


\(^ {166}\) Department of Public Health Queensland, ‘Anterior Poliomyelitis,’ 1938.
Jean Macnamara left Australia in mid-August 1931 to take up her Rockefeller Scholarship and, while mindful of the fact that the BMA had told her it ‘did not wish to have anything to do with the aftercare of polio cases’, she decided that she would report to them on schemes operating overseas. Although she found Paris ‘dreary and dirty’ and the people ‘awful … noisy and chattery … the women had sallow complexions and long varnished fingernails … and the children look sick’, she knew she was there to work, and her first task was to meet with Dr Daniel O’Brien at Rockefeller Foundation headquarters situated on the Left Bank. O’Brien soon realised that, because her ‘interests lay more in the practical side and less along investigative lines,’ there was no point in her remaining at the scientific research laboratory in Paris. He was adamant that she should leave at once for the United States where a ‘huge epidemic of polio’ was happening with several thousand cases alone in New York. In his opinion, it was a ‘crazy idea’ for Macnamara ‘to potter about in Europe while the war was in America’ and he made arrangements with New York for her ‘to proceed immediately.’ She persuaded O’Brien to ‘let her have a few days leave in England’ at her own expense and he agreed, provided she boarded the Lafayette at Southampton on 25 September.

In England, fate in the form of a grumbling appendix intervened and she sought confirmation of her self-diagnosis from a London surgeon who advised her not to travel to New York on any account, ‘because none of us would want to risk an appendectomy on a French ship.’ That doctors make bad patients is a truism — perhaps doctors know only too well the uncertainties associated with a correct

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167 VPRS 3183.
168 Macnamara, NLA MS 2399.
170 She did confide to her family that she felt ‘events were moving too fast.’ Macnamara, NLA MS 2399.
diagnosis, hence their reluctance to submit to doubtful and sometimes painful procedures. Macnamara informed O'Brien of her illness and he agreed to her taking ten days rest in the country before a decision was made on her future.\textsuperscript{171} She remained unwilling to leave for the United States and that ‘ten days rest’ extended to eight months, much to the chagrin of Daniel O’Brien in Paris.

Macnamara spent her time in Britain visiting several orthopaedic hospitals where she soon realised that Australian knowledge of aftercare treatment was far in advance of that in Britain. She was not impressed with the work being done for the aftercare of children at Great Ormond Street, London’s largest children’s hospital. Apart from ‘two Australians working there,’\textsuperscript{172} the treatment for crippled children was ‘medieval’, and hospital policy was to ‘let the children become deformed’ before ‘operating on their crippled limbs.’ No one in England knew ‘how to treat polios as well as we do in Australia,’ and some of the ‘old boys, whose word she had taken as gospel’ were very ‘so-so’ when she spoke with them in detail about aftercare. She was ‘furious’ that she had paid ‘30 and 40 shillings for their books’ as they were ‘dithering fools.’\textsuperscript{173} Macnamara was shifting her focus from scientific research to orthopaedic medicine, and it was understandable that O’Brien was annoyed; he had agreed to her leaving Paris in order to travel to the United States, and her Fellowship had been awarded on the basis that she investigate the virus ‘at a molecular level’ and not research orthopaedics.\textsuperscript{174}

Macnamara finally sailed for New York at the end of April 1932 where she met Dr Carter at the Rockefeller Institute. He tried to persuade her to return to researching the poliovirus, but she refused, adamant that her interest was now

\textsuperscript{171} Ibid.
\textsuperscript{172} Ralph Crisp and Dr Cuthbert from Perth, Western Australia, Ibid.
\textsuperscript{173} Macnamara, Ibid.
\textsuperscript{174} Her relief at not having to go to the United States was evident from her letters home. She went over O’Brien’s head and wrote directly to Dr Carter in New York asking his permission to stay in England. A few weeks later she wrote that ‘this little old appendix has allowed me to get my own way’ to ‘defeat O’Brien.’ Ibid.
in orthopaedic medicine. In March 1933, she visited Warm Springs in Georgia where, in her opinion, the 'treatment of paralysis was not taken seriously.' The staff were 'poorly trained' and the Director of Physiotherapy 'did not know how to care for paralysed muscles.' Supervision of patients at Warm Springs was 'lax' and splints were worn only if they 'did not interfere with social activities.' However, she believed that the work by 'Dr Michael Hoke on the surgical treatment of paralysed feet was probably the best in the world.' Jean Macnamara returned to Australia in September 1933 unsure about what she wanted to do in the future. She found it very frustrating that parents of children did not appreciate how important it was for their children to grow up healthy and straight, so they could become part of a healthy work force and contribute to the economic productivity of the nation. While she lamented the fact that many in society had not yet realised that a 'man's worth should not be measured by his shape,' she maintained that it was a 'good thing' that an 'instinctive horror of deformity' should be present in Australia. Because a large section of the population in Great Britain suffered from rickets or tuberculosis of the bone, Macnamara believed that people's sensitivities had been dulled, as they no longer reacted with 'shock and revulsion' to deformity.

The incentive to achieve recovery of muscle power is greater in Great Britain where the incidence of rickets, surgical tuberculosis, war injuries through the centuries have accustomed people to the cripple population. In Victoria these epidemics shocked a population unaccustomed to crippling, sensitive to deviation from the normal shape, and a condition which threatened to add 100 to 300 persons annually to the list of those eligible for invalid pensions.

175 The Foundation supported her travels around the United States and Canada to visit various orthopaedic hospitals where she met Jessie Stevenson, the most critical, careful and practical worker in polio in the United States.' Macnamara, MS2399/1/176d.
176 'Wild horses would not drag me back to serum therapy ... perhaps I'll do some veterinary work with sheep' Macnamara to family. Correspondence 1923–1968. National Library of Australia, Canberra. Papers of Jean Macnamara, MS 23991/150.
177 Macnamara, Notes for Articles. NLA, Canberra. Papers of Jean Macnamara, MS 239911/60.
Clockwise from top.
Physical therapists, Warm Springs, Georgia, 1932.
Child in calipers
Concert performers, Warm Springs
The ‘Little White House’, Warm Springs.
Macnamara, MS2399/5
When asked in 1938 if she thought that ‘mild cases’ were being splinted unnecessarily, she responded by saying it was the only treatment to prevent deformities from developing; moreover, if any child showed ‘any weakness’ when asked to hop on one leg, or walking on ‘tip-toe’, then it was ‘safer to splint than not to’.  

Jean Macnamara became a passionate advocate for correct posture in children. That conviction informed much of her attitude to correcting perceived deformities, whether they occurred naturally, like knock-knees, or resulted from polio paralysis. She was not backward in giving advice to parents about drooping shoulders, or a curved spine. She examined country children while they were at the Lord Mayor’s Camp at Portsea and sent off letters to parents chastising them for their laxness.

We suggest that you, his parents should look at him in bathing trunks and consider his shape critically as you would examine that of a building you have built or a young horse you think of buying. You will notice that he does not stand tall with chin and tummy in, but is inclined to slump so that his chest is flat, his tummy protrudes, his back is hollow. If he continues to slump it is likely his posture will be bad in adult life. Do everything you can to encourage a pride in his carriage.  

Five years after she returned from overseas, Victoria experienced its worst epidemic of polio. Jean Macnamara supervised the care of patients at both the Fairfield Infectious Diseases Hospital and the Children's Hospital using orthodox treatment — bed rest, and immobilisation of affected limbs in a neutral position in order to avoid the over-stretching of weak and damaged muscle tissue. Her admirers were many and, to some, her knowledge of aftercare treatment exemplary and justifiably ‘recognised throughout the world’. However, her views on treatment were not universally accepted, especially outside Victoria, Jean Macnamara followed orthodox medicine, a heroic approach that gave medical practitioners the active role in managing and treating polio paralysis. In 1946 she declared that ‘pool therapy

179 Ibid.
180 Macnamara, NLA MS 2399. Ibid.
181 Dr Shields (UAP) addressing Parliament in November, 1937. Ibid. MS2399/4/2.
did more harm than good' and that 'drooping adolescents' were proof that the 'Red Indian had the wisest plan' and that their 'papoose board should be the standard sleeping crib for babies from two months to two years, and that children with knock knees should be splinted.' In 1954, Dr Peter Colville addressed the Third International Poliomyelitis Conference where he said:

There is a wide divergence of opinion on the orthopaedic management of paralytic cases. This almost certainly reflects a general dissatisfaction with results obtained from all forms of treatment and an inability to obtain a rational assessment of results using different techniques. At present, no solution is offered to this problem, although it probably represents a great source of anxiety to patients.

The polio epidemics in Australia focused attention on, and highlighted the difference between, new and old ways to treat the body disabled by polio, and Jean Macnamara's influence on maintaining the dominance of orthodox treatment for polio paralysis in Australia until well into the 1950s was profound. Elaine Riska argues that the medical profession can be internally divided into an administrative or politically active elite, a knowledge elite and ordinary practitioners. In her early years, Jean Macnamara was keen to be part of the scientific, knowledge-rich stratum, but by her thirties she had become more of a lobbyist for change. Her energies were widely spread in her later years, and one of her passions was to promote the use of myxomatosis in Australia in order to combat rabbits, whose numbers had reached plague levels since their introduction into Victoria in 1859, and were causing enormous environmental and financial damage in rural Australia. She was not one to back down from a conflict, and her colleague Sir William Upjohn described her as 'vigorously to the point of ruthlessness in dealing with colleagues or other responsible people, including politicians.' Her passionate support for the use of the myxoma virus brought her into confrontation with Francis Ratcliffe of the

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Council for Scientific and Industrial Research (Now CSIRO) who maintained that the devastation to Australia’s delicate topsoil had occurred before rabbits arrived, and who was not convinced that the virus would spread in the rabbit population. Also against her was ‘the rabbit lobby’ of exporters, trappers and furriers who battled hard to maintain their livelihood. Dame Jean relished a chance to prove that she was correct in her thinking on subjects as wide ranging as milk as a possible carrier of the poliovirus, soil conservation, the benefits of composting and myxomatosis. However, she was strangely reticent when it came to expressing either a public or personal opinion about another woman who was to become a significant player in the field of polio treatment. That woman was Sister Elizabeth Kenny, and it was in rural Australia that accepted medical authority on the treatment of polio paralysis was first called into question.

184 Zwar, The Dame, pp94–97.
185 She was made a Dame Commander of the Order of the British Empire in 1935 for her services in the field of poliomyelitis. Zwar, The Dame.
Chapter 4

The Crippled Child: Treatment in Urban and Rural Australia

The best thing for patients and for the State was for medicine to have nothing to do with those whose lives were of no use to themselves or others; the art of medicine was not designed for their good. Medicine should minister to better natures, giving health both of body and soul; but those who are diseased in their bodies they will leave to die ... if a man was not able to live in the ordinary way he [Asclepius] had no business to cure him; for such a cure would have been of no use to himself, or to the State.

Plato, 'The Republic', Book III, Socrates–Glaucon

Plato's dialogues aptly illustrate the long history of prejudice and discrimination that has existed towards disabled members of society. It was not uncommon for early Athenians to allow their crippled children to die of neglect, and a Roman father had the 'right to destroy a deformed child' if five of his fellow citizens gave their consent. In early Rome disabled members of the population who had survived infancy were often exploited, and a slave trade in dwarfs was both popular and profitable.

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1 The term 'disabled' is currently preferred, but during the early to mid-twentieth century in Australia, 'crippled' was the predominant social identity for those with a physical disability. For that reason, 'crippled' has been used in context.


In the latter part of the Middle Ages, ignorance and prejudice among all classes of society led to many disabled being looked upon as 'a work of the devil, or as being in league with the devil or, at the very least, as victims of the wrath of God.' And, of course, many people were of the opinion that the disabled were crippled in mind as well as body. In the late nineteenth century, broader Victorian concerns about social reform and a growing awareness and understanding of how 'normal' children developed, led to the British government assuming responsibility for the care and education of crippled children, a decision that influenced the development of paediatric medicine. In a study of ethics within the practice of medicine, Baker has pointed out how Dr Alfred Hoche, a physician in Nazi Germany, appropriated several lines from Plato to underpin the Party argument for euthanasia for the Lebensunwerten Lebens, a phrase used to describe the physically and mentally disabled members of the German population who were regarded by them as living a 'life unworthy of being lived.'

Care of the crippled child

Before World War I, treatment and care for the crippled child in the United States of America and Britain was far in advance of that available in Australia. In America, hospitals, convalescent homes and asylums were available for residential care, and outpatient clinics or orthopaedic dispensaries provided after-care for children discharged from hospital. In England, the earliest organised social interest in care for the disabled had commenced in the eighteenth century and coincided with


the emergence of orthopaedic medicine. The aim of reformers was to offer shelter to
the disabled by confining them to institutions, thus achieving the equally important
goal of removing them from the streets, and far from the gaze of the more fortunate
members of the population. In England in 1551, Edward VI directed the collection
of alms to provide for 'the impotent, the feeble and the lame' and, eighteen years
later, an order was given to apprehend all beggars including the lame, the sick, the
aged and the blind, and to take them to two of London's hospitals.\(^8\) No arrangement
was made at that time for proper care or education, for the belief was widespread
that the disabled needed segregation from society, rather than integration with it.\(^9\)
Education programs were later introduced, but were dominated by the overriding
economic conviction that educating the disabled was a 'cost-effective prophylaxis
against a lifetime of dependence on public welfare.'\(^10\) That attitude was still evident
in Australia in the 1930s.

Homes for crippled children in the United States were divided into
three classes: hospitals staffed solely by trained nurses, convalescent homes with
a majority of graduates, and asylums where children were cared for by pupil
nurses and 'children's attendants.'\(^11\) When a child was discharged from hospital,
outpatient clinics or orthopaedic dispensaries provided care, but problems with
that arrangement soon became apparent.\(^12\) As was also the situation in Australia,
many parents failed to bring their children back for treatment after the first three

\(^8\) Kessler, *The Crippled and the Disabled: Rehabilitation of the Physically Handicapped in the United
States*), pp21–22

\(^9\) Pritchard, 'The Development of Schools for Handicapped Children in England During the
Nineteenth Century.'

\(^10\) Kessler, *The Crippled and the Disabled*; S. Koven, 'Remembering and Dismemberment: Crippled
Children, Wounded Soldiers and the Great War in Great Britain,' *The American Historical Review* vol.

\(^11\) A.K. McMurtrie, 'Nursing Care of Crippled Children in the United States,' *The American Journal
of Nursing* vol. 16, no. 2 (1915), pp115–18.

\(^12\) J.L. Stevenson, 'After-Care of Infantile Paralysis,' *The American Journal of Nursing* vol. 25, no. 9
(1925), pp729–33.
or four weeks and, apart from the advice and limited treatment given by public health nurses in local communities, very little was done for the crippled child. In the United States, therapists and nurses in the orthopaedic outpatient clinics believed that the therapy was too complicated for parents to learn and treat their child at home. Authorities tried on several occasions to organise a better way of treating the children. In January 1922, the medical society of St Louis offered free consultation and hospital care for all crippled children in their area whose parents could not afford payment. The children suffered from a range of disabilities: congenital disorders, acquired disabilities from malnutrition, or disability following diseases like infantile paralysis and tuberculosis. Many had never received previous medical treatment.

Despite the fact that treatment was free, many children never received treatment and language difficulties and parental ignorance meant that many slipped through the net. Following the initial diagnosis, children were sent to a hospital best suited to offer treatment — those suffering the after effects of infantile paralysis were likely to be sent to a Shriners Hospital for surgery. The results of surgery proved to be mixed and some orthopaedic surgeons were disappointed to discover that many children showed only slight improvement. Later studies revealed that more than fifty percent of children in various hospitals throughout the United States

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13 In all, 473 children were registered by their parents and the local automobile club provided cars and drivers to bring the children to and from the clinic. Fifty-one different surgeons and physicians volunteered their services, fifty nurses gave freely of their time and social workers were alerted to families with special needs. G.L. Anderson, 'Dr Lorenz and the Crippled Children of the Southwest: A Demonstration of the Value of Publicity and a Splendid Demonstration of Professional Cooperation,' *The American Journal of Nursing* vol. 22, no. 9 (1922), pp708–12.

14 Of the 248 children identified in the survey, 235 needed treatment, and of those approximately ten percent were labelled as hopeless cases because of 'low grade mentality.' The committee recommended that their care be assumed by the state in homes for 'feebleminded' children. Ibid.

15 In 1920, Members of the Ancient and Arabic Order Nobles of the Mystic Shrine (Shriners) resolved that members would establish a centrally located hospital that would concentrate on providing surgical care for crippled children. Eight hospitals were planned — including one in Minneapolis — for 50 to 100 beds. Only children of 'normal mentality' were admitted, and their disability had to be one that could be cured or corrected. Parents were not charged for treatment. The aim of the Shriners was to give children the opportunity to become self-supporting adults. F.J. Potts, 'The Shriners’ Hospitals: A General Outline of the History of the Founding of the Shriners’ Hospitals for Crippled Children,' *The American Journal of Nursing* vol. 26, no. 10 (1926), pp745–52.
were there because of infantile paralysis. Moreover, in an observation that was later confirmed in Australia, the number of crippled children was far greater than had been previously suspected, probably around ten times more.\(^{16}\) In the United States the outlook for the crippled child and adult improved when, on 3 January 1938, President Franklin Delano Roosevelt inaugurated an organisation that would have an enormous impact both on virus research and on the provision of better after-care. The National Foundation for Infantile Paralysis (NFIP) soon realised the benefit (albeit for a good cause) to be gained by using an appealing, chubby-faced, middle-class white child in braces or on crutches in posters for their fundraising, and it became the most ‘single most popular cause’ in postwar America.\(^ {17}\) Every year during the 1940s and 50s, the Foundation ‘raised more money than any other health campaign.’\(^ {18}\)

Although a census ofcrippled children had been carried out in New York in 1915, no attempt had ever been made to find out just how many crippled children there were in Australia. The sight of badly crippled children on the streets in cities and country towns in the twenties evoked pity in the population, but little constructive effort. Long periods in hospital gave children and adolescents little hope for the future, apart from the possibility of an invalid pension once they reached the age of sixteen.

For the Australian parent of a crippled child before 1920, there were no after care homes or special schools for children apart from Yooralla Hospital School in Victoria which had been established in 1917 by Sister Faith, who was motivated to do something about the plight of the disabled after she had found a ‘crippled child


spending her days penned under a chicken coop while her parents were at work.\textsuperscript{19}

In Australia, a philanthropic ethos did not exist to the same extent as in the United States and Britain, but it must be recognised that in the early part of the twentieth century a large wealthy class did not exist in this country, nor was there a centralised system of direct, uniform taxation to fund national welfare programs until after World War II. In New Zealand a similar situation existed, and parents of crippled children had to rely on charity from churches and other organisations.\textsuperscript{20} The care of the crippled child was regarded as 'the responsibility of parents and guardians' and, as was the case in Australia, the crippled child was often hidden from sight. A sense of family shame abounded.

In the twenties, there existed a deep sense of stigma about having an 'odd' child, and ignorance about where to turn for help for the handicapped made an already complex problem into a seemingly insoluble one.\textsuperscript{21}

The question of how to set up a system to care for crippled children was exacerbated by the fact that nobody knew how large the problem was. When a child was discharged from hospital, further help was given only if parents sought it, and many did not know where to turn to find that help. Neither education department, medical practitioner, nor hospital had any idea of the number of crippled children in Australia. During the period from 1850 to 1900, the Melbourne Ladies Benevolent Society had carried out some important surveys of 'physically impaired children and adults' as part of the duties of its 'lady visitors' to working-class homes in central Melbourne and four adjoining suburbs, and those figures had revealed that approximately thirteen percent of the disabled were children, with the highest


\textsuperscript{20} See J.C. Ross, 'A History of Poliomyelitis in New Zealand,' (Master of Arts in History, University of Canterbury, 1993), p42.

number having a ‘crippling condition.’ So authorities would have suspected that those findings would be replicated elsewhere in Melbourne.

**Rotary survey**

The first concentrated campaign to identify the number of crippled children began in Sydney at the end of 1928, following a proposal by the President of Rotary International in California that Rotary Clubs throughout the world should survey the needs of crippled children within their community. Sydney Rotarians took up the challenge with enthusiasm. They issued a brochure announcing that the main activity for Rotary for the following year would be initially to identify just how many crippled children there were in the city of Sydney, and then to work towards the goal of providing them with educational and vocational training. Well before the survey was completed, word filtered through the community of its aims, and more and more parents brought their children forward for assessment.

During the survey, Rotarians came up against a problem they had not envisaged, and that was the humiliation of many parents at having a crippled, or ‘odd’ child as many were described. They found that many children were concealed from inquirers, especially if the child also had an intellectual disability. Callers found hundreds of crippled children living out a lonely and hopeless life in the back rooms of houses, children for whom no rehabilitation treatment was then available. Their lives were not documented in the public record, they lived in the shadows, dependent on the goodwill of parents and kin to avoid being sent to an institution.

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22 The suburbs were Carlton, Fitzroy, Collingwood and North Melbourne. B. Gleeson, ‘Domestic Space and Disability in Nineteenth-Century Melbourne, Australia,’ *Journal of Historical Geography* vol. 27 (2001), pp223–40.

23 Coles, *NSW Society for Crippled Children.*

24 Ibid.

25 In six months Rotarians traced more than eight hundred children in Sydney and, in 1932, surgeons examined 1153 children. Ibid.
When the Rotarians called, the door was often slammed in the caller's face, but many persisted and insisted on seeing the crippled child that anecdotal evidence indicated was hidden within.\textsuperscript{26} As a general rule, it appeared that most parents relented, and allowed entry to the house.

Whenever a visit was made to Joyce's home she was just sitting doing nothing. She was 12 years old and could neither read nor write. Her family had not made any plans for her and her future seemed to be one of mere existence. Both her legs were crippled and she could only shuffle.\textsuperscript{27}

Apart from the problem of a parental sense of shame, there were other examples where a child was exhibited on major thoroughfares in the city to elicit sympathy from passers-by.\textsuperscript{28} However, it must be acknowledged that most working-class city families in early-twentieth century Australia had to sell their labour in order to survive, and the disabled beggar on the street corner was a common subject for journalists and writers.\textsuperscript{29}

There were other cases in Sydney where, with the best of intentions, a child was excessively sheltered by parents who exercised complete control and refused any social contact. Some parents believed that the best and only security for their child was the invalid pension, available at £1 per week from the age of sixteen, while others did not want to forfeit it by allowing an eligible child to take up an offer of work. One of the major goals for all Societies for Crippled Children in Australia was to stress to parents the importance of education, instead of looking to the certainty of a pension.\textsuperscript{30} Some health workers unjustly suggested that parents struggling to


\textsuperscript{27} \textit{The Society: Being Some Account of the Victorian Society for Crippled Children and Adults}, ed. A.M. Norris (South Melbourne: Victorian Society for Crippled Children and Adults, 1974), p42

\textsuperscript{28} Freeman described how women beggars displayed their crippled children on street corners. J. Freeman, \textit{Lights and Shadows of Melbourne Life} (London: Sampson, Low, Marston, Searle and Rivington, 1888).

\textsuperscript{29} See, for example, Vagabond and M. Cannon, \textit{The Vagabond Papers}, Abridged ed. (Melbourne: Melbourne University Press, 1969).

\textsuperscript{30} Coles, NSW Society, p39.
make ends meet had accepted the crippling of their child as ‘inevitable.’ It was understandable that some parents complained that they ‘could not afford to buy the boots, irons and braces that were recommended,’ for times were tough and money scarce; a pair of orthopaedic shoes fitted with calipers cost four pounds in 1932. In 1918, Sister Faith visited the home of a crippled child and found the father, a returned soldier:

Absolutely incapacitated. The mother is dying upon her feet, one boy has both legs in irons, other children of four and two claim constant attention, and the hunger wolf is in the house … the mother’s face reveals a world of such exquisite suffering and tragedy.

Little had changed by 1930 when Welfare Officer Margaret Watts reported:

There was poverty in many homes, and many children needed nourishing food and warm clothing. After-care following hospitalisation was impossible for there was nowhere for the children to go.

The majority of the children had received little, if any, education. A local headmaster told her of a ‘severely crippled child’ who lived in an isolated farmhouse in a nearby valley, and when Watts and her companion had negotiated ‘the perilous, winding track in her small car’ she discovered:

A woman and a crippled boy, a polio case, who came hobbling towards them. The visitors were made welcome and invited into the earth-floor dining room where the husband was. The mother had ‘dropped her bundle’ because she felt that life was quite hopeless, but the visit by the two women gave her new heart and she agreed to bring her son to the Society’s next orthopaedic clinic in Wollongong. Two months

33 Methodist missionary and Founder of Yooralla School in Melbourne.
later the son entered Margaret Reid Hospital for surgery and made a reasonable recovery.\textsuperscript{36}

The tremendous effort by Rotary stirred an enthusiastic response from government and from the British Medical Association,\textsuperscript{37} but that was overshadowed by the reaction from the general public, who contributed over £15,000 in a few months to the appeal for the formation of the New South Wales Society for Crippled Children. This was a remarkable effort when viewed in the context of tightening fiscal policy following the October 1929 market crash in the United States and the global Depression that followed. The Society set up Women's Auxiliaries in all metropolitan areas of Sydney to visit the children and evaluate their needs.\textsuperscript{38}

\textit{After-care for the cripple}

Victorian health authorities were increasingly concerned that a large-scale social problem was evolving because of the lack of after-care facilities. No formalised system existed to care for children once they had been discharged from Hampton, the convalescent hospital near the beach at Brighton, or from the newly constructed orthopaedic hospital at Frankston.\textsuperscript{39} Outpatient clinics operated in some hospitals, like the Royal Alexandra Hospital for Children in Sydney and the Children’s Hospital in Melbourne, but there was no organised service for transporting children to and from their homes to the hospital. Existing outpatient clinics overflowed with parents and children seeking massage treatment and realignment of splints. In 1890, Grace Jennings had described the scene at the turn of the century as ‘a string of characteristic-looking folks, hospital bent’ made their way up the street to the Children’s Hospital.

