



# New Zealand health system: universalism struggles with persisting inequities

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New Zealand was one of the first countries to establish a universal, tax-funded national health service. Unique features include innovative Māori services, the no-fault accident compensation scheme, and the Pharmaceutical Management Agency, which negotiates with pharmaceutical companies to get the best value for medicines purchased by public money. The so-called universal orientation of the health system, along with a strong commitment to social service provision, have contributed to New Zealand's favourable health statistics. However, despite a long-standing commitment to reducing health inequities, problems with access to care persist and the system is not delivering the promise of equitable health outcomes for all population groups. Primary health services and hospital-based services have developed largely independently, and major restructuring during the 1990s did not produce the expected efficiency gains. A focus on individual-level secondary services and performance targets has been prioritised over tackling issues such as suicide, obesity, and poverty-related diseases through community-based health promotion, preventive activities, and primary care. Future changes need to focus on strengthening the culture and capacity of the system to improve equity of outcomes, including expanding Māori health service provision, integrating existing services and structures with new ones, aligning resources with need to achieve pro-equity outcomes, and strengthening population-based approaches to tackling contemporary drivers of health status.

## Introduction

In 1938, New Zealand was one of the first countries to establish a universal, tax-funded national health service.<sup>1</sup> The vision of the government of the day was for New Zealanders to have universally available access to a comprehensive range of health services provided free of charge. All New Zealanders should have equal access to the same standard of treatment, the health system should have a preventive rather than curative focus, and primary care and hospital-based care services should be integrated, not fragmented.

Opposition from the medical profession meant that this vision has never been fully realised. Nevertheless, equitable access remains a guiding principle underpinning the public health service of New Zealand. Over the past two decades, considerable emphasis has also been placed on equity of health outcomes, especially with respect to differences in outcomes between Māori (the indigenous people of New Zealand) and non-Māori populations.<sup>2</sup>

In this Review, we briefly discuss the history of the New Zealand health system, including a series of structural changes that occurred during the 1980s and 1990s that largely reflected the political or economic ideology of whichever government was in power at the time. We subsequently describe arrangements for funding and service delivery that occur nowadays, explain some of the unique institutions that have developed in response to the special needs or circumstances of the country and its people, and consider various strengths and weaknesses of the system. Finally, we reflect upon future challenges and make some suggestions for change, particularly with respect to achieving equity of access and outcomes for all population groups.

## History of the New Zealand publicly funded health system

The Social Security Act of 1938 provided the legislative framework for funding health services from tax revenue. Services that were to be fully funded for all citizens regardless of income were general practitioner services, hospital services, pharmaceuticals, and maternity services. However, the medical profession strongly resisted the government's proposal to pay for general practice (GP) services via capitation funding. Eventually, a compromise was reached in which the government subsidy was paid on a fee-for-service basis, and GPs could charge copayments over and above the government subsidy. The result was fully funded public hospitals operating alongside privately-owned GPs with partial public funding.

Over time, the services that were covered by government funding gradually increased. Although few major changes occurred to the basic structure of the system during the first 50 years, perceived inefficiencies—especially regarding public hospitals—led to a series of major structural reforms commencing in the 1980s (panel 1). Before these changes, primary health and hospital-based services developed largely independently. Most GPs owned and worked in solo or group practices, with government subsidies for patient consultations and practice nurse salaries subsidised by patient copayments. Non-government organisations also provided a wide range of other community-based services. By contrast, public hospital services and public health services were both publicly funded and publicly provided and had been developed by the central government in a variety of regional configurations.

In 1991, an incoming (right-of-centre) National government announced the introduction of a neoliberal market-based approach to the public health system

in an effort to improve efficiency.<sup>4</sup> The democratically elected members of the 14 Area Health Boards, responsible for public hospitals and public health services were dismissed and replaced by commissioners to lead the change process. In 1993, a quasi-market was introduced with the establishment of four Regional Health Authorities (RHAs) contracting for primary and secondary services from a range of public and private providers, in addition to a Public Health Commission contracting for public health services. Public hospitals were reconfigured as for-profit entities and renamed Crown Health Enterprises (CHEs), and patients were often referred to as consumers. RHAs and CHEs were governed by government-appointed (rather than locally elected) boards of directors.

The government expectation was that these market-like arrangements would stimulate competition and so improve efficiency—especially of the public hospitals—and enhance consumer choice.<sup>4</sup> However, little evidence of improvement had been shown by 1996. Health professionals felt isolated<sup>9</sup> and widespread public concern had arisen about the effect of the changes on access to the system following the closure of some existing service providers who had failed to win contracts. Although some people argued that the reforms did not achieve their objectives because they had not been fully implemented, others were of the view that the quasi-market approach was fundamentally flawed.<sup>10</sup>

The Public Health Commission was disestablished in 1996, and in 1997 the RHAs were replaced by a single central purchasing agency: the Health Funding Authority (HFA). CHEs were renamed Hospital and Health Services and their for-profit status was removed. Although contracting for services remained in place, the HFA was required to work more collaboratively with providers in planning services and agreeing on the volume of services to be delivered, and quality indicators.<sup>11</sup> Subsidies for GP services and pharmaceuticals were increased for children younger than age 6 years.<sup>12</sup> The aim was to provide free services to these children, but GPs retained the right to charge a copayment if they wished.

