



Health Projections and Policy Options

New Zealand Treasury

BACKGROUND PAPER FOR THE
2013 STATEMENT ON THE LONG-TERM FISCAL POSITION

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**BACKGROUND PAPER
FOR THE 2013
STATEMENT ON THE
LONG-TERM FISCAL
POSITION**

Health Projections and Policy Options

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Health Projections and Policy Options for the 2013 Long-term Fiscal Statement

Executive Summary

New Zealand's health system plays a critical role in society by providing access to a range of services that improve the health of New Zealanders. We value health care because of its capacity to improve the length and quality of our lives and provide dignity for the sick. The health system also supports our economy by enabling greater rates of participation in the workforce and higher productivity.

Government spending on health care is an important part of our long-term fiscal challenge because it is both large and growing. Vote Health currently makes up 20% of core Crown expenditure, and health spending has been increasing faster than our national income for most of the last fifty years. Countries right across the OECD are facing similar challenges in managing their health expenditure growth.

While health spending is partly driven by demographic change and is projected to increase due to population ageing, non-demographic factors also play a significant role. Productivity gains tend to be lower in labour-intensive industries, and since labour is the largest input into health services, this pushes up health costs relative to the rest of the economy. Income growth and technological change tend to increase demand for health care as people's expectations about quality, access to services and the range of potential treatment options increase. Moreover, unlike many other areas of government spending, such as superannuation and social welfare, health spending pressures are mostly not directly controllable by government policy. Whereas governments can, for example, readily reduce superannuation spending by lifting the age of eligibility to match a budget constraint, reducing entitlements in one area of health spending can be offset by a rise in demand for other (sometimes more expensive) health services, such as acute hospital care, which are then more difficult to ration or control.

Our long-term fiscal projections show publicly-financed health spending continuing to increase as a proportion of national income, from 6.8% of GDP in 2012 to 10.8% of GDP by 2060. This projection is sensitive to three important assumptions. Firstly, it assumes that there will be a degree of 'healthy ageing', which means that the projected increase in people's life-spans will be accompanied by an increase in the number of years lived in good health. In our projections, this healthy ageing assumption offsets some of the cost increases brought on by population ageing. Secondly, the projections assume that health sector productivity will grow at 0.3% per annum in line with our assumptions for the rest of the public

sector. Achieving this rate of productivity growth may be challenging. Lastly, the projections assume that non-demographic demand for health care will grow in line with economy-wide real incomes at 1.5% per annum. This assumption reflects our expectation that higher incomes and technological improvements will continue to increase people's expectations about what the health system can and should deliver. Small changes in these assumptions have substantial impacts on projected health spending by 2060.

Consistent with historical trends, as our national income grows it is likely that we will want to spend a higher share of our income on health care in order to further improve health outcomes. However, growth of the magnitude indicated in our projections may not be desirable when we consider the implications this would have for taxes and spending on other important areas like education and superannuation. Furthermore, the relationship between health spending and health outcomes is not straightforward. International comparisons show that levels of health spending and rates of growth vary between countries, and for developed economies are only weakly related to health outcomes, which suggests that some countries do better at translating health spending into health outcomes. There is also some evidence of diminishing marginal returns to further health spending beyond a certain point. Although health systems make a significant contribution, population health is influenced by a wide range of lifestyle, environmental and economic factors. This means it may be better to allocate limited government funds to achieve other objectives, such as improving the quality of housing.

Since people face considerable uncertainty about the timing and size of the health costs they may face, some form of health insurance (either public or private) is desirable in order to spread risk across the population. However, private markets for health insurance do not cater well for the elderly, those with chronic conditions, or those on low incomes. This has led to significant government involvement in health systems in all OECD countries.

The New Zealand health system is a predominantly tax-financed, single-payer system. Public financing of health care currently sits at 83% of total health expenditure, with the remainder financed through private means. We do not currently see a case for a major shift in this financing model towards a predominantly privately funded system, as systems like ours typically perform better in terms of containing overall spending, and there is no one type of health system that presents a clearly more efficient or effective alternative. Therefore, this paper focuses on options to reduce the growth in public health expenditure within the existing tax-funded approach. Our view is that there may be scope for further targeting of public spending or greater cost-sharing within this broad approach, but the solution will not be found simply by expecting people to pay for their own healthcare in the future. There are no simple solutions, and achieving sustainable change over the next forty years is likely to require action across multiple fronts:

- ensuring that we get maximum health gains from every dollar spent through the way the health system is organised and run, and the way that services are prioritised;
- reducing demand for health services as much as possible by keeping people healthy and minimising over-consumption; and
- maintaining a firm and reasonable budget constraint on public health spending, and making adjustments to the coverage of the public health system.

First, we will want to ensure that our health system is operating in a way that maximises the benefits to patients and to society from health spending. Ensuring that we get the most efficient allocation of resources in the health system is especially challenging given that clinicians tend to make decisions about who receives services and there is no shortage of

people with the ability to get some benefit from additional health treatments. However, there are opportunities to improve the way that health services are organised and funded. For example, it is likely to be more efficient and sustainable – both in terms of government finances and the quality of health care – to concentrate specialised services in fewer hospitals in the future. The system will need to ensure that health care delivery is provided in the most cost-effective locations (such as community settings rather than hospitals). Decisions on what hospitals to build for the future are one way that governments can influence the direction of travel in terms of the shape and size of the sector. Another way that costs can be reduced will be by changing the skill mix of the health workforce, for example, by allowing professionals such as nurses and pharmacists to take on some of the tasks previously performed by doctors.

We should also look for a step change in the way that health services are purchased – so that we don't just fund the services we've always funded, but drive improvements in the mix of services available and in who provides those services. This could involve more national prioritisation of services and health technology, concentrating scarce planning and procurement expertise and reducing administration costs by reducing the number of purchasers in the health system, or splitting purchase and provision for a wider range of services where there is potential for contestability between providers to drive better performance.

These are not new ideas, and a number of changes are already underway to improve the performance and efficiency of the health system, including making some of the shifts outlined above. It is not clear whether the speed and scale of change currently underway will be sufficient. We will need to continue looking for gains in order to keep improving the outcomes we get from our health system within a fiscally sustainable path. There are actions that governments can take to change the funding and regulation of the health system to support further improvements. Changes of this nature tend to have long lead-in times, so decisions are needed well in advance of the point at which government finances become unsustainable.

A second priority will be management of demand on the health system. Primarily this is about keeping people well and reducing the need for expensive hospital treatments, as well as reducing unnecessary use of health services. Investment in preventive initiatives can be an effective approach, but it is not a straightforward solution as only a limited number of preventive initiatives have cost-saving potential. Poorly targeted initiatives will create fewer health benefits and be an ineffective use of health resources, so investment in prevention must be guided by good evidence. While increasing cost-sharing through patient co-payments can also be used to mitigate over-consumption of health services, changes would need to be carefully designed to prevent adverse effects (such as people going without cost-effective care and then becoming sicker). This is where the wider determinants of health status also play an important role: it may be that the most effective interventions to keep the population healthy and out of hospital are found outside of interventions in the health system itself.

Finally, governments can and do influence the rate of public spending growth directly, and can also make explicit decisions about the coverage of the public health system that will influence spending growth. Using fixed budget constraints (as we currently do) is one effective lever. However, there is a balance to be struck in setting budget limits, in order to avoid boom and bust cycles which tend to reduce value for money and because of the risk of unintended consequences such as deficits or service failures. Tight constraints can lead to longer waiting times and reductions in quality, although it may be possible to mitigate these impacts through performance improvements. Governments could also attempt to more

clearly define the services provided for free by the public system. This could mean excluding new treatments that are not supported by good evidence of cost-effectiveness. While technological change will expand the range of treatments available over the next forty years, not all technological advancements are equal, and we will want to ensure that the health system is configured to provide access to treatments that deliver the greatest gains.

Although we do not see expanding private financing as a key solution to the long-term fiscal challenge in health spending, the gap between what is medically possible and what it is affordable for the public system to provide may lead those who can to purchase additional health care or faster access through private means. This already happens in our system, and to some extent this provides a useful 'safety valve' on the constraints of the public system which helps to reduce fiscal pressures. It is likely that a combination of technological advances and fiscal pressure may cause the proportion of private financing of the system to increase over time.

A shift towards private finance would likely create a greater role for private health insurance (PHI). However, the extent to which an increase in private insurance would reduce pressure on the public purse should not be overstated. For example, complementary PHI (which covers gaps in public coverage) has been found to increase public expenditure in some countries as it undermines the demand-management effects of co-payments. An increase in PHI may also increase inequality in terms of access to health services, as PHI is predominantly purchased by those on higher incomes. Given that the market for PHI is likely to expand in response to reductions in coverage, however, it is likely that further consideration will be needed regarding regulatory measures to avoid adverse impacts on the public health system.