\textsuperscript{36} Ibid.

\textsuperscript{37} In Australia.

\textsuperscript{38} Coles, ‘Sir Lorimer Dodds.’

\textsuperscript{39} In 1929, the Committee of the Children’s Hospital bought an old home with eight hectares of land and a beach frontage at Mt Eliza and built an orthopaedic unit of 40 beds. It was closed in 1970 after demand for its services dwindled following the discovery of antibiotics and the Salk vaccine.
Often the means of locomotion consist of nothing better than a deal box on wooden wheels or the cast-off tire of an old-fashioned perambulator. Children on crutches, in go-carts drawn by their brothers or sisters, or limping painfully along unaided; draggle-tailed mothers, in many coloured garments, dawdling by with infant chronics, and exchanging confidences in high key as they make their way, in a leisurely fashion, to the great hospital at the corner ... Into one large room they all pour pell-mell while the forms fill up and the air becomes thick and charged with many odours, the while begins a perfect Bedlam of cries and ejaculations and explosive scoldings or entreaties. Poor little children!40

Thirty years later, not much had changed. However, in the late 1920s, the efforts of hospital administrators to alleviate the problem of overcrowding in hospital outpatients led to the development of several allied health professions, including physiotherapy, occupational therapy and social work. The Children's Hospital in Melbourne responded to the polio epidemics by implementing some major new developments aimed at looking after patients. The physiotherapy department was upgraded and moved to the new outpatients building, and Jean Macnamara was appointed to the position of Honorary Medical Officer (HMO) in Physiotherapy in 1928.41 Some parents refused to bring their children to the clinic because they disputed the diagnosis of polio, while others just ignored letters from hospital staff asking them to attend.42 It was not an easy task to bring a crippled child to the clinic. Mothers had to cope with travelling on the slow, inaccessible public transport system with children constrained in cumbersome braces and heavy boots. Some children were still confined in the Thomas splint. Elaine Parker's mother recalled how she had to carry her twelve-year-old daughter:

"In her plaster from the train platform [Flinders Street Station] up the ramp and right down to where we could get a taxi to the hospital. Nobody ever offered to help me."


42 J. Macnamara, Correspondence 1923–1968. NLA, Canberra. Papers of Jean Macnamara, MS 23997/5.

43 Interview of the parents of Elaine Parker by Barbara Rossal-Wynne 13 November 1992, Austin Hospital, Melbourne, The Bryan Richard Speed Infectious Diseases Collection: Fairfield Hospital
Mothers often spent many hours waiting in the various departments of hospitals, where an almost 'endless line of children, suffering from many and various forms of gross crippling, including muscle weakness and paralysis following poliomyelitis, waited for consultation, x-rays, blood tests, physical therapy, and the fitting and removal of splints and calipers. It is not surprising, therefore, that many mothers failed to bring their children back for treatment after the first three or four weeks; it was just too difficult. In her notebook, Jean Macnamara described some of the problems she experienced with getting children to attend the outpatient clinic.

John A of South Melbourne had 'attended for a while but not since his splint was fitted' while another 'was not attending the clinic because the diagnosis of polio was disputed by the parents.' Joseph B of Brunswick was walking about 'with severe paralysis' because he was 'allowed to walk too early.' Ruth B's mother was 'very deaf' and refused to bring her child in to the hospital despite her 'badly wasted calf muscle.'

Macnamara appreciated the fact that having exhausted mothers and children waiting hours for treatment was detrimental and, in 1931, she lobbied successfully for the introduction of an itinerant physiotherapy service based at the Children's Hospital. The new service would have a twofold approach. Children could be treated in their homes and their mothers taught by therapists to carry out simple daily treatment. Massage therapists also visited country areas once a week and held clinics in 'a local hospital, medical clinic, or even in the lobby of a hotel.' Slowly, in Victoria at least, the situation for after-care treatment of polio began to improve.

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1904–1996.

44 Coles, 'Sir Lorimer Dodds.'
45 Macnamara, NLA MS 2399 7/5.
47 Ibid., p98.
48 The situation in the other states improved from around 1937. A full-time massage therapist was appointed at the Adelaide Children’s Hospital in 1938, and there were three therapists in Hobart,
In 1930, the Committee of the Melbourne Children’s Hospital decided to build Australia’s first orthopaedic hospital for children at Frankston to cater for long-stay hospital patients up to the age of sixteen who were still in splints or plaster casts. In Western Australia in 1936, there were three hospitals offering treatment, but no convalescent homes. South Australia treated patients at the Adelaide Children’s and the Royal Adelaide Hospital, and Tasmanians received treatment at Vaucluse Hospital in Hobart and the Launceston General Hospital. Wingfield House in Hobart was erected by the Tasmanian Society for the Care of Crippled Children in the late 1930s to supplement the services offered by St Giles Home for Crippled Children. In Queensland, George Marchant of Montrose donated his home and five acres of land in 1932 to the Queensland Society for Crippled Children. A public appeal raised £5000 in two months and the Government made a grant of £500 to assist in the first year of operations. Rotary carried out a survey in Brisbane and two hundred children were discovered to be in need of help.

By 1932, the after-care of polio patients in the United States had become better organised. When the patient was discharged, the American Physiotherapy Association was notified and a physiotherapist made a house call to advise the mother on how to apply the splints. The Association had a ‘brace loan fund’ to help

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49 Yule, *Faith, Science and Love*. Frankston accommodated 88 patients and was almost always full. In 1936 a further twelve beds were made available at Brighton Convalescent Hospital for infantile paralysis cases.


families who could not afford to buy them, and sometimes the braces were ‘donated’ to needy families. However, Jessie Stevenson thought that families ‘valued the brace more’ if they could contribute something towards its cost, ‘even twenty-five cents a week’ was better than nothing. If the family could not afford a private physician they were referred to the nearest orthopaedic clinic and transportation was provided if needed. When the children were able to ‘get around’ they were referred to ‘our special schools for crippled children.’

Some important work on determining the number of crippled children in country areas was carried out in New South Wales in 1926 by the Far West Children’s Health Scheme, a non-sectarian organisation founded in 1924 by the Reverend S.G. Drummond for the purpose of giving indigent country children orthopaedic treatment, and a holiday at the beachside suburb of Manly. Travelling thousands of miles from the border with South Australia to as far north as Tamworth, Reverend Drummond and his wife discovered hundreds of crippled children. Most had never been seen by a doctor or received any kind of treatment for their condition, whether the cause was congenital, or resulted from an accident, or from disease. Various reasons, based on fear and ignorance, were given by parents for not consulting a doctor about their children. Friends had told them that the child ‘would grow out of it,’ or that they had known ‘children who had died under treatment,’ or that the medical cost would be exorbitant. Some parents said they had been trying to save money for the trip to Sydney to see a specialist. In Broken Hill, eighty-six children were identified and sent to Sydney for specialist treatment and, following their own return to Sydney, the Drummonds organised a team of orthopaedic surgeons to travel out west. In forty-five days the group travelled over 7000 miles and identified over

53 Jessie Stevenson RN was a senior physiotherapist working for the Visiting Nurses Association in the Chicago area. She met Dr Jean Macnamara when she was there in 1931. J. Stevenson, Letter to Jean Macnamara, 22 September. 1932. NLA, Canberra. MS2399/1/111.

600 children in need of treatment in New South Wales alone. Some of the children needed immediate treatment and, in the vast majority of cases, the condition was chronic. Many parents mistakenly believed that nothing could be done. Clearly, many more children would be scattered throughout Australia. By 1932, the needs of the country child in New South Wales had come within the jurisdiction of the Society for Crippled Children.

*Elizabeth Kenny*

As was the case in urban Australia, a disabled child was often a source of further hardship for rural families. A child unable to work on farmyard chores was a drain on meagre household budgets. If the need for after-care for crippled children was serious in urban areas, it was critical in country Australia where vast distances between settlements and towns made it harder to locate children and bring them in for assessment and treatment. While the established method for treating polio paralysis had its successes, it was not the only method available, especially in outback Queensland. In the early 1930s in rural Queensland and northern New South Wales, a nurse by the name of Elizabeth Kenny was moving around the countryside tracking down and treating crippled children. In so doing, she set herself on a path to challenge medical orthodoxy about the treatment of the paralysed body and, as a consequence, she also challenged the axiom about a nurse’s role within the medical hierarchy.

Nursing in the nineteenth and much of the twentieth century was dominated by the Victorian attitudes of Florence Nightingale, an approach that demanded dedication, discipline and a willingness to work long, often physically exhausting hours in

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55 In 1925 a survey in New York State revealed that crippled children made up around seven percent of the population, with fifty percent under sixteen years. The ratio of crippled children averaged around 2.5 to 3 per thousand. M.L. Ingram, ‘Trends in Education of Crippled Children,’ *Journal of Educational Sociology* vol. 6, no. 6 (1933), pp339–47. Extrapolating those results to New South Wales would give an estimated fourteen thousand crippled children with around seven thousand eligible for a pension. A report in 1925 showed 17,514 persons drawing a pension in New South Wales at an annual cost of £780,000. Vickers, ‘Report on the Education and Treatment of Cripples in the United States of America.’
hospital wards. Many doctors of that era doubted whether nursing could even be regarded as a profession, and considered the women as subordinates — 'assistants' in carrying out the therapeutic regimes for patients that were devised by them. The traditional, wise woman healer was replaced by the scientific doctor, and Victorian nursing emphasised the character of the nurse and not her skills or knowledge.

As a nurse, Elizabeth Kenny was expected to confine herself to the physical and practical aspects of patient care as dictated by her superiors, and not, on any account, to involve herself in the diagnostic or the scientific. Kenny's treatment for paralysed bodies divided communities within Australia, Britain and the United States. She gained support from a handful of doctors in Australia and from many in the United States, as well as sweeping condemnation from many in this country and overseas. Some medical practitioners eagerly embraced her therapy, while others were vehemently opposed to a treatment that contradicted conventional wisdom. As in all medical practice, opinions varied. However, broadly speaking, the orthodox treatment of polio could be summarised by the following:

Absolute bed rest, immobilization for protection of weak and paralysed muscles by splints and plaster casts, and the gradual introduction of muscle training or 're-education' after the acute phase and muscle spasm had abated. Surgery to correct deformities was generally performed and, in the case of children was initiated in late adolescence.

In 1953, Dr John Pohl recalled how children had previously been taken to the operating theatre to have paralysed limbs 'straightened out under anaesthetic'

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before plaster casts were applied, and of how the children ‘screamed with pain when they regained consciousness.’

Well, as doctors, we knew that if we didn’t force them into plaster casts they would end up crippled, twisted and deformed. The whole idea was to prevent that happening and that was the accepted and universal treatment. 59

Elizabeth Kenny advocated early intervention of treatment, as soon as possible after the initial diagnosis. Her priority was to try and alleviate the pain from spasm in affected muscles by applying hotpacks for up to twelve hours a day. 60 When spasm ceased, muscle re-education was introduced to develop a mental awareness of ‘alienated’ muscles and to re-establish co-ordination. At no time were splints or braces used and patients were allowed to remain in a ‘natural rest position’ in bed supported by sandbags. Kenny opposed any form of surgical intervention to correct deformities.

Several biographers have written about Elizabeth Kenny and it is not the intention of this thesis to fully cover her life. However, I would argue that the seeds of mistrust and suspicion later displayed towards Kenny as she battled bureaucracy and the medical profession to have her radical treatment acknowledged, were sown in the years between 1915 and 1930. Despite the fact that she claimed she had been a matron of a country hospital before enlisting in WWI, two of the trained nurses who knew her well and worked with her as a nurse overseas were convinced that she was not a qualified nurse, based on their belief that her knowledge in certain areas of practical nursing was ‘very limited’ and that she ‘did not know things she should

59 Pohl (an orthopaedic surgeon in Minneapolis) to Cohn, May 1953, Victor Cohn’s Elizabeth Kenny Research Notes, Transcriptions, Correspondence and Other Papers, Minnesota Historical Society, St Paul. Elizabeth Kenny papers, 146.K.8.6F.

60 In 1952, the treatment at the Kenny Institute in Minneapolis was ‘hot packs eight hours per day and changed every hour. In the acute stage packing was for twelve hours and if acute pain was present, patients were packed for twenty four hours.’ Vivian Hannan, Kenny Institute. Elizabeth Kenny, reports and other papers, undated and 1941–1951, Victor Cohn Papers, Sister Elizabeth Kenny Foundation Records. MHS. Elizabeth Kenny papers, 143.E.10.9B, Box 7.
have. Some supporters of Kenny even admitted that her attitude towards the BMA bordered on paranoia, that she saw 'an agent or a spy of the BMA behind every rose bush.' Lack of openness and minimal communication between the parties concerned bred mistrust on both sides.

The question of whether Kenny received any formal nursing education in Australia has been debated widely. My research indicates that she did receive some training, but not in an acknowledged hospital or nurse training scheme. That deduction rests on an examination of the Guyra Argus from 1908 to 1911, a period when Kenny lived in that small town in the New England district of New South Wales with her grandmother. Over that time, the Argus ran regular advertisements for the Norland Nursing School in Sydney and the idea of becoming a nurse appealed to Kenny. She had been helping new mothers with their babies in Guyra, and had approached a small cottage hospital looking for work as a nurse. The year's training

61 Sisters Ella Morphett and Pattie Kirton. MHS 146.K.8.6f, Box 9 (Cohn).

62 Aikens to Cohn, December 1955. Victor Cohn's Elizabeth Kenny Research Notes, Transcriptions, Correspondence and Other Papers. Ibid.

63 See, for example, V. Cohn, Sister Kenny: The Woman Who Challenged the Doctors (St Paul: University of Minnesota Press, 1975); J.R. Wilson, Through Kenny's Eyes: An Exploration of Sister Elizabeth Kenny's Views About Nursing (Townsville: The Townsville Regional Group, Royal College of Nursing, James Cook University of North Queensland, 1995) W. Alexander, Sister Elizabeth Kenny: Maverick Heroine of the Polio Treatment Controversy (Rockhampton: Central Queensland University Press, 2003).

64 An school established in 1908 to meet the 'increasing demand for trained ladies as Children's Nurses.' Norland believed that it was 'eminently suited to women who had a natural sympathy with young children ... and who wished to receive scientific and practical training in nursery nursing.' The Institute, The Sydney Norland Institute: A Training College for the Training of Educated Women in Nursery Nursing, (Woollahra, NSW, 1911), p3.

65 According to her cousin Millicent, she first got the idea about becoming a nurse 'when she was with Granny Moore in Guyra.' W. Alexander, Wade Alexander Papers, Undated and 1862–1951, 2001. Minnesota Historical Society, St Paul. Elizabeth Kenny papers, 143.E.10.9BBox 7. Her nephew stated that his aunt told him 'she had trained at the Benevolent Society in Sydney and that the training had cost £45'. Interview with Jack Kenny MHS 146.K.8.6f (Cohn). Dr John Pohl said she told him that she graduated from a Sydney nursing school in 1911. Pohl to Cohn. MHS 146.K.8.6f (Cohn).

66 The hospital was called 'Scotia' and the owner a Nurse Sutherland. Some researchers state that Kenny worked as a nurse at 'Scotia', but Nurse Sutherland's daughter insisted that she 'worked in the kitchen.' Patience Moore to Alexander, 1 February 2001. Alexander, MHS 143.E.10 (Alexander).
at Norland cost forty-five pounds, and on several occasions Kenny quoted that figure as the amount she paid for nursing tuition in Sydney. Three months of the twelve months training at Norland was spent in Sydney Hospital or the Benevolent Institution, and this is probably where Kenny gained her midwifery and surgical experience before being awarded a 'general efficiency certificate."

The question of how the young Elizabeth Kenny, living in a small town in southern Queensland, learned about anatomy and muscle structure has puzzled many researchers. Throughout her life, she maintained that it was her involvement in teaching calisthenics prescribed for her eleven-year-old brother Willie — a 'thin, weak, boy' — by Dr Aeneas McDonnell of Toowoomba. Bodybuilding was very popular in the early twentieth century. Based on the idea that an outward physical robustness mirrored an interior moral vigour, it had emerged as part of a wider movement towards health and fitness in the Western world, and newspapers of the time carried advertisements for books on bodybuilding. Kenny's sisters, Julia and Mary, remembered the excitement when the long awaited book by Eugene Sandow arrived in the post. In his introduction, Sandow outlined how he had studied muscle development for years, and how he believed that everyone could benefit from his program, even the bedridden. Of interest when considering how Kenny's later method of muscle 're-education' developed, is that Sandow endorsed passive exercise 'assisted by a nurse' and believed in the power of the will to bring about improvement. A few years later, another book was published in Boston, USA.

67 For example, Catherine Caskey and Jack Kenny to Victor Cohn, 12 October 1955. MHS146.K.8.6F Box9.
68 The Sydney Norland Institute.
70 Interview with Mary Scotney and Julia Farquharson 20 April 1953. MHS 146.K.8.6f (Cohn).
72 Ibid., p3.
by a woman who had been treating paralysed children for ten years. Her name was Wilhelmine Wright, and her method was similar to Sandow’s.

There exists in many paralysed limbs a possible amount of muscular power that is not suspected, and will not be available unless cultivated and developed.73

Later, many medical practitioners based their criticism of Sister Kenny and her method on the accusation that she ‘stole’ the work of others, in particular, Wilhelmine Wright. That criticism is unjustified. Building and refining a method based on previous findings, and the sharing of ideas is, after all, common in scientific endeavour. Moreover, Wright maintained that ‘braces and plaster jackets’ were the only way to prevent deformities in limbs, an approach condemned by Kenny, and Wright did not advocate the commencement of treatment until three to six weeks after paralysis occurred. In contrast, Kenny advocated early intervention of treatment, gentle stretching of muscles, no restraining splints, and the use of ‘hot packs’ to reduce pain and muscle spasm in affected limbs.

Kenny spent her war service employed by the Sea Transport Section and nursed for short periods at the Australian Auxiliary Hospitals (AAH) at Southall, Dartford and Harefield in England. No 1AAH at Harefield played a significant role in her later career. Massage therapists had travelled with the first contingent of the Australian Imperial Force from Albany in November 1914 and, at first, most of them were employed in British military hospitals in England where the treatment was viewed as ‘very beneficial for wounded soldiers.’74 Following the establishment of the AAH, the majority of Australian massage specialists were then stationed at Harefield, and one was assigned to each transport ship bringing the wounded back to Australia.75 Kenny would have had ample opportunity to observe the therapists at

75 Once in England, the wounded were further assessed and if it was believed that the injury was liable to keep them out of action for more than six months they were transported back home. A.G. Butler,
work on the transports or in the wards, for in all ‘more than fifty thousand patients’ were treated at Harefield during the war.76

Following her discharge from the AIF, Elizabeth Kenny lived with her mother Mary at Nobby in Queensland, nursed the sick, and delivered babies in her local neighbourhood. There were outbreaks of infantile paralysis in Queensland in 1919, and in New South Wales in 1920 and 1921, and it was during that period that she attended some cases, and provided treatment for crippled children. Daphne Cregan was sixteen months old in 1916 and a normal, healthy toddler when she contracted what was probably cerebral meningitis while her family was living at Ben Lomond in New South Wales.77 Her father insisted it was not polio, ‘we’d never heard of polio then,’ and doctors were unsure how to treat the child’s subsequent paralysis for, as William Cregan remarked ‘no two of them had the same opinion.’78 The family had taken the advice of a Sydney specialist to try massage, but ‘that made no difference whatsoever.’79 When they heard that Kenny had returned from overseas and was now nursing in Queensland they sought her help. In her autobiography,80 Kenny claimed to have nursed children with polio in 1911, but that is contradicted by evidence from her contemporaries.81 She began treating seven-year old Daphne Cregan in 1921, massaging her legs with goanna salve and olive oil before using ‘bark splints’ to support

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76 J. Bassett, Guns and Brooches: Australian Army Nursing from the Boer War to the Gulf War (Melbourne: Oxford University Press, 1997).
77 Daphne’s mother was an Avery and knew Elizabeth Kenny from her days as a governess to the family. Kenny helped Amelia Avery dress for her wedding to William in July 1910. Daphne Cregan to Elizabeth Kenny. MHS 146.K.8.6f (Cohn).
78 William Cregan to Cohn, 13 December 1955. MHS 146.K.8.6f (Cohn).
79 Wm Cregan. Ibid.
80 Kenny and Ostenso, And They Shall Walk.
81 Two of the nurses (Sisters Pattie Kirton and Ella Morphett) who were with her during WWI were positive that she did not start nursing polio patients until after WWI. Elizabeth Sterne (Warwick President of the Country Women’s Association (CWA) in 1925) was also convinced that she did not treat any polio cases until the 1920s. Two of Kenny’s cousins also believed that ‘it was after the War.’ Morphett to Cohn. Moore to Cohn. MHS 146.K.8.6f (Cohn).
the child's limbs. Clearly, Kenny had not yet formulated her opinion on the benefits or disadvantages of splinting or begun exploring her system of muscle re-education.

A Labor Government had been elected in Queensland in 1915, and the Home Secretary’s Office had become increasingly involved in the administration of public hospitals that were formerly under the auspices and control of voluntary contributors. Labor’s view was that the voluntary system was not only unreliable, but also patronising in its discriminatory attitude towards the poor. In 1917, the Home Office in Queensland assumed responsibility for the Brisbane Hospital when, following the redirection of a significant proportion of voluntary contributions to fund the war effort, the hospital was in danger of financial collapse. The passing of the Hospital Act 1923 and the formation of the Brisbane and South Coast Hospitals Board (BSCHB) marked the beginning of the end for the voluntary hospital. Labor saw its vision of implementing socialised medicine and nationalising Queensland’s hospitals move one step closer with the formation of a central body to control funds, and the implementation of a plan to exclude medical practitioners from hospital boards. Many hoped that hospital admission would no longer be governed by an individual’s ability to pay fees, and that hospital treatment would become available for all. Charles Chuter was appointed to the inaugural Board in 1924, and he soon set about implementing his conviction that only those who funded hospitals should sit on boards, and that members of the medical profession, if they were not benefactors, should be excluded. Then Chuter went further and detailed a plan to abolish the honorary system in hospitals and replace those medical practitioners

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82 That danger was averted in 1920 when the Government took over the Golden Casket lottery to fund Queensland’s hospitals. By 1927, over two million pounds had been raised. <www.goldencasket.com/corporate>


84 Charles Edward Chuter was Assistant Under-Secretary in the Home Secretary’s Department in the Queensland State Government and a member of the Brisbane and South Coast Hospitals Board. In 1935, Chuter became Under-Secretary of the newly formed Department of Health and Home Affairs. <http://www.adb.online.anu.edu.au/biogs/A130469b.htm> Accessed 20 April 2007.
with full-time paid medical staff. The BMA\textsuperscript{85} realised that its power base in hospitals was about to be eroded, and a bitter feud developed between Chairman Chuter and the Honorary Medical Officers (HMOs). The BMA prevailed to the extent that it maintained its right to appoint honorary staff in hospitals, but medical practitioners remained excluded from the Brisbane Hospital Board until a change of government in 1957.\textsuperscript{86} In 1929, Queensland voters rejected the Labor platform and elected the Country and Progressive National Party to office, but the inexperienced government was swept from power\textsuperscript{87} in 1932 with the re-election of Labor. William Forgan Smith was installed as Premier and both he and his Health Minister, E.M. Hanlon were convinced that revamping health policy was vital for the economic and social wellbeing of Queensland.\textsuperscript{88}

By the mid-to-late 1920s, Elizabeth Kenny was travelling over great distances in her role as a nurse, as far north as the Gulf Country and as far south as northern New South Wales. It would not have taken her very long to become aware of the plight of the crippled child in rural Australia. In 1930 she outlined a scheme to Queensland Under-Secretary of Health, Charles Chuter, to provide better health-care facilities for those in the bush,\textsuperscript{89} and he supported her by providing her with a ‘station to station’ pass, which was later upgraded to one granting free travel for Kenny on all railways in Queensland.\textsuperscript{90} A stocky, balding figure with a reputation

\textsuperscript{85} In Australia.

\textsuperscript{86} <www.archivessearch.qld.gov.au>

\textsuperscript{87} Arthur Fadden (Prime Minister 1941) a member of the party and a former Alderman on the Townsville City Council, was elected to the Queensland Legislative Assembly for the seat of Kennedy in 1932. He was a firm supporter of Elizabeth Kenny. <www.primeministers.naa.gov.au>

\textsuperscript{88} Soon after Labor took office, Hanlon amended the \textit{Hospitals Act} to insist that any bequest to a hospital had to be ‘paid into a special fund instead of being credited to the local authority.’ Ross Patrick, \textit{A History of Health & Medicine in Queensland 1824–1960} (St. Lucia, Qld.: University of Queensland Press, 1987), p76.

\textsuperscript{89} Under her scheme, nurses would provide mothercraft and infant welfare services, visit children in primary schools and teach first-aid classes with the help of the St John’s Ambulance Brigade.

for being a hard worker and articulate negotiator, Charles Chuter was also regarded as a ‘jolly man’ who had been ‘quite a footballer and a fighter’ in his youth. He first met Elizabeth Kenny in connection with the invention of her ‘Sylvia Stretcher’ and, although he remained a loyal and influential supporter for the remainder of his life, he was also known to ‘get mad at Kenny and tell her off … to stop rushing at a thing like a bull at a gate.’

