Health

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The opening section of this discussion paper is organised in three parts: first, a discussion or the major demographic trends relating to mortality, morbidity, and fertility; second, health services; and third, the determinants of health. Some such separation of topics is unavoidable but the three are closely inter-related: it needs to be borne in mind that morbidity and mortality are the outcomes of health services *and* are determinants of health.[1] The paper will end with an overview of Health Services Now, Current Issues, and an Assessment of the Health System's performance.

Despite the fact that most official reports on health treat pharmacy and dentistry as unrelated to health, I have tried to take a broader view. Obtaining even simple data that would allow comparisons – such as the number of practitioners per 1000 population – has proved highly frustrating, so that the early intention of also including the 'alternative' sector[2] has had to be abandoned. Given that the law now requires GPs to advise patients of potentially relevant alternative treatments, this is to be regretted. [3]

Major Trends

Since the 1840s life expectancy has increased, averaging at a rate of around one month a year (half the most recent gains being due to decreased mortality in the over 70 year-old cohorts); morbidity has fallen, and in the case of some diseases virtually disappeared; and fertility rates, which started close to the biological maximum among Pakeha, have fallen sharply (1870-1939); risen sharply (1945-61); and since moved to hover around replacement.[4]

Age at first birth has increased from the 1980s but there is a polarity in age at first birth according to education and socioeconomic status (Figure 1).[5]

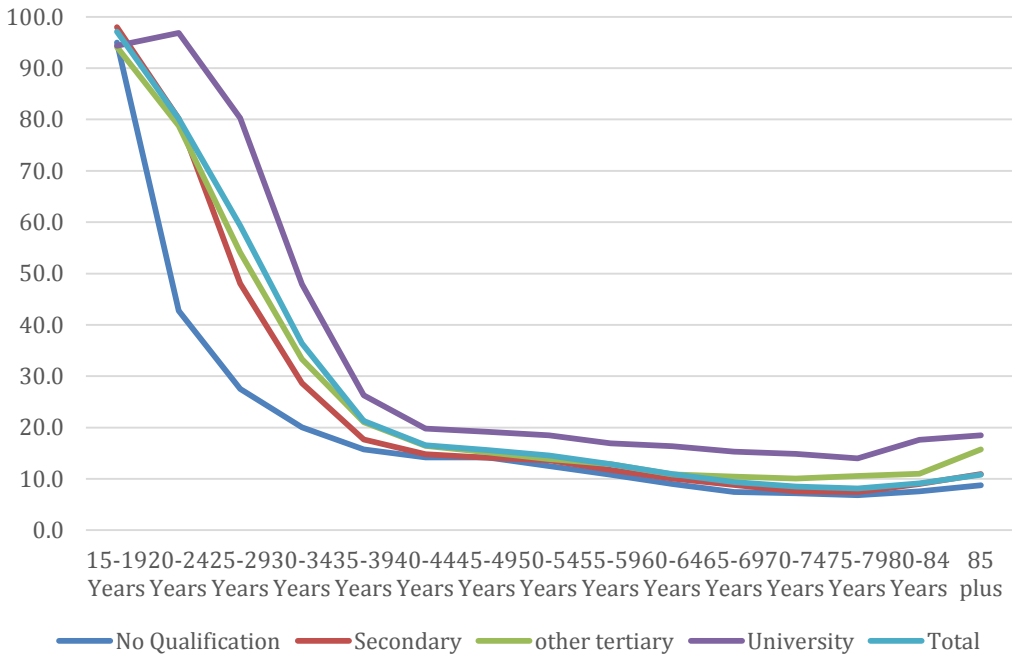

Figure 1: Percentage Childlessness for Educational Achievement Level by Age, Women Aged 15 Years and Over Resident in New Zealand. Source: Didham, R. (2015) Changing childlessness patterns in New Zealand. Paper presented at the Population Association of NZ Conference, Hamilton, June 2015

Whereas an increasing proportion of all women now postpone their first child until well into their thirties, and the proportion of births to teenage mothers has been falling, a high percentage of all first births still occur to young women within five years of leaving high school. Whereas the former group tend to be well educated, employed, with higher incomes and often in stable relationships, the latter group tend to be less well educated, unemployed or in unskilled casual employment, with low if any income (other than a benefit), and usually without any stable partnership. Given the international evidence, one would assume that most in the older group plan their pregnancies while most in the youngest cohort end up with unplanned pregnancies.[6]

We might also note in passing that the sharp decline in fertility (compared to 1945-75) also means that most adults have grown up in one or two-child families or households. Some observers believe that this has meant a decline in the general level of domestic and child-rearing skills, a form of social capital that has been ignored by policy makers and many scholarly commentators. This also means that fewer children have learned how to help look after younger siblings. While in the short run this might result in more parental interaction per child, it also means more parents who have no experience of looking after babies or young children. This might help explain the apparent phenomenon of children arriving at school aged five with completely inadequate language skills because they have rarely been talked to.

Health Services

During the nineteenth century great advances occurred in medical knowledge and it became central to public policy to (a) develop public-health programmes and (b) ensure equitable access to health services. Visible shortcomings and failures became both a prompt to major voluntary initiatives, notably the Plunket Society and the Health Camps, and central to public debate.[7] By the 1920s, Government largely funded hospitals through local Boards, which usually charged a fee to make up the shortfall), provided free dental care for school children, and heavily subsidised the training of dentists and medical doctors. Between 1936 and 1938, the first Labour Government enunciated the principle that all New Zealanders with only a few exceptions ought to have access to free maternity services, free hospitalisation, and free general-practitioner services. The first two were introduced in 1939 after the Government called the New Zealand branch of the British Medical Association's bluff, but only after protracted negotiations did the Government reach agreement with the Medical Association to allow an on-going fee for service and provide a subsidy for general practitioner services.[8] Services provided by optometrists and psychiatrists were not included and dental care was provided only for those younger than 18 years old.