While fixing the 'long-term fiscal problem' associated with rising health spending is not an easy task, and there is no simple solution, excessive rises in health spending in the future are not inevitable, even with an ageing population. That said, action will be needed on a range of fronts to ensure that New Zealanders have the best possible access to health services, get the greatest health gains from every dollar spent, and that health spending growth is sustainable for future generations.

1 Overview of New Zealand's Health System

New Zealand's health system plays a critical role in society by providing access to a wide range of services that improve the health of New Zealanders. We value health care because of its capacity to improve the length and quality of our lives. People also value the role of the health system in improving the comfort and functionality of individuals' lives, even when this does not improve health outcomes. In such cases, 'care is not directly concerned with improving health; rather it seeks to provide dignity for sick people' (Dolan & Olsen, 2002). Such spending is not justified in terms of health outcomes, but by other societal values such as respect, empathy and personal autonomy. The health system also supports our economy by enabling higher rates of participation in the workforce and higher productivity.

The first section of this paper provides an overview of the New Zealand health system. It looks at what we spend on health care and how this has changed over time, before looking at how well New Zealand is doing at translating health spending into health outcomes.

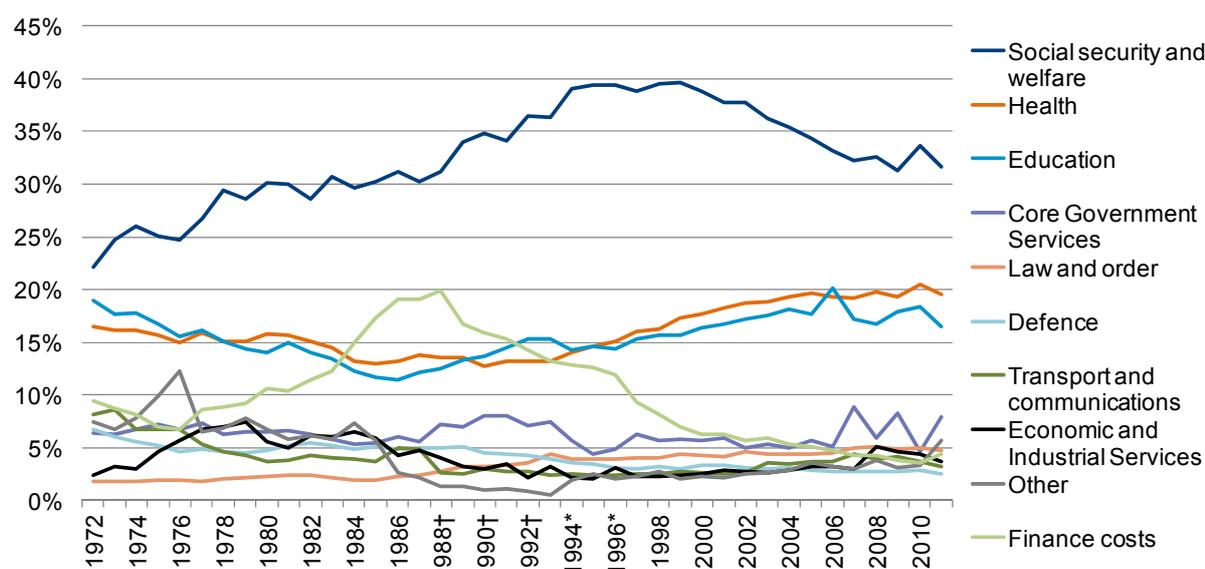
1.1 Health spending

In this paper we refer to health spending in two main ways. 'Publicly-financed health spending' refers to health spending that is financed from taxation. 'Total health spending' refers to all health spending, financed from both public and private sources.

1.1.1 Changes in health spending and international comparisons

Health spending is an important part of the long-term fiscal challenge facing New Zealand as it makes up a large proportion of government expenditure. Vote Health represents 20% of core Crown expenses, at around \$14 billion. In addition, the Accident Compensation Corporation (ACC) spends a significant amount of public funding on health services (Vote ACC currently sits at \$1.1 billion). Relatively small amounts of health services are funded by other central government agencies. Health spending has increased as a proportion of total core Crown expenses since the early 1990s (Figure 1).

Figure 1: Core Crown expenses by sector, 1972 – 2011



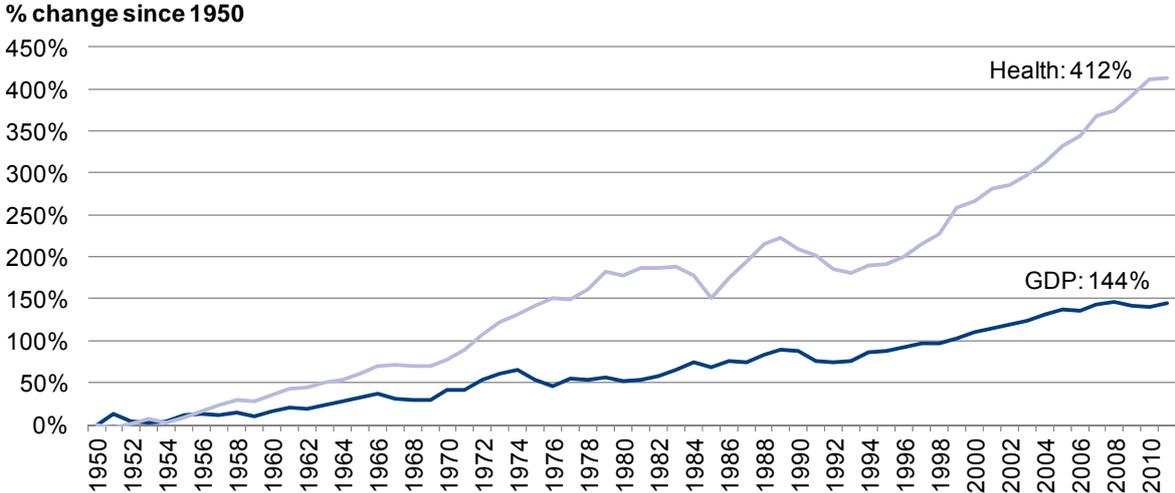
Source: The Treasury

Note: Data for these years marked (†) is inclusive of GST. GAAP data for years marked (*) has not been backdated on IFRS basis.

Health spending is not only large, it is also growing. Publicly-funded health spending has been increasing faster than national income for most of the last sixty years. As shown in Figure 2, the real per capita increase in core Crown health spending since 1950 was 412%, while GDP has increased by 144%. In real dollars per person, the amount spent on health care by government has risen from the equivalent of \$583 per person in 1950 to \$2,987 per person in 2011 (2011 dollars). As a share of GDP, that equates to an increase from 3.1% in 1950 to 6.8% in 2012. This reflects an increase in the volume, quality and type of services provided, as well as an increase in medical costs.

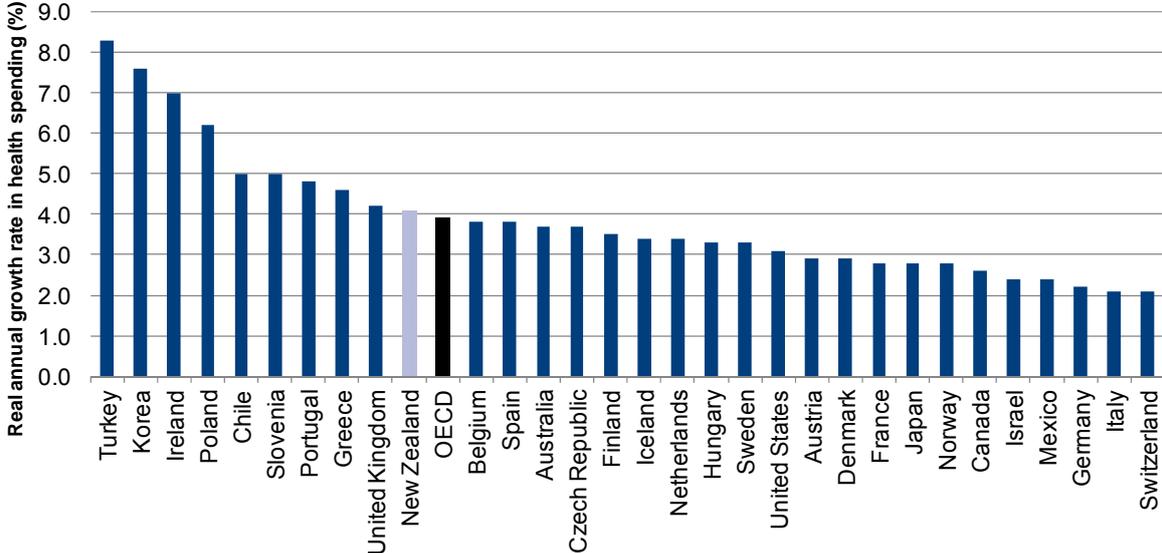
New Zealand is not alone in choosing to grow its health expenditure. Figure 3 shows real per capita growth rates for total health expenditure across the OECD from 1993 to 2008. Health expenditure grew at an average rate of 3.9% across the period, with New Zealand sitting just above the average at 4.1%. More recently, growth rates have slowed in response to fiscal pressures brought on by the global financial crisis, with zero average growth in total health spending across the OECD in 2010 (OECD, 2011). New Zealand’s relatively strong macroeconomic position going into the crisis has meant that we have not been forced to reduce growth to the same extent as most other OECD countries.