Kenny clinics

Anecdotal evidence about Elizabeth Kenny and her skill with nursing crippled children began to spread throughout Queensland, and she realised that she could better serve the interests of the children by getting them to come to her for treatment, rather than spend time traveling to remote towns and farms to treat them. In May 1933, she began treating paralysed children, including three from Nobby, in ‘bathtubs and on tables’ set up in the courtyard of Queen’s Hotel near the waterfront in Townsville. Mainly through the lobbying of Charles Chuter, the Queensland Government began to take note of her voluntary work and when three doctors, Dungan, O’Neill, and the Government Medical Officer H.J. Taylor, requested that Kenny treat their patients they decided to make further investigations. Premier Forgan Smith and Home Secretary Hanlon realised they could gain further control over the access and organisation of medical care for the population by funding a government-run clinic. However, by supporting Elizabeth Kenny the Queensland Government would fuel the resentment directed towards her and them by the

91 Ibid.

92 Wade Alexander gave details on Kenny during the early 1930s in Alexander, Sister Elizabeth Kenny: Maverick Heroine of the Polio Treatment Controversy), pp50–53.


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BMA in Australia. Many medical practitioners would come to view her clinics as an example of socialised medicine, a concept to which they were vehemently opposed. It did not help that the BMA viewed the Queensland Labor Government as the great promoters of socialised medicine in Australia.

At Queen's Hotel, Kenny had no staff to help her with the young patients, and was teaching mothers how to care for their children using her labour intensive method. Kenny worked on the bodies of the children every two hours. With her 'hot packs' she found she was able to relieve muscle pain. She then used her fingers to feel the children's arms and legs for any sign of muscle movement or response. She recognised insertion points and how certain muscle groups worked in opposition to others. Slowly at first, then gradually increasing, she passively exercised paralysed limbs. Kenny was vehemently opposed to the splinting and immobilisation that orthodox medicine advocated for the treatment of polio paralysis, for she believed that it made the pain worse, and prevented the gentle stretching treatment she advocated.

In May 1933, Dr Raphael Cilento, the Chief Quarantine Officer for North Queensland, set out from Brisbane on a tour of quarantine stations in the north of the State and, because word about her work with crippled children was becoming known in medical and government circles, he called in to Townsville to meet Elizabeth Kenny. According to his biographer, it was a 'pleasant, unofficial meeting;' Cilento listened to Kenny's claims and watched her work with the children, but was determined to reserve his judgement until her methods could be tested. The following month, and after an invitation by Dr Harold Crawford, President of the Australian Massage Association, Kenny presented a demonstration of her methods at the Brisbane Hospital. Raphael Cilento attended the trial which he felt was less than fair to Kenny and conducted in

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94 Cilento was now Director, Division of Tropical Hygiene and Chief Quarantine Officer for North Queensland (1928–1933) <www.asap.unimelb.edu.au/bsparcs/bios/P001138b.htm> Accessed 4 June 2006.

an atmosphere of hostility and disbelief. Cilento believed that much of the criticism was not directed at Kenny's method, but more towards Kenny herself. She could not explain her method in accepted medical terms, and used phrases like 'spasm' and 'alienation' to describe the symptoms. Harold Crawford believed that Kenny was at best a faith healer, and at worst a crank, and that she posed a very real risk to patients and their parents who 'would be swayed by an attempt to offer a quick solution, rather than remain with a method that had been tried and tested by time.'

Following that demonstration, Raphael Cilento recommended to Hanlon that no decision be reached on the effectiveness of Kenny's treatment unless patients under her care could be observed for a minimum of six months. That advice placed the Minister in a quandary. The public were clamouring to have Kenny's method made freely available, but Hanlon was worried about sanctioning a method to which the influential BMA was vehemently opposed. On the other hand, he was keen to exercise the Government's mandate to pursue its platform of socialised medicine, but he also realised the need for an authoritative and respected medical figure to conduct the investigation into the effectiveness of Kenny's method. Raphael Cilento met that prerequisite perfectly. In 1933, his position as Chief Quarantine Officer had been abolished, and he had been transferred to Canberra as Senior Medical Officer in the Commonwealth Department of Health. Cilento was unhappy living in the southern capital, and his relationship with F.H.L. Cumpston had deteriorated. When Premier Forgan Smith asked Cumpston to second Cilento to Brisbane to investigate Kenny, Cilento jumped at the chance to leave that 'dreary, detached, public service mortuary chapel called Canberra.'

In February 1934, the Queensland Government set up the 'Experimental Muscle Re-education Clinic' in Townsville with Sister Kenny in charge. The clinic was established for the primary purpose of testing whether her method of treatment
could be taught to others over a period of four months; the success or not of her treatment method was not then in question. The Government had arranged for seventeen patients to be admitted, but when word spread throughout the Townsville community almost 60 turned up at the door, including some who had suffered with various types of paralysis for many years. Kenny refused to send the extra patients away, and her decision to ignore instructions contributed to her very public falling out with Cilento and the medical profession.

According to his biographer, Cilento was predisposed to view Kenny’s treatment method ‘in a favourable light,’ but his subsequent report did not give Kenny what she sought, an official endorsement of her methods, and the seal of approval she needed to be able to open more clinics. Cilento had selected seventeen of the most intractable cases of paralysis from the sixty patients available to form the basis for his judgement and, when the report was presented, Cilento and Kenny disagreed loudly and publicly over the guidelines laid down in the initial agreement. He insisted that the Townsville Clinic was opened to test the treatment method, while Kenny was equally adamant that the issue under investigation was whether her method could be taught to others, primarily nurses. He claimed that one of the terms of reference for setting up the Clinic was to see if the patients could ‘be restored permanently to health;’ that was untrue, and had never been agreed to by Kenny, or by the Government. Cilento refused to comment formally on any other patient aside from his selected seventeen, despite the fact that he had examined a recent paralysis case, a child from Townsville who had been admitted to the Clinic in March, unable to walk. Within twelve weeks of the Kenny treatment the girl was

98 Some of her critics had suggested that the power of Kenny’s personality played a major role in her treatment and because of this, it would be impossible to teach others to apply her method. Letters and Correspondence. Fryer Library, University of Queensland, Rae W Dungan Collection, UQFL 354/10.
The Elizabeth Kenny Clinic in Townsville, 1934. Kenny with staff (above) and first anniversary celebrations (below) MHS 146.K.8.6f.
walking and, although Cilento had told her mother she ought to be pleased that Sister Kenny ‘had cured her,’\textsuperscript{101} he refused to include the child’s history in his report.

Cilento noted that all the cases he reviewed had made some general improvement, but he believed progress was more likely due to the general measures employed at the Clinic, such as improved hygiene, exercise, housing and nutrition, and a sympathetic attitude, rather than to any specific treatment. In his opinion, the object of the exercise was to save the country from the burden of providing a pension by restoring the individual to a point where he could earn his own living. Because none of the patients had been ‘completely cured,’ Cilento doubted whether it was worthwhile to either the patient or the public to transform a ‘physically low-grade potential pensioner into a physically high-grade pensioner, none the less dependent.’\textsuperscript{102} Kenny was furious when she read Cilento’s report,\textsuperscript{103} but perhaps the relationship between them could have been repaired if she had not publicly attacked him. Tom Aikens, the independent member for South Townsville in the Queensland Legislative Assembly knew Kenny well, and referred to the relationship between her and Cilento as:

\begin{quote}
Like a dog and a goanna, both warily watching each other, waiting for another chance to pounce and fight.\textsuperscript{104}
\end{quote}

The recently knighted Raphael Cilento was a very proud man, and he was deeply affronted by Kenny’s criticism of him, for he regarded himself as her social

\textsuperscript{101} Letter from Mrs TL Rheuben, \textit{Townsville Daily Bulletin}, 5 April 1935.

\textsuperscript{102} Cilento to Hanlon, UQFL 354/14.

\textsuperscript{103} Kenny replied to Cilento’s report in a scornful letter to EM Hanlon on 5 September 1934. She replied to each one of his criticisms paragraph by paragraph and made no attempt to hide her disdain for his findings, especially his views on pensions for polio sufferers. However, soon after receiving Kenny’s letter, Hanlon offered Cilento the post of Director General of Health and Medical Services for the State of Queensland. Letters and Cuttings Re Kenny Clinic 1933–1943. State Library of Queensland, Brisbane. Chuter, Charles Edward, QM 65/17/34.

\textsuperscript{104} Aikens to Cohn. MHS 146.K.8.6f (Cohn).
and intellectual superior.' To Cilento, it was unthinkable that any nurse would dare challenge a decision made by a medical practitioner.

Kenny persuaded the Queensland Government to seek another medical opinion on the Townsville Clinic, and they appointed Dr James Guinane, the son of the proprietress of the Townsville Hotel. Despite Cilento's urgings to 'just write a couple of sheets of paper,' Guinane submitted an extensive report that advised that four recent cases of paralysis had all recovered after the Kenny treatment and recommended the adoption of her treatment. Not surprisingly, Cilento was not impressed and, although he refused to comment publicly, he did write to Minister Hanlon to advise him to 'exercise caution' when reading Guinane's report. As a consequence of this intervention, Guinane's detailed evidence on patient evaluation was removed from his report, and only the recommendations circulated.

Over the following six months the feud between Kenny and Cilento escalated, and he was forced to make it public when increasing popular support for another Kenny Clinic in Brisbane meant he could no longer remain silent. Cilento issued a statement saying that neither he nor the Queensland Government approved or disapproved of the Kenny method. Furthermore, Cilento believed that public and scientific opinion would support his conviction that the money set aside for Sister Kenny's 'spectacular endeavour' would be better served if 'directed towards improving existing massage departments and orthodox treatment in our great public hospitals,' a service that was being provided 'quietly and without publicity' by orthopaedic specialists.

And so the battle lines were drawn. Elizabeth Kenny retorted that seeing

105 Fisher wrote that Cilento was 'deeply wounded' at being 'subjected to the most violent public and private vilification.' Fisher, Raphael Cilento: A Biography, p81.


the 'poor, little afflicted children doing so well' made her even more determined to overcome all the obstacles put in her way and she would, within a few weeks, take her treatment south into New South Wales and Canberra, where she gained the support of someone of even greater power and influence than Sir Raphael Cilento. In March 1935, William Morris Hughes invited Kenny to Canberra to give 'a demonstration of her methods' to himself and Dr Earle Page. The meeting was instigated following a letter from Eleanor Mackinnon, who told Hughes that 'by getting behind this work you will gain more renown than during the war.' Mackinnon also wrote to Prime Minister Lyons, describing Kenny as 'a modest gentlewoman who has worked for this great result and received a gift that is Christlike in its operations.' Another supporter of Kenny was the Director-General of the Australian Department of Health, Dr J.H.L. Cumpston who had long been concerned about the plight of the crippled child in Australia, and had requested each state to nominate or set up a central body to coordinate activities for the care of cripples. Cumpston observed:

The medical profession is, by nature, very conservative and has in the past, not given much attention to this tedious, disappointing and unrenumerative work. Sister Kenny has enthusiasm and originality and has taken up with vigour a neglected field.

As a consequence of Cumpston's directive, the states decided that the Societies for Crippled Children would carry out the task and, in order to coordinate planning and find out what knowledge had been gained, the Commonwealth Department of Health arranged a conference in Canberra for the following year.

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108 Eleanor Vokes Irby was born at Tenterfield, NSW on 18 February 1871. After marrying Roger Mackinnon in 1896 in Sydney the couple moved to Warialda, Elizabeth Kenny's birthplace. She was prominent in the Red Cross and the Voluntary Aid Detachments and was on the board of the Children's Hospital in Sydney. In 1929, she was appointed to the first Hospitals Commission of NSW. She had a life-long interest in politics and claimed to have first met Kenny in 1915. <www.adb.online.anu.edu.au/biogs/A100306b.htm> Accessed July 2009. Mackinnon to WM Hughes and PM Lyons, February 1935. Poliomyelitis: Sister Kenny's Treatment-Papers Returned by the Hon. Wm Hughes Ex Minister for Health. National Archives of Australia, Commonwealth Department of Health, A1928/1/ 802/17/1.

109 Chuter, OM 65/17/37.

110 Ibid.
1935, some prominent orthopaedic surgeons in Victoria were prepared to give the Kenny treatment a trial. While not 'prepared to give Sister Kenny’s methods either unqualified praise or unqualified criticism', Dr Douglas Galbraith was 'definitely interested in her methods,' and advised W.M. Hughes that he was 'prepared to strongly advise the Committee to place facilities at Sister Kenny’s disposal in the Children’s Hospital'. However, Galbraith and John Whitaker were both of the opinion that Kenny’s results were being given undue credence because of the lack of appropriate aftercare for the crippled child in rural Australia.

Orthodox treatment in the large city hospitals has shown tremendous progress in the last decade, and we would suggest that the area where Sister Kenny has been working has not enjoyed such a high standard of orthopaedic work. Her results have thus stood out in marked contrast to existing methods of treatment, we don’t believe this would be the case if she had been working in a capital city.

In May, the New South Wales Government announced that it had decided to establish a clinic at the Royal North Shore Hospital for treatment of patients by the Kenny method. All seemed to bode well for the future of the Kenny clinics but, in a strange turn of events, she suddenly announced that she was not opening the Brisbane clinic because she 'was not satisfied by the conditions offered by Queensland' and was affronted by 'Dr Cilento’s refusal to endorse my method.' Minister Hanlon declared himself 'amazed' at Kenny’s decision, and declared that

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111 Dr Douglas Galbraith, Medical Superintendent of the Orthopaedic Section of the Children’s Hospital at Frankston
112 Galbraith to Hughes, 30 May 1935. The Committee wrote to Hughes offering facilities for Kenny to carry out the treatment, but Cumpston believed that because the relationship between Kenny and Queensland had deteriorated, he was doubtful whether a clinic would be established. NAA A1928/1, 802/17/1.
113 Honorary Surgeon to the Orthopaedic Section, Frankston.
114 Galbraith and Whitaker to WM Hughes, 30 March 1935. NAA A1928/1, 802/17/1.
115 In the electorate of WM Hughes.
116 Minister HP Fitzsimons to WM Hughes, 15 May 1935. NAA A1928/1, 802/17/1.
117 Papers 1934–2001, Correspondence of Mary and Stewart McCracken. Fryer Library, University of Queensland Library; Elizabeth Kenny Collection, UQFL16/4.
one of the Townsville nurses would run the clinic in her stead. Privately, Hanlon was incensed with Kenny, and instructed Charles Chuter to 'sack her' which he did.\footnote{Chuter to Kenny, 17 May 1935. Chuter, OM 65/17/37.}

I have the honour, by direction, to inform you that the cabinet has decided to conduct the Crippled Children's Clinic as a Government activity, and your services as Honorary Superintendent of that Institution will therefore no longer be required. I am instructed by the Minister to convey to you his thanks for the excellent honorary service which you have given to the community.

Circling in the background was Cilento, a man who publicly criticised Kenny and her treatment, but who subsequently submitted a memorandum to Hanlon proposing that he should be 'established as administrator as well as advisory officer' of all the Kenny clinics in Queensland.\footnote{Cilento to Hanlon, June 1935. Ibid.}

How Kenny was persuaded to rethink her stand on Brisbane is not clear, but within a few days she was reported as describing the whole incident as a 'misunderstanding between her and the Queensland Government' and, three weeks later the Brisbane Clinic opened for business.\footnote{‘Sister Kenny to Continue Townsville Clinic, Townsville Daily Bulletin, 20 May 1935. ‘Sister Kenny Clinic Opened at Brisbane, Townsville Daily Bulletin, 11 June 1935.}

Dr Rountree was appointed as Medical Superintendent, with Kenny as Supervisor, two Sisters from the Townsville Clinic and two trainees. However, the situation in Victoria was not resolved for three years,\footnote{Until 1938.} despite a vigorous campaign by several Melbourne newspapers\footnote{‘Tiny Child Is Pathetic Pawn to Challenge BMA, Smith’s Weekly 20 November 1937.} to stop the ‘Czars of the BMA stonewalling when a new technique promised hope for frightfully paralysed kids.’\footnote{‘Fed up with Doctors’ Freezing out Sister Kenny, The Truth 13 November 1937.}

It appeared that the strength of the opposition towards her in that state was formidable, and difficult to overcome. Dr Jean Macnamara's position in Victoria as doyen in the field of orthopaedic treatment for paralysed children was indisputable. In October 1935, a Royal Commission was convened in

\begin{footnotesize}
\begin{enumerate}
\item[118]Chuter to Kenny, 17 May 1935. Chuter, OM 65/17/37.
\item[119]Cilento to Hanlon, June 1935. Ibid.
\item[120]‘Sister Kenny to Continue Townsville Clinic, Townsville Daily Bulletin, 20 May 1935. ‘Sister Kenny Clinic Opened at Brisbane, Townsville Daily Bulletin, 11 June 1935.
\item[121]Until 1938.
\item[122]‘Tiny Child Is Pathetic Pawn to Challenge BMA, Smith’s Weekly 20 November 1937.
\item[123]‘Fed up with Doctors’ Freezing out Sister Kenny, The Truth 13 November 1937.
\end{enumerate}
\end{footnotesize}
Queensland 'to enquire into modern methods for the treatment of infantile paralysis and particularly the Elizabeth Kenny method ...'\textsuperscript{124} Initially, Kenny supported the formation of the Commission by the Queensland Government; that is, until she was made aware that she would not be able to give evidence on her own behalf, and that the hearings would take place 'in camera.'

At the Conference in Canberra in 1936, fourteen papers were presented over three days. Among them was one by Jean Macnamara\textsuperscript{125} and, immediately following her presentation, one by Elizabeth Kenny,\textsuperscript{126} who was described by one of the delegates as:

A rather isolated figure ... grimly reticent in a heavy, severely tailored black suit with a hard, forbidding-looking black hat. She expected hostility, and at the conclusion of her paper she got it.\textsuperscript{127}

When Kenny had finished her paper, Dr Harold Crawford\textsuperscript{128} of Queensland stood up to question her. He attacked Kenny, and said that he strongly objected to 'children passing out of the hands of the properly trained specialists in the orthopaedic realm' to be treated by 'nurses who are inexperienced.'\textsuperscript{129} Furthermore, Crawford said that he knew of children treated by Sister Kenny ‘who have developed deformities.'\textsuperscript{130} When the meeting broke up, Reg McKellar Hall, an orthopaedic

\begin{footnotes}
\item[124] D.H. Borchardt, 'Part V Queensland,' Checklist of Royal Commissions: select committees and boards of inquiry, (Brisbane: 1970) Drs Thelander, McDonnell, Nye, Lahz, Paterson, Duhig, Gibson and Bostock were appointed as Commissioners. They were given three years to investigate Kenny’s claims.
\item[125] Now Dame Jean Connor, Physician-in-Charge, Physiotherapy Clinic, Children’s Hospital, Melbourne. Her paper was, ‘The prevention and treatment of poliomyelitis and of the crippling of infantile paralysis.’
\item[126] Sister Elizabeth Kenny, no affiliation given, ‘The treatment of the cripple’.\textsuperscript{127}
\item[127] JG Norris, Honorary Secretary, Victorian Society for Crippled Children.
\item[128] Crawford represented the BMA (QLD) and was Chairman of the Queensland Branch of the Australasian Massage Association. Commonwealth Department of Health, Report of the Australian Conference of Crippled Children. Fryer Library, University of Queensland, Rae W Dungan Collection, UQFL 354/8.
\item[130] Ibid.
\end{footnotes}
surgeon from Perth persuaded Kenny to have a ‘cuppa’ with him. He found her ‘aloof’ at first, but she warmed to him when he revealed that he was interested in what she was doing for the children, and wanted to learn about her method. They made arrangements to meet at the Kenny Clinic in Sydney the following week. Hall was impressed by what he later observed: to him her method demonstrated a great deal of common sense, particularly the removal of splints to allow patients ‘to feel as though they had arms and legs.’ He phased in the Kenny method at the Children’s Hospital in Perth when he returned, and thus incurred the ‘displeasure of Dame Jean Macnamara,’ his former colleague from his days as an RMO at the Melbourne Hospital, who would accuse him of ‘operating a cripple factory’ when she visited Perth in 1948.

Kenny returned to Brisbane upset by the reception she had received in Canberra, but heartened by the news that the Queensland Government had extended its support of her by opening new clinics in Cairns, Rockhampton and Toowoomba to supplement those already operating in Townsville, Brisbane and at the Royal North Shore Hospital in Sydney. Kenny’s work was beginning to gain attention overseas, and she was invited to speak at a health conference in London in June 1937. Mention was made of the possibility of providing a ward and patients for her to test her method and Kenny was elated. She was tired of fighting with the Victorian BMA and ‘weary’ of refusing applications from Victorian parents for treatment. ‘It wasn’t fair,’ she wrote to Dr Rae Dungan, ‘for Victoria to neglect their own cripples especially when Victoria had refused the offer of a Kenny clinic of their own.’ At Royal North Shore Hospital there was a ‘long list of patients

131 McKellar Hall, Reflections of an Orthopaedic Surgeon, p41.
132 Ibid., p47.
133 Kenny to Dungan, 15 February 1937. 320 patients were attending the Brisbane Clinic, with a further 73 on the waiting-list, and they had no room for interstate admissions. Furthermore, the Sydney Clinic was ‘half-full of patients from Victoria’ with 500 on the waiting-list for admission. Notes and Letters from Dr Dungan’s Practice and Sister Kenny’s Reports to Dr Dungan. Fryer Library, University of Queensland, Brisbane. Rae W Dungan Collection, UQFL 354/9.
requiring admission' and Minister Hughes believed ‘the clinic was so popular, it was likely to remain as a permanent activity.’ However, he was unwilling to commit Commonwealth funds to reduce waiting lists as that would create a ‘precedent.’

In Brisbane, Kenny applied for leave from the Queensland and New South Wales governments, and made preparations to sail for Southampton.

The year 1937 would prove to be critical for Elizabeth Kenny. The Queensland Royal Commission into her treatment method was due to bring down its findings, support for her work in Britain was juxtaposed with increasing attacks from the medical fraternity in Victoria and, in May, the *Medical Journal of Australia* had published a scathing review of her book. Polio epidemics were raging on the east coast of Australia, and the public was searching for answers from public health officials, science and medicine. Scientists debated openly and amongst themselves about the epidemics, and frustration in the population increased as authorities failed in their efforts to define what polio was, or how it was transmitted or, more importantly, how to avoid catching it. The public turned to the media for information and advice, and when Victorian newspapers took up the cause of Elizabeth Kenny, the people rallied behind her. Some parents asked for their child to be treated by her methods in hospital, while others approached Kenny directly for help and paid her expenses to come to Melbourne.

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136 The treatment methods described by Kenny in her first book bear little resemblance to those in her later works. For example, she advocated hydrotherapy, but made no distinction between therapy in large communal pools (which she denounced) and individual treatment in a bath. The language is convoluted, difficult to understand and unsophisticated. The impression given is that she was searching for words to adequately explain the symptoms she was observing. E. Kenny, *Infantile Paralysis and Cerebral Diplegia, Methods Used for the Restoration of Function* (Sydney: Angus and Robertson, 1937).

Once in Britain, Kenny found an influential supporter in Sir Frederick Menzies, who took a great interest in her and arranged for two wards at Queen Mary’s Hospital, Carshalton to be made available in early July for her to test her methods. The major breakthrough for Kenny was that she would finally be able to treat acutely ill patients in the early stages of the disease. The treatment was to be supervised by the British Orthopaedic Association, which was scheduled to present preliminary findings at the end of three months. Although some nursing and medical staff at Carshalton had initially been dubious about her method, and ‘thought she was mad at first,’ most became enthusiastic. By September, Kenny sensed that the treatment was being well received, and she wrote to Charles Chuter to say she had asked that the London report be sent directly to the Royal Commission for evaluation before their findings were published. Several therapists had confided to her that the treatment was ‘superior to any other method,’ while a member of the medical staff wrote to the Ministry:

I inspected the ward and saw most of the children, many of whom were pathetic and pitiful examples of this dread infection—infantile paralysis. However, the whole atmosphere of the ward in regard to the nursing staff, the children etc., was bright and cheerful, and I detected an optimism amongst the nurses which encouraged me to think they were fully satisfied with the results so far achieved. This impression was emphasized as a result of personal enquiries and questions put to several of the nurses who had previously been treating cases by old methods.

However, formidable forces were marshalling against Kenny in Australia. Some nurses employed at the Brisbane Clinic wanted to leave, citing reasons that the treatment was ‘boring’ and that some of the patients were so hopelessly crippled that it was a ‘waste of time’ trying to treat them. The sisters were unhappy that there

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138 Chief Medical Officer of Health, London County Council.

139 The LCC gave her 30 cases (including eleven early paralysis cases) wards, equipment and nursing staff. Dr Richard Metcalfe, Consultant Orthopaedic Surgeon, Carshalton to Cohn. MHS 146.K.8.6f (Cohn).

140 Ibid.

141 Interviews with Lawson, Reardon, Reynolds and Metcalfe. Ibid.

was no textbook on the Kenny treatment available for consultation, no treatment sheet made out for patients nor any attempt made to monitor progress. It appeared that the Brisbane Clinic lacked guidance and seemed to be fulfilling the prophecy made by Cilento and other critics that Kenny’s presence was vital to the viability of any institution using her methods. Chuter urged her to return from England as soon as practicable. In NSW a medical committee recommended that the Clinic at Royal North Shore be closed because of ‘inconclusive evidence’ about her treatment, and in Victoria the Minister of Health, in response to the public clamour for a clinic in that state, claimed that it was not necessary because ‘Sister Kenny has not made any radical changes in the treatment for polio.’ In the Victorian Parliament, Dr Shields (UAP) warned Victoria’s parents to have nothing to do with ‘quacks’ in Melbourne who were offering to cure children by miraculous methods. It was not, he said:

A case of the medical profession being jealous of a nurse and believing her incapable of doing any good but that Dame Jean Macnamara’s knowledge was recognised throughout the world and was an example of a prophet being honoured in every country but her own. Everything possible should be done to prevent deformities, and that included the use of splints. Sister Kenny had fulfilled a useful service by arousing the interest of Government authorities and public bodies by her efforts to organise treatment for cripples.