Two or three generations have been brought up on the story of unenlightened resistance from the Medical Association to the first Labour Government's far-sighted proposals; given the subsequent history of the National Health Service in the United Kingdom some would now wish to radically revise that view of our history.[9] According to some, the experience of the NHS shows that universal entitlement to primary health care guarantees an enormous waste of resources, quite apart from the confusion caused by allowing medical practitioners to have both private practice and public practices, thus allowing them to use the resources of the latter to subsidise their incomes from the former.[10] Nor, some argue, has the (growing) fee-for-service worked well. As one recent critic said: it raises little money, fails to deter unnecessary treatments, and becomes ever more complicated and therefore expensive to administer (not least because new exemptions keep being introduced).[11] Others insist that the NHA is a model of the advantages of having free and universal access to health services. There is a broad consensus that co-payments discourage use and therefore have detrimental effects on health, but any thorough analysis of policy would need to weigh the cost of those disadvantages with the cost to the taxpayers of not requiring co-payments. The community is clearly divided. At the instigation of New Zealand First, the Clark Labour government introduced free health care for children up to age six; yet the New Zealand health system relies increasingly on specialists who are refugees from the socialized health systems of other countries, including Britain.[12]

Early in the 20th century a consensus had emerged that all who needed health services ought to be able access them according to their means.[13] Since the emergence of the party system in politics in the 1900s,

inadequacies of income and geographical isolation from services and amenities have been seen as the major sources of disadvantage; 'left' governments being more sensitive to inadequacies of income and 'right' governments to the consequences of geographical isolation (although the obsession with population-based funding has made the 'right' less concerned with this).[14] Since 1885 responsibility for delivering health services has been devolved to elected hospital or health boards in the various districts and towns, a system unique to New Zealand. With the shift from fee-paying to Social Security payments in the 1940s and '50s, Health Boards became little more than agents for the Department of Health.[15] This also reflected the increasing importance of expensive medical technologies operated by highly skilled physicians and surgeons to the overall health system at the level of secondary care. Despite attempts to reform governance, central government remains the key player.

As noted above, increased life expectancy together with dramatic reductions in morbidity, notably cardiovascular disease, together with the diminishing gap between morbidity and even mortality rates for Pakeha and Māori, must be considered major achievements of the health system over the past 35 years.

As productivity gains ended and the range and cost of medical interventions increased, as did the average age of the population and the proportion older than 65, inequalities also increased in other areas, especially for the least educated and the least skilled. Simultaneously, neither governments nor the population at large recognised the increasing importance of education in the new economy and society taking shape, or if governments did they invested no more money in either education or research and development (as a proportion of GDP).[16] The consequences of providing health services for a low-skill, low-wage workforce remain largely unexamined.

Recent health reforms[17]

Since the 1980s, the New Zealand health system has undergone a succession of reforms. In 1984 Government established fourteen Area Health Boards (AHBs) funded on a population basis and with responsibility for providing secondary and tertiary health care and public health services (funding the latter remained with the Department of Health). Through ministerial appointments to governing boards, contractual requirements, and performance targets the AHBs became increasingly accountable to central government.

In the early 1990s, a National government set out to separate the purchase of health services from their provision by establishing four Regional Health Authorities responsible for purchasing all personal health and disability services for their regional populations from both public and private providers. Government also established 23 public Crown Health Enterprises (CHEs) to run hospitals and public health services as commercial entities. At the same time Government established two new organisations of importance, although their origins lay in the 1980s: first, a Public Health Commission to advise on public health policy, monitor the health system's performance, and purchase of public health services; and, second, Pharmac to manage the purchase of pharmaceutical drugs. Both reforms came into effect in 1993 although the Commission was soon being by-passed whereas Pharmac has gone from strength to strength. The formation of Independent Practitioner Associations of GPs to facilitate collective contracting, together with the growth of Māori health providers and services, not to mention deinstitutionalization (particularly of mental health and disabled service users), encouraged the private sector to assume an increased role in delivering community-based services. However, implementation of these reforms turned out to be more costly than anticipated and some aspects proved unpopular with both the public and clinicians.

In 1998, under a new National government, a single Health Funding Authority was formed to purchase services. CHEs became Hospital and Health Services (HHSs) which were no longer required to make a profit. These changes were short-lived as a Labour–Alliance coalition government elected in 1999 introduced further reforms, returning to a model similar to that of the 1980s with 21 (now 20) DHBs responsible for planning, purchasing or providing services for their region. Since 2002, Primary health organisations (PHOs) (currently 31) have been established to coordinate Primary Health Care (PHC) services for an enrolled population, funded

on a capitation basis. Significant new funding has reduced user charges and improved patient access in PHC.

The Health Practitioners Competence Assurance Act 2003 (HPCAA) also requires a mention, although ignored by the 2014 New Zealand Health System Review (HiT report). Under this measure the Medical Practitioners Disciplinary Tribunal was established under the Ministry of Health to ensure that professional standards were met by a range of professions in the health sector, such as medical practitioners (including nurses and midwives), the dental professions (including therapists and hygienists), pharmacists, osteopaths, chiropractors, podiatrists and psycho-therapists, among others. It is unclear from the Tribunal's web site how it discharges these responsibilities, but it appears, for example, to have authorized establishment of the Pharmacy Council and charged it with protecting the public and promoting good pharmacist practice. The certification and annual recertification of pharmacists has become one of that Council's core roles. One of the main purposes of this measure was occupational licensing to ensure public safety. It was part of a more general concern to prevent any occupation with specialized knowledge from using control over entry to control incomes.[18]

Recent reforms have concentrated on increasing care coordination and integration in the health system. The National-led government elected in 2008 has focused on increased 'frontline' services and reduced bureaucracy. It has created a new National Health Board to advise the Minister of Health and a Shared Services Agency to undertake administrative and support services on behalf of DHBs to reduce duplication and improve collaboration.[19] It has also reduced the number of PHOs from over 80 to 31 and hopes to shorten waiting times for assessment and treatment in elective services.[20]

Within the health sector, the success of Pharmac has seen its role extend. It not only continues to operate successfully on the demand and supply side, but has developed a broader supervisory jurisdiction. In conjunction with the Best Practice Advocacy Centre, Pharmac has not only been developing strategies to encourage general practitioners to alter their prescribing practices, but Pharmac itself has begun to extend its jurisdiction to cover hospital prescribing practices.[21]

Determinants of Health

Those active in the field of research into health consider education, income, and life-styles the principal determinants of health. The three are not independent variables, although the relationships are very complex.[22] In the later 20th century it became orthodoxy that between 1840 and 1940 'the big effects' flowed from investment in public health, despite health expenditure being heavily biased towards tertiary services. Tensions accordingly developed among medical professionals, and between medical specialists and other analysts of health policy, about the best allocation of public spending. Furthermore, non-medical specialists became sceptical of the advocacy of some medical specialists as the latter entered the field of social policy well beyond areas where earlier epidemiologists had a major impact. What is clear, however, is that among the poorest 15 per cent of the population, low incomes, low qualifications, and high-risk lifestyles (in terms of using so-called recreational drugs including tobacco and alcohol) compound each other.