Another general election in 1999 resulted in a Labour-led (left-of-centre) coalition government coming into power. The Labour Party considered that the health system was focused on competition rather than cooperation, lacked leadership and vision, emphasised financial accountability at the expense of quality, and suffered from a democratic deficit.<sup>13</sup> These conclusions from the Party resulted in a further episode of reform to the health services. The HFA was abolished and 21 District Health Boards (DHBs) were established to both purchase and provide health services for their resident populations,<sup>8</sup> and a primary health-care strategy was introduced.

Rather than encourage competition among providers, the democratically elected DHBs were expected “to collaborate with relevant organisations to plan and

### Panel 1: Key institutional reforms since 1980

#### 1983 Area Health Boards Act<sup>3</sup>

Development of 14 Area Health Boards

#### 1991 Reform plans announced by Minister of Health<sup>4</sup>

Area Health Boards disestablished and replaced with a government-appointed commissioner

#### 1993 Health and Disability Services Act<sup>5</sup>

Establishment of the Public Health Commission, four Regional Health Authorities (RHAs) and 23 Crown Health Enterprises (CHEs)

#### 1993 Pharmac established<sup>6</sup>

Establishment of Pharmaceutical Management Agency (Pharmac) to manage subsidy of medicines and reduce pharmaceutical costs

#### 1996 Public Health Commission disestablished

#### 1998 Health and Disability Services Act Amendment<sup>7</sup>

Four RHAs replaced by Health Funding Authority (HFA) and CHEs become Hospital and Health Services (HHS)

#### 2000 New Zealand Public Health and Disability Act<sup>8</sup>

HFA abolished. HHSs reconstituted into 21 District Health Boards

co-ordinate at local, regional, and national levels”.<sup>8</sup> They were also required “to promote the integration of health services, especially primary and secondary health services”.<sup>8</sup>

In summary, after about 50 years of relative stability, the New Zealand health system underwent a series of major structural reforms from the 1980s. The 1993 attempt to introduce market principles into the system and to stimulate competition between service providers was of particular note from an international perspective. These reforms were radical, but short term, and we argue that they produced few major benefits. Over the past two decades, change has been more incremental, often driven from the bottom up rather than the top down. Initially, the focus was on encouraging cooperation rather than competition between providers, reducing inequities, improving primary health care, shifting services into the community, and strengthening service integration. Although these ambitions remain, government attention over the past few years has focused on encouraging performance improvement through a narrow range of national performance targets.<sup>14</sup> At the service delivery level, funding is tight and efforts are directed towards achieving efficiencies while maintaining—if not increasing—service outputs.<sup>15</sup>

### Updated health system: changes as of 2019 Funding

New Zealand spends around 9% of gross domestic product on health care (figure 1), of which 78·6% is

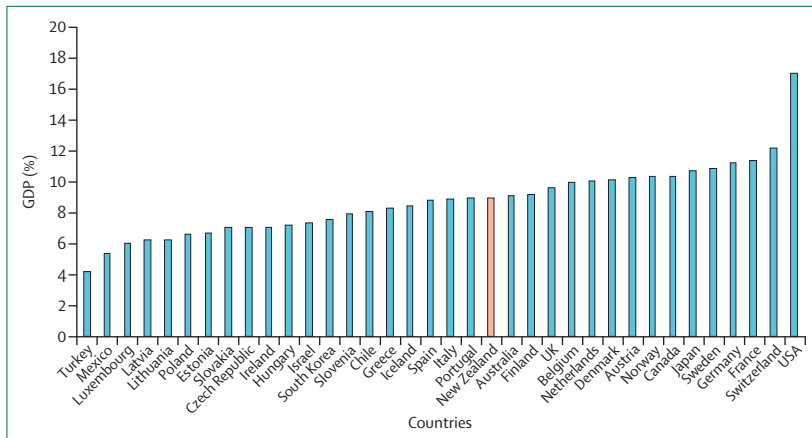


Figure 1: Percent gross domestic product expenditure on health in 2017

Data from Organisation for Economic Co-operation and Development Stat.<sup>16</sup>

For more on **public hospitals** see <https://www.health.govt.nz/your-health/certified-providers/public-hospital>

For more on **private hospitals** see <https://www.nzpsha.org.nz/>

public funding.<sup>16</sup> In per capita terms, New Zealand spent US dollars purchasing power parity (US\$ PPP) 3590 in 2016, just below the Organisation for Economic Co-operation and Development average of US\$ PPP 4003.<sup>17</sup> Around 15% of total health expenditure is funded out-of-pocket, with the remaining 5% funded through private health insurance. There are no tax exemptions or subsidies for private health insurance, and so the majority of patients covered pay the premiums themselves, rather than through their employer.<sup>18</sup> Coverage by private insurance has declined slightly from 32.6% of the population in 2005 to 28.8% in 2015. Possible reasons for this decline include population ageing and the associated increasing cost, reduced waiting times for elective surgery, and increased government subsidies of primary medical services.