When the London report was released it was inconclusive, but Menzies recommended that the arrangements with Kenny be extended to July 1938 to further evaluate her method. However, the report of the Queensland Royal Commission was damning, and ignored the London findings. Although the evidence given and the report itself were not published or submitted to Parliament, the findings were made public. The Commissioners believed that her method showed a radical departure from orthodox treatment and recommended that all the clinics be closed. They found that the Kenny treatment had caused:

Additional damage to the patient, and that the abandonment of immobilisation was a grievous error and fraught with great danger, especially for very young children. If the Government saw fit to reject the advice and decided the Kenny clinics should remain open then the Commission strongly urged that the clinics be placed under
the control of a competent orthopaedic surgeon with the object of rejecting hopeless cases, thus avoiding the cruelty of disappointed hopes. Public money would be saved, and a sane and balanced view of the patient’s possibilities would be obtained.\textsuperscript{143}

Kenny had made a grave error of judgement with her early agreement to abide by the findings of the Commission. She had made some extravagant claims in 1935 of being able to bring about a significant, even full, recovery in old paralysis cases,\textsuperscript{144} and had harboured the unrealistic expectation that, because the Queensland Government had supported her method, the BMA would do likewise. Kenny further damaged her image with the medical profession by contending that the Commission had been influenced in its findings by the political antagonism that existed between the BMA and the government. By 1938 Kenny had well and truly modified her public utterances on possible cure rates, but her earlier rash claims continued to haunt her. She was becoming more selective, and was refusing to treat patients that past experience had shown her would not benefit from her treatment.

In early 1938, six badly paralysed children from south Queensland arrived for treatment in Brisbane, and all were in the early stages of the disease. Kenny requested beds for them at the Brisbane General Hospital (BGH), but was refused. None of the parents could afford to pay for accommodation. Kenny knew she would be breaking the rules of her agreement by admitting the children to the Brisbane Clinic, because it was specifically designed as an outpatient clinic with no provision for acutely ill children as in-patients. She was, however, aware that this was her chance to prove that her treatment was more effective if implemented in the early stage of paralysis. When Kenny arrived at the clinic and saw the condition of the children, who ‘cried bitterly with pain from large bed-sores’ caused by immobilisation

\textsuperscript{143} Ibid.

\textsuperscript{144} See Cases 2, 3, 8, 29 and 30 in the Report of the Royal Commission. For example, ‘Will walk with one or two sticks without crutches or callipers in two years with consistent clinic treatment. Would expect her to walk sufficiently well to assist with housework and walk to the tram’. Sgd. E Kenny, 15 October 1935. Chuter, OM 65/17/37.
Charles Chuter was furious, and ordered her to discharge the children. Kenny refused, and informed Chuter that several specialists from the BGH had agreed to supervise the treatment of the children. Reluctantly, he conceded defeat. Seventeen children in the early stage of paralysis were subsequently treated at the Brisbane Clinic, and all made an excellent recovery.

The good results and a positive assessment from the hospital doctors paved the way for the opening of Kenny Ward 7 at the BGH in June 1939. Hospital authorities decided that newly admitted patients would be given a choice of treatment, Kenny or orthodox, before being sent to an isolation ward for three weeks. It was testimony to the strength of the relationship between Kenny and Chuter that their former dispute did not lead to a complete breakdown. Just before her patients were transferred from the clinic to the BGH, Kenny wrote, ‘I regretted having to refuse your commands owing to your humane view of this work, and the admiration I have for your unbiased and unprejudiced attitude which, unfortunately, is so rare.’

Although Elizabeth Kenny had finally achieved her goal of treating Australian patients with her method in the early stage of paralysis, it was a short-lived victory. She was refused access to the isolation hospital in Brisbane and consequently all patients admitted to the Brisbane ward were beyond the early infectious stage. Nevertheless, medical men like Dr Aubrey Pye were impressed by ‘how well her cases did than those treated in the hospital by the orthodox method.’ In his opinion,

145 Kenny to Chuter, April 1939. Chuter, OM 65/17/38.

146 Aubrey Pye, General Superintendent of the BGH to Kenny, 31 January 1940. Correspondence, Incoming and Outgoing for the Period 1939–1951. Includes Correspondence between Hospital Superintendents and Others Concerning the Kenny Treatment and Management of the Kenny Clinics., Fryer Library, University of Queensland, Brisbane, Elizabeth Kenny Collection, UQFL16/1/1.

147 ‘Wattle Brae’ ward in the BGH. If patients had elected to receive the Kenny treatment, hot packs were immediately commenced. Ward Sister Mary Luddy remembered constantly running back and forward to wring out the woollen packs. She remembered that the passive exercises were never forced, because the limbs were very tender, but pain never increased despite the exercises. Chuter OM 65/17/34.

Kenny was a ‘brilliant re-educationalist and a very competent observer.’ Dr Jarvis Nye had been a member of the Royal Commission that had condemned all aspects of Kenny’s treatment the previous year, but now he admitted that she now knew ‘more about muscle origin, insertion and function than any of the men here.’ Furthermore, he concurred that results with some of her Brisbane Hospital patients were ‘truly amazing’ — Elizabeth Kenny ‘wasn’t the quack that we had believed she was.’ Nye tried to convince the other members of the Royal Commission to reconvene and reconsider their verdict, but they would not listen.

Kenny in the United States

By the end of 1939, Kenny believed there was little more that she could achieve in Australia without the support of the BMA, and turned her attention to the United States. She had been successful at gaining a foothold in Victoria, at the Hampton Children’s Hospital, where she was given a proportion of cases, with the others treated by two orthopaedic surgeons, Drs Forster and Price. Their report expressed the opinion that Kenny had made a definite contribution to the treatment of polio. However, the report was ignored. Jarvis Nye convinced five other medical supporters of Kenny to lobby the Queensland Government for financial help to fund her trip to the United States and, according to several accounts, Premier Forgan Smith was glad to see her go. John Wilson quoted a comment from Mary McCracken who claimed that when Premier Smith heard that Kenny wanted to

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149 Aubrey Pye to Chuter, 31 January 1940. Ibid.
150 Dr Jarvis Nye to Cohn. MHS 146.K.8.6f (Cohn).
152 Drs Nye, Arden, Pye, Lee, Fryberg and Professor Wilkinson signed the letter to Basil O’Connor of the NFIP, Chuter, OM 65/17/38.
153 Elizabeth Kenny’s adopted daughter.
leave Australia he said to Health Minister Hanlon, 'Let's get rid of the old bugger. Piss her off to the US and pay her fares.' In April 1940, Kenny and McCracken arrived in California, where they then set off for New York armed with a letter of introduction to Basil O'Connor of the NFIP from the Premier who supported her by declaring 'my Government has been much impressed with the results of the Kenny system … particularly the treatment of the disease in the acute stage.' O'Connor himself was a powerful player in the medical and legal establishment. A former law partner of President Franklin Roosevelt, he was also a close associate of Morris Fishbein, the pugnacious editor of the *Journal of the American Medical Association* (JAMA) and was a vocal critic of socialised medicine and of any government intervention into the relationship between medical practitioner and patient. O'Connor believed that medical care for polio patients should be met by contributions to the Foundation, and that no state or government funds should be used until all other avenues of funding had been exhausted. That was in contrast to the majority of voluntary agencies in the United States which believed that their role was to supplement and not to 'displace public financing in health and welfare.'

In July 1940 Kenny was given a ward at Minneapolis General Hospital after gaining the support of Drs Knapp and Cole who obtained a grant from the

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154 Fryberg to Cohn. MHS 146.K.8.6f (Cohn); J.R. Wilson, 'Lessons from Sister Kenny's Enterprise: Intellectual openness, political assertiveness and a tolerance of difference,' (paper presented at Fifth Elizabeth Kenny Oration, Townsville, 1995), p4.

155 Details on her time in America and Canada from Alexander, MHS 143.E.10 (Alexander), and W. Alexander, 'Sent to the United States,' in *Sister Elizabeth Kenny: Maverick Heroine of the Polio Treatment Controversy* (Rockhampton: Central Queensland University Press, 2003).

156 Close associate and former law partner of President Franklin Roosevelt.


159 Knapp was Chief of the Department of Physical Medicine at Minneapolis General Hospital and Cole was Chief of the Department of Orthopaedics at the University of Minnesota. MHS 146.K.8.6f (Cohn).
NFIP to cover Kenny’s living expenses. Postgraduate courses were set up at the University of Minnesota in 1942 to teach Kenny’s method to physicians, nurses and physical therapists. Many who visited Minneapolis to observe her demonstrations were impressed.

Most dramatic demonstration I have seen in a good many years … Everyone is 100% favorable. Many of our physicians who were formerly skeptical have come over ‘whole hog’ and a number are planning to register for your course for physicians in Minneapolis … I knew the course was good but I had no idea it was so very good … The ideal situation would be to have every child who is attacked by the disease treated by your method … The lecture was a very valuable experience for all of us.161

One of the physical therapists attending was Alice Plastridge, the assistant director of physical therapy at the Warm Springs Foundation in Georgia. In 1931, Jean Macnamara had thought the staff at Warm Springs were ‘poorly trained, skilled at handling fractures but did not know how to care for paralysed muscles.’ It was possibly the only time that Kenny and Macnamara agreed on treatment, although their reasons were different. Kenny had told Plastridge that ‘the ‘puddles’ [hydrotherapy pools] at Warm Springs should be turned into gardens and that she wouldn’t have anything to do with ‘any place that used massage, pools or splints.’ Plastridge found Kenny to be ‘not a good lecturer or teacher’ and found her theories about the effect of the poliovirus so ‘radically different from our teachings that they cannot be accepted at face value.’ She did, however, respect Kenny’s ‘sincerity and

160 In 1942, The Exchange Club of Minneapolis started the Sister Kenny Endowment and Education Fund, a nonprofit organization that paid Kenny $416 per month ‘until the day she died.’ Kenny could not accept donations directly as she was on a visitor’s visa and, as such, was forbidden from accepting charity. Jim Henry to Victor Cohn, 1953. Ibid.

161 William Stewart, Director State Crippled Children’s Service University of Missouri; Associate Professor Washburn, University of Wisconsin; HA Smart, MD, Virginia; FL McNaughton, McGill University Department of Neurology and Neurosurgery. Correspondence, Incoming for the Period 1942–1947. Mainly Letters of Appreciation from Doctors and Others in the US and Canada Who Attended or Visited the Kenny Clinic in Minneapolis, Minnesota. Fryer Library, University of Queensland Library., Elizabeth Kenny Collection, UQFL16/1/2.

162 Macnamara to Carter, June 1933. J. Macnamara, Correspondence 1923–1968. Report to Dr WS Carter. NLA, MS 23991/176d.

163 Elizabeth Kenny, MHS 143.E.10.9b (Cohn).
honesty of purpose' described her as a woman with a 'mission in life,' and expressed the conviction that, 'if we can learn from her even one new method which would benefit a patient, we are more than willing to accept it.' However, Plastridge and another two technicians from Warm Springs left Minneapolis before the end of the course. By so doing, they incurred the wrath of Kenny, especially when a new course of treatment at Warm Springs was advertised as the 'Kenny Treatment.'

We are doing a grand job here at Warm Springs. In fact I would be at peace with the world if that fool National Foundation hadn't spread the word that we were teaching the 'Kenny method.' What a mess of misunderstanding has come from that.164

A constant theme throughout the letters that Kenny exchanged with Charles Chuter during her time in the United States was her bewilderment at the attitude of the Australian medical profession towards her treatment. On several occasions she asked Chuter to arrange publication of the results of her success in America in the Queensland newspapers because the 'BMJ will not publish anything from me.'165 In May 1942, she wrote to him from Minneapolis:

Why are the people of Australia debarred from the benefit of my research? Although I am not over anxious to return to Australia and leave the country where I have proved my work, I think of the little children; and I think of those who are supposed to be doing the Kenny treatment, and I want them to do it as it should be done in the interests of humanity. There are always plenty of complaints when I do return about the staff not doing as they do when I am there. I do not blame the staff. I do blame the medical men who ridicule them for doing my work. I hope this is all over now, and the patients will get the correct treatment. I am willing to return at any time to teach in Australia. When I think of all the damaged lives from the epidemics in 1937–38 my heart is torn with sorrow.166

Throughout her early career, Elizabeth Kenny was bedevilled by a lack of communication skills. Teaching her method to others was integral to her success but a poor grasp of language and the inability to express complex physiological concepts to a sophisticated medical audience proved problematic. In 1942, one medical

164 Robert L. Bennett, MD, Warm Springs to Dr Frank Krusen, 6 August 1942. Ibid.
165 Kenny to Chuter, 4 October 1940. Chuter, OM 65/17/33.
166 Kenny to Chuter, May 1942. Ibid.
practitioner wrote to a colleague about Kenny’s book, *The Treatment of Infantile Paralysis in the Acute Stage*:

I don’t wonder that you have had difficulty in obtaining any information from EK’s book. I have had it since it was first published [1941] and I am of the opinion that it is one of the worst attempts to describe a technique that I have ever encountered.167

Most practitioners, be they from medical orthodoxy or from the allied health professions accepted that the current methods for treatment of the disease were far from satisfactory. Most were deeply concerned about the suffering of polio patients and were open to the idea that the Kenny method should be given a fair trial, but many were confused by her inept attempts to explain her interpretation of the effect of the poliovirus on the human body. She would have been well advised to stick to what she knew best, although it must be acknowledged that her views on polio as a systemic and not purely neurotrophic disease were ultimately proven correct.

In 1942, the NFIP issued a formal approval of Kenny’s method for treating polio paralysis and, later that year, the Elizabeth Kenny Institute was opened in Minneapolis.168 However, the Foundation refused to give financial support to the Institute and it was subsequently registered as a non-profit charitable organisation.169

In the United States, Kenny had finally found the support she needed, and believed that her ‘seven years of strife had ended.’ Victory, albeit for a few years only, was hers. In 1944, the American Medical Association170 featured prominently in a campaign to discredit her by claiming that ‘the public and many doctors’ had been misled.

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168 Initially accommodated around 180 patients but was expanded in 1951.
169 Able to receive tax-exempt donations from corporations and the general public. In 1943 the proposed grant of $139,000 was rejected by the NFIP. Inventory: Journal Articles, Papers and Letters In "Kenny's Brown Bag". Minnesota Historical Society, St Paul. Elizabeth Kenny papers, 143.E.10.3B, Box 1.
about the effectiveness of her treatment, in particular the use of hot packs to lessen pain and that there was nothing new about her methods. The continuous use of the packs was described as of 'questionable value and a waste of man power and hospital beds.' They criticised her recovery rates, saying she did not separate out 'spontaneous recoveries' in her statistics. How could she? At that stage nobody knew how polio was transmitted, or its epidemiology or aetiology.

In July 1944, the Kenny Institute applied for a grant from the NFIP for funds to train teachers in the Kenny method and also to 'establish a clinical research centre' in Minneapolis. Kenny did not believe the Institute would be successful, suspecting that it was part of an 'organised endeavour to get rid of me' because her visa was due to expire the following May. She was correct: Basil O'Connor was furious when he received the grant application. The NFIP considered itself to be the premier body funding scientific research into poliomyelitis and it would brook no interference into its territory. O'Connor commissioned a report from the National Research Council into 'the potentialities of the Kenny Institute for (a) teaching the concept and methods of Sister Kenny and, (b) research in this field.' The committee (composed entirely of medical men) found against the Institute and recommended that 'no grants be made to the Kenny Institute for research either basic or clinical.' Ironically, the NFIP itself was later judged as not meeting the standards of 'trusteeship, organisation, administration, educational work and financing' laid down by the National Information Bureau (NIB).

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171 'American Physicians Claim Paralysis Not Cured by Kenny, Ottawa Evening Journal, June 1944.

172 US$ 845,000 for a period of three years. Marvin Kline, Kenny Institute to Basil O'Connor, 18 July 1944. MHS 143.E.10.4f.


174 Along with the Sister Elizabeth Kenny Foundation in 1947. The NIB believed that the greatest problem for the Kenny Foundation was that the national officers were, for the most part, ignorant of organisation standards in the USA. They were a 'group of starry-eyed crusaders.' The NIB was a non-profit membership corporation for the protection of contributors and philanthropic agencies. National Information Bureau, 8 December 1947. RAC. Commonwealth Fund Archives, Rockefeller Foundation Archives, Series 2, Box 24, Folder 210.
the NFIP until around 1936, when he withdrew his support. The family privately directed their lawyers to make no further contributions because of concerns about the 'secrecy by the foundation about their finances'.\textsuperscript{175} To the family's knowledge the NFIP had never made available 'an audited statement' of its financial position. In October 1949, the Foundation wrote to the Rockefeller family pleading for a significant contribution to the 'March of Dimes' campaign because it was in a 'grave' financial state.\textsuperscript{176} The previous year one of its medical directors intimated that the Foundation's administration costs were 'very high',\textsuperscript{177} a statement that appears to be backed up by the previous year's figures published in \textit{The New York Times}.\textsuperscript{178}

It seemed that Kenny was destined to relive her Australian experiences as yet another report in November 1944 by a committee of medical men attacked her integrity and credibility. Chicago academic and orthopaedic surgeon, Dr Phillip Lewin\textsuperscript{179} later commented:

That was a crooked deal that committee, some people were on it who should not have been, and others left out who should have been on it. No I wasn't on it. I was sold out. Ghormley was the finest guy in the world. But, he should have had a minority report. There were some punks on that committee and I've got that in writing from their peers.

\textsuperscript{175} The NIB had 'never seen a consolidated statement on the fund-raising costs of the national and its local chapters, said to aggregate some millions each year, nor has it seen a consolidated statement on resources of the Foundations 2700 local chapters. Between 1939 and 1947 the NIB estimated the income of the NFIP and its chapters was approximately $US75,000,000. National Information Bureau, Medical Interests/Polio, RAC, Rockefeller Family Archives, RG 2/14/114.

\textsuperscript{176} Stated that the Foundation needed to raise 40 million dollars in 1949 if the program was not to be curtailed. It had already raised almost $26 million that year. The official estimate for likely polio cases in 1949 was between 33000 and 38000.

\textsuperscript{177} Dr Hart van Riper, 8 January 1948. Harkness Report and Sister Elizabeth Kenny Foundation, RAC RF CWF 2/24/210.

\textsuperscript{178} In 1948 there were 27,908 cases of polio in the USA. The Foundation spent $7million on medical care, distributed 600 respirators and employed an extra 2400 nurses, 153 physical therapists and 35 doctors. No figures were available for 1948, but in 1947, $18 million was raised. The subsidy per patient in 1948 was $250. Polio Drains a Treasury, \textit{The New York Times} 7 October 1949.

\textsuperscript{179} Professor and Chairman of the Department of Bone and Joint Surgery, Northwestern University Medical School, Chicago. Lewin to Cohn, 19 October 1954. MHS 146.K.8.6f (Cohn).
In characteristic fashion, Kenny counter-attacked, using the media as an ally, and once again the people flocked to support and defend her.\textsuperscript{180} Hundreds of letters from all over the country flooded into the Kenny Institute, and most of them either attacked Fishbein personally; or the AMA, the medical profession or the pharmaceutical industry.

You have found a way to relieve the suffering and tortuous crippling of our little children, while our great scientific medical specialists stood by helpless, hand on chin, brow wrinkled and no doubt rubbing their schnozolas at the same time. You have given our great medical fraternity with their self-coined technical terms, their few latin words to make them appear very scientific, and their monopoly on medicine, handed to them on a golden platter in the form of a licence, such a staggering wallop on the aforementioned proboscis that I doubt very much if they will fully recover. Why is your Institution not getting the greater proportion of the proceeds from these ‘March of Dimes’ campaigns? God give us more Sister Kennys and deliver us from the Fishbeins.\textsuperscript{181}

Another Californian wrote, ‘take it from me that the reputable physicians in many parts of the USA look on Fishbein for just what he is, one step above a quack … he did not come across the office of the AMA by ability, but he wormed and chiselled his way into the editorship. He is a cheap, unscrupulous Kike who has become very objectionable to the medical fraternity.’\textsuperscript{182} Edward Smythe, Chairman of the Protestant War Veterans association in New York was incensed at her treatment, and wrote:

America needs you more than it needs Morris Fishbein and his ilk. You stay right here … I am asking friends of mine in Congress to invite you down there for a talk before that body of outstanding Americans. A thousand Fishbeins and names like that do not represent the sentiments of true Americans, these are but guests in this country who has [sic] outstayed their welcome, and are about to be requested by force if necessary to get the hell out of here. The AMA is dominated by these alien shysters.

\textsuperscript{180} For an analysis on how Sister Kenny used her position as the ‘people’s choice’ to further her claim for equal footing with the medical establishment to access and conduct laboratory research into the aetiology and prevention of polio see N. Rogers, ‘Sister Kenny Goes to Washington: Polio, Populism and Medical Politics in Postwar America,’ in The Politics of Healing, ed. R.D. Johnston (New York: Routledge, 2004), pp97–117.

\textsuperscript{181} H Spencer Jordan, California, to Kenny 28 October, 1944. Complimentary Letters and Parents’ Appreciation, Undated and 1942–1949. MHS. Elizabeth Kenny papers, 143.E.10.3B.

\textsuperscript{182} William Ballard, Hollywood. 9 March 1945. Ibid.
While conceding that the AMA was a ‘very strong organisation,’ another mother urged Kenny ‘not to give up … don’t let the Pill Slingers Association beat you.’ Another believed that doctors ‘should put up a sign, “Pay as you enter” on their doors,’ and that ‘they are all jealous of each other.’ J. Hall of New York believed that ‘it’s a shame the way the medical profession have acted towards you … the AMA is too contemptible for words. Some day you will be fully vindicated … the rank and file of this country value your work.’ Mrs Roberts of California urged her ‘not to pay any attention to the doctors, they have fought everything good that ever came along … they fought the chiropractor and every drugless method we have.’ For Cosette Dexter, Kenny’s gender was the key to why she was being ‘persecuted.’

It’s a man’s world, don’t give up. The women of America need you. Just realize what is against you. You are a woman, you don’t have a college degree but Jesus Christ wasn’t a MD, and the money interests who are reaping a harvest from the manufacturing of braces are against you. Buck up, there are thousands like me who believe in you.\footnote{Edward Smythe and J. Hall, New York, February 1944; Mrs Roberts, Los Angeles, 24 February 1944; Cosette Dexter, Minneapolis, 2 February 1944. Ibid.}

Some writers appeared also to harbour suspicions about the NFIP, its goals and its close association with the AMA, suspecting that its purpose was to benefit certain sections of the population at the expense of others. Other letter writers were angry when they realised that the money they donated to the ‘March of Dimes’ did not go to Kenny. Mrs Bonnell of Minneapolis was not going to contribute ‘any more dimes to the NFIP of which Basil O’Connor is head … because I didn’t know before that you didn’t get a nickel of it.’ Several letter writers referred to the Ghormley report — ‘a ridiculous and monstrously unfair attack’ published by the AMA in June 1944. Mrs Rich had ‘never been so disgusted in my life to realise that an intelligent group of men such as the AMA should underrate and make such statements about one who is giving so much to humanity,’ and reminded Kenny that ‘jealousy apparently causes some folks to do mean, dirty and uncalled for things.’\footnote{Ghormley et al., ‘Evaluation of the Kenny Treatment of Infantile Paralysis’; MG Brown and Mrs Rich, Minneapolis. MHS 143.E.10.3b.}
Support for Kenny crossed social boundaries, and rich and poor offered money to keep her in America. A ‘soldier’s wife’ in San Francisco was ‘more than happy to donate $5 a year to keep you here among us,’ while a socialite in New York promised that ‘many of her friends would send donations ... if a fund for you is started here.’ Early the following year the press ran a scurrilous story alleging that Kenny had received a large personal payment ($US49,535) from the NFIP. What the article failed to mention was that the payment spanned three years, that wages for all the Institute staff were deducted from the total, and that Kenny herself probably received around $6400 over that period.

Demise

In 1942 there were few Kenny clinics left in Australia, with a handful of Kenny-trained nurses who were not up-to-date with current treatment. In Minneapolis, Kenny heard from Charles Chuter that ‘by December there will be nothing left of the Kenny clinics in this State.’ Cairns, Toowoomba and Townsville had been shut down, as well as the wards in Brisbane Hospital. The clinic at Newcastle had disappeared in June 1939 when the Superintendent, Dr Kenneth Starr, re-introduced splinting, removed Kenny’s name from the Clinic, and announced that he had introduced ‘modifications’ to her treatment. Starr also admitted that

185 Mrs V Houben, San Francisco; Loretta Pierce, New York. A five million dollar nationwide fundraising campaign to support the newly-established Kenny Foundation was launched in November 1945. Known as ‘Pennies for Kenny’ it was promoted by Bing Crosby.

186 My deduction from letters on file is that other staff (89 in 1945) were paid $40,724 and travelling expenses totalled $2680. That left the sum paid to Kenny approximately $6431 or $178 per month. Elizabeth Kenny, MHS 143.E.10.9b (Cohn).

187 Charles Chuter to Kenny, 2 June 1942. Chuter had been moved from the Department of Health to that of Local Affairs after Cilento ‘had made serious charges’ against him. Chuter OM 65/17/34.