Figure 2: Core Crown health expenditure per capita and GDP per capita, indexed real growth, 1950-2011



Source: The Treasury

Figure 3: Growth in total per capita health expenditure in OECD countries, 1993-2008

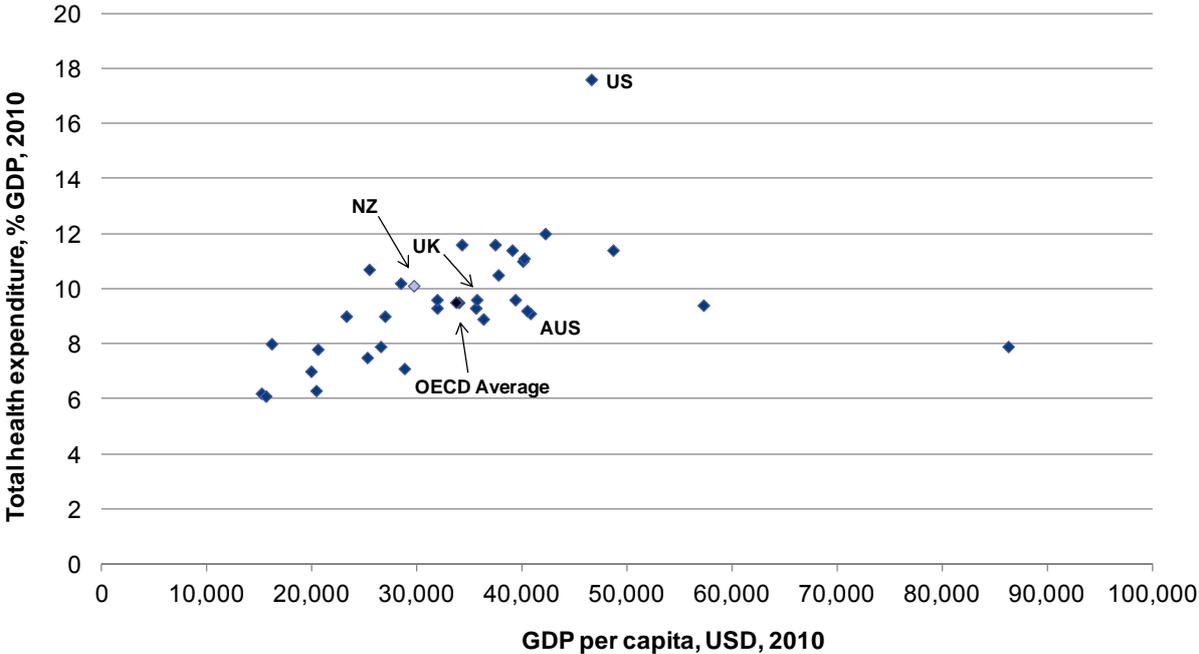


Source: OECD

As a proportion of GDP, New Zealand’s health expenditure is above average for OECD countries. In 2010, total health expenditure in New Zealand was 10.1% of GDP compared to the OECD average of 9.5% of GDP. Only two countries – Portugal and Greece – spent a higher proportion of GDP on health *and* had a lower GDP per capita.

In dollar terms, New Zealand spends slightly less on health per person than the OECD average, and less than many of the countries we compare ourselves with, such as the United Kingdom and Australia (which is understandable given our lower national income).

Figure 4: Total health expenditure as a proportion of GDP and GDP per capita in OECD countries, 2010



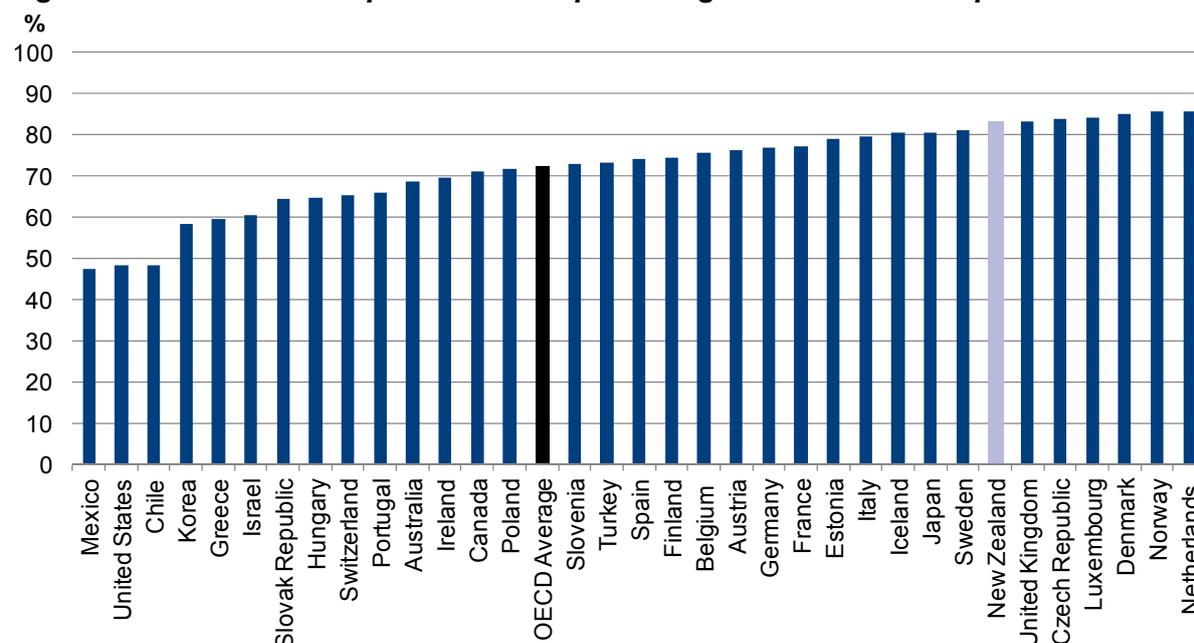
Source: OECD Health Statistics 2012

International comparisons of health spending only give a broad idea of how particular countries compare with others and should not be used to indicate an ideal level of health spending. The high level of spending in the United States, for example, is generally attributed to the high costs that are generated by its health system, as opposed to notably superior health outcomes (Squires, 2012). Therefore, it is important to consider such data alongside analysis of health outcomes and productivity (see section 1.2).

1.1.2 Composition of health spending

Most OECD countries rely on public finance as their main source of health funding. In New Zealand, public expenditure on health care currently sits at 83% of total health expenditure. Public expenditure has exceeded 74% of total health expenditure since 1945, peaking at 88% in the early 1980s (Ministry of Health, 2012b). Private spending can be split into private insurance, payments out of people’s own pockets, and spending by voluntary and not-for-profit organisations. New Zealand’s share of public expenditure as a proportion of total expenditure is above the OECD average (Figure 5).

Figure 5: Public health expenditure as a percentage of total health expenditure

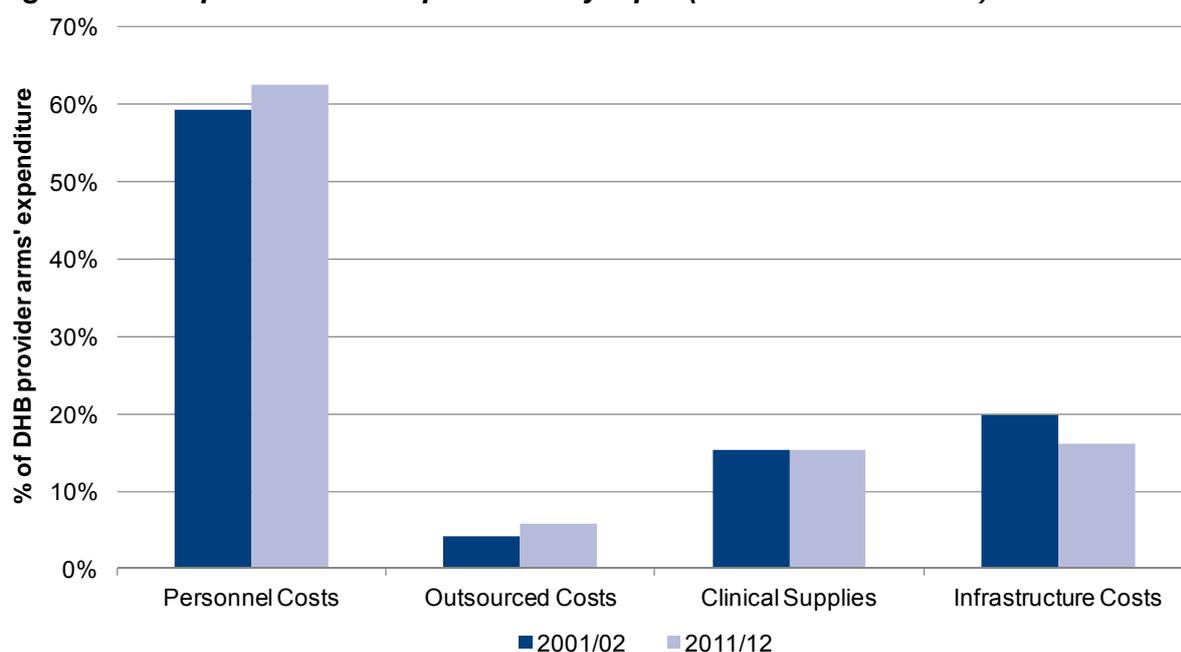


Source: OECD

Most publicly-financed health spending in New Zealand is managed by District Health Boards (DHBs). Publicly-financed spending is allocated to a range of services including public hospitals, primary care, pharmaceutical prescriptions, disability support, mental health, preventive health services, and long-term care. The majority (65%) is spent on health care services for individuals, with the remainder allocated between medical goods such as pharmaceuticals (7.6%), prevention and public health services (6.7%), and health administration (3.6%).