### DHBs and secondary care

Nowadays, 20 DHBs are funded by the Ministry of Health to plan, purchase, and provide health and disability services for the population within their defined geographical regions.<sup>19</sup> DHBs serve populations ranging from 33 190 people to almost 600 000. Greater Auckland, with a population over 1.6 million people, has three DHBs.<sup>20</sup> DHBs operate under a set of directives from the Ministry of Health,<sup>8</sup> although they do have some autonomy as to how to meet these directives. Their statutory obligations include promoting the integration of health services (especially primary and secondary care services), seeking the optimum arrangements for the most effective and efficient delivery of health services, and reducing health disparities by improving health outcomes for Māori and other population groups.<sup>21</sup>

Each DHB is governed by a publicly elected board, augmented by up to four government-appointed members to balance any perceived lack of expertise.<sup>22</sup> DHB funding is based on a need-adjusted population-based formula with additional compensation for DHBs serving rural communities, tourists, refugees, or populations with high

unmet need. DHB funding covers most health services including hospital, primary, aged care, mental health, public health, and community-based services.<sup>23</sup> DHBs can provide a service directly on a not-for-profit basis, or purchase services from non-government providers or other DHBs.

DHBs own and manage the public hospitals and provide a range of public health and community-based services (such as district nursing). The 82 public hospitals (10 585 beds) provide most secondary and tertiary services free of charge to New Zealand residents. However, a range of specialist (especially surgical) and maternity services are also provided by private hospitals or clinics. The 78 private hospitals are mostly small with a total of 1856 beds. They provide around 50% of all elective and non-urgent surgical procedures, which augments the public system's primary, constrained, focus on urgent and essential services. Private hospitals are funded primarily by patients either directly out-of-pocket or, more commonly, via private health insurance. DHBs (and the Accident Compensation Corporation [ACC]) might sometimes choose to purchase services from private hospitals, especially elective surgical services (for which patients can be on a waiting list) at public hospitals. Many specialists work in both the public and private sectors.

### Primary health care

We have summarised the key changes that have occurred in primary care over the past 30 years (panel 2). In 1992, after many years of practising independently, GPs voluntarily began to form Independent Practitioner Associations (IPAs) in response to the perceived threat of the 1993 health reforms.<sup>28</sup> IPAs were professional collectives, owned and governed by GPs, with a range of formal structures (companies, incorporated societies, or trusts) and sizes (from small organisations with a handful of GPs to highly organised associations with over 300 members).<sup>29</sup> Some IPAs took on budget-holding for laboratory and pharmaceutical services, and used savings to develop new services.

Following the 2000 National Health Strategy,<sup>30</sup> the Primary Health Care Strategy was released in 2001.<sup>31</sup> The Primary Health Care Strategy focused on population health, and included health promotion and prevention, the development of community-based services, and provision from a range of health professionals. Although some aspects of the Primary Health Care Strategy were poorly or incompletely implemented,<sup>32,33</sup> it aimed to promote the advantages of funding primary health services on the basis of population needs rather than fee-for-service, with services to be delivered by newly formed networks of primary health providers called Primary Health Organisations (PHOs). PHOs are not-for-profit organisations with both provider and community representation on their governance boards. They were established rapidly, and by 2005 77 PHOs had been established, covering 3.8 million New Zealanders.<sup>34</sup> As

of 2019, ongoing amalgamation has resulted in 32 different PHOs with wide variation in structure and size, and about 93% of the population of New Zealand is enrolled with a PHO.<sup>35</sup>

DHBs fund PHOs via a capitation formula to provide services to improve and maintain the health of their enrolled populations. PHOs also receive payments for meeting health targets; from general medical service subsidies for attending to high-need non-enrolled patients; for provision of specific programmes such as health promotion, primary mental health, and chronic care management; and for injury-related services under ACC.

The capitated payments received by PHOs are passed on to member practices via a variety of mechanisms on the basis of various criteria, including age, sex, ethnicity, and socioeconomic status of their enrolled population, and possession of a Community Services Card or a High Use Health Card.<sup>36,37</sup> A Very Low Cost Access (VLCA) scheme exists, which provides additional funding to general practices with an enrolled population of at least 50% of patients defined as high needs (ie, Māori, Pacific, or lower socioeconomic), on condition that the practice agrees to keep their copayments below a threshold—zero fees at present for children age 13 years or younger, NZ\$12·50 for children from age 14 years to 17 years, and \$18·50 for adults age 18 years and older.