188 Hanlon defended his decision by declaring that the whole of the medical profession had been won over to the Kenny treatment. That was obviously untrue. ‘Minister Defends Policy on Kenny Treatment’, The Telegraph, 9 September 1942.

189 The only clinic in Australia that was operating within the auspices of an infectious diseases hospital and treating patients in the acute, infectious stage.
(Top) Opening of the Elizabeth Kenny Institute in Minneapolis, MN
(Centre) Party to celebrate the first anniversary of the Institute.
(Right) Elizabeth Kenny with a patient.
MHS 146.K.8.6F
Kenny's appointment as a consultant had been a mistake because of the 'most adverse reaction on the consultant medical staff of the hospital.' Chuter dismissed Starr's attitude as 'being on a par with the general attitude of the profession.'

In Brisbane, the George Street Clinic was barely functioning, with just two nurses remaining from the original staff of thirty-one. The remainder had enlisted for war service, fearful of losing their jobs at a time when memories of the Depression years were fresh. The clinic continued to operate for a few years in a 'lifeless fashion,' a 'mere shadow' of its former self. In 1945 Kenny was upset to hear that her name was still used in conjunction with the Brisbane Clinic because 'the work is not what it should be.' She was correct. Kenny had refined and improved her method of treatment in the years since she left Australia, and the staff at Brisbane had fallen behind. No one knew how to treat patients in the early stages of paralysis, and that failure to give appropriate treatment gave her detractors further corroboration of their case against her.

Sir Raphael Cilento was still 'deprecating the Kenny method,' and Health Minister Hanlon had deserted her, 'speaking of her in Caucus in degrading terms.' Chuter believed that 'hostility' towards Kenny 'still lurked in high places' despite the fact that the NFIP had informed Hanlon earlier that year that it had endorsed her treatment of the disease in the acute stage, and Basil O'Connor had written to thank Hanlon for 'referring Miss Kenny to us.' In 1942, the Australian-American Association wanted to publish an article in its Australian journal about Sister Kenny's success in America, but was warned 'to exercise caution' by a close friend and medical associate of Sir Raphael Cilento. The Association decided not to publish

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190 Chuter OM 65/17/34.
the article.\textsuperscript{191} That same year, Professor Philip Lewin\textsuperscript{192} published a report stating his opinion on the Kenny treatment:

There is no doubt that her treatment abolishes pain and stiffness and minimises the occurrence of deformities. It prevents contractures, lessens the degree of paralysis, and, by treating the symptoms in the acute stage, procures a higher percentage of full recovery than any other method.

In December 1945, Kenny wrote to the Secretary of the Australian Legation in Washington about her concern for Queensland polio sufferers in the epidemic that had resurfaced in her home state. She pleaded with them to intercede for her and send a delegation to Minneapolis to study the work being carried out at the Institute. The letter was passed on to the Acting-Director General of Health, A.J. Metcalfe in Canberra but he declined, blandly stating that ‘it was not possible to agree to Sister Kenny’s suggestion.’\textsuperscript{193} When she returned to Australia in 1947 she was ignored by most medical and government officials with the exception of the loyal Charles Chuter, who delivered her report \textit{Evidence Concerning my Seven Years Activities in the United States of America} to Queensland Premier Edward Hanlon.\textsuperscript{194}

In a cable to Chuter, Kenny Institute doctors backed Kenny’s report.

Please advise your government and the Australian people that we wish to state the eminently satisfactory results obtained in treating approximately 2000 acute cases of poliomyelitis during the past seven years by staff of the Elizabeth Kenny Institute. The treatment regime ameliorated suffering, minimized deformity and tended to abolish the need for corrective surgery. The contribution of Miss Kenny saved the United States from a national disaster during the recent epidemic and she has been

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\textsuperscript{191} Professor EJ Goddard of Queensland University. Ibid.


\textsuperscript{193} Supply of Scientific and Agricultural Information. Elizabeth Kenny Institute. National Archives of Australia, Department of Foreign Affairs and Trade, A1067/A46/2/7/2.

presented with the Gold Key Award by the American Congress of Physical Medicine for her outstanding contribution to the knowledge of poliomyelitis.\textsuperscript{195}

The only organisation to welcome her home was the Country Women’s Association, a reception strangely at odds for a woman who was accorded a police motorcycle escort in major cities in America. In Toowoomba, Kenny was ‘disgusted and disappointed’ when she saw the foundry busy making ‘steel braces and jackets for the unfortunate children in hospital’ and remarked ‘how different things were for the children of Minneapolis.’ She wrote, ‘sometimes I think that the bitter tears and broken hearts of the mothers of Australia and the broken bodies of their children should haunt these people the rest of their lives.’\textsuperscript{196} The silence that greeted her report to Hanlon was deafening, and polio survivors in Australia continued to be denied any freedom of choice in what treatment they would receive.

By the end of 1948, Elizabeth Kenny had admitted to many of her supporters that she had grown ‘weary of the unnecessary bickerings, untruthful reports and the futile attempts to give the necessary help and knowledge concerning this disease’ and that she intended to retire: she had ‘done her best.’ She knew that many doctors in the United States supported her but that the enormous power and political influence of the NFIP was against her. At no point in the history of the two Foundations had relations been cordial; they had remained competitive, hostile and uncooperative. Kenny was worn out, her health was beginning to break down and her legendary energy and drive was deserting her; the ‘old war horse’ wanted to go home to Queensland to live out her remaining years. Sometime during 1949 she was diagnosed with Parkinson’s Disease and that strengthened her resolve to return to Australia. She returned to the United States for a brief visit in 1950, a shadow of her former self physically, but still capable of firing a broadside at anyone who dared


criticise her method of treatment. Elizabeth Kenny died at home in Toowoomba, Queensland on 30 November 1952. She was seventy-two years old, but insisted to the end that she was six years younger. The last letter she wrote was to Minneapolis:

I think I will have to pay another visit to the United States of America to straighten things out a bit, and get the book written for the World Health Organization which is so very necessary ... I have improved and am taking my medication. Please remember me to all enquiring friends, with kindest personal regards.197

Perhaps it is just as well that she did not live to see two of the Directors of the Kenny Foundation charged198 with conspiracy in 1965 to defraud the Foundation and its contributors. One can only imagine her reaction to that revelation.

Polio was not the localised disease it was once thought to be and by 1950 it was accepted that it involved not only nerves, but also muscle and skin.199 By then most leading hospitals in the United States had incorporated most of the Kenny treatment into their programs, but other treatments still remained available. Polio patients in the United States of America, Canada, the United Kingdom, New Zealand and many European countries were given the option to choose what treatment they would have. That choice was largely denied to polio survivors in Australia.

The year Kenny died, Sir Earle Page, the Federal Minister for Health, rose to his feet in the Australian Parliament to announce that he had received 'certain requests from certain authorities for an investigation of Sister Kenny's methods, to bring Australia abreast of a treatment that had proved successful overseas,' but that he could see no reason for a fresh investigation because her treatment 'had done very little compared with orthodox methods.'200 Two other eminent men, one Australian

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198 USA vs Koolish, 340 F.2d 513 (8th Circuit 1965).


and one American, gave an antithetical appraisal of Sister Elizabeth Kenny. In 1951, she met Macfarlane Burnet during a brief stay in Melbourne. He later wrote,

I had a talk with her in 1951, under rather special circumstances. She had retired and was returning to Australia to end her days — she was suffering from Parkinson's disease and the fact that I was the best known virologist of her native land moved Kenny to call on me … it was the most interesting and concentrated opportunity I have ever had to sense the quality of another human being. On this occasion she had stipulated that the Press should not be present. She told me she had treated more cases than anyone else in the world — she gave the precise number, 7828 — and no one else was in a position to speak with her authority … She is now almost forgotten by the world. But there was an air of greatness about her and I shall never forget that meeting.201

In 1968, Dr John Paul maintained,

Sister Kenny's ideas and techniques marked a turning point, even an about-face in the after-care of paralytic poliomyelitis. By determination and sheer willpower she helped to raise the treatment of paralyzed patients out of the slough into which it had sunk in the 1930s.202

Elizabeth Kenny shook the complacency of the medical establishment who firmly believed that muscles affected by the poliovirus remained frail and vulnerable for a lengthy period, and that gentle movement of limbs in the early stages of paralysis was dangerous. That dictum became more and more entrenched in the 1930s and 40s, with the result that polio survivors were encased in plaster casts for many months. With its introduction of early, active treatment the Kenny treatment discouraged attitudes of passivity in patients, and encouraged independence and acceptance of the disability. Keeping the affected limb or chest warm with hotpacks undoubtedly helped to relieve pain, and gentle passive movements helped keep joints mobile and prevented deformities. Kenny encouraged her patients to remain autonomous, to retain agency over their bodies, and to work with the Kenny therapist to bring about recovery. That relationship was far removed from accepted medical practice of the era where the active care-giver gave medical treatment to the passive care-receiver.

By the early 1950s many orthodox treatment programs in the United States and elsewhere had adopted significant, if not all, features of the Kenny method, even if they did not understand or accept her definition of the aetiology of the disease. Sister Elizabeth Kenny’s concept of treatment was not fully integrated with the orthodox but rather the two methods began to relate to each other in a different way, to wind around each other in a synergistic relationship instead of being locked in a battle for power, and it was the polio survivor who benefited from that cooperative interaction.

That was the story throughout the world, except for one country — her homeland, Australia.
Chapter 5
Dancing in My Dreams: Rehabilitation and Going Home

Then came the glorious era of physiotherapy, where there are all those beautiful — even at that age I realised it—buxom ladies with belts of different colours like karate belts which linked in complicated ways in the middle, and sort of pushing and pulling.¹

Because I was bandaged in the splints and could not move except for my hands, I would imagine my inner self leaving my body and dancing above myself. I can still picture it. I have on a beautiful coloured shirt fringed with lace, and my limbs are lithe and free like those of a fairy being.²

Once you have spent two years trying to wriggle one toe, everything is in proportion.³

The convalescent stage of treatment of polio paralysis usually lasted around eighteen months, and depended on the initial severity of the disease. For the polio survivor, the transition from acute care or isolation to a rehabilitation ward was a significant moment. Restrictions on hospital visiting hours were, to some extent relaxed, and parents and children, wives and husbands, and friends and relatives were allowed to visit the ward and see for themselves how the patient had progressed since being admitted. Often, no improvement was visible and the realisation dawned


³ Franklin Delano Roosevelt, 1945.
that recovery was to be a long, slow process. Some patients were shocked to discover that, despite the many medical advances made during the Second World War, there was still no medical treatment for polio.

When I first came to Fairfield Hospital [in 1954] I rather imagined that people would give me injections of penicillin or something ... I was shocked to discover that it was just a matter of lying in bed drinking orange juice and waiting for the polio to cease attacking vital nerve centres, paralyzing limbs, muscles and organs.¹

Many patients grieved at the loss of their former self and became depressed, a normal reaction to the personal trauma of having polio that mirrored the 'grief cycle' later described by Elisabeth Kübler Ross.² Although her seminal work focused on death, the four stages of anger, bargaining, depression or sadness, and acceptance are recognised as a common response to profound despair. Also acknowledged is the fact that the stages described by Ross are neither predictable nor linear:³ polio survivors would often bounce back and forward from one stage to another. Some never expressed their anger at becoming paralysed, quickly accepted what had happened to them and moved forward, while others never reached the point of acceptance.⁴

Rehabilitation ward

Long stays in hospital were a common experience for polio survivors worldwide, and life in the ward was made more bearable by the fellowship and sense of belonging that developed between patients as they dealt with what had happened

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³ <http://www.bmj.com/cgi/content/full/329/7466/627>
to them — they consoled each other during painful therapy, shared treats brought in by family and friends, joined in conspiracies to play tricks on nursing staff, laughed and rejoiced at their achievements, and supported each other when they failed.

At the beginning of the rehabilitation process, emphasis was placed on the attainment of short-term goals like holding a cup, or a pencil, attending to personal needs or sitting up in bed. Small triumphs mattered.

Being able to move the fingers of my right hand as well as my left, then being able to lift my left arm by myself. Then — a very big event, a moment of freedom — being able to turn over in bed by myself.®

In Western Australia in 1954, 22-year-old Vivienne recalled her initial lack of interest when her nurse announced: ‘you are going to feed yourself today.’ To her surprise, she found that the effort required was worthwhile:

I had peach juice, bits of peach, bits of scrambled egg, toast crumbs and dribbles of tea all over me. But there was a strange satisfaction in having done something for myself, and the food definitely tasted better.®

Tony Gould could clearly remember the day when he:

stood up for the first time in months, holding onto the parallel bars for dear life, I was almost overcome with vertigo. Not long afterwards, when I took my first steps on my own, with a caliper on one leg and elbow crutches for support, I was as uncertain as a novice on stilts.®

The ward community provided an important link to the world outside, and patients who had understandably been preoccupied with themselves and their illness, were given the opportunity to recapture a feeling of empathy for others and to regain social skills. Rehabilitation means acceptance of social as well as personal responsibility. Self-pity was frowned upon. Hugh Gallagher told of his experience at Warm Springs in Georgia where:

10 Gould, A Summer Plague, p317.
Small triumphs matter. Polio patients in Fairfield Hospital 1950s.
(Bottom right) Children in Thomas splints, circa 1937. (Fairfield Hospital archives)

Young girl in a Thomas splint, circa 1938. At other times, her arms would have been bound into the horizontal splints. (Fairfield Hospital archives)
The new patient, surrounded by many in the same situation and some in a worse situation, casts off his self-pity or soon has it forcibly torn from him by his neighbours, who will tolerate practically anything but pity or despair.\(^\text{11}\)

There was little privacy in the ward, patients were helped onto bedpans, given sponge baths or enemas behind a screen if they were lucky, or seated on bedside commodes in a hospital gown that flapped open at the back. Many older men found the complete dependence on nursing staff 'demeaning', especially when staff 'dressed them in a nappy' and 'treated them like children,' using phrases like 'naughty boy' when an unfortunate accident occurred and bedclothes were soiled.\(^\text{12}\)

Patients in Fairfield Hospital in the late 1940s remembered the 'nightly sponge baths on freezing cold nights' and the joy they felt when they could progress to having a warm bath. When Clem was taken down to the hydraulic bath in Fairfield he was 'amazed how happy and jovial' the other patients were. Completely paralysed, his naked body was 'placed on a stainless steel table and lowered into the water to be washed by the nurses, no privacy any more.'\(^\text{13}\)

Some young girls going through puberty found it 'so embarrassing to have nurses attending to personal needs,'\(^\text{14}\) and older women also lamented the lack of personal privacy: 'we weren't allowed to have screens around the bed when using a bedpan, Sister said it was too much work for the nurses.'\(^\text{15}\) The more mobile patients were encouraged to become less dependent on hospital staff, and were happy to help overworked nurses with routine tasks, and gained satisfaction from feeling they were becoming a little more independent. In Prince Henry Hospital in Sydney, Lynne Ellis remembered the 'absolute bliss' of her first hot bath in months, and of


\(^{12}\) D.J. Wilson, 'The Crisis of Acute Poliomyelitis,' in *Living with Polio*, p51.


Not all experiences of hospital were negative ... there was a camaraderie on the ward and many of us developed life-long friendships ... the older girls who could walk around helped change the babies and feed the little ones. It was like one big, happy family.\textsuperscript{17}

Although visiting hours were slightly more liberal in the convalescent wards, they were strict by today's standards and especially punitive for rural families in Australia who were obliged to travel hundreds of miles on weekends to spend an hour with a partner or child. Most parents agreed that being able to see their child at frequent intervals helped to allay their natural fears about their welfare, but the inflexibility of hospital bureaucracy generally made that impossible. Many families tried to visit regularly, but some eventually gave up because it was just too difficult, especially with other young children at home. Relatives and friends were often too afraid of catching the disease to volunteer to look after siblings while parents visited their sick child. In addition, weekends were generally the only time when farming families could snatch a few hours' respite from their gruelling daily schedule by recruiting school age children to help with farmyard chores. One interviewee recalled:

My parents were farmers outside Launceston and they were not wealthy people. To begin with they used to come to see me every weekend, then once a fortnight. Very few people came to see me in hospital.\textsuperscript{18}

Some mothers travelled on a motorbike to the hospital, while another 'rode a bicycle the fifty-two miles from Railton to Launceston, every Sunday for three years.'\textsuperscript{19} In Minnesota, Arvid's parents made the 'seven-hour trip' to the Sister Kenny

\begin{footnotes}
\footnotetext{16}{Prince Henry Hospital, Sydney 1951. Ibid.}
\footnotetext{17}{Interview J. J.H. Smith, 'Fear, Frustration and the Will to Overcome: A Social History of Poliomyelitis in Western Australia,' (Edith Cowan University, 1997), p373.}
\footnotetext{18}{Interview D. Ibid.}
\footnotetext{19}{A. Killalea, The Great Scourge: The Tasmanian Infantile Paralysis Epidemic, (Sandy Bay, Tasmania:}
Institute 'every Sunday with the exception of one time when they got caught in a snowstorm.' In many instances, small children did not recognise parents or siblings when they came to visit after an absence of several weeks. A mother in Perth was allowed to see her fourteen-month-old son for two hours a week.

He didn't know who we were when we went in to see him. By the time we were about to leave he was beginning to recognise us and then we would have to go, and he'd scream, and all the children would scream.

Children under seventeen were not allowed in the wards. Pamela remembered when her brother came 'with Mum and he had to stay outside the gate, all we could do was look at each other.' Not surprisingly, Geoff thought Fairfield Hospital was 'like a prison.' It was not until 1953 that visitors were allowed into the wards because of the fear of spreading the various infections the isolation hospital housed within its walls. Before then, patients who were both ambulatory and well enough to leave the ward (criteria that excluded most polio survivors) were 'escorted by staff' to a 'covered Visiting Station.'

A facility which boasted a wire-netting fence to ensure a separation between patient and visitor and thus contained the infection. The visitor, out in the open and some yards from the patient, was also behind wire netting — with a sort of no-man's land in between. The whole rather unsavoury and demeaning set up was, not surprisingly, known as 'the pens.'

Some hospitals discouraged parents from visiting because it was 'disruptive.'

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Tasmanian Historical Research Foundation, 1995), p108.


21 John Smith. Smith, 'Fear, Frustration and the Will to Overcome.' p371.

22 Interview A. Ibid.


Elaine Theodore’s parents were not allowed to see her for six weeks in the Children’s Hospital in Melbourne because nursing staff told them ‘she would fret,’ so they climbed up a nearby wall and waved to her. At Queenstown in Tasmania, ‘parents stood at a fence and, across an expanse of grass, tried to glimpse children held up at hospital windows.’ However, if the Matron or Supervisor was sympathetic, change could occur.

When I was a student nurse, a child came into hospital and did not see the parents again for two weeks. I thought that was perfectly horrible and as soon as I became a supervisor I began to make a change. In the Respirator Centre [Mount Sinai, New York] we allowed visitors in the morning, afternoon, or the evening, whichever was convenient for the relative.

The pregnant Una White contracted polio when she was twenty-one and was sent to Fairfield Hospital where she gave birth to a son who rapidly developed symptoms of the disease.

I didn’t see my newborn baby for twelve months. Then he was moved to the convalescent home at Mt Eliza, and we used to travel from Warburton every six weeks because that was all we could afford. We didn’t have a car and we had to get a taxi. I used to nurse him in his Thomas splint for about an hour and a half. He came home when he was three years old and it was only then that I realised that I had a son … I don’t know how long it took him to realise that we were his mother and father.

When they were first moved to the rehabilitation ward, many patients were still experiencing painful muscle spasms. Polio patients, unlike those who suffered a spinal cord injury, retained full sensory awareness — they might not yet have been able to control their muscles but they could feel the pain in their limbs. Despite the

25 Interview with Mr and Mrs Parker parents of Elaine Theodore by Barbara Rossal-Wynne, Austin Hospital, Melbourne, The Bryan Richard Speed Infectious Diseases Collection: Fairfield Hospital 1904–1996.


considerable pain experienced by many survivors, in other aspects the retention of sensation was a bonus, for it meant that patients also retained control over many important bodily functions. For many young men, the realisation that they could still 'perform' was a huge relief. Fourteen-year-old Michael remembered mixed feelings of 'acute embarrassment and joy' when he 'suddenly developed an erection' during a sponge bath, but consoled himself with the thought, 'well, there's at least one muscle that still works.' Mercifully for Michael, the middle-aged nurse who was bathing him 'carried on as if nothing had happened.' The retention of the ability to feel muscle movement in their limbs also meant that polio survivors could sense and learn to activate adjacent stronger muscles to take over the role of those weakened and damaged by the poliovirus.

Mending the body disabled by the poliovirus was not simply a matter of straightening limbs and rebuilding muscle tone. For most, it meant readjusting themselves to life in a body that was no longer familiar: one that had endured not only severe pain from the physical effects of the virus, but also significant emotional and psychological trauma, and physical change. Survivors had to cope with a loss similar to losing a loved one, and many were not given sufficient time to work through the grieving process. The physical effects of the virus were but one aspect of a larger dimension of disability, and ethnicity, class and gender all played a part in the individual response. But everyone connected with the polio survivor was affected by the experience.

Polio belongs not just to those of us who were paralyzed by it but to our mothers and fathers, our sisters and brothers, our partners and our children; to those who cared for us, to those who brutalized us — not mutually exclusive categories; to those who saw us as palimpsests on which to write their discomfort, their fear, their pity, their admiration, their empathy.


It sometimes took years for survivors to give up their dreams of complete recovery and a return to a pre-polio life, and to come to terms with their disability. For men, the weakening of their body by the poliovirus threatened innate values of masculinity: strength, virility, leadership and independence; while public opinion often viewed disabled women as being non-sexual beings, no longer suited for the conventional mid-twentieth century role of wife and mother.

In Australia, the iron lung was commonly referred to as the 'box' and, for the lucky ones, their intense feelings of relief and joy at being free of the respirator were soon tempered, as the realisation that many weeks, months and possibly years of hard work and more physical pain lay before them before they could regain a sense of identity and purpose about what the future held for them. Some survivors remained dependent on respiratory support; those who learned to 'frog breathe' by using their neck muscles to force air into their lungs became a little more independent than those who had to rely on the rocking bed, or on the Curaiss respirator.31 Some remained apprehensive about leaving the security of the iron lung. When Jim was allowed home for Christmas he 'felt like a glass man that might break, or come apart at a touch.'32 Others were worried that they would 'get seasick' on the rocking bed, and Louis was relieved to discover that it was straightforward, and offered him 'another way to breathe.' Furthermore, it meant that he was 'finally weaned from the womb of the iron monster.'33

Survivors had to come to terms with their feelings and conceptions of self-image, especially if they had previously shared widespread stereotypical and

31 The rocking bed was like a large seesaw and used gravity with the shifting weight of the abdominal organs against the diaphragm to force air in and out of the lungs. The chest respirator was a shell that used pressure to force the chest down to expel air from the lungs and then released it.
32 Wilson, 'Straws on the Ceiling: Life on the Polio Wards,' in Living with Polio, p128.
33 D.J. Wilson, 'Covenants of Work: Recovery and the Rehabilitation Hospital,' Ibid., p93.
cultural views about the disabled body and its place in society. As Daniel Wilson has explained in his study:^34

Most, if not all polio patients had very conflicted emotions about iron lungs, braces and wheelchairs. To assent to using them was a certain sign that one had left the world of the able-bodied and crossed over to the world of the crippled, the handicapped and the disabled.

Jim had ‘often wondered’ what it would be like to have paralysed limbs. In Melbourne in 1954, he found out. ‘You look at your arm and you say to yourself, “I’m going to move that arm,” you try your darndest to move it but it just will not budge.’^35 Some patients had ongoing breathing problems that prohibited the use of an anaesthetic, thus affecting other aspects of treatment. In Fairfield Hospital, eight-year-old Noel retained vivid memories of the hospital dentist.

He worked on our teeth without pain killers or anaesthetic. Having my teeth out like this with my mouth propped open with steel frames and blood spilling out everywhere stays with me forever.^36

The myth of total recovery, perpetrated to a large extent by the American ‘polio’ president, Franklin Delano Roosevelt,”^37 and based on an expectation that patience, hard work and adherence to exercise regimes would bring about improvement and a return to a normal body, was exposed as a cruel illusion. As the sociologist Irving Zola pointed out, Roosevelt was a wealthy, powerful figure with access to the type of support services of which the average polio survivor could but dream. In 1924, FDR had become attracted to the idea of hydrotherapy for paralysed limbs after hearing about several successful recoveries from friends and, after visiting Warm Springs in Georgia to bathe in the warm mineral waters

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^35 Vickers, ‘Footprint: From the Iron Lung.’


at the rundown resort, he was convinced the treatment would help.\textsuperscript{38} In 1926 he bought Warm Springs, much to the relief of the owner who received twice what he had paid for it a few years previously, and made plans to turn it into a facility for polio treatment — albeit one for white sufferers as it transpired, since no African American was admitted to Warm Springs during the segregation years in the South. FDR's illness sparked an enormous revival in public and scientific interest in polio research and treatment, and promoted the visibility and growth of the profession of physical therapy in the United States. Nevertheless, the abiding message that the Roosevelt myth imposed on other less fortunate survivors, be they black or white was, 'if Franklin Delano Roosevelt could overcome his handicap so could, and should, all the disabled. And if we fail, it is our problem, our personality defect, our weakness.'\textsuperscript{39}

As a consequence, many American survivors experienced feelings of guilt that they had been unable to live up to the example of their President and overcome polio as he had done. However, Roosevelt's message of conquering polio was ambivalent. By refusing to acknowledge publicly his disability,\textsuperscript{40} FDR inadvertently supported society's view that the disabled should continue to live their lives on the fringes as passive recipients of charity, forever reliant on the goodwill of family and friends to survive — to all intents and purposes historically invisible.