Labour costs are the single biggest input component of publicly-finance health spending. Within public hospitals, for example, labour costs comprise 63% of total costs, with the rest made up of infrastructure costs, clinical supplies, and outsourced costs (Figure 6).

Figure 6: DHB provider arm expenditure by input (2001/02 and 2011/12)

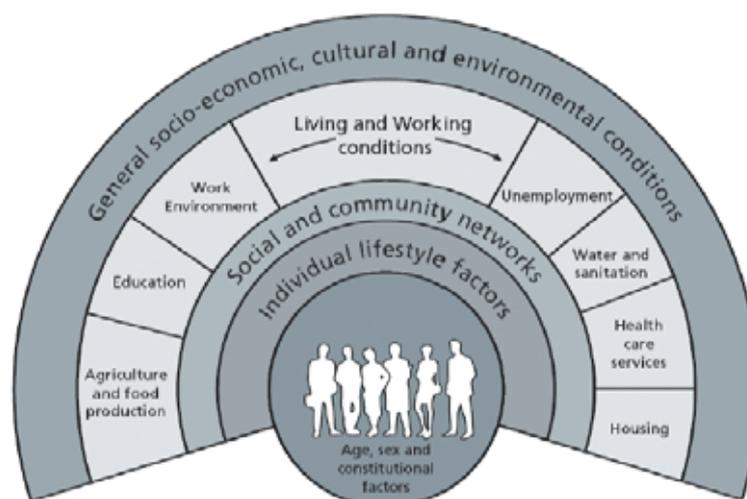


Source: DHB Annual Plan data

1.2 Performance of the New Zealand health system

Health care is just one of a number of factors that influence health status. Other factors, as shown in the diagram below, include individual characteristics through to wider socio-economic, cultural and environmental conditions (Figure 7).

Figure 7: The main determinants of health



Source: (Dahlgren & Whitehead, 1991)

Health systems can make a significant contribution to improvements in health outcomes. Empirical studies suggest that the contribution of health care to population health gains in developed countries may be between one-fifth and one-half (Bunker, 2001; Joumard, Andre, & Nicq, 2010; Machenbach, 1999; Tobias & Yeh, 2009). The impact of health care differs across countries, with some health systems being more effective at turning resources into outcomes than others.

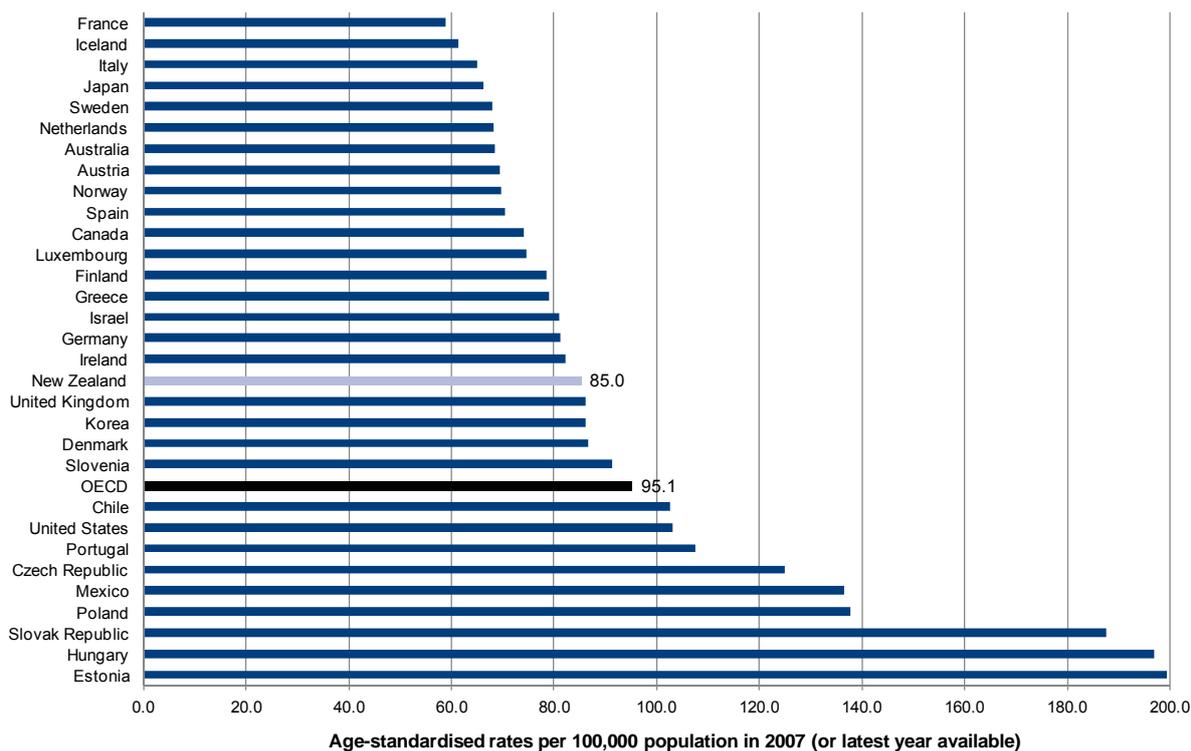
New Zealand performs well on many commonly-used indicators of overall population health status. For example, life expectancy has improved from 71.1 years in 1961 to 81.0 years in 2010, and since the 1990s has improved at a faster rate than the OECD average. However, given the many non-health system determinants of health status, it is difficult to get an accurate picture of the performance of the health system from these high-level indicators. Below we provide information on a selection of indicators which are considered to be more closely related to health system performance.

1.2.1 Amenable mortality

The concept of 'amenable mortality' refers to deaths that 'should not have occurred given available health care services' (Tobias & Yeh, 2009).

In 2007, age-standardised amenable mortality rates ranged from 60 to 200 deaths per 100,000 people in OECD countries (Figure 8). New Zealand had 85 deaths per 100,000, which was slightly better than the OECD average of 95 deaths per 100,000. The main causes of amenable mortality were diseases of the circulatory system, cancer and diseases of the respiratory system. New Zealand performed poorly relative to the OECD in terms of diseases of the respiratory system (Gay, Paris, Devaux, & de Looper, 2011).

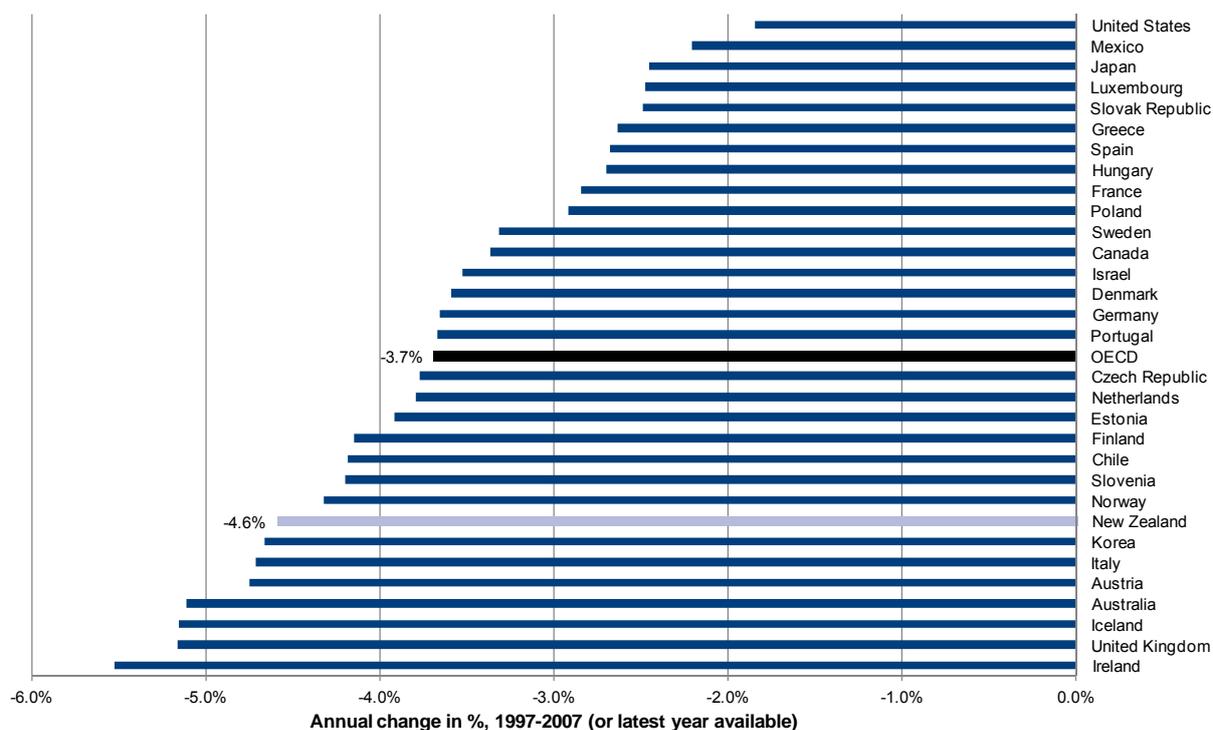
Figure 8: Amenable mortality in 31 OECD countries, 2007 or last year available