Health providers funded through PHOs still retain the right to charge patients copayments for their visits, but as subsidies have increased, or been extended to more population groups, copayments for some patients have declined. From December, 2018, higher subsidies were extended to children age 13 years and younger, and to lower-income patients holding Community Services Cards.<sup>38</sup> Even so, many people still pay NZ\$30–50 or more for a GP consultation.<sup>39</sup>

### New Zealand non-profit health sector

Not-for-profit institutions also play an important role in the New Zealand health system. The Ministry of Health refers to all non-statutory and non-profit making health groups as non-governmental organisations. In 2016, Statistics New Zealand identified 2200 non-governmental organisations working primarily in the health sector.<sup>40</sup> They range from small local providers to large national organisations and provide a diverse range of health and disability services. Less than 50% of these organisations receive government funding from the Ministry of Health, DHBs, or PHOs.<sup>41</sup> Non-governmental organisations provide support for both the individual and their families, and to the overall system, relieving pressure in the health and care system across settings.

### New and shifting health practitioner roles

Since 2002, New Zealand has seen the rise of nurse practitioners who have advanced training with the authority to practice beyond the level of registered

### Panel 2: Reforms focusing on primary care

#### 1980s

- Nurses Amendment Act<sup>24</sup>
- Early adoption of electronic systems (initially for payments and appointment), followed by electronic clinical records

#### 1990

- Midwives can practice independently and receive same reimbursement as general practitioners (GPs)

#### 1992

- Changes in subsidies for primary care
- Community Services Card introduced to target primary care subsidies to low-income families<sup>25</sup>
- Subsidies removed completely for higher-income families
- Development of Independent Practitioner Associations

#### 1997

- GP and pharmaceutical subsidies increased for children younger than age 6 years to provide free care for this age group<sup>12</sup>

#### 2001

- Primary Health Care Strategy<sup>26</sup>
- Formation of 80 Primary Health Organisations with general practice membership
- Capitation of practices with enrolled populations replacing fee-for-service subsidies

#### 2015

- GP and pharmaceutical subsidies increased for children younger than age 13 years to provide free care for this age group<sup>27</sup>

#### 2018

- Extension of higher GP subsidies
- GP and pharmaceutical subsidies extended to children age 14 years and younger and to those holding a Community Services Card

nurses in a range of scopes of practice and with prescribing rights.<sup>42</sup> They can practice autonomously or work collaboratively in teams in areas such as health promotion, disease prevention, and chronic care management. They often work with under-served communities, rural areas, and Māori providers to improve access to care.

In 1990, new legislation had resulted in a rapid shift in maternity services away from a doctor-led model of care to a midwife-led model of care. Midwives were able to practice autonomously and were no longer required to have a nursing background as part of their training.<sup>43</sup> As a result, midwife-led care now occurs in over 80% of births,<sup>43</sup> and the pre-1990 model of GP-led obstetrics has almost disappeared. Although midwife-led systems are generally associated with favourable outcomes,<sup>44</sup> the midwife-led model has unique features that have not been formally evaluated. Two studies have led to debate

about aspects of midwife education and outcomes for babies and their mothers.<sup>43,45</sup>

### Unique features of the New Zealand health system

**Constitutional issues: the role of the Treaty of Waitangi**  
Māori, the indigenous population of New Zealand, have inhabited all the main islands of the nation for at least 700–1000 years. The Māori population was thriving at the time of the first European settlement in the late 1700s. In 1840, the Treaty of Waitangi was signed between Māori leaders and representatives of the British Crown. This treaty provides the constitutional bedrock for the modern state of New Zealand. The treaty guarantees Māori control over their own resources, with equal rights for Māori and non-Māori. The principles embedded in the Treaty are being increasingly applied to the health system, including legislative requirements for Māori representation on governing boards.

During the 1980s and 1990s, indigenous groups clearly articulated their desire for greater autonomy and flexibility in the delivery of health care. Māori health gains, Māori participation in planning and implementation of health service policy, and Māori provider development were emphasised as government priorities throughout the 1990s.<sup>46</sup> The result of this combination of Māori aspiration and government support led to the rapid development of a diverse range of iwi (tribally)-based primary care initiatives. Māori ownership and provision of medical, dental, mental health, traditional healing, and other services—in addition to community health programmes and health promotion—represent a profound and enduring development.<sup>47</sup> Typically, services have a holistic Te Whare Tapa Whā approach incorporating physical, mental, family, and spiritual dimensions of health.<sup>48</sup> Although iwi organisations are commissioned to provide these services predominantly for Māori, they can employ non-Māori providers and their services are available to non-Māori patients.