Since the 1950s successive censuses have demonstrated that Māori in general are disproportionately over-represented among those who leave school first and those with the poorest qualifications.[23] In twenty-first century New Zealand, unlike the period from the 1890s until the 1970s, there are very few high paying, let alone secure, jobs for males who leave school as soon as they can. Instead such young people enter the 'precariat, if lucky enough to find any legal work.'[24] This means the Māori are heavily over-represented among the post 1984 poor, even if they live in cities. Because their fertility rates are higher than those of other racial and ethnic groups, the proportion of Māori children growing up in poverty is also high. If they live in a region such as the East Cape (of the North Island), their disadvantage is compounded by weaknesses in the regional economy (although Pakeha in Northland and the East Cape do not fare as poorly).[25] Pacific Islanders, to varying degrees, have shared the same fate, although those

who remain in their islands of nativity are never included in our census.

These inequalities are increasingly apparent among the young. For 60 per cent of children, poverty persists over at least seven years,[26] and many of them have their lifelong health and education compromised. The longer the period on low income, the greater the harm.[27] According to a paper presented to the Marmot symposium, the proportion of *all* children living in poverty is substantially higher in New Zealand than in any comparable society, although the proportion of elderly who are defined as well off is also very much higher than in comparable societies (thanks to National Superannuation. The children of the poor, to a greater extent perhaps than ever before in this country, are also now culturally underprivileged in various ways, not least because of restricted literacy and numeracy, limited experience of or access to the internet, and in an increasing proportion of cases parents – or more commonly *a* parent, whose upbringing was equally disadvantaged.[28] Whereas in the nineteenth century and much of the twentieth, poverty was widely seen as a time in the lifecycle of an individual or a family, 'as something temporary and/or anomalous', not a permanent state, in the last generation for a proportion of families/households poverty has come to be a permanent or possibly an inheritable state.[29] The precise links between poverty and poor health outcomes is often unclear and frequently contentious.[30]

This points to the issue of inter-generational inequality, first raised in New Zealand by David Thomson in his book *Selfish Generations?* (1991).[31] Affluent New Zealanders, overwhelmingly white and middle-aged, have much greater influence over decision making and provide most of the decision makers as well. As Thomson showed, the parents of the baby boomers moved resources via the welfare system to maximize their returns at the various stages of their life cycle; it now seems that their children, the baby boomers themselves, are doing the same. National superannuation is by far and away the largest 'benefit', and it is increasing; the proportion of GDP spent on research and development, by contrast, is small and in relative terms shrinking; while the situation has begun to change, the proportion spent on early childhood education remains relatively low and fiercely contested although it has been the fastest growing sector of the educational system. The situation is extraordinarily complex but the evidence increasingly shows the importance of investing most heavily in children up-to the age of five.[32]

Despite this, interestingly, the differences in the rates of mortality and morbidity for Māori and Pakeha, like those for men and women, have declined quite substantially over that same period 1984-2014. When we look at the incidence of obesity, and its associated health risks and problems, however, Māori and Pasifika are disproportionately over-represented. Although one might argue about society's responsibility, if any, for the obesity of adults, there can be little argument as to the importance of tackling obesity among children. The causes of this epidemic, as some call it, are much more complex than the availability of cheap, calorie dense, low nutrient foods, although reducing or even removing them entirely provides a relatively simple and effective first step towards slowing the trend.[33] There is a school of thought that believes insufficient attention has been paid to genetic and biological aspects of this phenomenon.

Inter-generational inequities threaten future social cohesion. This is particularly marked because declining fertility combined with the ageing of the very large 'baby-boom' generation will place an ever greater financial strain on the young as they enter the workforce. As labour-market participation rates are already very high (when compared with other societies in the OECD), there is little wriggle room.

Across the same period, ironically, the determinants of health have shifted most dramatically. In the nineteenth and early-twentieth centuries protein-rich diets plus abundant saturated fats provided the generations of those eras with stronger immune systems and helped lower vulnerability to the common contagious diseases of the period, while improvements in the area of public health – clean water,

adequate waste disposal (including sewerage), and education in basic hygiene – helped deliver impressive gains by the end of the 1930s and eliminated most water-borne contagious diseases such as typhus, typhoid and summer dysentery. In the 1950s and '60s further substantial gains were made through programmes of inoculation, usually delivered to school-age children (greatly reducing or even eliminating diphtheria, tetanus, pertussis, tuberculosis, poliomyelitis, and various varieties of measles)[34]. Successful commercialisation of sulphonamides and then penicillin, here as elsewhere, also greatly reduced morbidity and mortality caused by bacterial infections. Māori also benefitted greatly.[35]

In the post-War decades, however, a shift occurred away from public health interventions towards a renewed emphasis on clinical gains. In the process the consequences for public health of an ageing housing stock largely disappeared from view (the link between sub-standard housing and poor health having been a major issue between the wars). As the country's housing stock aged still further, it became increasingly common for young couples to buy their first home from poorer stock, such houses being cheaper, and have the first of their two children in poorly insulated, damp, cold homes. Professor Phillippa Howden-Chapman, who pioneered this renewed public-health initiative, built research teams that undertook large-scale community trials, some involving 10,000 households, which proved that even relatively small changes – in indoor temperatures and relative humidity, for instance – could make substantial improvements in health, not to mention significant reductions in visits to doctors and admissions to hospitals. Although it has taken some 20 years to get this issue on to the health agenda, the fact that It appears to be now on the agenda generates hope that more rapid progress might be made.[36]

Despite the convergence in rates of morbidity and mortality for certain diseases, differences between Māori and Pakeha in other areas remain even when socio-economic differences are controlled for. We need to note, however, that whereas the key historical differences have been diminishing over the past 50 years, the incidence of certain new health problems has dramatized once more the way in which the determinants of health vary with ethnicity. These residual differences are cultural rather than biological or genetic, however, addiction to tobacco explaining a high proportion. Although there are some diseases where incidence is higher among Māori and (more recently) sub-groups of Asians,[37] and there have been specific campaigns as a result, most of the disadvantageous incidence is related to socioeconomic status (SES). As the Marmot Symposium demonstrated in 2011, there is a gradient of health disadvantage right across the socio-economic range, and the poor are at one end.[38]