Source: Nolte and McKee (2008) cited in Gay et al (2011)

The results also showed a decline in rates across all countries studied, but with considerable cross-country variation in the rate of amenable mortality and the scale of change. New Zealand experienced a decline in amenable mortality of 4.6% which was higher than the OECD average of 3.7% (Figure 9).

Figure 9: Annual change in amenable mortality, 1997 to 2007 (or last year available)



Source: Nolte and McKee (2008) cited in Gay et al (2011)

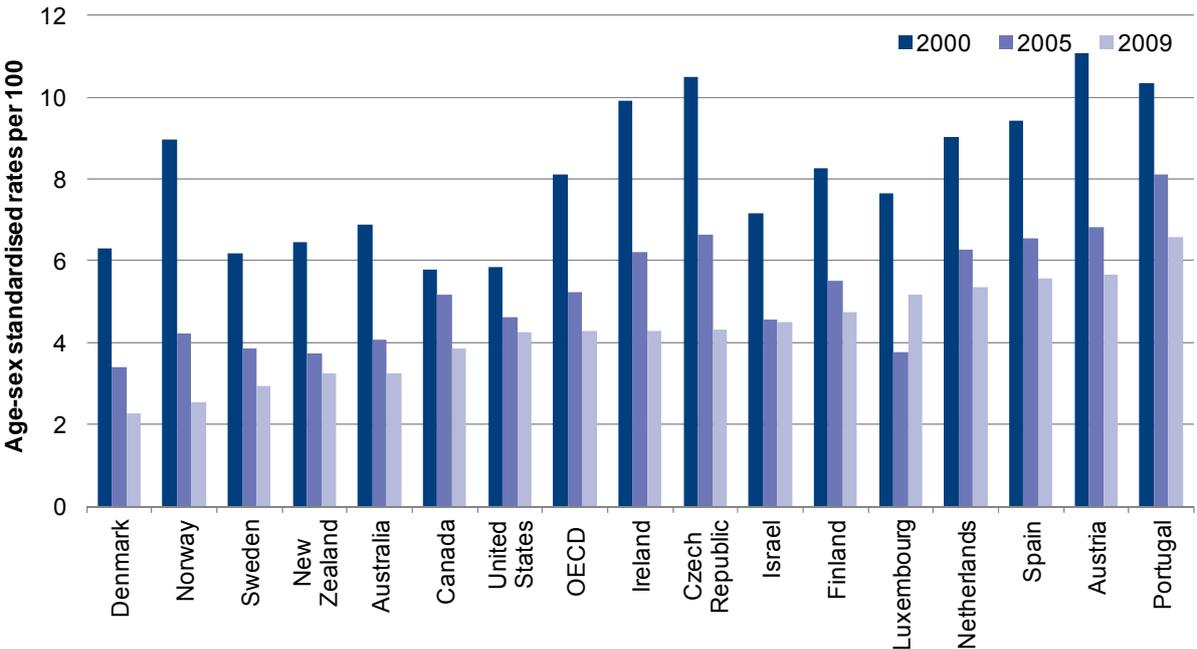
These reductions in amenable mortality rates are not strongly correlated with growth in overall health expenditure per capita, which points to the quality of spending, the mix of interventions, and efficiency of service delivery as being at least as relevant to health outcomes.

1.2.2 In-hospital care

Heart attack fatality is a good measure of the quality of acute care ‘as it reflects the processes of care ... such as effective medical interventions including thrombolysis, early treatment with aspirin and beta-blockers, and co-ordinated and timely transport of patients’ (OECD, 2011). Although cardiovascular disease remains the leading cause of death in New Zealand (and in most developed countries), mortality rates have declined since the 1970s. Much of the reduction can be attributed to lower mortality from heart attacks, due to better hospital treatment.

New Zealand’s performance on in-hospital care for heart attacks is relatively good compared with the OECD (with an age-sex standardised fatality rate of 3.2 per 100 patients compared with a rate of 4.3 per 100 patients for the OECD, as shown in Figure 10). This has continued to improve over the last decade.

Figure 10: Reduction in in-hospital case-fatality rates within 30 days after admission for heart attack, 2000-09 (or nearest year)



Source: OECD Health Data 2011

Note: Rates age-sex standardised to 2005 OECD population (45+)

1.2.3 Avoidable hospital admissions

Rates of avoidable hospital admissions are often used to provide an indication of how well the primary health care system is working.¹ Avoidable hospitalisations include those that could have been prevented in theory through primary care interventions (known as

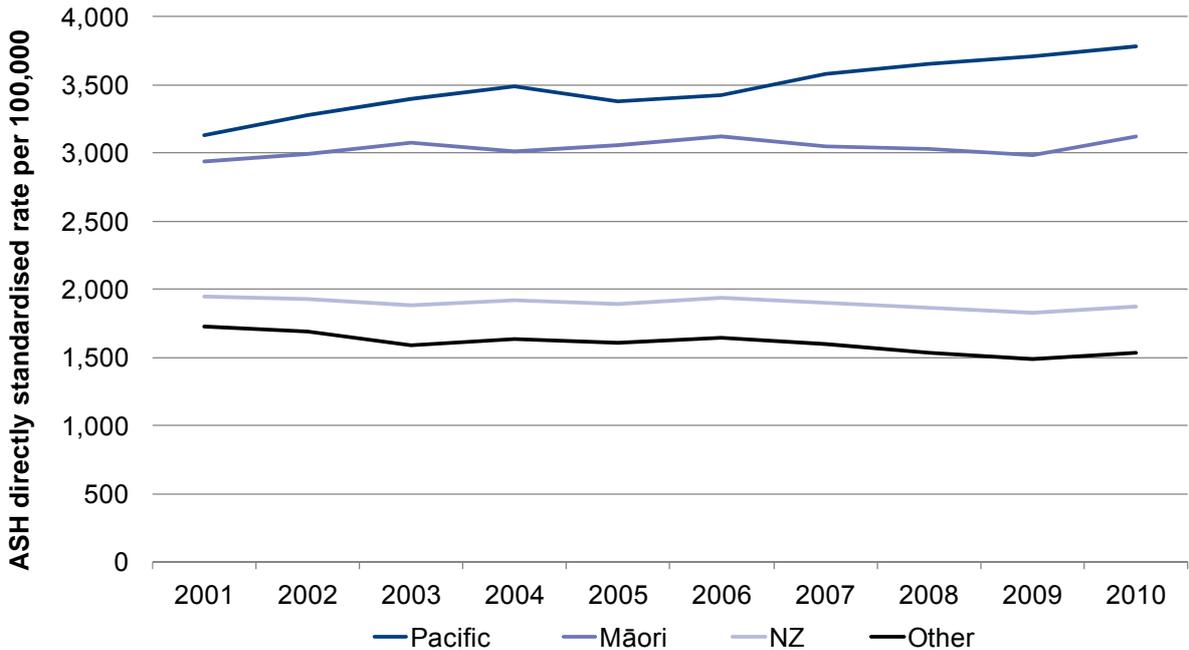
¹ High hospital admission rates may also point to poor care co-ordination or care continuity, or other barriers to accessing primary care such as unaffordable co-payments.

ambulatory-sensitive hospitalisations), and those that are preventable through public health and other initiatives such as vaccination, screening, and injury prevention programmes. For example, conditions like asthma and chronic obstructive pulmonary disease are either preventable or manageable through appropriate primary care interventions.

Hospital admission rates for these conditions can serve as a proxy for primary care quality and accessibility. New Zealand has very high hospital admission rates for both asthma and chronic obstructive pulmonary disease, in both cases at 1.6 times the OECD average. However, New Zealand has very low admission rates for uncontrolled diabetes, at less than one-fifth of the OECD average (OECD, 2011).