### Accident Compensation Corporation

ACC is the sole no-fault accident compensation scheme for both work and non-work personal injuries sustained in New Zealand. Established in 1974, ACC is a government social insurance scheme funded by levies on employers, employees, and motor vehicles, in addition to a government contribution for people who are not in paid work. The scheme covers loss of income and the costs of any medical and rehabilitation expenses following an accident.<sup>49</sup> It also provides lump-sum compensation for permanent disabilities and support for family members after an accident-related fatality.

ACC is administered separately from the public health system and is responsible for its own budget and for purchasing health services for injured people. Being a no-fault scheme is a major feature. People injured in New Zealand—including temporary visitors—cannot sue

for damages following an accident (except for exemplary or punitive damages). This aspect of the scheme has been extremely successful, with patients compensated while costly lawsuits are largely avoided, including medical malpractice suits (a statutory bar prevents against suing health professionals for medical negligence causing so-called personal injuries). From a medical practitioner perspective, the no-fault aspect of the scheme lowers the high costs of medical malpractice insurance, reduces the incentive to practise defensive medicine, and encourages openness in reporting adverse events. However, it also potentially reduces professional accountability for harm.<sup>50</sup> Other processes for strengthening accountability include the Health and Disability Commissioner's office, which processes patients' complaints, and various regulatory authorities, including the Medical Council, which handles referrals from ACC about possible medical error.

### Pharmaceutical Management Agency (PHARMAC)

PHARMAC is one of the few remaining legacies of the 1993 reforms. Established as the sole purchaser of medicines dispensed in community pharmacies, PHARMAC's aim was to introduce price competition between pharmaceutical companies as a means of controlling rapid price inflation that occurred during the 1980s.<sup>6</sup> PHARMAC's role has gradually expanded over the past few years and now includes the purchase of vaccines and hospital medicines as well as negotiating national contracts for hospital medical devices.

In deciding which medicines should be subsidised, PHARMAC utilises a framework of four factors for consideration: need, health benefit, costs and savings, and suitability.<sup>51</sup> Unlike most technology assessment agencies, PHARMAC must make its funding decisions within a capped budget, and so has a powerful incentive to manage both the price and volume of medicines. Strategies for keeping medicine prices down have included reference pricing, sole supply agreements, contractual arrangements, multiproduct agreements, and tendering.

### Plunket and well-child care

The Royal New Zealand Plunket Society was formed in 1907 by Dr Frederik Truby King, a Medical Superintendent in Dunedin. He believed that support services for parents, including encouraging a nutritious diet, would lead to reduced childhood mortality and improved adult health. Originally named the Society for the Health of Women and Children, it gained the prefix Royal in 1915 and was renamed after Lady Plunket, ardent supporter and wife of the Governor of New Zealand. Plunket centres were set up around the country, and all expectant mothers were given manuals on feeding and baby care. A string of Karitane neonatal care institutions were set up for babies who were failing to thrive. Mothers were educated in domestic hygiene and so-called mothercraft practices of regularity of feeding and bowel habits, and

For more on the Health and Disability Commissioner's office see <http://www.hdc.org.nz/>

For more on accident-related fatality see <https://www.acc.co.nz/im-injured/>

this ideology became parenting lore. By the 1940s Plunket philosophy was credited with New Zealand having the lowest proportion of infant mortality in the world.<sup>52</sup> Although infant deaths have decreased, the Organisation for Economic Co-operation and Development reports that a large number of other countries have a lower proportion of infant deaths than New Zealand.<sup>53</sup>

Plunket did little to address ethnic disparities. Plunket developed as a monocultural organisation run by European women who raised the funds.<sup>54</sup> Plunket nurses were not permitted to visit Māori homes, and Māori infant health was the domain of state-funded district nurses.

Although Plunket services are no longer segregated and are designed to cater for the needs of all children, a greater diversity of well-child care providers now exists, including Māori providers.<sup>55</sup> Plunket functions as an independent trust with funding from the Ministry of Health augmented by community fundraising and donations. Nowadays, hundreds of Plunket centres are available, with trained nurses providing flexible support and education to all parents on child care and parenting, and assessing the health and development of children from birth up to age 5 years. Services include a telephone advice centre (PlunketLine), Facebook chat groups, and a car seat rental scheme. Generations of parents have recorded the health and development of their child in the Plunket Book, now named the Tamariki Ora Health Book.

## Strengths

The strength of New Zealand's health system rests on its foundation of a long-standing commitment to public funding and universal health care. Although this commitment has been less evident in primary health care than in other types of services, and over previous decades somewhat eroded by rationing in the public system, the standard contract that PHOs hold with DHBs remains a fundamental element of the social contract. The universal orientation of the health system, along with historically strong social policy and social service provision, have contributed to New Zealand's favourable health statistics such as life expectancy, maternal and infant mortality rates, and low rates of communicable disease.