Given this and the fact that targeting ethnic groups often causes a backlash, on the grounds that such campaigns are discriminatory and therefore unfair to those in groups not being targeted, it is politically most prudent to focus on socio-economic disadvantage, something the overwhelming majority of New Zealanders have long considered ought not to necessarily translate into poorer health of fewer opportunities.[39]

Further advances may be stalled or rendered slow by the difficulty of discussing and addressing such fundamental issues as domestic violence and child abuse, both of which seem to be epidemic, or even poor parenting.[40] Simultaneously, as noted, increasing affluence has seen New Zealand fully exposed to the epidemic of obesity with its associated forms of morbidity, especially diabetes.

Health Services Now

Provision of services

Public health services in New Zealand are largely provided by District Health Boards through twelve DHB-owned Public Health Units, including environmental and communicable disease control, health promotion and preventive services. (*Diseases* of the eye are treated in a hospital setting, although most

regions have seen lengthy queues for over a generation, but eyesight correction is dealt with privately; similarly, the hospital diagnoses and treats hearing disorders - although, once again you will need to queue for a long time - but rarely pays for hearing aids.)[41]

Since 2001, primary health care (PHC) has been coordinated through Primary Health Organisations (PHOs) which receive capitation funding for their enrolled populations, and which contract GP practices and other providers to deliver PHC services. GPs also usually charge patient co-payments.

New Zealand has a lower average ratio of medical practitioners and a higher average ratio of nurses for its population compared to other OECD countries. However, the 2011–2012 New Zealand Health Survey found 27% of adults and 20% of children had had an unmet need for PHC in the previous year. (It proved impracticable to obtain comparable data for dental and optometry ratios and needs. Although dental care is free up to the age of 18, accessing it is not easy and assumes the availability both of an adult with the time and resources to get the child to and from appointments and of a qualified dentist who has enrolled in the scheme.) The most recent evidence indicates that only about half of all children access this free service although the proportion of pre-schoolers enrolled has risen from 49 per cent in 2009 to 73 per cent in 2013. (Five-year olds without any tooth decay increased from 52 to 57.5 per cent between 2005 and 2013, the comparable figures for Māori being 30 to 37 per cent).[42]

Specialist physicians and surgeons provide ambulatory care either in community-based public or private clinics or in hospital outpatient departments. Most specialists are employed by public-sector hospitals, but as noted earlier many also maintain their own private practices (something banned in Canada, for instance). Hospital outpatient and inpatient services are mainly provided by public hospitals that are owned and administered, or funded by, the DHBs. There are no charges for inpatient or outpatient treatment in public hospitals. Patients are prioritized for access to publicly funded elective services.

Mental health care is largely community- and outpatient-based. Maternity services are provided through a Lead Maternity Carer, 75% of whom are midwives. As noted, basic dental care is free for children under 18 years, but there is limited publicly funded dental treatment for adults, other than for emergencies. There are two main providers of ambulance services, staffed with paramedics and volunteers. Many forms of complementary and alternative care are available in New Zealand.

The Pharmaceutical Management Agency (Pharmac) manages the Pharmaceutical Schedule and negotiates the purchase of drugs from suppliers. The Medicines and Medical Devices Safety Authority (Medsafe) administers legislation and regulations about medicines and therapeutic products.

The ACC is a comprehensive, government-funded no-fault personal injury scheme that funds treatment, rehabilitation and compensation for people who are injured in New Zealand.

New Zealand's health system is now also responsible for services to people with disabilities. The Ministry of Health funds services for those aged under 65 years, while DHBs fund services for those 65 years and over. Many private for-profit and not-for-profit providers deliver these services.

Financing

Taxpayers provide most of the finance needed for health care (83.2% in 2010, of which 8.4% comes from the ACC and most of the rest from general taxation). The balance comes from direct payments by service users, private health insurance premiums, and a small contribution from non-profit organisations. In 2010 New Zealand ranked 12th in the OECD for health expenditure as a percentage of GDP at 10.1% (slightly

above the OECD average of 9.5%). Health expenditure as a percentage of GDP rose from 6.8% in 1990 to 10.1% in 2010.[43]

Total appropriations for health spending in the Government's 2013–2014 Budget are NZ$ 14,655 million, an increase of NZ$671 million or 4.8% over actual expenditure in 2012–2013. Some 80 per cent of health services funding goes to DHBs, with the remainder spent on national services purchased directly by the Ministry of Health (MOH).

The New Zealand health-care system provides universal access to a broad set of health services. In addition, about 38% of adults hold some supplementary private health insurance (representing 4.9% of total health expenditure). The MOH funds 20 DHBs through a population-based funding formula and DHBs then fund a range of providers through service agreements as well as having their own hospital services. Outpatient and inpatient hospital services, including maternity services, remain free. Following the introduction of The Primary Health Care Strategy in 2001, capitation funding has replaced fee-for-service funding of general practice. Patients continue to pay additional fees, however, though these have generally reduced and have been free for children up to the age of six since 1996. Most prescriptions have a co-payment of NZ$5 per item. Adult dental care and optometry are paid for privately. Long-term care is funded through both public and private mechanisms.

The state-run ACC provides compensation for accidental injuries through a fully comprehensive, no-fault insurance scheme. ACC is funded through levies on employers, employees, the self-employed and car-licenses. 'It also provides funding to the MOH for accident-related care costs incurred by public hospitals and pays private providers for approved treatment for accident-related care.'[44]

We might note in passing that although population-based-funding redressed previous structural inequities, people living in the largest geographic areas with the lowest population densities tend to the view that the existing system fails to recognise the cost of providing primary let alone secondary medical care to their residents. Given the very low populations in such areas no government is likely to pay much attention to such complaints short of some unanticipated medical calamity. South Link Health, an innovative organisation, has recently launched the Southern Clinical Network to help address some of these problems in the lower South Island.[45]

Human Resources[46]

In 2010, there were 2.6 physicians per 1000 population (below the OECD average of 3.1) and 10 nurses per 1000 population (above the OECD average of 8.7). New Zealand has the highest proportion of migrant doctors among OECD countries and one of the highest for nurses: 52% of New Zealand's doctors and 29% of its nurses are foreign-born; 36% of New Zealand's doctors and 23% of its nurses are foreign-trained. New Zealand also has the third highest expatriation rate among OECD countries for doctors (28.5%) and the second highest expatriation rate for nurses (23%). Currently (2013), there are shortages of medical practitioners including some specialists such as psychiatrists, shortages of mental health workers, and there are long-standing problems in attracting professionals to rural areas let alone retaining them.