Ambulatory-sensitive hospitalisation rates have remained fairly stable in New Zealand over the past decade. The total rate dropped slightly from 1,947 per 100,000 admissions in 2001 to 1,875 per 100,000 in 2010. Figure 11 shows significantly higher rates for Māori and Pacific people, with the Pacific rate almost double the overall rate. The rate for Pacific people has worsened significantly over the period, further exacerbating the gap between ethnicities. This may indicate that the primary health care system is not adequately addressing the needs of Pacific and Māori people. This is despite a large increase in public funding for primary care. Total capitation funding for general practices increased from \$405 million in 2004/05 to \$737 million in 2010/11.

Figure 11: Ambulatory-sensitive hospitalisations in New Zealand by ethnicity



Source: Ministry of Health

Note: Ambulatory-sensitive hospitalisation rates are standardised to WHO standard population

Other health indicators also indicate a high disparity in health outcomes between ethnicities. For example, in 2006 the life expectancy for Māori was 8 to 9 years lower than for non-Māori, although the gap narrowed between 1996 and 2006 by about 0.2 years for males and 1.4 years for females (Ministry of Health, 2012a).² Rates of infectious disease are high in New

² There is also a disparity between Māori and non-Māori with regard to health expectancy, which is the number of years a person can expect to live in good health, of 6.8 and 6.2 years for males and females respectively in 2006 (Ministry of Health, 2011).

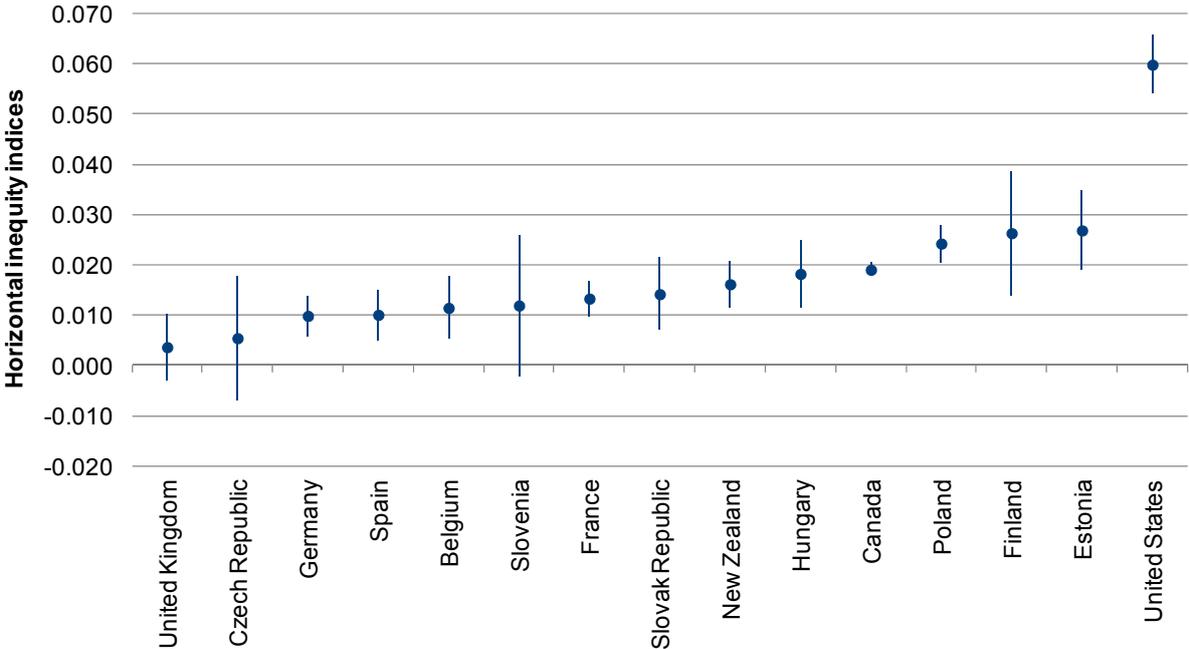
Zealand compared with other developed countries,³ and there are clear ethnic and social inequalities in infectious disease rates. The rates of infectious disease admission for Māori and Pacific people in the most deprived quintile have doubled in the past 20 years (Baker, et al., 2012).

1.2.4 Access to care

Another aspect of health system performance is access to care, particularly for vulnerable populations. Measuring rates of health care utilisation, such as doctor consultations, is one way of identifying whether there are access problems for certain populations.

The horizontal inequity index is a measure of inequality in health care use. Figure 12 shows the horizontal inequity index for the probability of a visit to the doctor (both generalists and specialists) in a range of OECD countries. A number that is higher than zero favours those on higher incomes. The index is adjusted for differences in the need for health care, since health problems occur more frequently and severely among lower socioeconomic groups. Overall, New Zealand does not appear to be out of step with other OECD countries.

Figure 12: Horizontal inequity indices for probability of a doctor visit (with 95% confidence interval), 2009 (or nearest year)⁴



Source: Health at a Glance 2011 (OECD Indicators)

Another way of looking at the equity of access to services is through assessing reports of unmet need for health care. People give a variety of reasons for not receiving health care, including cost, long waiting times, not being able to take time off work, childcare responsibilities, or having to travel too far to receive care (OECD, 2011). Differences in the reporting of unmet care needs could be due to differences in survey design (as there is no standard survey across all countries), socio-cultural factors, or because of reactions to

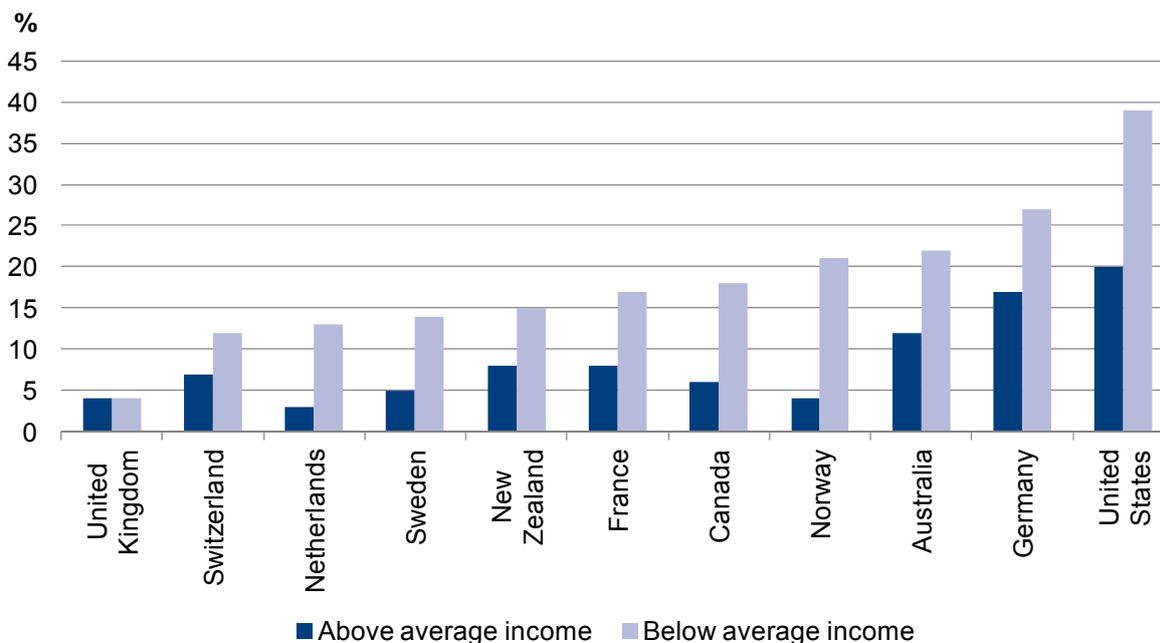
³ Rates of some infectious diseases are unusually high – notably, campylobacteriosis, rheumatic fever, childhood pneumonia, meningococcal disease, and skin infections. The share of infectious diseases in acute hospital admissions increased from 20.5% in 1989-93 to 26.6% in 2004-08 (Baker, et al., 2012).

⁴ The 95% confidence interval is indicated by the vertical lines.

current national debates about health care. However, according to the OECD, these factors play a lesser role in explaining differences among population groups *within* a given country.

In New Zealand, people with below average incomes are almost twice as likely to forgo medical care due to cost as those with above average incomes (Figure 13). However, the relative disadvantage of those on lower incomes is about average compared to the group of countries shown in Figure 13.

Figure 13: Unmet care need due to cost in eleven OECD countries



Source: Commonwealth Fund (2010), included in Health at a Glance 2011: OECD indicators

Note: 'Unmet care need' means that the person either did not visit doctor with medical their problem, did not get recommended care or did not fill or skipped a prescription. To determine unmet medical care, individuals are typically asked whether there was a time in the previous 12 months when they felt they needed health care services but did not receive them, followed by a question as to why the need for care was unmet.