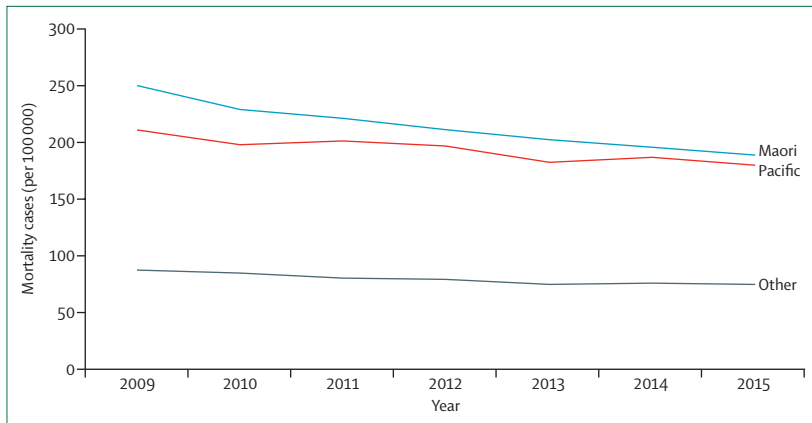
Related to the universal, social orientation of the system is the relatively modest health expenditure per capita<sup>17</sup> and New Zealand's long-standing ability to moderate overall increases in health-care expenditure. Tight government control over the public health budget has encouraged DHBs to develop innovative ways of achieving greater efficiency in health service provision.<sup>56</sup>

PHARMAC has been extremely successful in keeping pharmaceutical expenditure down while ensuring population-wide access to medicines. A comparison of average annual per capita expenditure of six categories of primary care prescription drugs in 10 high-income

countries with universal health care coverage found average expenditure in New Zealand to be only 23 Canadian dollars (C\$) per person compared with C\$49–\$171 in nine other countries.<sup>57</sup> PHARMAC estimates cumulative savings from its activities over the past decade to be around NZ\$6 billion.<sup>58</sup> Additionally, the number of medicines listed for subsidy has increased by about 60%. Even so, critics argue that cost savings have sometimes been achieved at the expense of access to medicines, especially new medicines.<sup>59,60</sup> Other concerns expressed by stakeholders include non-transparency of the decision making process, supply issues arising from sole supply agreements, and constraints and inefficiencies in the submission process for access to high-cost medicines.<sup>61</sup> Overall, residents of New Zealand are generally satisfied with the range of medicines available and PHARMAC's role in achieving value for money in pharmaceutical management is appreciated.<sup>61</sup> Copayments for subsidised medicines are low by international standards (NZ\$5 per item for people age 13 years and older, up to 20 items per household, then free). Reduced fees are in place for low-income households or those in urgent need of medication.

New Zealand's health system has shown its ability to innovate. An outstanding example has been the development of new models of indigenous-led health care. The establishment of PHOs has also led to some improvements in the scope and quality of GP services. For example, a wider provision of after-hours services is in place, a minimum amount of which is specified in the PHO Service Agreement.<sup>62</sup> Payment by capitation has encouraged wider use of practice nurses, and longer consultations have been reported with a greater focus on the management of chronic conditions at the primary level.<sup>63,64</sup> Some PHOs have extended services provided outside of the traditional practice setting—for example, in churches (which act as community centres for Pacific people), schools, and marae (Māori community meeting houses).

Another key strength of the New Zealand health system is the early adoption and extended use of information technology, particularly in primary care. All residents have a unique health index number and all GPs use electronic medical records.<sup>65</sup> Considerable investment has been directed towards standardising the collection and reporting of data, especially ethnicity data, and this information is increasingly being shared across health and administrative datasets. The government is now undertaking a Digital Health Work Programme to accelerate the implementation of an electronic health record for all New Zealanders which can be shared across service providers and across regions.<sup>66</sup> The Integrated Data Infrastructure (IDI), which links national datasets including health, education, housing, social services and justice, is another powerful tool that can contribute to answering complex research, policy, and evaluation questions to improve people's lives.



**Figure 2: Mortality from conditions amenable to health care**  
Data from Nationwide Service Framework Library.<sup>69</sup> Cases of mortality per 100 000 people for members of the Maori, Pacific Island, or Other populations in New Zealand, up to age 74 years. Other is defined as non-Maori and non-Pacific.

New Zealand's health system has other strengths that are not discussed in this Review. These include nationally led health workforce planning,<sup>67</sup> high-quality training of health professionals with robust regulation and reaccreditation systems, and a focus on quality and safety surveillance. A well developed, albeit modestly funded (by international comparison) health research infrastructure is also in place.<sup>68</sup>

### Weaknesses

Over the past decade, New Zealand's health system appears to have diminished focus on and commitment to equity in health outcomes. Persisting and marked inequities still exist in access and outcomes for Māori, Pacific Island, and low-income populations (figure 2).<sup>70,71</sup> Although these inequities have arisen from the broader social determinants of equity, in particular from persistent and rising poverty,<sup>72</sup> they also reflect the loss of momentum over the past decade in the provision of innovative, accessible, and effective primary health care for high-needs population groups. Continued increases in hospital spending, with the number of hospital doctors increasing at a greater speed than are GPs,<sup>73</sup> is contrary to the declared policy of investing in primary care to keep people healthy and reduce demand for hospital care.