\textsuperscript{40} Extensive efforts were made by Roosevelt and his supporters to hide the full extent of the President's disability from the American public and the press supported those efforts. See Gallagher, \textit{FDR's Splendid Deception}, and J. Duffy, 'Franklin Roosevelt: Ambiguous Symbol for Disabled Americans,' \textit{Midwest Quarterly}, vol. 29 (1987), pp113–35.
Physiotherapy

The growth of physiotherapy in Australia had initially been influenced by the experience of nursing Allied casualties during the First World War, and later by the return of disabled soldiers. The profession dominated the provision of care and treatment for those who survived exposure to the poliovirus, and rose to prominence during a period of great social change in this country: two world wars and the Great Depression formed the context within which polio epidemics waxed and waned in Australia. By the mid-twentieth century, American physiotherapists had sent out a clear signal to the medical profession that, although they wished to maintain close ties with the medical profession, they expected to control their own training and curriculum, and to be accepted as professionals in their own right within the medical field, and not as subordinates. Following the end of the Second World War, physiotherapists in Britain began to challenge the orthopaedic surgeon for control over the rehabilitation of patients. In Australia, this came somewhat later. The physiotherapy profession did not become recognised as a fully separate and independent association within the practice of medicine until the 1970s. Before that, ‘hospital physiotherapists ... kept a low profile in wards to avoid upsetting the doctors or nurses.’

Convalescent patients were given exercises to stretch their contracted muscles, and descriptions of that process varied from ‘not too bad’ to ‘intensely

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41 In the early twentieth century, ‘massage’ described the treatment given by providers known as ‘masseurs’. (In the United States ‘physical therapists’).

42 P. Bentley, D. Dunstan, and A.P. Association, The Path to Professionalism: Physiotherapy in Australia to the 1980s, (Melbourne, Vic.: Australian Physiotherapy Association, 2006).


45 P. Bentley, D. Dunstan, and A.P. Association, ‘Consolidating the Gains — the 1950s,’ in The Path to Professionalism, p129.
painful.' If they were given hot-pack treatment before therapy commenced, it usually lessened the pain. A great deal depended on the skill of the therapist and the zeal with which they approached the challenge of getting a muscle to stretch just beyond the point where pain occurred. In Hampton Hospital in Victoria, four-year-old Joan remembered ‘Miss B, a thin, hard woman who would stretch me and weigh me down with sandbags,’ an experience she described as ‘excruciatingly’ painful.\(^{46}\) In St George Hospital in Sydney, Gary encountered something similar, but he was older than Joan and reluctantly accepted the pain as an inescapable part of the process of getting better.

Every day a physiotherapist, Miss T, would come and undo each of my limbs from the iron frame and try to get them mobile. It used to pain like the dickens and I used to scream the place down and call her for everything, yet it was Miss T who got me walking. She sent me Christmas presents for the next ten years.

Many referred to the Physiotherapy Department as the ‘torture chamber’ or the ‘screaming ward’ and admitted to being ‘scared of the physios.’ One therapist threatened eight-year-old Ruthanne, telling her she would ‘put her in the pool and hold her head under water’ if she didn’t stop crying during stretching treatment.\(^{47}\) Others were luckier: Beatrice remembered her therapist as ‘wonderful. She would stretch my muscles like nobody’s business. I’d get tears in my eyes, but I still looked forward to my time with her because she was just such a nice person … she’d had polio herself.’\(^{48}\) Most polio survivors agreed that therapy hurt, and many children cried. In the Bronx in 1955, Edward was treated in the ‘torture chamber’.

They had this inclined plate and they would slowly move it up a couple of degrees and then you would sit there for half-an-hour and that would hurt. They slowly progressed it until you were sitting up.\(^{49}\)

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\(^{46}\) In-patient Hampton Hospital, Victoria in 1952. J. Smith, ‘Your Stories — Joan’s Journey,’ no. 19/4 p11, Polio Perspectives, (Collingwood: Paraquad Victoria, 2007).


\(^{49}\) Edward O’Connor, the Bronx, NYC 1955. Ibid., p49.
In England, Ian remembered ‘it was called the screaming ward, and you could hear people screaming on the way there, and screaming on the way back.’

This geezer used to get hold of my left ankle and my left thigh and, kkkkkkkrrrrr, put my heel up to my arse … and then it was you [screaming] when you was there.50

Many associated the period of their hospital convalescence with treatment with hot packs. The reaction to these seems to have been mixed. Some thought they brought relief from pain, while others loathed having them applied. Charles Mee thought the treatment was a ‘bizarre, disgusting procedure,’51 and Jim could ‘still remember the smell of wet wool for years afterwards, and the itching.’ The packs were a comfort for a short period while they were warm, but once they cooled down he felt the experience was ‘like having a wet nappy on.’52 J. Downham of Delaware thought that the packs, ‘from his shoulders to his knees, helped wonderfully’ with the pain in his limbs.53 In the early 1940s, the nursing staff in New York State:

had no equipment to use for this new method, so they rigged up two towels with sticks in the ends and they squeezed the packs between them. This proved to be unsatisfactory as it left too much water in the wool. So then they got a table with washtubs and an old-fashioned wringer in the middle and put the packs in boiling water in one tub and then squeezed them out in the other. After a brief cooling they were applied to my entire body and then wrapped in pieces of rubber to keep the heat in. The packs were on 24 hours a day for two weeks.54

Busy nursing staff sometimes applied the wool packs while they were still too hot, burning hapless patients. Patients and staff alike dreaded the treatment — patients because they were terrified of being burned, and staff because it was hard, unrewarding work, and the majority had no desire to inflict additional pain on survivors.

51 Mee, A Nearly Normal Life, p64.
52 Jim Porteous in Gould, A Summer Plague; Mee, A Nearly Normal Life.
It was very trying using those hot, steamy packs on a hot day, we had no air conditioning in the hospital and we had to run the packs through wringers and then wrap them up in a waterproof covering so that the bed wouldn’t get too wet.55

Most patients who were treated at the Kenny Institute in Minneapolis or at other centres in the United States were positive about their experience, and many letters can be read in archives56 from grateful patients or parents. Mrs Danielson wrote:

When my daughter Betty was stricken with polio in 1939, she was treated unsuccessfully at the University of Virginia and Warm Springs, before being transferred to the Institute in 1944, and she improved.57

Another mother wrote saying that she was ‘so glad the Kenny method was used on our boy … it took away some of our terrible fear.’58 Rose Fitterer worked as a nurse at Washington Park Hospital in Chicago during the 1949 polio epidemic, and treated ‘many patients with the method, who blessed Kenny for her contribution to science.’ Fitterer believed that ‘many, many of our children and adults are walking today because of Kenny, an Australian nurse who gave of herself so unselfishly.’59 Michael Davis believed that his ‘life changed’ when Kenny-trained therapist John Untereker appeared ‘with a huge pair of shears’ to help his mother treat him at home, cutting up the ‘ingredients for a Kenny “sandwich” custom-fitted for me.’

John showed my mother how to build the layers of cotton sheet for my sensitive fair skin. Doubled blankets, rubber sheet, and outer cotton blanket for each of my body limb parts, and how to fasten them around me every hour with huge, diaper-sized safety pins.60

When Michael was admitted to Kosair hospital in Louisville, Kentucky, he


56 For example, Minnesota Historical Society, St Paul, MN and Franklin Delano Roosevelt Library, Hyde Park, New York.

57 Mrs Danielson, Minneapolis, 1944. MHS 143.E.10.3b.

58 Mrs Beckton, Washington, DC. 1945. Ibid.

59 Rose Fitterer, Washington Park Hospital, Chicago. Ibid.

continued with the treatment for four weeks before being discharged. Some time later, he returned for muscle re-education treatment under the care of Unterek. In contrast with the above, two second-hand accounts painted a different picture of undergoing the Kenny treatment. In her book, Anne Finger described a telephone interview she had with a man who claimed he was treated as a young boy at the Kenny Institute in Minneapolis where,\textsuperscript{61} ‘male physical therapists — gorillas— forced his body to bend forward while he screamed with pain.’ Charles Mee included a similar account in his book from a patient in Nebraska, who claimed he saw:

one of Sister Kenny’s disciples stretch out the hamstrings of a fellow polio patient by pushing down on his foot as hard as she could until he screamed. She didn’t stop until the foot was stretched straight out … tearing some tissues.\textsuperscript{62}

Both those experiences were at odds with everything that Kenny believed in, and taught to her students. In a letter to Sister Dryden in New Zealand in 1948 she wrote:

Acute cases require very gentle handling, any stretching that is to be done must be done very mildly. The patient, on no account must be put in any pain, gentle stimulation is desirable.\textsuperscript{63}

Of course, Kenny had no direct control over individual therapists who claimed to be applying her method, and the same applied to therapists who used more orthodox treatment. There is little doubt that ill-treatment by certain therapists did exist, and although most patients reported that therapy was painful, there is a vast difference between the deliberate imposition of pain upon someone and the often unavoidable side effect produced by stretching a muscle that has contracted. Time and time again, Elizabeth Kenny emphasised that stretching was not to be carried beyond the point where pain was felt.

\textsuperscript{61} The source was not identified. Finger, \textit{Elegy for a Disease}, p118.

\textsuperscript{62} Mee, \textit{A Nearly Normal Life}, p67.

\textsuperscript{63} Kenny to Dryden, Duncan Hospital in Wanganui, New Zealand, 10 January 1948. Elizabeth Kenny, reports and other papers, undated and 1941–1951, Victor Cohn Papers, Sister Elizabeth Kenny Foundation Records, MHS. Elizabeth Kenny papers, 143.E.10.9B Box 7.
A few parents rebelled against hospital regimes and treatment and, despite the fact that many respected the expertise of medical staff, some were willing to try another approach. The father of a patient in Sale Hospital in Victoria said:

We got fed up with the lack of treatment. At first her arms were tied to the back of the bed. Then Mr Lee the specialist came and put her in a Thomas splint. She wasn't treated for weeks so we met Matron Buller and Mr Lee and I told them I could give her better treatment. They told us "If you take her out of our control the child will never walk again." We took her home and massaged her legs every three hours and within three months she was walking.64

Others who had earlier agreed to have their child treated by the Kenny method were 'shocked to find that hospitals might now refuse treatment.' One family was told by the family doctor, 'what would she [Kenny] know about it, she was only a bloody woman.'65 Shirley Barnett's parents refused to give permission for her to be placed in a Thomas splint. When they asked hospital staff if an alternative to splinting existed, they were told: 'Sister Kenny has a small hospital in Hampton' but that her treatment 'was not acceptable.' Nevertheless, and despite being told by the orthopaedic specialist that their daughter 'would never walk again if they removed her from Fairfield Hospital,' they decided to place her under the care of Kenny.66 Some parents were so overawed by the prestige of medical practitioners that they dared not question treatment, fearing that their child would be in some way disadvantaged if they were viewed as 'uncooperative' by hospital staff.67 Most of those fears were not justified, but there were some exceptions. When Simon's parents complained to the staff nurse at Queen Mary's about the standard of nursing care:

He suffered for it in all sorts of niggling ways: the hot packs were put on a little bit

64 Mr Parker, father of Elaine aged sixteen months in 1936. Interview with Mr and Mrs Parker parents of Elaine Theodore, Fairfield Hospital Archives.
66 Shirley made a complete recovery, and when her parents took her back to the original specialist some months later, his only comment was that 'it was a miracle that she could walk.' In S. Barnett, 'Baby Shirley Broadway', no. 8, Personal Polio Stories, (Kensington: Post-Polio Network (NSW) Inc.)
67 Wilson, 'Straws on the Ceiling: Life on the Polio Wards,' in Living with Polio, p126.
too hot; he was handled more roughly than usual; and if he asked for a bottle, he was told to wait for his turn.68

Dissatisfaction with the physiotherapy treatment provided in hospital was not confined to Australia. In England, Jim’s parents were not happy with his progress and requested his transferral to Queen Mary’s Hospital where the Kenny treatment was used. Their consultant warned them that Kenny’s treatment was ‘fanciful’, and declared that the ‘best bet for their son was to remain in a plaster cast.’ But his parents contacted an orthopaedic surgeon at Carshalton, who advised them to tell their consultant ‘to take a running jump and bring your son down here.’69 In 1955, Dr Richard Metcalfe, a consultant orthopaedic surgeon at Queen Mary’s remarked:

We have been laughed at here for sticking to her [Kenny’s] principles, but we get amazing results even after others say nothing can be done. Maud Forrester Brown [an orthopaedic surgeon at Bath] has stated that people who don’t use splints in the early stages of polio are nothing more than quacks or charlatans despite the fact that it was universally accepted at the 1951 Copenhagen Conference [on Poliomyelitis] that immobilised patients developed tightness or contractures.70

George Durr was eighteen-months old in 1931 when he contracted polio in New York State. After four years in hospital in Westchester, his father told doctors he was taking him home, ‘because they weren’t doing anything for me.’

I remember leaving the hospital and I could not walk. I was completely paralysed from the neck down. They had to strap me into the car. This was my first experience in being outside — seeing trees and corn. The ride home was very exciting. It was just amazing to see houses and roads and cars. It was just unbelievable to a five-year-old kid who had been literally strapped and locked into a bed his entire life.71

By the early 1950s most overseas experts had conceded that, to be truly

69 Brigadier Metcalfe was a consultant orthopaedic surgeon to the Army during the Second World War and later worked at Carshalton. Jim Porteous. Ibid., p238.
70 Metcalfe to Cohn, 29 August 1955. I. Brand, ‘The History of the National Foundation for Infantile Paralysis’. MHS, St Paul. Elizabeth Kenny papers, 146.K.8.6F; Victor Cohn’s Elizabeth Kenny Research Notes, Transcriptions, Correspondence and Other Papers. 146.K.8.6F.
effective, stretching had to be started in the early stages of rehabilitation, and strict immobilisation of the body had been abandoned. Across the Tasman, some hospitals in New Zealand had been using the Kenny treatment since 1943\textsuperscript{72} when the Health Department had decided that there was 'something in it.' In 1945, the Duncan Hospital at Wanganui was under the supervision of a physical therapist who had been trained at the Kenny Institute in Minneapolis, and Kenny herself visited in December 1947. The attitude of the Health Department in New Zealand stands in stark contrast to its Australian counterparts. It negotiated with the Kenny Institute in Minneapolis for the exchange and training of several physical therapists during the 1940s, and arranged for a surgeon, Dr Walter Robertson, to visit there in 1947 'to study Kenny treatment and other orthopaedic matters to see what could be usefully applied in New Zealand.' On his return, Robertson said that he knew 'of no better treatment' than the Kenny method.

It was a good and rational method in both acute and convalescent stages, with much to be gained and little to lose, and he recommended that training be given to nurses and masseuses, to be held in readiness for epidemics.\textsuperscript{73}

However, the Department of Health in New Zealand did not choose to implement all of Robertson's recommendations — probably because staff numbers were inadequate. One of the major criticisms that health authorities had of the Kenny method was that it was highly labour intensive, and there were simply too few physiotherapists to call upon. However, by the 1950s, the Kenny treatment was widely available throughout New Zealand and, in another breakthrough in rehabilitation treatment, the care of polio patients had been transferred from the orthopaedic surgeon to the physiotherapist.\textsuperscript{74}


\textsuperscript{73} Ibid., p62.

\textsuperscript{74} Ibid.
A paradigm shift in the treatment of the paralysed body had occurred, not only in New Zealand, but globally. In the 1940s, what the profession of orthopaedics had most feared from the Kenny treatment was losing control over the rehabilitation process. By the 1950s, that jurisdiction had largely been lost, as authority for the care of the paralysed body shifted from the medical profession to para-health professionals.

While polio survivors in New Zealand and elsewhere had a choice of treatment in the late 1940s, that was not the case throughout most of eastern Australia. It appears that the more things changed globally on the treatment of polio paralysis, the more they stayed substantially the same in Australia. Barbara was fourteen in 1951 when she was taken by ambulance to Fairfield Hospital. Once admitted, she was put into plaster casts from her feet to her knees, with her upper body strapped into a metal and leather Double Thomas splint twenty-four hours a day. The lower part of her right arm was left free ‘to eat or read.’ In 1954, eight-year-old Gailene ‘was strapped from head to toe into a full-length body frame for twenty-six months.’ The young girl, whose sisters ‘grew accustomed’ to seeing their sibling ‘in an cage,’ was unable to ‘sit up to eat, drink, or use the toilet.’

In the early 1950s, Fairfield Hospital was desperately in need of more physiotherapists. Some patients recalled that they ‘had no treatment for weeks’ or, at the most, once every three or four weeks during their daily bath in warm saline. Les had:

No treatment for three or four weeks and I stiffened up quite badly during that period. By the time the physiotherapist got to me just doing passive exercise was quite painful.

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76 Watson, ‘Polio Story’.
78 Interview Les Corneille by Barbara Rossal-Wynne, Austin Hospital, Melbourne, The Bryan
Una suffered from ‘bad bed sores from the coconut fibre matress ... I didn't get moved or turned over because the nursing staff were so flat out.’ The situation had improved by the end of the decade. Patients in Fairfield went to the physiotherapy ward ‘each day’ where they were ‘strapped into our double Thomas splints’ and had ‘strength tests every week on every muscle’ that were then scored on individual ‘muscle charts ... there was also the salt water bath where four or more of us kids were strapped in together by our shoulders.’ Children learned not to expect sympathy.

It was so hard on me emotionally. We weren’t allowed to complain or be upset, it just wasn’t allowed. If I ever showed I was lonely or frightened, the nurses either ignored me or I got into trouble. It was so hard, so I just learned to never show how I was feeling ... As I got better, they started physio on my limbs and I started to learn how to get about a bit in the leg irons. That seemed so heartless too. No-one ever helped, or picked me up when I fell over. It was all up to me, if I wanted to get better, then I had to do it. I guess that’s where I got to be so determined.

**Education**

After-care therapy for polio survivors in the 1930s and 1940s was based on an economic model aimed at producing employable members of the workforce, and on social integration through a vocation-oriented rehabilitation system. The conviction existed that the disabled had to be ‘normalised’ by becoming productive members of society, in contrast to an institution-based life of dependence on charity. Some of the training began in the wards. Any occasion that interrupted the long tedious hours was welcomed: even the dreaded physiotherapy was a respite from the boredom of staring at walls and ceilings.

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Richard Speed Infectious Diseases Collection: Fairfield Hospital 1904–1996.

79 Interview Una White by Barbara Rossal-Wynne, Fairfield Hospital Archives.


Children in saline bath, Fairfield Hospital, 1930s

June Middleton, Fairfield Hospital, circa 1950.

June with Vern Draffin, circa 1950s.
Fairfield Hospital archives.
In line with broader concerns about social reform and a growing awareness and understanding of how 'normal' children developed, the British government had assumed responsibility for the training and education of crippled children in 1899. The topic of segregation of the disabled in special schools versus integration with the able-bodied in ordinary schools was widely discussed in Britain and, in 1918, education for the disabled became compulsory. By 1930, twenty schools in London catered for crippled children, with free transport provided by the London City Council. The earliest attempt to provide education for crippled children in the United States was prompted by charity workers, but as the twentieth century dawned there was a gradual transition from private to public responsibility as the conviction grew that the state should provide educational opportunities for the crippled child. Massachusetts was the first state to introduce public education in 1906 and, by 1915 special classes for crippled children were provided in New York.

In 1931, a committee set up by President Roosevelt estimated that there were 300,000 crippled children in the United States, with at least one-third needing education.

Following a joint research project in 1951 with the New Zealand Crippled Children's Society, that country's Education Department concluded:

> A visit to orthopaedic wards would convince most people that it is possible for children to live a reasonably happy life in such surroundings. In the best equipped wards children had lessons from a hospital teacher, and were given books, handiwork,

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outings, and entertainment. Older children had correspondence lessons, listened to talks over the radio, and had pen friends.\textsuperscript{86}

In Victoria, the \textit{Education Act} of 1872 had made schooling compulsory for all children able to attend, but it did not make any provision for those who were unable to attend school because of 'sickness, fear of infection, temporary or permanent infirmity or any unavoidable cause.'\textsuperscript{87} Because many children were kept immobilised in bed in hospital or at home for many months, many fell behind in their education. Where Australia was concerned, the education of children in hospital appeared spasmodic, despite the best efforts of various state Societies for Crippled Children.\textsuperscript{88}

Some children had no schooling, books or games unless provided by parents, while others remembered a teacher coming in for reading lessons.\textsuperscript{89} During the 1920s, efforts were made to introduce some form of vocational training for the disabled, but that training was usually in the form of needlework for women and young females, and basketwork for men and young males. Many of those occupational therapies would have reinforced a feeling of inadequacy and hopelessness in many of the disabled, for their training was so limited that the future would hold few prospects for them outside the charitable sheltered workshop.\textsuperscript{90}

In New South Wales, the first school for disabled children was opened in 1930 at the Royal Alexandra Hospital for Children, and the Society for Crippled


\textsuperscript{89} Interview J. Smith, ‘Fear, Frustration and the Will to Overcome’, p406.

\textsuperscript{90} Marshall, \textit{Yooralla}; Almoner’s report, Tasmanian Society for the Care of Crippled Children.
Children arranged a transport system to take children from home to the school, and to public hospitals for orthopaedic treatment. By 1933 children occupying the 88 beds at Frankston Hospital were receiving schooling and occupational therapy. Tasmania, Victoria and Queensland all formed Societies for Crippled Children between 1932 and 1935 and carried out surveys of crippled children in their state. All found children in great need of help either for treatment, care or access to education. In Tasmania, 30 percent of crippled children were not attending school in 1932.

Training

In 1938, the Society for the Care of Crippled Children in Tasmania forged a close relationship with the Education Department to improve education standards of children in hospitals and convalescent homes throughout the State. As well as receiving tutelage in the basic skills, children were encouraged to save the money they received from the sale of their handiwork — 'woollen mats, kettle holders, tapestry pictures, small toys, wood-fibre flowers, baskets and trays.' The Hobart Hospital Almoner also noted that children undergoing long periods of treatment for polio paralysis 'presented a serious behavioural problem' for nursing staff if they were not kept occupied and amused. She also commented on the 'appalling lack of education among older cripples,' some of whom had spent years in hospital with no tuition provided. A few older patients in Tasmania were given the opportunity to develop skills that were more in keeping with earning a future living, 'six patients were receiving instruction in commercial work, accountancy, typewriting and shorthand,' and the Society managed to place two as apprentices in Hobart. But

91 Coles, NSW Society for Crippled Children, p16.

92 Twenty five percent of children were paralysed following infantile paralysis. Parker, Crippled Children in Tasmania.

93 100 savings accounts were opened at the Hobart Savings Bank. Almoner’s report, Tasmanian Society for the Care of Crippled Children.

94 One to a bootmaker and the other to a dressmaker. Ibid.
it was often an uphill battle to change entrenched cultural views of the disabled, as the Hobart Hospital almoner reported in 1939. She thought that many people still believed that 'if one possessed a crippled body one must be in touch with the devil,' and denounced those potential employers who 'refused to give young cripples a trial.' It was her opinion that Hobart businessmen should 'give thanks' that their children and grandchildren had been spared 'the scourge' of infantile paralysis, and should each undertake to employ one disabled person during the coming years.\(^5\) Still, the majority of the disabled appeared destined to spend their time doing handicrafts. Gary was taught how to:

Weave cane baskets and trays, then later how to make leather wallets then how to knit a scarf. I remember when I started basket weaving and was getting positive comments from the visitors who came to my ward that I had a flash of marketing initiative and set myself up in business as a supplier of all my hand made goods. The baskets I charged five shillings for, the trays seven and sixpence and the wallets were nine and nine pence. When I was finally discharged I had amassed a fortune of just over twenty pounds, almost enough to buy a block of land with! \(^6\)

By the mid-1940s, the Education Department had provided greater access to the basic skills of reading, writing and arithmetic for children in Tasmania's hospitals.\(^7\) In Victoria, the Education Department provided a teaching service for children in hospital, correspondence lessons for children at home and teaching staff at Yooralla, and the Victorian Society for Crippled Children and Adults arranged for the education and training of disabled children and adults on its register. In Western Australia, education and training for polio survivors in hospital was provided at the Princess Margaret and the Royal Perth Hospitals.\(^8\) Attitudinal change towards the disabled came about as more and more people became aware that the crippled child or adult was more than just a problem and responsibility for hospitals, that families

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\(^5\) Almoner's report, Tasmanian Society for the Care of Crippled Children.

\(^6\) Buchanan, 'I Used to lump Puddles.'

\(^7\) Ibid.

\(^8\) Marshall, Yooralla; Norris, The Society; R.D. McKellar Hall, Reflections of an Orthopaedic Surgeon, (Perth: Hesperian Press, 1983)
and the community needed to become involved as well. Future prospects for the disabled would improve only if hospitals, families and the community worked together to formulate and operate a comprehensive scheme to help them achieve their full potential.

Despite that viewpoint, some family members and friends were convinced the polio survivor would never live a 'full' life, and exhorted them to lower their expectations about the future. Viewed as being incapable of real community participation or of usefully directing their own lives, polio survivors were often regarded as the antithesis of all that was healthy and normal in society. When a friend of Roosevelt's mother visited the family home after FDR fell ill, she observed:

Now he is a cripple … will he ever be anything else? His mother is wonderfully plucky and courageous, but it's a bitter blow.99

Rick remembered that his parents ‘were embarrassed about me … they didn’t want to talk about my polio. It was ignored. They said quite a few times that they wished I died … they put me in a closet when they had company.’ Rick wonders whether it would have been a ‘better thing … if I had [died].’100 At home in Western Australia, a young polio survivor ‘had to do [my] exercises in the hallway of the house while everyone else was having dinner, due to the shame they felt.’101 The effect on relationships and on the ebb and flow of family life was often far-reaching. Sometimes the trauma experienced by young children at the forced separation from family lasted well into adulthood, and the relationship between parent and child never fully recovered. Often it was the parent who now felt rejected.