1.2.5 Health sector productivity and variations in performance

Another perspective on the performance of the health sector can be gained by looking at measures of productivity. However, robust data on sector productivity is currently quite limited, even at a national level, partly because it is difficult to measure.

Two measures reported annually by the Ministry of Health in its Health and Independence Report are average length of stay (in hospital) for medical and surgical treatment, and the percentage of surgical procedures that are carried out on a day-case basis (patient admitted and discharged on the same day). These offer some insights into the efficiency of the hospital sector, which accounts for a large proportion of total health spending. Rates may be influenced by advances in treatment technology (such as surgical advances leading to less invasive procedures and more effective drugs), better follow-up and community care, and more effective administration. As Figures 14 and 15 show, these rates have been moving in a positive direction over the last decade.

Figure 14: Average length of stay (days)

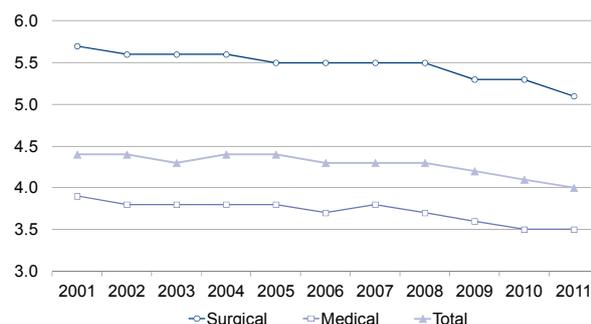
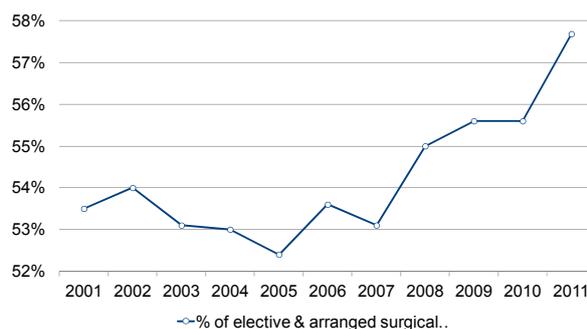


Figure 15: Day-case surgical procedures



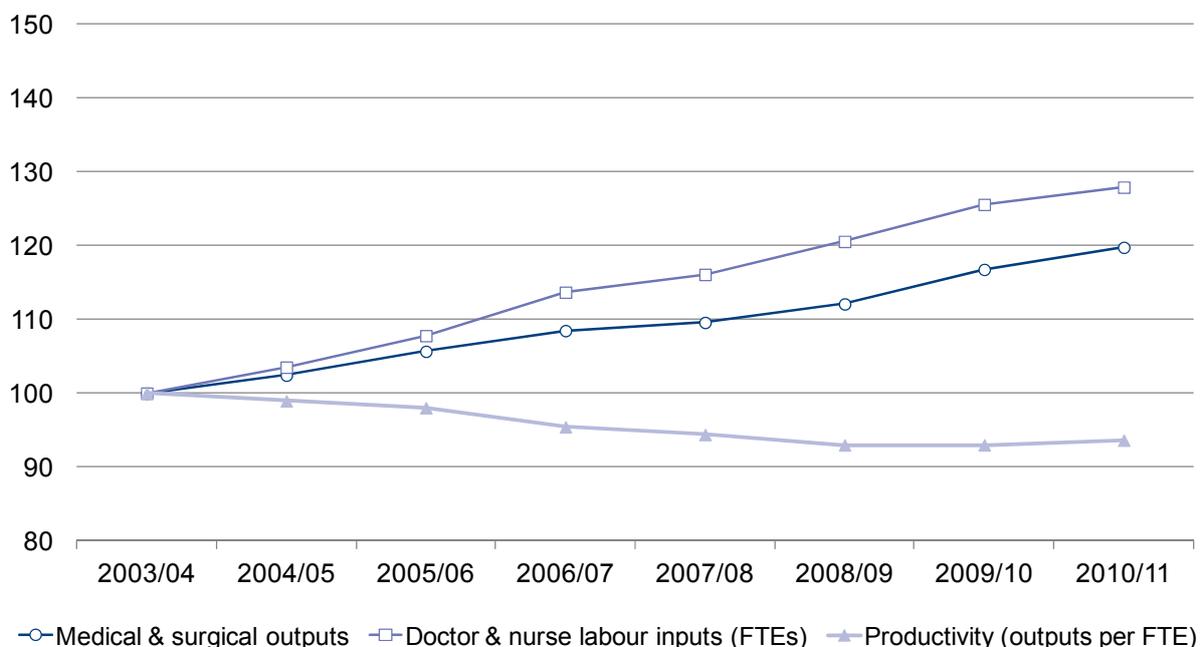
Source: Ministry of Health

A challenge for hospitals and DHBs in managing down these rates, particularly the average length of stay, is to minimise any related increase in unnecessary readmissions. The rate of acute readmissions (as a percentage of discharges) has been trending upwards over the last few years, although the rate of growth appears to have slowed. This may signal a reduction in the quality of care, as well as offsetting efficiency gains to some extent. However, some increase in readmission rates does not necessarily imply that longer average stays in hospital are preferable.

Another way of looking at productivity is to compare medical and surgical outputs with the labour inputs (doctor and nurse hours or costs) required to produce them. Figures 16 and 17 below provide this input/output comparison for hospitals. Perhaps unsurprisingly, these measures show a decline in labour productivity during the period 2003/04 to 2009/10 when emphasis was placed on increasing numbers of doctors and nurses in the health system, with an improvement in 2010/11 coinciding with state sector wage restraint.

Figure 16: Doctor and nurse productivity in DHB provider arms (medical and surgical)

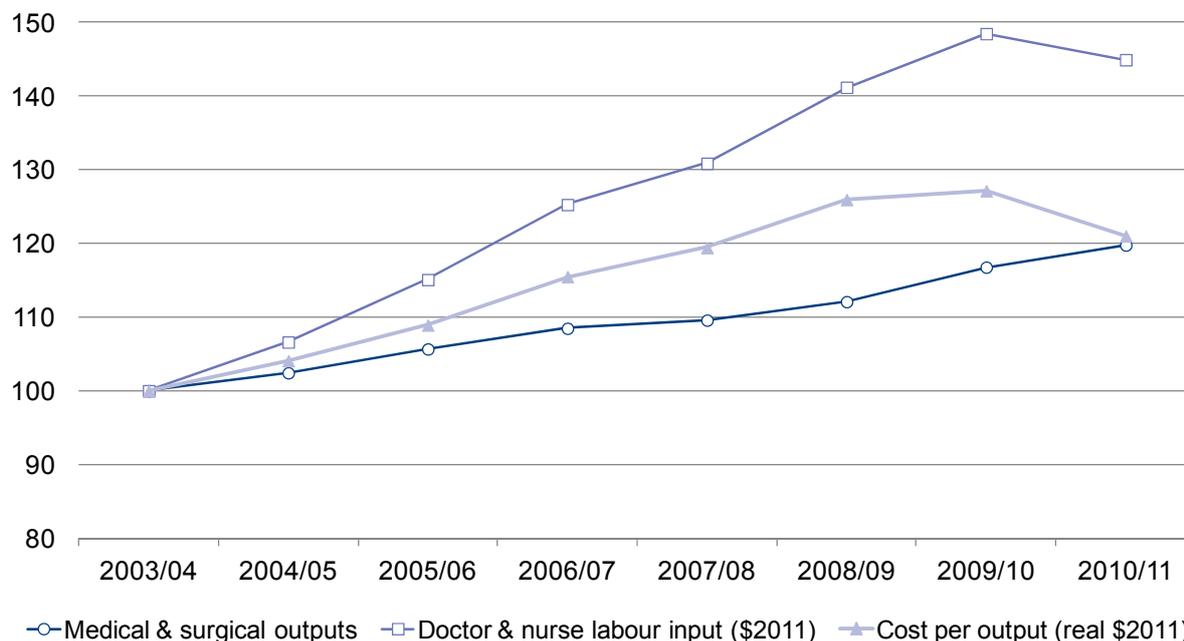
Indexed growth: 2003/04 base = 100



Source: Ministry of Health

Figure 17: Doctor and nurse efficiency and costs in DHB provider arms (medical and surgical)