Similarly, over the past decade, population health approaches to health policy and the social determinants of equity have, in general, been weak and ineffective. For example, New Zealand's legislative and health system responses to modern drivers of health outcomes—food and alcohol industries, poor quality housing, and institutional racism—have been in many instances wholly inadequate, with resulting persistent inequities in health outcomes.

Despite universal funding, access to care remains problematic. For example, at the end of 2017, only four of the 20 DHBs succeeded in meeting the national target of providing at least 85% of patients with suspected cases

of cancer with treatment within 62 days.<sup>14</sup> Although access to secondary services is not measured systematically, a small pilot study in 2017 found that 9% of the population reported unmet need for secondary health care that had been identified by a health professional.<sup>74</sup> In the case of primary care, 28% of the population—and 38% of Māori—reported not being able to access primary care when required within the past 12 months.<sup>75</sup> This was largely because of the inability to pay for GP consultations (14% of those surveyed) or being unable to get an appointment within 24 hours (17%). VLAC funding was intended to improve access to GPs for high-need populations, but this funding is targeted at practices, rather than at individual patients. A 2014 study found that 44% of people categorised as high needs were not enrolled in a VLCA practice and so were not eligible for these higher subsidies for GP consultations.<sup>76</sup>

Despite the series of institutional reforms over the past three decades, questions remain regarding the structure of the system. For a small country, the system is complex and fragmented, and this contributes to inequity and inefficiency. A health system with 20 DHBs and 32 PHOs creates duplications and gaps across service providers, and requires much more effort to integrate its functions across service and geographical boundaries. Additionally, the dual nature of the primary and secondary sectors continues to impede service integration and obstructs efforts to unlock funding which has historically been directed towards hospitals.

Although ACC is one of the great strengths of New Zealand's institutional arrangements, it has also introduced inequities, because different funding and benefit entitlements apply depending on the cause of a health problem. Copayments for consultations with GPs or allied health professionals (such as physiotherapists) differ depending on whether the problem was caused by an accident or an illness. ACC patients requiring hospital treatment might receive treatment earlier than other patients, especially in situations for which ACC is paying income compensation while the patient is off work and could be eligible for a more comprehensive range of services, including home support. Whether or not a problem will be classified as accident-related (resulting in considerable patient distress) is often unclear. ACC has a financial incentive to deny claims in the interests of reducing costs, especially if the claim is likely to extend over many years.<sup>77</sup>

Funding has not increased in line with cost increases and the majority of DHBs are struggling to meet their objectives.<sup>78</sup> For the past few years DHBs have been exploring ways to cut back expenditure, but after several years of exercising spending restraint, so called low hanging fruit options have been largely exhausted. Concerns have arisen that staff are stressed and service cutbacks seem likely.<sup>15</sup> As of June, 2018, 16 of the 20 DHBs were running net deficits.<sup>79</sup> A main reason for this was increasing hospital expenditures, partly because of a

growing trend to outsource personnel and to increase service costs.<sup>80</sup> The Minister of Health expressed the view that the deficits are a direct result of years of underfunding by the previous government.<sup>81</sup> Forecasting indicates an increasing demand for health services and rising expenditure in response to an ageing population, other demographic changes including rapid immigration, and the rising cost of health care.<sup>82</sup>

Historically there have been pressures and incentives for hospitals to neglect their capital infrastructure because of short-term pressures for service delivery. Therefore, capital expenditure has often been below budget. Moreover, infrastructure decisions tend to be negotiated with each DHB in isolation and thus lack a whole-of-system perspective.<sup>83</sup> Hospital managers need stronger incentives to make timely capital investments, considering long-term service needs from a national perspective.

A further potential problem for the health system in New Zealand is the ageing workforce (47% of GPs intend to retire in the next 10 years and 27% within the next 5 years).<sup>84</sup> Additionally, stress among GPs is high, with increasing numbers of complex high-need patients to care for in short consultations, large amounts of paperwork, and insufficient remuneration, resulting in nearly 25% reporting feelings of exhaustion.<sup>85</sup> Recruitment and retention of the rural workforce is also particularly challenging.