I’d hear the car coming up the drive and I’d go to the door, like I’d greet anybody — more so a family member — and I’d go to kiss him. He’d turn his face right away …

99 Gallagher, FDR’s Splendid Deception, p28.
100 Rick Spalsbury, Oklahoma City. Silver, Polio Voices, p67.
101 Interview C. Smith, ‘Fear, Frustration and the Will to Overcome’, p406.
stabbing me in the back ... those were things I found very hard to handle. I couldn’t understand why he would do that to me,[his mother].

When her son was discharged from hospital in Western Australia, another mother was told by doctors that it ‘was up to her if he ever walked again.’ Every day she had to give her son:

Five hours of exercises, and I had to go back to Princess Margaret [Hospital] three times a week to see the physios there ... we didn’t see friends, we didn’t go out ... our complete life changed.

According to Barbara, her mother ‘never coped with the fact I had polio — she was embarrassed.’ The fourteen-year-old Victorian remembered going home for the weekend in a long pram with the Double Thomas splint.

My father took me out in the pram, my mother wouldn’t come. She tried to get me into a nursing home as she didn’t want to look after me at home, but I was too young. She always referred to me as ‘my other daughter’ but only when she had to refer to me at all. I lost my name when I got polio. She would always walk several paces ahead of me if we were out and tell me to hurry up. When I turned sixteen, my mother wanted me to look for a job, saying that I could not expect them to keep me.

Disabled young women were often stigmatised as being unsuitable for a future role as wife and mother. When Valda was growing up her mother told her: ‘Always stand with your back to the wall, it’s crooked and no one will ever want to marry you.’ And, when she turned twenty-one, her parents gave her ‘a sapphire ring and told me ‘no man will ever want you ... you’ve got a crooked body.” June had been preparing for her wedding to another young Victorian when she suddenly found herself confined to an iron lung. After five years in Fairfield Hospital, she told her fiancé to:

102 Interview A. Ibid.
103 Interview A. Ibid.
104 Watson, ‘Polio Story.’
Go out and find someone else who had some future ... it was a good thing that it happened six months before the wedding and not six months after. His parents stuck by me ... lovely people but dead now."106

June Middleton remains [2009] in her iron lung at the Yooralla Ventilator Support Service in Melbourne, where she holds the Guinness World Record for the person who has survived for the longest time in a respirator. June believes that 'she has lived a happy and positive life', and that 'it doesn't pay to be miserable.'107 She has no movement in her limbs apart from her little finger, but can 'type a reasonable letter in two hours ...it gives you some independence.' An only child, she remembered her father coming to visit her in Fairfield Hospital, 'three times a week by public transport until he was well into his 90s.' In the United States, a young wife wrote about how her marriage had been adversely affected by her disability.

I had been married a little over seven months when I was stricken in 1939 ... not a very promising future for my husband, and in the past few months he has sort of given up on me. I can walk by myself on the level but it takes very little to throw me off balance and down I go. I have to wear a steel back brace which has two steel bars the length of my back and one across the hips and a long leg brace on my right leg.'108

Society has placed great value on certain physical attributes such as sexual attractiveness and physical symmetry. Jean had been 'a pretty child', who had grown up accustomed to the 'admiration of her boy cousins.' Catching polio 'knocked out her high opinion of herself', and when she had left hospital and enrolled at Miami University, she discovered:

In this kind of culture, men like perfect women. They like their arms and legs to match. And that was quite a shock to me because I still thought of myself as quite a catch. Right away, you knew where you stood with men and it was just devastating.


107 'Melbourne woman has spent 60 years in iron lung.' Herald Sun, 5 April 2009.

108 Mrs A Duprey, Burlington VT to Sister Kenny, January 1943. National Foundation for Infantile Paralysis. MHS. Elizabeth Kenny papers, 143.E.10.4F.
And nobody ever talked to me about it, nobody ever said, 'This is what you should expect now.'

**Going home**

From the time they were admitted to isolation, most polio survivors dreamed about the day when they would hear the words — *You can go home* — and, although the majority would leave in braces, on crutches, or in wheelchairs, most were excited and happy at the thought of leaving the hospital. The decision to send survivors home was generally made when medical staff decided that no further recovery in muscle power could be expected. Brian was discharged from Fairfield ‘in a Thomas splint and was wheeled around by his family on a modified pram.’ Louis was seven when he came home from Sale Hospital in Victoria, ‘with two calipers and two walking sticks as well as a brace for the spine … therapy was severe’. At night he was tucked into a splint spread-eagled and unable to move, with his hands and feet tied. In Melbourne in 1951, Marguerite was also discharged in a full Thomas splint, ‘totally confined so that all I could move were my hands.’ Her father ‘placed her in the family car on a plank of wood that went from the back seat to the front.’

Another boy had to continue sleeping in his Thomas splint, but sometimes he could convince his brother ‘to untie the straps for me and he could escape.’ When twenty-two-year-old Una went home from Fairfield Hospital in 1950, she wore:

*A brace with steel bars with calipers on my legs and on crutches. I couldn’t do anything. If I let go of the crutches I’d fall. It was better when I got the wheelchair, and I’d carry the kids and the shopping on the chair back to the house.*

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111 Thomas, *A Story to Break the Silence*.

112 Interview Una White by Barbara Rossal-Wynne, Fairfield Hospital Archives.
Adults were often understandably apprehensive about returning to a world they had known as a physically different person. Society in the mid-twentieth century expected the disabled to adjust to their altered physical state, and made few concessions. Buildings and public transport were largely inaccessible. Some children were very anxious about leaving the confines of the hospital walls. Many had never known another life, and looked upon ward staff as their family. Five-year-old George ‘met his brothers and sisters for the first time’ when he went home. Cindy admitted that she ‘should have been happy but I was terrified about going home because the hospital and the other children there were my family. I had forgotten who my real family were.’ Some never thought of themselves as having a normal childhood because they spent so much time in hospital.

Then I went home. Boy, was that weird. I had hardly seen my family for years and suddenly I was supposed to be part of them again. I really didn’t know how to handle it, and I don’t think they did either.114

Other children felt that they settled back fairly easily into family life, learning to play again with siblings and neighbourhood children, although not able ‘to do everything they did.’ One boy ‘managed to ride my bike again, but I kept falling off, and climbing in the backyard was really hard.’115 Reflecting on his post-polio life, a Western Australian interviewed by John Smith observed:

I never had the chance to play team games, and I think I missed out on a lot in learning the ethos of a team. I never learned to share victory and defeat in team sports that other boys of my age would have had. I think that was the biggest loss.116

The financial burden on families did not end with the return of the survivor. Homes had to be altered, physical barriers erected or removed, and arrangements

113 George Durr, Silver, Polio Voices; Cindy Bernstein, ‘Mazzy Meets the Dragon’, no. 3, Personal Polio Stories, (Kensington: Post-Polio Network (NSW) Inc.)
114 Thomas, A Story to Break the Silence.
115 Ibid.
116 Interview D. Smith, ‘Fear, Frustration and the Will to Overcome.’
made for after-care therapy. Hazel went home in 1952, to Narrandera, NSW and her three children under five years, 'strapped to an aeroplane splint for fifteen months ... it was somewhat like a horses' harness.' The family had no 'home care or financial help' and the young mother had 'two paralysed hands, as well as her left arm.' They employed a girl to help around the house but dismissed her after coming home to find their baby 'covered in bruises from ill-treatment.' If at all possible, the extended family helped out with care of the disabled child. Marguerite's grandmother would take her for walks around Melbourne:

On a long flat pram bandaged in the Thomas splint. She wheeled me along streets where houses were being built, and we used to pause by an old hedge which was full of singing birds. Nan had the thoughtfulness to buy me a pair of sunglasses because she said I was looking at the sky all the time. I remember them well, they had white plastic frames. Another time she took me across the road to a huge paddock. It was full of bright yellow daisies and she made daisy chains for my head and neck. The perfume was potent and life giving. I remember these as happy times.

In Melbourne, the Children's Hospital accepted the responsibility of providing outpatient after-care for all children under the age of fourteen if they could pass a stringent means test. The medical profession was opposed to admitting anyone to a public hospital who could afford to pay private fees. Private physiotherapists treated those who could afford to pay for the treatment (10/6 per visit) three times a week for several months or years. For those who could not afford to pay a physiotherapist or who failed the means test, the Department of Health paid a panel of therapists to provide orthodox treatment for cases approved by the Consultative Council on Poliomyelitis. The Council was set up in Melbourne in 1945 to provide physiotherapists, accommodation, transport of patients and the necessary treatment for the after-care of polio patients in Victoria, and it subsequently provided after-

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117 H. Atkinson, 'My Story', no 26, Personal Polio Stories (Kensington: Post-Polio Network (NSW) Inc.).

118 Swann, 'Polio Story.'
Dr Jean Macnamara was convenor of the Splint Subcommittee of the Council and the only treatment method sanctioned was the immobilisation treatment that she endorsed. In 1947 the Council announced that the 'prompt provision of splints' was an essential part of its treatment program, and believed it was an 'urgent' matter that the inventory of splints be increased because of the likelihood of another epidemic of polio in Victoria.

A Craft Centre under the supervision of the Children's Hospital was organised at Frankston and 'every effort was made to find employment' for the older polio survivor. At Christmas, a group known as the 'Polio Aunts' organised gifts for paralysed children living at home. Not only dolls and books, but also practical donations like 'mattresses for long prams, pillows, blankets, hot water bags and swivel mirrors so that little patients lying on their backs could see what was going on around them.' One suspects that the children would rather have been given a toy.

In South Australia, one full-time physiotherapist was appointed by the Crippled Children's Association 'to organise and service all country clinics' and itinerant services for Adelaide were begun in 1951 by each of the hospitals. The workload of those dedicated practitioners must have been arduous. In Victoria, Wards 9 and 10 at Fairfield Hospital were set aside for the after-care of longer-term patients but not for 'hopeless cripples,' and the Red Cross declared it was willing to help with older polio cases who did not require heavy nursing. It had been intended that Victorian country children would be given care at hospitals with a physiotherapist

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119 Royal Park (68), Queenscliff (68), Forest Hills, Caulfield (50) and Shennington. Consultative Council on Poliomyelitis. Public Records Office Victoria, Melbourne. General Correspondence Files, VPRS 6345 P0000/327/279.

120 The Council voted to grant a yearly sum of £1500 to the Royal Melbourne Hospital to improve the capacity of its splint workshop. The cost of the splints was divided equally between the hospital, the patient and the Hospitals and Charities Commission. Splint Production October 1947–August 1970. PRO Victoria. Consultative Council on Poliomyelitis, VPRS 6345, P0000/392/824.

121 Norris, The Society, pp45–47.

122 Bentley, Dunstan, and Association, The Path to Professionalism, p104.
on the staff, but that rarely eventuated because the overworked therapist was so busy with treating other general patients that there was 'very little time' to attend to the needs of the polio cases. More physiotherapists were needed in country areas, but it had proved 'very difficult' to induce them to leave the city to work in country hospitals. In 1949 there remained large areas in Victoria where no adequate after-care was available for the paralysed child, adolescent or adult.

The power of orthodox medicine lies in its potential ability to return a person to full health, but that model often fails when confronted with chronic illness. Some parents recognised that fact and decided not to use the after-care provided by authorities but instead to seek out alternative healers to help their child. Some of the treatments used were bizarre. In Hobart, some children were taken to the Tattersalls Hotel where the 'Wrestlers, Fouché and Felice' 'threw you around like rag dolls.' In Victoria, Val Heath's parents took her home after 40 months in Fairfield Hospital and arranged for a so-called 'Kenny-trained nurse' to treat her:

	twice a week on the kitchen table where my naked body was slapped with the outside leaves of lettuce (for the iron content) and then she would rub my back, legs and arms with dugong oil, which was very hard to get in wartime Melbourne. I smelled like a fish. Then she would put me in a bath and hose me with cold water ... I hated that woman.

Neville was more fortunate. His parents took him to an osteopath who manipulated his spine and instructed his mother on how to massage him following a 'hot sea bath.' Louis also went to an osteopath who worked on his spine, and told him to wear his leg caliper on alternate days because daily use would 'further weaken'

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123 Ballarat, Geelong, Mooroopna, Mildura, Horsham, Hamilton, and Bendigo. VPRS 6345.
124 Ibid.
125 Ibid.
127 Sister Vera Andrews. Interview Valda Millie Heath, Fairfield Hospital Archives.
his leg.\textsuperscript{128} In Australia, the BMA took a very dim view of medical practitioners who took up the practice of homeopathy. It excluded them from membership until 1916, and forbade its members from consulting with alternative therapists.\textsuperscript{129} When Louis’ specialist discovered that he was seeing an osteopath, he ‘threatened to have nothing to do with him’ if he continued with the alternative therapy.

\textit{Surgery}

Fortunately, polio paralysis resolved in most patients, generally within six to eight months; but many underwent surgical intervention to repair damaged tendons, or a spinal fusion to correct a curved spine. Valda Heath’s memories of that experience were chilling.

Every year from the age of eleven till eighteen, I used to go to St Andrews Hospital [East Melbourne] and there I would be hung by the chin from the roof with my hands on a nurse’s shoulder till my feet were just off the ground … that would get my back reasonably straight, and then they would slap Plaster of Paris around … I was naked and I hated it … then they would cut the plaster off and make a celluloid model with laces down the front … every time I breathed the laces squeaked so I was conscious of it … I had a very poor image of myself.\textsuperscript{130}

When she was eighteen,\textsuperscript{131} Dr Eric Price told her ‘now that you have finished growing, we’ll fix your back.’ Valda woke from the anaesthetic to find she was ‘in plaster down to my knees.’ Soon after:

\begin{quote}
They cut a hole in the plaster at the back and put in a turn buckle … it became a torture rack … don’t think I have ever gone through such pain … every morning the doctor would turn the screw, and as he turned it I twisted and stretched … the pain was shocking … after four months I had stretched six inches and my spine was pretty good … so then they operated and cut some bone from my left shin and put it down
\end{quote}

\textsuperscript{128} Alice Farnham, an American osteopath in Melbourne. Pruscino, ‘Polio Story.’

\textsuperscript{129} E. Willis, ‘Sister Elizabeth Kenny and the Evolution of the Occupational Division of Labour in Health Care,’ \textit{Australian and New Zealand Journal of Sociology}, vol. 15, no. 3 (1979), pp30–38.

\textsuperscript{130} From 1945 till 1952. Interview Valda Millie Heath, Fairfield Hospital Archives.

\textsuperscript{131} In 1952.
one side of my spine. I thought that was it, but then three weeks later they did the other side. I was happy in hospital though.\textsuperscript{132}

Gareth’s leg was treated at the Children’s Hospital in Melbourne in the mid-1950s. His mother told how surgeons:

wanted to slow down the growth of his good leg, so they smashed the bones in it, so the other leg could catch up. He had a built up boot all the years he was at school.\textsuperscript{133}

Stories of pain, both before and after surgery, were common, especially where contracted muscles had to be stretched before corrective surgery or where curvature of the spine was straightened before spinal fusion. The experience of survivors worldwide was consistent. In the United States:

Many surgeons used casting to straighten the spine prior to surgery. Some patients were ‘hung’ or ‘lynched’ … a strap around your neck and head pulled you up as you stood so that your feet were barely touching the ground or some platform and then the cast was applied. This process could take some time before all the plaster had dried sufficiently to maintain the stretched spine.\textsuperscript{134}

In 1957, Gary was admitted to St George Hospital in Sydney to have his spine fused. Once he was settled into bed, Gary was then:

harnessed in a steel frame with weights on each end … to stretch me. That session on the rack lasted three months before the doctor realised that I hadn’t stopped growing, so sent me home.’

For the next two years, Gary had to wear a full plaster cast from his neck to his hips which he found was ‘agony in summer’ especially when the cast became ‘soaked with perspiration and I couldn’t scratch the unbearable itchiness.’ His cast was changed every six months by suspending him ‘from the ceiling by a support under my neck … once it was removed you couldn’t get too close to it as it was really

\textsuperscript{132} Ibid.

\textsuperscript{133} Una White. Fairfield Hospital Archives.

\textsuperscript{134} D.J. Wilson, ‘Going Home to a Long Recovery,’ in Living with Polio, p159.
Polio survivors overseas also remembered the body cast as an ‘awful experience’ and the ‘terrible itching’ and ‘sores that developed’ where the edge of the cast rubbed on bare skin. Many added that they did not feel any better after the surgery, sometimes they ‘felt worse.’

**Back to school**

After negotiating the emotional upheaval associated with returning home, the next big hurdle for polio survivors was assimilation into wider society. For children, that meant either returning to the school they had previously attended, or enrolment in a special school for the physically disabled. Survivors had to become accustomed to the stares and comments of the general public — ‘when you have a physical disability you become used to people looking at you with a mixture of sympathy and disgust.’ Other schoolchildren could be particularly cruel and insensitive. One girl recalled:

School was torture, I was left by myself in the class-room at recess. Sometimes the teacher would ask some of the children to play with me at recess — but they would run off as soon as she was gone. Later, when I was in the schoolyard the other children would make fun of me if I tried to join in. They would imitate my ‘funny walk’ and would smack me and laugh if I tried to run after them. I could never use the toilets because some of the older children would gang around the entrance and say, ‘You’re too ugly to come in here.’

A boy remembered:

I used to get teased a lot at school because I had a caliper on my right leg ... got called names like ‘Football boots’ or ‘Limpy’ or ‘Hopalong Cassidy.’

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135 Buchanan, ‘I Used to Jump Puddles.’
137 J. Marguerite Swan, ‘Polio Story.’
138 Interview D. Smith, ‘Fear, Frustration and the Will to Overcome.’
In contrast to the cruelty of some of their peers, older school children were sometimes protective. 'One day I got into a fist fight with a boy and someone rushed up and said, 'Cut it out John, don’t hit him, he’s a polio sufferer.' Even getting to school was an ordeal — Pauline recalled how her ‘brother and sister had to push me in the long pram up the hill every morning.’ Her desire to go to school in Traralgon, Victoria with her brothers and sisters was so strong that several times she ‘crawled across the highway in her calipers, but the police always got me at the Caltex service station’ and took her home. She couldn’t understand why the school would not allow her to attend: ‘it was my legs that didn’t work, not my brain.’ Some girls desperately wanted to look ‘the same as everybody else’ and hated ‘being different, forced to wear warm socks and leggings to keep the polio bits warm.’

Adults went back to their previous workplace if they were lucky, or tried to find new employment. Mothers went home to their families and tried to ‘act normal … the tears I shed trying to get the washing done, trying to cook the meals, trying to do those things for children, I pushed myself to prove I was able to do it … until I cracked up.’ Marguerite Swann recalled the joy she felt when, years after contracting polio, she:

> gave birth in turn to five healthy little babies who grew freely and energetically towards adulthood. I found something miraculous and healing in bringing forth those perfect little bodies from my own imperfect one.

Many children and adults who had experienced grief and trauma when separated from family found themselves in a similar set of circumstances when they were released from hospital. Friendships forged over months and years were abruptly

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139 Ibid.


141 Interview H. Smith, ‘Fear, Frustration and the Will to Overcome.’

142 Swann, ‘Polio Story.’
terminated, and many polio patients missed the warmth and companionship of the polio convalescent ward where everyone had faced the same difficulties and challenges. When they went home, some felt alienated from family and friends, when all they really wanted was to fit in, and to be accepted as they were — the same person inside as they had always been. It was just the outside bits that had been irrevocably altered by their confrontation with the poliovirus.
Conclusion

In March 2007, a 22-year-old Pakistani studying in Australia returned to his home for a holiday. While in Pakistan he became ill with nausea and flu-like symptoms, and noticed some weakness in one of his legs. Despite not feeling well, he boarded Thai Airways flight TG999 and arrived back in Melbourne via Bangkok on 2nd July. The following day he felt increasing pain and weakness in his lower limbs and was admitted to Box Hill hospital in eastern Melbourne on 6 July. Initially, polio was not suspected because of his age and the fact that he had received three doses of Sabin vaccine as a child, but he had not received a booster polio vaccination before travelling to his homeland where polio is endemic. Polio was diagnosed after a MRI scan revealed classic changes of the disease in the anterior horn region of his spinal cord, and the patient was isolated and moved to a single room. Half the passengers on flight TG999 have been traced and given booster shots of polio vaccine, but over one hundred could not be contacted. Those airline passengers have indeed been fortunate, for the student on board with them was infectious, and spreading wild poliovirus.

The impact of medical science in the first half of the twentieth century was prodigious; diphtheria immunisation with toxoid in the 1920s, sulphonamides in 1933, and antimalarials and penicillin in the 1940s. The discovery in 1952 of Magnetic Resonance Imaging.  

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1 Magnetic Resonance Imaging.
3 The poliovirus can live in the human body for weeks: it is a truly transnational disease. R.L. Bruno, ‘Thanks to One Unvaccinated Student, Australia Has Its First Case of Polio in 21 Years,’ New Mobility October 2007, p8.
that there was a transient, viraemic stage when the poliovirus was present in the circulating bloodstream signalled to scientists that development of a vaccine was possible. From 1911 to 1963, 30,977 cases of paralytic polio were notified to public health authorities in Australia. Experts have calculated that the ratio of carriers or asymptomatic cases of polio to those who developed paralytic polio varies between 100:1 to 1000:1. Extrapolating this to 1951 (Australia’s worst year for polio) when 4940 cases of paralytic polio were notified to authorities, means that, in a population of approximately 8 million Australians, there would have been at least 494,000 carriers of poliovirus.

The introduction of the Salk polio vaccine in Australia in 1956 led to a dramatic reduction in the number of people with the disease and, between them, the Salk and Sabin vaccines have eliminated polio caused by wild poliovirus, which no longer circulates within the Australian population. The story that had begun with the isolation of the poliovirus by Landsteiner and Popper in 1908 was expected to conclude with the global eradication of polio in the year 2000. Unfortunately, although the Western Hemisphere was certified free of wild poliovirus in the late 1980s, the virus remains endemic in areas of South Asia and Sub-Saharan Africa. It is imperative that high levels of immunity within the population be maintained by vaccination with the inactivated polio vaccine (IPV), because it is impossible to eliminate wild poliovirus importation, especially by ‘carrier’ or asymptomatic members of the population. Vaccination of infants and children is the only way to establish and maintain population immunity against polio. Because polio has been

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4 See Table 2, Chapter 1, this thesis.
5 <www.cdc.gov/mmwrhtml.htm>
7 The last Australian case of polio caused by wild poliovirus was in 1977.
8 The half of the globe that includes the Americas.
9 The two most recent outbreaks of polio in the United States were amongst members of religious

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eliminated in many Western countries, many in the population have become blase about immunisation, evidenced by an increasing number of parents who choose not to have themselves or their children vaccinated against polio and other diseases.10

Australians no longer have first-hand experience of polio, and some in the community now focus on the alleged dangers of the vaccines themselves rather than on the diseases they prevent. Periodically, the anti-vaccinationists gain centre-stage in the media and their often misinformed views reach a wide selection of the community. The problem is viewed so seriously that authorities in Belgium recently fined and jailed two sets of parents for failing to vaccinate their children against polio.11 Scare campaigns can have lasting effects.12 Whooping cough vaccination was halted in Japan in the mid-1970s because of 'public concerns over adverse neurological effects' and, in 1979, an epidemic appeared with over 13,000 cases reported, and 41 deaths. Likewise, preventing an outbreak of epidemic polio depends on maintaining a high level of immunity within the population. If that level drops, then the threat of an outbreak from importation of wild poliovirus becomes a distinct possibility.13 In Nigeria in 2003, vaccinations with Sabin vaccine came to a halt when government officials claimed that the vaccine was a

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groups who object to vaccination. Inactivated Poliovirus (IPV) is advised for routine polio vaccination in countries where the wild poliovirus has been eliminated but Oral Poliovirus (OPV) remains the vaccine of choice for mass vaccination to control polio outbreaks because it produces a higher initial level of antibody, and shedding of the attenuated virus in faecal matter improves overall community protection.