There are also over 900 pharmacies and 3351 practicing pharmacists in New Zealand, which are visited every day by thousands of people to have their prescriptions dispensed or to buy pharmacy-related products. The community pharmacy also provides free advice and counselling on the maintenance of good health. All the major hospitals and some of the smaller hospitals also have a pharmacy department which looks after the pharmaceutical needs of patients in the care of the hospital. Around 13 per cent of all certificated pharmacists are employed by hospitals. (It proved impossible to find comparable data for

dentists and related specialists, optometrists and opticians.)

Gender representation in the health workforce varies substantially depending on the profession. Women make up 93% of nurses, 80% of physiotherapists, and 71% of psychologists, but only 40% of the medical practitioner workforce (45% of GPs and 29% of dentists). Māori and Pacific people are markedly under-represented among health professionals.

Two of the six universities train pharmacists (a four-year undergraduate course), and doctors (a six-year undergraduate course). Registered nurses are trained in three-year tertiary-level courses that are offered in both universities and polytechnics. Nurse practitioners undertake advanced training and may have prescribing rights within their specialist field. New Zealand also has Enrolled Nurses who undergo an 18-month training programme and must practise under the direction and delegation of a registered nurse or nurse practitioner.[47] Only Otago University trains dentists (a four year training course).

Current Issues

The fundamental issues in the delivery of health services have been those of method and governance (i.e. who decides and who are they accountable to). Since the triumph of an epidemiological approach in the 1970s and '80s, the emphasis has increasingly gone on screening programmes, immunization, and public campaigns to change behaviours (notably the attack on smoking). In the famous phrase of the founder of the Plunket Society, Frederic Truby King, we prefer to place our resources in preventing diseases and accidents rather than assisting the casualties (i.e. better the fence at the top of the cliff than the ambulance at the bottom). Debates now often focus on targeting versus universalism. It is an old debate, of course. The Planning Council in the 1980s, led by Judith Davey, said a lot about the advantage of investing in fences rather than ambulances. In some respects the dramatic nature of the image is achieved by creating a false dichotomy. No matter how high the fence, some climb over it and need an ambulance. In the end, of course, almost all of us need care at the end of life.

Recent trends indicate the need to find new fences to prevent or reduce new problems. Although most of the evidence remains anecdotal and fragmentary, it is increasingly being confirmed by surveys that show not only a sharp rising trend in gestational diabetes from around 7 per cent a decade ago to 20 per cent now, thus greatly increasing the likelihood of babies being born with the disease, but that teenagers are spending around one-quarter of their lives looking at screens (not including smartphones) and that a mere 16.5 per cent are doing one hour or more of moderate-to-vigorous exercise daily. In one recent survey of teenagers in Dunedin less than 30 per cent also ate the minimum amount of fruit and vegetables specified. Some 22.2 per cent were overweight, and 7.1 per cent obese.[48] Given that Dunedin's population is predominantly of European descent and (by New Zealand standards) well educated, the implications for our health system are little short of alarming.

Whereas the organisation charged with determining which pharmaceuticals are to be available, widely known as Pharmac, appears to have worked very effectively, there is no organisation for deciding whether we need new solutions or fences for new problems; whether to screen or not (for conditions such as prostrate and breast cancer); whether to immunise or not; let alone how to prioritise the allocation of scarce resources and services.[49] Although it is true that from time to time governments establish bodies to tackle these tasks, most recently the National Health Committee, to date most governments have then run scared and either abolished or emasculated the agency they set up. Nor has there ever been any agreed system for determining accountability. Since the 1990s, by and large, governments have devolved decisions to elected health boards, while stripping them of their financial autonomy and most of the powers they enjoyed in the distant past. Girded by powerful national traditions of egalitarianism and fairness the underlying constraint remains the widespread belief that

what is available to some must be available to all.[50]

By the 1990s it had become clear that New Zealand was unable to afford the same standards of health care for everyone.[51] For the best part of a generation, the issue has been what mechanism to adopt for rationing. Private health care has always existed for the relatively wealthy. Some afford it by means of health insurance. Others travel to Australia, the UK and even the US – and now Thailand and Malaysia. As medical capabilities have been extended, and rationing has become more visible, the issue has become more salient. The fast-increasing upwards pressure on government health budgets has removed attention from historic exclusions – why the township of Clyde has a hospital but Queenstown, one of the fastest-growing centres in the country, does not[52] – and focused on prioritising and rationing hospital services. It only takes a heart-rending personal story to become the focus of intense media attention and the customary processes and criteria come under almost unbearable political pressure. Occasionally the issue of equity across the country captures the media's attention, but usually only in the region which considers itself disadvantaged. The Commonwealth Fund's conclusion that equity of healthcare in New Zealand was the second worst in the OECD attracted scarcely any media attention. Mancur Olsen's anatomy of democratic society's decision-making processes could hardly find a better illustration.[53]

In general, however, it seems likely that health services to people living in small localities have been improved by concentration of services in larger centres. The same argument could be applied to the cessation of GP home visits. Attempts to exploit the novel opportunities of the digital age, such as those being pioneered by BPAC Inc., clearly seem to mark potential areas for addressing some of these issues.