In 2018–19, nurses, midwives, and junior doctors all went on strike over staffing issues, pay rates, or cut-backs to working conditions.<sup>86–88</sup> A high feeling of burnout is also present in the senior medical workforce.<sup>89</sup> Workforce pressures in several health professions, especially in rural areas, leads to a high dependence on health professionals trained overseas, to keep in line with other high-income countries. Training models for health professionals could be transformed to meet the future challenges of community-based generalist care and the new normal of multi-morbidity. A workforce is needed that is responsive to patient needs, rather than persisting with a system designed around out-of-date configurations for health professionals.<sup>90</sup>

### Future challenges and opportunities for change

New Zealand's health system is not effectively delivering its promise of equitable health outcomes for all population groups. Some areas of policy development have been neglected over the past decade, during which the focus has been on individual-level secondary services and performance targets.<sup>91,92</sup> To effectively address issues such as suicide, obesity, and poverty-related diseases, New Zealand urgently needs to modernise and strengthen its population health approaches to health policy development and the social determinants of equity. For example, policy settings for key health-related commercial products such as sugar-sweetened beverages and alcohol, and for determinants of health such as housing quality and affordability, should be updated.

New Zealand's relatively small population belies the complexity and fragmentation of its health system. A dispersed and ethnically diverse population means inevitable trade-offs between equity of geographical access, cost of service provision, quality of services, and the seismic resilience of services (ie, the risk associated with centralised services). A combination of the system's complexity and these trade-offs has contributed to the inequities in access to services and health outcomes that are prevalent in New Zealand. Changes in the structure of the health system might be required. There is scope to improve the equity, coherence, consistency, efficiency, and quality of health-service provision through aligning and integrating services and functions, where possible, across the administrative boundaries of DHBs and PHOs, bringing more central coordination to information systems, and further empowering Māori groups to lead and govern indigenous health services. Further system-level integration of primary and secondary care, and between DHBs, could facilitate shifting resources out of the hospital setting, modernising service provision, and reducing inequities in access. Improved coordination between different health professional groups—for example, midwives and GPs, and GPs and specialists, could similarly be of great benefit for both equity and efficiency of health service delivery.

Coordinating the various non-government agencies which receive government funding (such as youth, mental health, drug and alcohol and counselling, parenting, disability support, and Māori services) would simplify the system. More resources focused on primary health would help improve access to care, address inequalities, reduce admission to hospital, and concentrate on preventive health-care measures. Given that a key component of the government health strategy is to shift services out of hospitals, DHBs require pathways and incentives to move resources into primary care.

One way to provide more community-based, integrated, and equitable services is to revise and strengthen the existing blended funding model for primary health services, capitalising on the strengths of both capitation and targeted fee-for-service funding mechanisms to encourage greater use of primary care. Any such revision of the funding model would require clear articulation of the policy objectives related to reducing financial barriers to access. The revision would also require specific policies for primary care services that serve largely or exclusively low socioeconomic communities, high-needs communities, or both, as these practices face costs and service-delivery challenges that are not borne by practices that serve more mixed communities. Close monitoring and evaluation would be required, as any new funding system would undoubtedly introduce its own complexities and inequities.

New Zealand could further capitalise on early adoption and innovation of health information technology. Adoption of a single virtual electronic health record would enable integration across hospital, primary, and



community care settings, and ensure all health data are incorporated into the IDI. New Zealand could also lead the way in using IT to support people in managing their own health care, reducing the need for face-to-face visits, and creating efficiencies in health-care delivery. An ageing population living with an increasing number of long-term conditions threatens to overwhelm the health system. The internet offers them health promotion activities, information on specific conditions, participation in support groups, and a raft of e-therapies, used in conjunction with a trusted health professional to ensure people are not acting on inaccurate, misleading, and potentially dangerous information.

Despite strong philosophical underpinnings, New Zealand's version of universalism has not achieved equity of outcomes for all Māori, Pacific Island, or low-income populations, and the country has a complex and fragmented system. With a new reform-minded coalition government coming into power in 2017, following 9 years of a government that maintained a steady course, a new window of opportunity has opened for further reform of the health sector, with a much greater focus on the social determinants of health and equity of outcomes. Early initiatives from the incoming government have included increased salaries and improved working conditions for nurses working in DHBs; a recognition that the national health targets have perverse incentives; and the announcement of a major review of the way that publicly funded health services are structured, resourced, and delivered. Other initiatives that promise to improve population health outcomes include a focus on reducing child poverty,<sup>93</sup> a government inquiry into mental health and addiction,<sup>94</sup> and the introduction of a range of measures to address a shortage of houses and homelessness.<sup>95</sup> Any future changes should focus on strengthening the culture and capacity of the health system to improve equity of outcomes, including expanding Māori health-service provision, integrating services and functions, aligning resources with need to achieve pro-equity outcomes, and a long-term commitment to strengthening population-based approaches to tackling contemporary drivers of health status.

#### Contributors

Authors contributed equally to this Review.

#### Declaration of interests

The views, opinions, findings and conclusions or recommendations expressed in this paper are strictly those of the authors. They do not necessarily reflect the views of the institutions where the authors currently work. The paper is presented not as policy, but with a view to inform and stimulate wider debate. Authors declare no competing interests.

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