10 The Australian Childhood Immunisation Register (Immunisation Register) was developed in 'response to a decline in childhood immunisation in Australia and the alarming increase in preventable childhood diseases.' Australian Government and Medicare Australia, "Immunisation Register," <http://www1.hic.gov.au/general/acircirgacir>


13 A NSW Public Health report concluded in 2003 that although there had been an improvement in immunization coverage, in an area in northern NSW around Lismore and Byron Bay the level of conscientious objection to immunisation was high enough to allow outbreaks of disease (eg measles) to occur. B. Hull and P. McIntyre, 'Mapping Immunisation Coverage and Conscientious Objectors to Immunisation in NSW,' NSW Public Health Bulletin 2003.
‘Western plot to sterilise Muslims’ and, as a consequence, an epidemic of polio erupted within Nigeria and spread rapidly into neighbouring countries.\(^\text{14}\)

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<th>Country</th>
<th>Year-to-date 2009</th>
<th>Year-to-date 2008</th>
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Many years passed before scientists discovered the mode of transmission of polio. However, the epidemiological pattern was complex, and communication with other researchers working in the same field was slow. Today, we live in a world of rapid communication and exchange of ideas, along with unparalleled access to information. It is difficult to imagine a time when important discoveries or clues to the mode of transmission of the poliovirus could lie hidden on a researcher’s desk or

locked away in a filing cabinet, or of a period when postal services were frustratingly slow, and letters and items were often lost or misplaced. An age when libraries used card catalogues that had to be painstakingly flicked through, the checking of cross-references and bibliographic details for papers was tedious and time consuming, and scientific and medical journals containing published results from other workers in the polio field took many weeks to cross back and forth to Australia. In 1948, epidemiologists continued to remain sceptical about their ability to state exactly how the poliovirus was transmitted from person to person, but believed they had narrowed it down to three possibilities: that polio spread by direct contact between people, by faecal contamination of food, milk or water, or by insects.\(^{15}\) Five years later, the epidemiology of polio was clearer, and scientists had concluded that the disease spread from person to person through traces of faecal contamination remaining on hands or fingers. They were also aware that countries with higher standards of living and hygiene were experiencing epidemics of increasing frequency and severity, and that the age incidence of the disease had altered from one that affected mainly children under five years, to older age groups.\(^{16}\)

Polio was indeed the most feared of the childhood diseases. The unpredictability of the epidemic outbreaks, the suddenness with which the disease struck, the severe and painful symptoms, and the possibility of long-lasting paralysis and disability increased levels of anxiety within communities, particularly among parents. Thousands died in the worldwide polio epidemics, and thousands more were left with permanent paralysis. It is difficult to estimate the recovery rate of those paralysed with the virus but, in the United States, Donald Neumann proposed:


Roughly 10% to 40% of persons recovered full muscle strength; the remaining 60% to 90% were left with varying degrees of residual paralysis, typically ranging from near total paralysis and subsequent death to only isolated paralysis of selected muscles.\textsuperscript{17}

The student from Pakistan was fortunate, his exposure to the poliovirus left him with no paralysis, possibly because he had retained some level of immunity from his vaccination with Sabin as a child. If he had suffered respiratory paralysis, then the treatment would have been exactly the same as 40 years ago, he would have been placed in a respirator. There remains no cure for polio. However, the polio epidemics of the twentieth century have led to improvements in rehabilitative medicine and in the care of the acutely ill patient suffering from respiratory distress. Iron lungs have evolved into smaller, more efficient ventilation devices, and biochemists have developed diagnostic tests to monitor potentially life-threatening changes in body chemistry levels.

Traditional orthopaedic treatment for those affected by polio in the 1930s and 40s recommended bed rest with the muscles kept in a neutral position, 'a point midway between the extremes of movement' by the use of extensive splinting.\textsuperscript{18} Treatment in Australia up to the mid-1950s remained very conservative, with a period of immobilisation of 'two to six months for mild cases, and up to twenty-two months for the more severe ones.'\textsuperscript{19} Dr Jean Macnamara\textsuperscript{20} of Victoria was acknowledged as the authority on polio treatment in this country, and she was convinced that maintaining orthodox treatment was the only way to prevent deformities developing. Adults were to be kept in the 'optimum posture position'


\textsuperscript{18} W. Kent Hughes, 'Letter to Editor,' \textit{Medical Journal of Australia} vol.2, no. 18 March 1939.

\textsuperscript{19} E. Casely, 'Physiotherapy in South Australia,' \textit{The Australian Journal of Physiotherapy} vol. 1, no. 4 (1955), pp 164-69.

\textsuperscript{20} She was made a Dame of the British Empire in the King's Birthday Honours list in 1935 in recognition of her orthopaedic work with crippled children.
by plaster of Paris splints, wood or wire outlines and she believed that the natural activity of children was better 'controlled' or 'rationed' by the double Thomas splint. Uppermost in her mind were two factors. The first was the need to rescue children from entering the 'cripple factory' by treating childhood 'chassis' problems like knock knees, flat feet and curved backs with corrective splints. Secondly, she believed that 'the salvage of the potential cripple' would be expedited if:

the physiotherapist, a technician in conservative and preventive orthopaedics, acted as a pilot or instructor in details of the regime, steering her patient from deformity, guiding him and his parents in a way to help him to grow up straight and tall.  

Macnamara believed that the American surgeon Robert Lovett had been correct when he published his views in 1917 about the treatment of polio, and that his judgement remained valid thirty years later.

The number of cases in which recovery is to be obtained is very greatly extended by keeping the patients from walking during the first year, and in many cases during the second year.  

Not all agreed with her. In 1946 she censured her former colleague Macfarlane Burnet for his attitude of 'apathy and hopelessness' after he wrote:

Maybe we shall have to recognize the possibility of infantile paralysis as one of the normal perils of childhood — one, by the way, which is far less important in regard to loss of life and permanent crippling than the chance of a road accident.  

Sister Elizabeth Kenny challenged rehabilitation orthodoxy and taught that treatment should be introduced during the acute phase of polio, and that splinting was to be avoided. She believed that the practice of immobilising muscles increased


contractures and paralysis by ‘alienating’ or isolating muscles from the thought process. In other words, Kenny maintained that if a patient could neither feel a limb, nor see it, they would forget about it and how to move it. In her later years, Kenny refused to draw a distinction between her treatment method and her theory of the aetiology of polio. Kenny maintained that flaccid muscles were normal and that those affected by the poliovirus experienced spasm which caused them to shorten and pull the affected limb or part into an unnatural and deformed position. For Kenny, acceptance of her treatment had to signal acceptance of her theory, and she refused to accede to the requests of many of her supporters that she distinguish between the two.

It is difficult to evaluate how widespread the use of the Kenny treatment became in the United States because of the relationship and interaction between the conflicting principles of treatment. Many hospitals incorporated selected aspects of the Kenny treatment — for example, the use of hotpacks in the early, acute phase of the disease, but rejected others. Some used modified splinting, but never to the extent of the full body plaster cases of the 1930s. In 1947, the Medical Director of the National Foundation for Infantile Paralysis, Dr Hart van Riper, set out on an extensive tour of the United States to visit towns and cities where polio outbreaks had occurred. Van Riper reported that he ‘did not see the “orthodox” or immobilisation technique used anywhere I went,’ but added that in many cases ‘the treatment was not called the Kenny treatment’ because it had been modified in small ways by the doctor who prescribed it. However, by the early 1950s, most therapists and treatment centres

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24 A recent program (21 May 2009) on ABC television’s ‘Catalyst’ appeared to support Kenny’s theory. Researchers postulate that ‘our brains are born with a basic map of a four limbed body outline, and that the map needs constant updating from the senses … touch … vision … joint position. These send a live feed to a part of the brain known as the right parietal lobule – which integrates the feeds, and updates the body map.’ http://www.abc.net.au/catalyst/stories/2576978.htm Accessed 25 May 2009.

in the United States had adopted the major principles of her treatment even if they disagreed with her theory of causation.

Italy ceased the use of plaster casts in 1940 and, in France, patients were supported in bed by sandbags. In 1952, Dr Douglas Galbraith of Victoria declared that he ‘deplored the previous custom of confining a child to a frame for long periods’ and that, in his opinion, such immobilisation produced not only ‘deformities of the body but also of the mind.’ By 1954, Canada, New Zealand, Scandinavia and the United States of America used either Kenny or a combination of both forms of treatment. In 1954, Professor Zanoli summed up the present position on polio treatment.

Moist heat as used in the method employed by Sister Kenny should be started in the acute, febrile stage and before any passive exercise is commenced. Because contractures occur very early, it is necessary to commence passive movements of limbs four or five days after the onset of the disease. Patients should not be immobilized but supported in bed by sandbags or similar and their position should be changed frequently throughout the day including lying prone in an anterior or posterior position.

Despite this, Australia, Brazil and Puerto Rico continued to immobilise patients with polio, a treatment that was later described in the Journal of the American Medical Association as ‘an abuse of rest.’ Not one patient in the 1937–38 epidemic in Australia was treated with hotpacks in the acute stage of the disease and, even as late as 1954, medical practitioners continued to advocate complete bed rest.

All active or passive muscular movement should not only be avoided but forbidden for up to six weeks, and the patient not allowed to lift even a finger to do anything for himself. This must be stressed on patients, sisters and nurses. Morphia,

phenobarbital, potassium bromide, or chloral should be given — if necessary all of them, or combinations of the same for up to six weeks.\textsuperscript{29}

In 1993, the American orthopaedic surgeon Leonard Peltier concluded that Kenny’s method of treatment remained, ‘the best available today.’\textsuperscript{30}

The transformation of Australian society by the influx of postwar immigrants, the counterculture movements of the 1960s and resistance to all forms of authority including medical, introduced Australians to alternative health therapies. As Martyr has argued, the medical profession had frequently stereotyped ‘perfectly good healers as “quacks” within a thinly disguised aim of “protecting the public” while actively moving to protect their own sphere of power and influence.’\textsuperscript{31} By the 1980s, a visit to the acupuncturist, chiropractor, osteopath or herbal or Chinese medicine provider was no longer viewed as unusual, and bolstered confidence in other members of the population to reject the view of those who advocated Western medicine as the only option. Today, many orthodox-trained medical practitioners are not opposed to alternative medicine, rather they are sympathetic and receptive to developing a discourse about the two forms of therapy, and appreciate the potential for the combined use of the two forms of healing. Patients themselves have done much to initiate the process because of their choice to seek advice and care from both orthodox and non-orthodox medicine.

Some thirty to forty years after they first contracted polio, some survivors have experienced muscle pain and increasing weakness of previously paralysed limbs. The condition, known as post-polio syndrome (PPS), appears more common in females than males, and affects many of those who had residual paralysis. Many


have had to be refitted for braces, or use a cane for walking, some have had to resort
to using a wheelchair again, or a motorised scooter. The sheer numbers of polio
survivors requiring braces or crutches, or who are dependent on wheelchairs, has
couraged the development of lighter, more effective and manoeuvrable devices.
New rehabilitation techniques have evolved to strengthen muscles and restore
function. Two of the major changes over the past seventy years have been society’s
more enlightened attitude to the disabled, and the social class of those affected by
the disease. The polio survivor today is more likely to be black, poor and socially
disadvantaged, whereas in the twentieth century they were overwhelmingly Western,
white and middle-class.

During the polio epidemics, the entrenched political and cultural power of
organised, orthodox medicine denied Australian citizens the right to choose how
their paralysed bodies were treated. There were good people on both sides of the
debate of how best to treat the body paralysed by the poliovirus. They happened
to believe different things, and some of them made mistakes. In the end both the
advocates of new methods and those who opposed them conceded some ground.
Unfortunately for Australian polio survivors, that conciliatory approach happened
later than in most other countries.
Bibliography

Primary Sources

Australia

Archives Office of Tasmania, Hobart
Office of the Minister for Health, Semi-Private Correspondence, Reports and Addresses TA406, HSD23/1/1

Fairfield Hospital Archives, Austin Hospital, Melbourne

Interviews of former patients conducted by Barbara Rossal-Wynne, Archivist. Transcripts by Kerry Highley.

Lisbeth Anderson
Brian Caulfield
Les Corneille
Vern Draffin
Dr Frank Foster
Ron Gillam
Geoff Golding
Valda Millie Heath
Neville Hogan
Jack Irvine
Liz Jones
Garry Marr
June Middleton
Elaine Theodore and her parents, Mr and Mrs Parker
Edna Thilby
William Wesson
Una White
Maureen Wright

Printed archives
Record Book of Patients admitted, No. 32. 1937.
Report Book (No. 13) of the Medical Superintendent, Dr JV Scholes, 1937
Photographic material
Series 1. Correspondence 1923–1968

Personal correspondence to and from Jean Macnamara, Items 1–523

Items 7/5, 1/18d/79f, 1/23, 1/28, 1/36, 1/36b, 1/44, 1/41a, 11/55, 11/60, 1/1/310-373, 1/16e, 1/18d, 1/163b, 1/1/60, 1/16/17k, 1/120, 4/1

Hodge, L. Correspondence 1923–1968, MS 2399, 7/5

Stevenson, J., Letter to Jean Macnamara, 22 September, 1932. 1/111

Keogh, T., Letter from Thomas Keogh to Jean Macnamara, 11 November 1930, 7/5

Series 2. Personal papers, 1915–1962

Report to Dr WS Carter, Rockefeller Institute on her visit to the United States of America. 1/176d

Series 4. Newspaper Cuttings, 1933–1964

Items 1-4

Series 5. Pictorial material


23 October 1929
11 November 1930
18 November 1930
25 November 1930

Series 11. Notes for articles

Items 11/55, 11/60 and 11/63

Royal Children's Hospital

Collected Papers of the Royal Children's Hospital and Paediatric Society of Victoria, 1935–1960

Public Record Office Victoria (PROV), Melbourne

Charity, Relief and Health. Town Clerk's Correspondence Files VPRS 3183 P0000

Poliomyelitis Council of Victoria. Polio Papers. Minutes, Polio Committee. ID 65

Polio Campaigns 1930–1932. Minutes, Polio Committee. ID 69

Poliomyelitis Council of Victoria, 1930–1932. ID 70


Poliomyelitis, 1931–1938. ID 72

General Correspondence Files VPRS 6345 P0000

Training of physiotherapists, treatment of paralysis, 112/638/3

Accommodation and aftercare for cripples. 113/638/8

Lady Dugan and Red Cross Homes for cripples. 113/638/11

1949 epidemic. 113/638/11

Polio Campaigns 1930–1933, Consultative Council on Poliomyelitis. 327/279

265
Commonwealth/State relationship. 392/820
Cost of splints. 392/821
Jacket respirators 392/822
H/1 VPRS 8291 P0001
Poliomyelitis 1937-1939, 124/P/11.

State Library of New South Wales, Sydney

State Library of Queensland, Brisbane
John Oxley Library, Heritage Collections
Mary Kenny, Photographs and Papers. TR2931
Matron Barron, Letters on Sister Kenny, February 1934 to April 1935. TR1829/1/16

John Oxley Library, Manuscript Collection
Chuter, Charles Edward SLQ OM 65
Letters, Memorandums, Cuttings Relating to Sister Kenny, 1943–1945, 17/33
Letters and Cuttings Re Kenny Clinic 1933-1943, 17/34.
Memorandum, Circulars, Letters Etc Re Kenny Clinic. Treatment of Poliomyelitis at Queen Mary's Hospital for Children, Carshalton. 28/10/1937, 17/38.

State Library of Tasmania, Hobart
Tasmaniana Library, Heritage Collection
Parliamentary Papers, Tasmanian Society for the Care of Crippled Children.

University of Queensland, Brisbane
Fryer Library, Elizabeth Kenny Collection UQFL16
Correspondence Relating to Sister Kenny Foundation, 16/2
Correspondence, Incoming and Outgoing for the Period 1939-1951. Includes Correspondence between Hospital Superintendents and Others Concerning the Kenny Treatment and Management of the Kenny Clinics, 16/1/1
Correspondence, Incoming for the Period 1942-1947. Mainly Letters of Appreciation from Doctors and Others in the US and Canada Who Attended or Visited the Kenny Clinic in Minneapolis, Minnesota, 16/1/2

266
Kenny, E., Evidence Concerning My Seven Years Activities in the United States of America. Report Dated 14 October 1947 to Hon. E M Hanlon, MLA, Premier of Queensland, 16/1/3

Kenny, E., My Report on Conference with the Medical Profession in Fourteen Foreign Countries (1947), 1947, 16/1/4

Washburn, A., Letter to Elizabeth Kenny 22 October, 1942. 16/2

Mary McCracken Papers, 1934–2001, 16/4

Papers 1934-2001. Correspondence of Mary and Stewart McCracken, 16/4

Papers 1940-2000. Correspondence of Mary and Stewart McCracken, 16/5

Fryer Library, Rae W Dungan Collection UQFL 354

Letter to Dr Dungan from Sir Raphael Cilento, 11 May 1939, 354/1

Notes, Treatment of Patients in Acute Stage of Poliomyelitis, 354/1

Thesis Extracts and Letters from the Medical Journal of Australia, 1938, 354/3

Starr, K., A Report to the Minister for Health, NSW on Sister Kenny’s Method of Treatment of Infantile Paralysis. May 1939. 354/4

Various Correspondence Concerning Sister Kenny’s Treatment, 354/5/5

Letters and Reports from Sister Kenny to Various Correspondents, 354/6

Commonwealth Department of Health, Report of the Australian Conference of Crippled Children, 354/8

Dungan, R.W., Various Sets of Typewritten Notes Concerning Sister Kenny’s Work, Method, Procedures and Recommendations, 354/8

Notes and Letters from Dr Dungan’s Practice and Sister Kenny’s Reports to Dr Dungan, 354/9


Letters and Correspondence, 354/10

Reports to Various People Regarding Sister Kenny’s Work, 354/10

Letters and Correspondence, 354/12

Cilento, R., Report on the Muscle Re-Education Clinic, Townsville. 12/12/1934. 354/14

Foster, W. and Price, E., An Investigation of 23 Cases of Poliomyelitis Treated by the Kenny Method at the Children’s Hospital Hampton, Victoria, 1939. 354/15

University of Melbourne Archives, Melbourne


Murphy, Leonard J.T. 1984–1985. 91/114. Photocopy of Professor RJ Berry’s autobiography. Berry was the first Professor of Anatomy at the University of Melbourne, 1906–1929.

Canada

Library and Archives Canada, Ottawa

Record Group 29

Poliomyelitis. 1939/09-1961/07

Epidemiology: Diseases — Poliomyelitis — Infantile Paralysis (Polio) — Kenny Treatment 1939-1952

Epidemiology: Diseases — Poliomyelitis — Reference Material regarding poliomyelitis 1949-1953

Epidemiology: Diseases — Poliomyelitis — Reference Material regarding poliomyelitis 1937-1951

Epidemiology: Diseases — Poliomyelitis — Epidemics 1925-1952

Correspondence April 29, 1949 – October 17, 1949

United States of America

Franklin D Roosevelt Library, New York, NY

Franklin D Roosevelt: Papers as President, Official File, Sister Elizabeth Kenny Institute.

Papers as President, President’s Personal File, National Foundation for Infantile Paralysis, Basil O’Connor to FDR, 1 December 1944.

Papers as President, President’s Secretary’s File, Letters of support for Sister Elizabeth Kenny, National Foundation for Infantile Paralysis, February 1944 – 1945.

Minnesota Historical Society, St Paul, MN

Manuscript Collections, Elizabeth Kenny: an Inventory of her Papers. 1880-1952, MHS 143

MHS 143.E.10.3b Box 1

Personal correspondence and Related Papers, 1942-1951


Administration, Conference on Poliomyelitis (Minneapolis), 3-5 December, 1945.


Administration, Dayton, Donald C, 1944-1948.


Inventory: Journal Articles, Papers and Letters In ‘Kenny’s Brown Bag.’

Kenny Institute, Complimentary letters and Parents’ appreciation, undated and 1942-1949.

MHS 143.E.10.9b Box 7


Henry, James, Personal correspondence and related papers, 1942-1951.


Poliomyelitis (Article Reprints), Undated and 1941-1964.

Victor Cohn Papers, Sister Elizabeth Kenny Foundation Records, Elizabeth Kenny, correspondence, reports and other papers, undated and 1941-1951.

Victor Cohn Papers, Sister Elizabeth Kenny Foundation Records, Dr Frank H Krusen’s Elizabeth Kenny file, 1941-1944.

MHS 143.E.10.4f
National Foundation for Infantile Paralysis, Gudakunst, Dr Don W, 1941-1944.
Technicians, Kenny, Mary Stewart, 1942-1947.
Webber, Mrs Charles C, 1941-1945.

MHS 143.E.10.6f
Australia 1939-1952, Medical Personnel and Institutions, Box 4.
Medical Personnel and Institutions, Belgium, Curtis, Dorothy, 1946-1950.
Medical Personnel and Institutions, France 1948.
Medical Personnel and Institutions, Pakistan.
Medical Personnel and Institutions, Michigan, Calhoun, Dr Ethel T, 1942-1948.

MHS 146.K.8.5B.8
Newspaper and Magazine Articles Regarding Elizabeth Kenny, Australia Undated and 1940-1954.

MHS 146.K.8.6f Box 9
Victor Cohn's Elizabeth Kenny Research Notes, Transcriptions, Correspondence and Other Papers, Interviews and other sources, A-W, 1940-1970.
Brand, J., The History of the National Foundation for Infantile Paralysis, The Response to Developing Problems of Medical Care, 1940-46.
Victor Cohn's Elizabeth Kenny Research Notes, Transcriptions, Correspondence and Other Papers, Elizabeth Kenny letters, 1937-1952.
Victor Cohn's Elizabeth Kenny Research Notes, Transcriptions, Correspondence and Other Papers, Additional research correspondence, 1953-1974. Box 9.
Photographs of Elizabeth Kenny
Australia, undated and ca. 1890-1952
United States, 1940–1952

National Library of Medicine
Sophia Smith Collection, Smith College. Florence Rena Sabin Papers

Rockefeller Archive Center, Tarrytown, NY
Rockefeller Family Archives
Medical Interests/Polio. Keith Morgan, V.P, Georgia Warm Springs Foundation. RF2, RG 2/14/113.
Medical Interests/Polio. National Information Bureau. RF2, RG 2/14/114.
Rockefeller University Archives
Simon Flexner papers, American Philosophical Society (APS) Microfilm. Correspondence between
Simon Flexner and Jean Macnamara, 1929–1933. RU RG301.

**Rockefeller Foundation Archives**

Address by Dean Rusk, President, the Rockefeller Foundation, 1954. RF Series 200/37/303.

Australia Hall Institute 1933–1935. Apperly, F.L., 1.1 Projects, 410 Australia, 12 March 1922. RF RG1.1 410

Correspondence between Dr Kellaway and Dr Alan Gregg., 1934. RF RG 1.2, Series 410 Australia, Box 2, Folder 15.

Carter, W., 1.1 Projects, 410 Australia, 29 June 1923. RF RG1.1 410.


**Reports**


———, 'Year Book of the Commonwealth of Australia,' (Canberra: Commonwealth Bureau of


Department of Public Health Queensland, 'Annual Statement of Notifiable Diseases During Calendar Year,' Annual Report of the Commissioner of Public Health, (Brisbane: 1914).


Official reports


Journals, Newspapers and Magazine Articles

Journals

The American Journal of Nursing, 1900s to 1956.
The American Journal of the Care for Cripples, 1914.
Australasian Nurses’ Journal, 1900s to 1930s.
Australian Journal of Experimental Biology and Medical Science, 1939.
Journal of Educational Sociology, 1933.
Journal of Experimental Medicine, 1900s to 1930s.
Journal of Immunology, 1935.
Journal of the American Medical Association, 1944.
Journal of the History of Medicine, 1974.
Medical History, 1972.
Medical Journal of Australia, 1900s to 1960s.
Public Health, 1932.
Social History of Medicine, 2008.
Newspapers

Magazines or Newsletters
The Australian Women's Weekly

The Hammer: Newsletter of the Health and Medicine Museums

New Mobility
Bruno, R.L. 'Thanks to One Unvaccinated Student, Australia Has Its First Case of Polio in 21 Years.' October 2007.

NSW Public Health Bulletin
Hull, B. and McIntyre, P. 'Mapping Immunisation Coverage and Conscientious Objectors to Immunisation in NSW.' 2003, pp8-12.

Polio Perspectives
'Stories', edited by Mary-Ann Liethof, Collingwood: PolioNetwork, a service of Paraquad Victoria.
Corrigan, P. 'Polio Story', 2006, Ibid.
Heath, V.M. 'Polio Story', 2002, Ibid.
John Van Delft. 'Polio Story', 2006, Ibid.
Kosseck, M. 'Polio Story', 2006, Ibid.
Medlyn-White, L. 'Your Stories', 2005, Ibid.
Metter, B. 'Polio Story', 2006, Ibid.
Murray, E. 'Polio Story', 2002, Ibid.
Pruscino, L. 'Polio Story', 2006, Ibid.
Smythe, E. 'Polio Story', 2006, Ibid.
Watson, B. 'Polio Story', 2002, Ibid.

Post-Polio Network (NSW) Inc.,
Barnett, S. 'Baby Shirley Broadway'. No. 8, Ibid.
Bernstein, C. 'Mazzy Meets the Dragon'. No. 3, Ibid.

Buchanan, G. 'I Used to Jump Puddles'. No. 7, Ibid.

Ellis, L. 'Post-Polio Post'. Ibid.

Featherstone, P. 'Life's Good?' No. 4, Ibid.

Gaumond, J. 'Immunisation'. No. 6, Ibid.

Hasemer, M. 'A Working Holiday in London'. No. 9, Ibid.

O'Reilly, G. 'Post-Polio Post'. Ibid.

Solomon, P. 'Living in a Country Town'. No. 8, Ibid.


Conference Proceedings


Health Transition Workshop, Canberra, 1989.


Papers


Secondary Sources

Books


———. *Poliomyelitis: Findings in Investigations of Evidence Concerning Poliomyelitis, with Special Reference to the Kenny Concept of the Disease and Its Treatment from 1937 to 1947*. [Brisbane: s.n, 1948.


Richards, W. His Majesty's Territorial Army. London, 1911.


**Electronic sources**


**Film or broadcast**


**Journal articles**


283


Duffy, J., ‘Franklin Roosevelt: Ambiguous Symbol for Disabled Americans,’ *Midwest Quarterly* Vol. 284


———, 'Poliomyelitis,' *Medical Journal of Australia* Vol. 1, no. 7 (1918).


———, 'Treatment of Poliomyelitis During the Acute and Convalescent Phase,' Medical Journal of Australia Vol. II, no. 9 (1928).


Neumann, D.A., 'Polio: Its Impact on the People of the United States and the Emerging Profession

287


Webster, R., 'Anterior Poliomyelitis,' *Medical Journal of Australia* Vol. 1, no. 7 (1918).


Unpublished theses


Highley, K. 'For Want of a Cake of Soap and a Towel: A Study of Epidemic Poliomyelitis in Mid Twentieth Century Australia'. BA (Hons), Australian National University, 2004.


Smith, J.H. 'Fear, Frustration and the Will to Overcome: A Social History of Poliomyelitis in Western Australia'. PhD, Edith Cowan University, 1997.