Apart from the failure to achieve productivity gains (which is beyond the scope of this paper), various factors have contributed to our inability as a nation to provide everyone with the same standards of timely and appropriate health care. Among the most important, in no necessary order:

1) an ageing population, which requires increased health-care expenditure, often of an expensive kind (although most of the most expensive interventions, with the exception of dental care for "baby-boomers", are still concentrated mainly in the last five years of life);
2) the on-going pharmacological revolution:
    (a) an ever-wider range of drugs, many of them very expensive;
    (b) a new field of expert knowledge, not always appropriately involved in decision making;
    (c) the availability of so-called recreational drugs, whether legal or not, that generates costs to the health system, pharmacies, the police and prisons, diverting scarce resources to a war that many consider unwinnable if not already lost;
3) the constant flow of new technologies, many of them increasingly specialised and expensive;
4) an epidemic of obesity and related conditions, especially diabetes;
5) all problems remaining more acute for Māori and Pasifika (although these terms need to be disaggregated in any more refined analysis);
6) existing infrastructure of hospitals etc reflecting historical population distributions, not current ones;
7) the on-going problem that those most disadvantaged are least likely, for various reasons, to access even free services, thus compounding the effects of socio-economic disadvantage;
8) a conjunction, confirmed by recent research, that low SES in childhood is associated with poor physical health in adulthood plus substance abuse regardless of adult SES, making the issue of equity in this area of even greater importance than has been realised;[54]
9) some recent research – hotly contested – indicating that pollutants, diet and stress can cause persistent changes in the mix of epigenetic marks in chromosomes, and that some of these acquired changes can be passed on to descendants, further compounding the effects of low SES;[55]
10) recent research indicating that there are and will be long-term health problems as a result of

major disasters, such as the Canterbury earthquakes, problems which we are only now beginning to identify;[56]

11) an increasing range of ethnic groups for whom English is their second language, creating barriers which make it harder to access available health services

Above all, perhaps, the growth in poverty (and extreme poverty), not only adversely impacts health among the poor but has a 'multiplier' effect among their children.[57]

Assessment of the health system

The strategic direction and goals for the health and disability sector in New Zealand are set by the Public Health and Disability Act (2000). This Act requires the responsible ministers to develop overall health and disability strategies for the country, which currently include 'The New Zealand Health Strategy' (2000), 'The New Zealand Disability Strategy' (2001), 'The Primary Health Care Strategy' (2001), and 'He Korowai Oranga: Māori Health Strategy' (2002). The 2011–2014 National-led government focused on six specific health targets, along with better public services, clinical integration, financial management and sustainability, and ensuring quality. New Zealand has paid particular attention to better managing waiting lists and reducing waiting times for elective services. However, there are major gaps in our understanding of access to elective services, including a lack of information about the number of people who are returned to their GP for ongoing care as they do not reach the agreed thresholds for treatment; changes over time in the actual thresholds; and the actual times that people wait.

The Ministry of Health reports annually on the state of public health in New Zealand. The 2012 report showed continuing improvement in life expectancy and health expectancy; decreases in the rates of death from cancer and cardiovascular disease; relatively stable levels of obesity in children, but a continuing rise in adult rates; increasing immunisation rates; and a continuing reduction in the proportion of the population smoking tobacco. However, in all cases, Māori (and, where reported, Pasifika) health outcomes were poorer than non- Māori. In some areas, such as life expectancy, this inequality has been decreasing, but in most areas inequality remains a focus for improvement.

The National-led government's most innovative initiative has been Whanau Ora, an approach that places families/whānau at the centre of service delivery, requiring the integration of health, education and social services. Although developed to address long-standing and seemingly intractable inequities in Māori health, the model is not restricted to Māori. Its success in tackling longstanding inequities will be watched with great interest.

Overall, despite the shortcomings identified in this paper, in the last 30 years most New Zealanders have had very good coverage of their health-care needs through public health services. Where user co-payments for PHC and pharmaceuticals have been identified as a barrier to access in the past, these charges have been reduced by additional government funding. As noted earlier, in other countries such co-payment systems are rejected.

New Zealand has a range of measures for determining people's experiences with the health system. Available data (such as the Commonwealth Fund surveys) show that the public is broadly satisfied with the public health system overall. The New Zealand Health Survey, while showing high levels of satisfaction with aspects of PHC services, also reports that Asian, Pasifika and Māori adults, together with those in the most deprived areas, were less likely to report positively about their treatment. According to HiT's assessment more work is needed to systematise the available measures and to better understand the basis for New Zealanders' views on their health services.

The Health Quality and Safety Commission, established in December 2010, is responsible for assisting both public and private providers across the whole health and disability sector to improve service safety and quality, and therefore improve outcomes for all service users. Performance indicators are used in both primary and secondary care to assess PHO and DHB performance against set targets.[58] Generally, performance is improving over time, but significant differences in performance between DHBs are evident.[59]

Conclusion

According to the HiT Report, overall New Zealanders have a high health status, but Māori and Pasifika suffer significant inequalities. Managing the growing burden of non-communicable diseases and chronic health conditions is the current challenge for the health system, along with greater integration and coordination of services.[60]

This is a somewhat more upbeat finding than the projected trends suggest will be the case in ten years and further out, given the clear inability of the existing system to provide adequate elective surgery for everyone identified by their GP as needing it, let alone the long-standing inadequacies of the system identified above.

Apart from the projected needs of the ageing 'baby-boomers' for new teeth, hips, knees and sometimes shoulders etc., the evidence is growing that the existing epidemic of obesity will not only worsen but see chronic diseases appearing at younger and younger ages.

The final issue that requires addressing reflects the rapid diversification of New Zealand's demographic profile, and in particular the growth in the number and proportion of citizens with their origins in South, Southeast, and East Asia. As New Zealand has become demographically multicultural, it remains formally bicultural, and institutionally monocultural.

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[1] I would like to acknowledge help from Emeritus Professor Charlotte Paul, Professor Peter Davis, Professor Ian Tucker, Emeritus Professor Gary Hawke, and Dr Malcolm McKinnon. During the several earlier iterations of this paper Professors Paul and Hawke read several drafts and commented exensively. I am especially grateful to them for their help.

[2] The supplement industry and disciplines such as homeopathy, osteopathy, naturopothy, etc.

[3] As Emeritus Professor Charlotte Paul pointed out to the author, the law does not mention alternative practitioners but does require doctors (and other health practitioners) to give patients the information that a reasonable patient in the particular patient's circumstances would expect to receive (right 6(1)) and to co-operate with other providers to ensure quality and continuity of care for the patient (right 4(5)).

[4] *Our Futures Te Pae Tāwhiti: The 2013 Census and New Zealand's changed population*, Wellinton, The Royal Society of New Zealand, 2014, pp. 9-13.
[5] Didham, R. (2015) Changing childlessness patterns in New Zealand. Paper presented at the Population Association of NZ Conference, Hamilton, June 2015
[6] Anna Christina d'Addio, *International Transmission of Disadvantage: Mobility or Immobility across Generations? A Review of the Evidence for OECD Countries*, OECD Social, Employment and Migration Working Papers, 52, Paris, 2007 (7)d
[7] For the health camps see Margaret Tennant, *Children's Health the Nation's Wealth,* Wellington, Bridget Williams Books, 1994 and for Plunket see Lynda Bryder, *A Voice for Mothers: The Plunket Society and Infant Welfare, 1907-2000,* Auckland, Auckland University Press, 2003.
[8] For the best analysis of the politics see Barry Gustafson, *From the Cradle to the Grave: A biography of Michael Josephh Savage*, Auckland, Reed Methuen, 1986,
Ch. XI.
[9] Although J.B. Lovell-Smith, *The New Zealand Doctor and the Welfare State* Auckland, Blackwood and Janet Paul, 1966*,* provided a balanced and judicious analysis, Elizabeth Hanson, *The Politics of Social Security: The 1938 Act and some later developments*, Auckland, Auckland University Press and Oxford University Press, 1980, embodied the national consensus. For a recent example of uncritical acceptance, see Robin Gauld, 'Questions about New Zealand's Health System in 2013, its 75th anniversary year', *New Zealand Medical Journal*, Vol. 126 (16 August 2013), pp. 68-74.
[10] The debate has raged in the United Kingdom, but almost all major players if not all stakeholders accept that the system is 'creaking'; see for instance Julian Le Grand, *The Other Invisible Hand: Delivering Public Services Through Choice and Competition*, Princeton, Princeton University Press, 2007.
[11] See the report of a speech by Professor Martin McKee, a visitor from Britain, *Otago Daily Times*, 26 August 2014, p. 16.
[12] Professor Robin Gauld of the Preventive and Social Health Department at Otago University was recently reported on TV3 News remarking the high number of medical doctors who had left Britain for New Zealand because of their discontent with the NHS.
[13]Disabilities causing loss of income to workers caused by accident, however, were addressed separately under the Workers Compensation Act (1908) and the National Provident Act (1911). Disabilities to those serving in the armed forces which impacted adversely on their ability to earn an income were dealt with separately again. Neither system has been properly studied.
[14]The urbanisation of New Zealand has reduced the National Party's dependence on farming and rural support to the point where it is almost entirely dependent on urban support. In 1936 just under 49% of all New Zealanders lived in a city or a town larger than 10,000 persons; in 2013 that figure had reached 88% and the towns and cities, of course, were much larger, Auckland having reached roughly 1.5 million (one-third of the nation's population).
[15] No historian has attempted a history of the country's health boards, although there are some good histories of particular boards, notably John H. Angus, *The Otago Hospital Board*, Dunedin, 1984, and pp. 220-21 for the structure of funding. For central government's policy see Derek A. Dow, *Safeguarding the Public Health: A History of the New Zealand Department of Health*, Wellington, Victoria University Press, 1995.
[16] Although NZ's expenditure on education by proportion of GDP is higher than the OECD average, this is largely due to our low GDP and high proportion of school-age children. But it still means that some other expenditure has a relatively low proportion of GDP. It ought to be borne in mind, of course, that the proportion of GDP is a rough preliminary indicator, no more, According to Emeritus Professor Gary Hawke, the biggest single influence is often the fraction of GDP required to pay interest on overseas debt.
[17] For my account of the current system and its recent history I have relied extensively on the Health in Transitions Report, kindly forwarded to me by Professor Peter Davis, Compass Research Centre, University of Auckland.
[18] See G. Parston, *The Evolution of General Management in the National Health Service*, Wellington, Insistutute of Policy Studies, 1988.
[19] Asian Pacific Observatory on Health Systems and Policies, 'Executive Summary', *New Zealand HiT* (2014).
[20] Asian Pacific Observatory on Health Systems and Policies, 'Executive Summary', *New Zealand HiT* (2014).

[21] I am indebted to Professor Ian Tucker, Otago University School of Pharmacy, for help in understanding the changing role of Pharmac and the role of such organisations as BPAC Inc.

[22] This list does not do justice to the work done, mainly by specialists in public health, to identify the determinants. For a more thorough account see http://heapol.oxford journals.org/content/23/5/318/F1.expansion

[23] According to the National Radio morning news on 13 November 2014 some 70% of all Māori leave school without any qualification. The figure for Pasifika, a much smaller population, was 60 per cent.

[24] According to the same news broadcast cited in note 21, if lucky or skilled enough to avoid unemployment many of these people need three or four 'jobs' to earn sufficient to live in minimal comfort.

[25] For a recent discussion see Shamubeel Eaqub, *Growing Apart: Regional Prosperity in New Zealand*, Wellington, Bridget Williams Books, 2014.

[26] E. Craig, Reddington A., Wicken A., Oben G., & Simpson J. (2013) *Child Poverty Monitor 2013 Technical Report (Updated 2014)*. Dunedin. NZ Child & Youth Epidemiology Service, University of Otago. http://www.nzchildren.co.nz/document_downloads/2013%20Child%20Poverty%20Monitor%20Technical%20Report%20MASTER.pdf.

[27] S. Mayer, *The Influence of Parental Income on Children's Outcomes*, Ministry of Social Development,, 2002, p. 6. at https://www.msd.govt.nz/documents/about-msd-and-our-work/publications-resources/research/influence-parental-income/influence-of-parental-income.pdf.

[28] It needs to be remembered that poverty in itself does not cause cultural deprivation, and never has, even if it increases the likelihood. Although unpopular (and largely unread) on the political Left, in New Zealand Dame Lesley Max first identified the issue of 'poor parenting'; see *Children: Endangered Species?* (1985).

[29] See for instance Annabel Cooper and Marian Horan, 'Down and Out on the Flat', in *Sites of Gender: Women, Men, and Modernity in Southern Dunedin*, eds. Barbara Brookes, Robin Law, and Annabel Cooper (Auckland, Auckland University Press, 2003), p. 222.

[30] Although a link exists between poverty and the incidence of rheumatic fever, the precise risk factors are unclear. Not all poor people, not even all poor Māori are at risk; see details about the Rheumatic Fever Research Partnership: http://www.hrc.govt.nz/news-and-media/media/rheumatic-fever-research-gets-funding-boost

[31] Sub-titled: *The Ageing of New Zealand's Welfare State*, Wellington, Bridget Williams Books, 1991.

[32] 1 November 2014, *International Transmission of Disadvantage …*, OECD Working Papers, Paris, 2013.

[33] Kim Hill interview with Sir Peter Gluckman, 1 November 2014, National Radio.

[34] See Statistics New Zealand, *A History of Survival in New Zealand: Cohort Life Tables 1876-2004*, Wellington, Statistics New Zealand, 2006.

[35] Māori benefitted because (a) high rates of intermarriage provided them with much stronger immune systems capable of combating Eurasian diseases, while (b) Māori medical doctors helped ensure improvements in public health in Māori communities; see Ian Pool, *Te Iwi Māori*, Auckland, Auckland University Press, 1991, pp. 46-7, 61-4, 78-80 and 84-90 for immunity and Raeburn Lange, *May the People Live: A History of Māori Health Development 1900-1920*, Auckland, Auckland University Press, 1999. For an historical overview of the total population, see Alistair Woodward and Tony Blakely, *The Healthy Country? A History of Life and Death in New Zealand*, Auckland, Auckland University Press, 2014.

[36] See Mark Wright, 'Housing and Health', *University of Otago Magazine*, 40 (March 2015), pp.6-9.

[37] European New Zealanders group all Asians together, including Indians from South Asia and Chinese from Guandong, presumably on the basis that they originate in different parts of Asia, although all evidence indicates that Asian, even East Asia, comprises genetically unrelated populations.

[38] The Marmot Symposium addressed Health Equity and the Social Determinants of Health and was named in honour of Sir Michael Marmot, who addressed the symposium. The papers are available on-line.

[39] On the centrality of fairness to the value-system of New Zealanders, see David Hackett Fischer, *Fairness and Freedom: A History of Two Open Societies New Zealand and the United States*, New York, Oxford University Pres, 2012.

[40] For further discussion, see the paper on Inequality and Mobility. See also for an estimate of the cost of family violence, the press report on Suzanne Sniveley's study for Sir Owen Glenn's inquiry into family violence; reported by Simon Collins, *New Zealand Herald*, in *Otago Daily Times,* 11 November 2014, p. 3.

[41] The real point being that your condition will probably have deteriorated substantially and irreversibly while waiting in the queue.
[42] The Associate Minister of Health reported *ODT*, 8 November 2012, p. 14.
[43] Other organisations come up with slightly different figures. For instance, the US-based Commonwealth Fund reported that New Zealand spent $3182 per capita on healthcare in 2011, lower than any other country in the OECD; *Otago Daily Times*, 21 June 2014.
[44] Asian Pacific Observatory on Health Systems and Policies, 'Executive Summary', *New Zealand HiT* (2014).
[45] *ODT,* 12 November 2014, p. 12 and the South Link website.
[46] The percentages are taken from the Health in Transition Report.
[47] Asian Pacific Observatory on Health Systems and Policies, 'Executive Summary', *New Zealand HiT* (2014).
[48] The figures are from a survey done in Dunedin known as Built Environment and Active Transport to School led by Dr Sandy Mandle, Physical Education, Otago University, reported in the *ODT,* 8 November 2014, p. 10.
[49] It is more controversial than this suggests. The media exploits every case where a seriously ill child or a terminally ill adult is denied access to some treatment available overseas.
[50] For egalitarianism see Leslie Lipson, *The Politics of Equality* (Chicago, Chicago University Press, 1948) and Erik Olssen *Building a New World* (Dunedin, Otago University Press, 1994), Ch. 10, and for fairness the recent comparative study by Fischer, *Fairness and Freedom.*
[51] In NZ health includes hospitalisation, maternity care, and subsidised general practitioner services (free for children up to age 7); unless caused by an accident and eligible for ACC help, the health system does not include psychological stress, many mental illnesses, most chronic conditions, dental care after the age of 18 and orthodontic services, optical services, or such specialties as podiatry, physiotherapy, massage etc.
[52] This particular intra-regional conflict could be repeated throughout the country, of course: Hastings has no hospital, and resents the fact that Napier does.
[53] Mancur Olson Jr., *The Logic of Collective Action: Public Goods and the Theory of Groups*, first published in 1965, develops a theory of political science and economics of concentrated benefits versus diffuse costs.
[54] See Richie Poulton, Avshalom Cespri, Barry J. Milne, W. Murray Thomson, Alan Taylor, Malcolm R. Sears and Terrie E. Moffitt, 'Association between children's experience of socioeconomic disadvantage and adult health: a life-course study', *The Lancet*, Vol. 360 (23 November 2003), pp. 1640-45 and Maria Melchior, Terrie E. Moffitt, Barry J.Milne, Richie Poulton and Avshalom Caspi, 'Why Do Children from Socioeconomically Disadvantaged Families Suffer from Poor Health When They Reach Adulthood? A Life-Course Study', *American Journal of Epidemiology,* Vol.166, no. 8 (2007), pp. 966-74
[55] Michael K. Skinner, 'A New Kind of Inheritance', *Scientific American*, August 2014, pp. 35-41.
[56] David Fergusson, John Horwood, Joseph Boden, and Roger Mulder (2014) Impact of a Major Disaster on the Mental Health of a Well-Studied Cohort. JAMA Psychiatry. 2014; 71(9):1025-1031. doi: 10.1001/jamapsychiatry.2014.652
[57] One in five of all children in poverty grow up in a household dependent on a benefit; one in four grows up in a two-adult household where one adult has a job. According to Susan St John, in a report of the Child Poverty Action Group, the latter figure is two in five. The extent to which Working for Families could address the latter issue is beyond my scope although it is available only to families where one adult is in paid employment. See *Our Children Our Choice*, Child Poverty Action Group, May 2014. For an overview, see Jonathan Boston and Simon Chappell, *The Child Poverty Debate*, Wellington, Bridget Williams Books, 2014.
[58] The results of DHB performance targets and PHO Performance Programme targets are publicly available on the MOH web site.
[59] Asian Pacific Observatory on Health Systems and Policies, 'Executive Summary', *New Zealand HiT* (2014).
[60] Asian Pacific Observatory on Health Systems and Policies, 'Executive Summary', *New Zealand HiT* (2014).