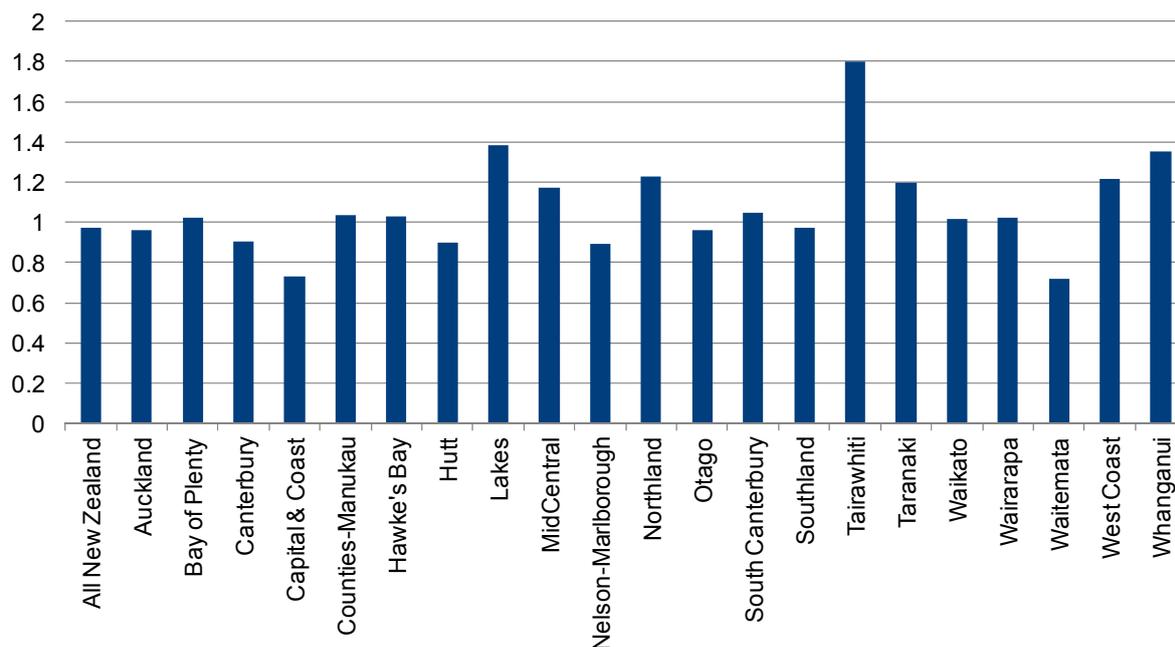
Indexed growth: 2003/04 base = 100.



Source: Ministry of Health

These productivity indicators are useful, but should be approached with caution because of measurement difficulties and because they only tell part of the story. For example, they do not reflect productivity trends in primary health care. They need to be considered alongside other measurements of health sector efficiency and effectiveness discussed earlier. Amenable mortality rates are one such measurement that can give an indication of health system effectiveness and are not strongly correlated with per capita spending. Rates of avoidable hospital admission provide information on the effectiveness of the primary health care system and its accessibility to vulnerable population groups. Figures 18 and 19 provide a breakdown of relevant rates by District Health Board. A range of factors could be driving these rates, including social and ethnic differences. Having a better understanding of what those factors are, and whether variations in service effectiveness and productivity also play a role, may help to identify areas for future improvement.

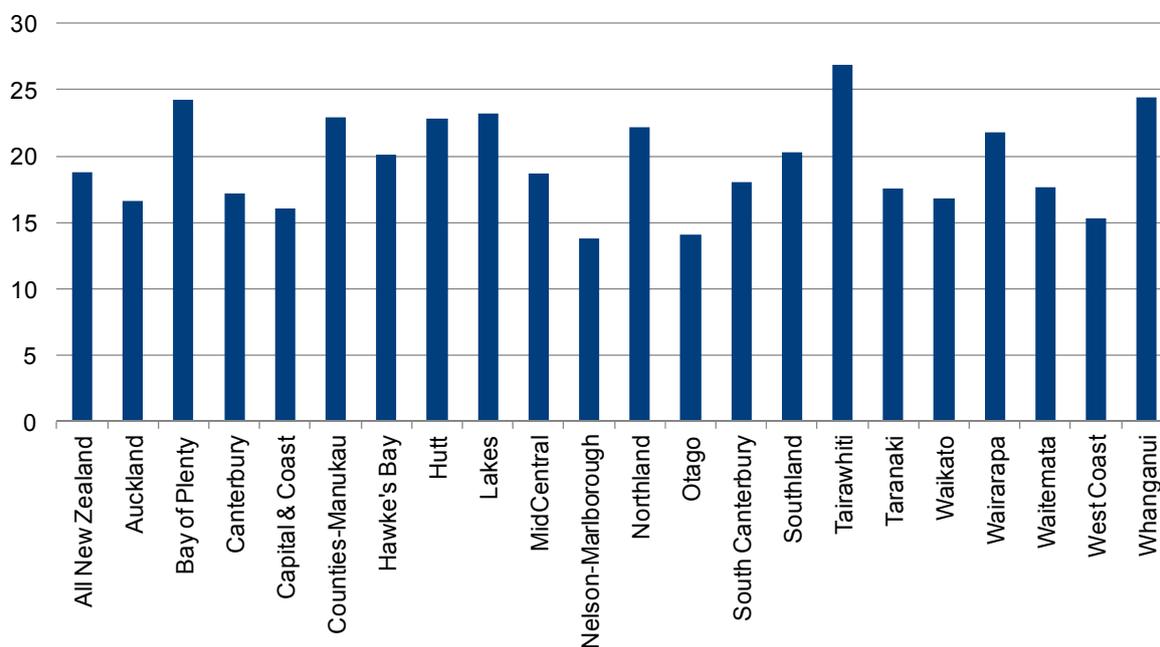
Figure 18: Amenable mortality, 0-74 years (2009), age-standardised rate per 1000



Source: Ministry of Health provisional data

Note: Data are presented for the former Otago and Southland DHBs, which are now merged into the Southern DHB.

Figure 19: Ambulatory sensitive hospitalisations, 0-74 years (2010), age-standardised rate per 1000



Source: Ministry of Health provisional data

Note: Data are presented for the former Otago and Southland DHBs, which are now merged into the Southern DHB.

2 Understanding the Size of the Challenge

2.1 Projections of health spending

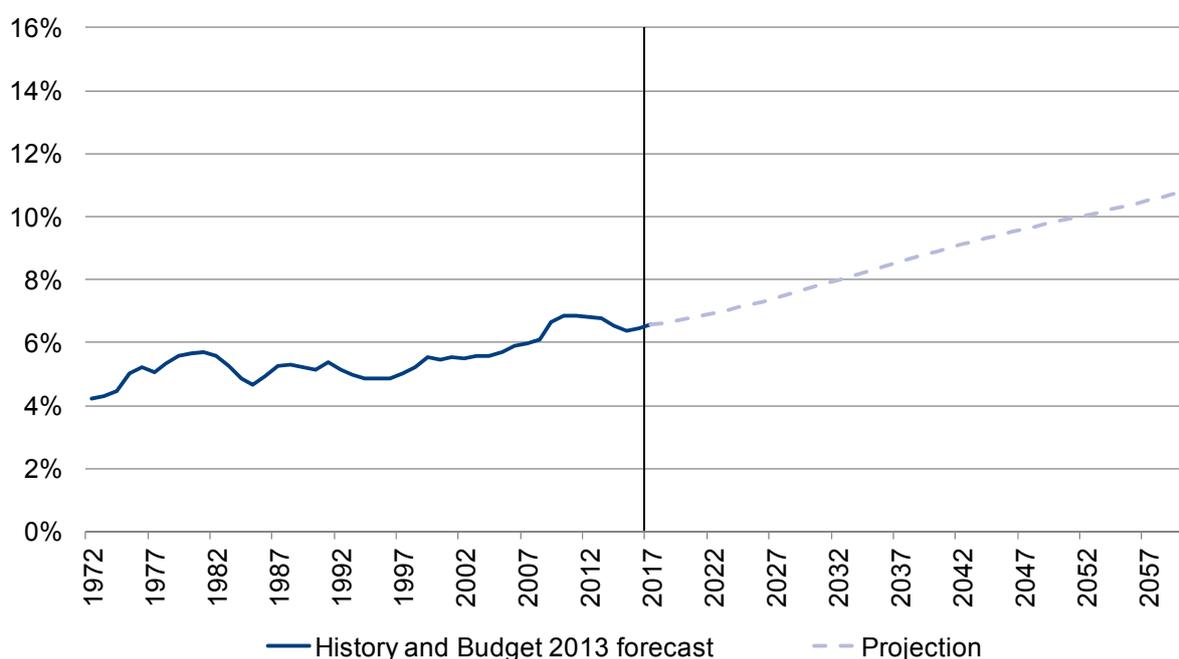
Taking what we know about the drivers of past health spending, we can project future spending growth to 2060 using the Treasury’s long-term fiscal model. The purpose of this exercise is to better understand the scale of the fiscal pressure that future governments may face. This is a starting point for thinking about the sustainability of current health system arrangements.

2.1.1 Projections under the long-term fiscal model

The projections are built from the ‘bottom up’, (referred to as the “resume historic cost growth” from 2015/16 scenario in *Affording Our Future*) meaning that factors like inflation, labour inputs, demographic growth of recipient groups, productivity growth and non-demographic volume growth are used to project future health spending. The methodology and underlying assumptions are discussed in more detail below.

Using this approach, health spending is projected to grow at around 2.5% a year in real terms, increasing from 6.8% of GDP in 2012 to 10.8% in 2060 (Figure 20).

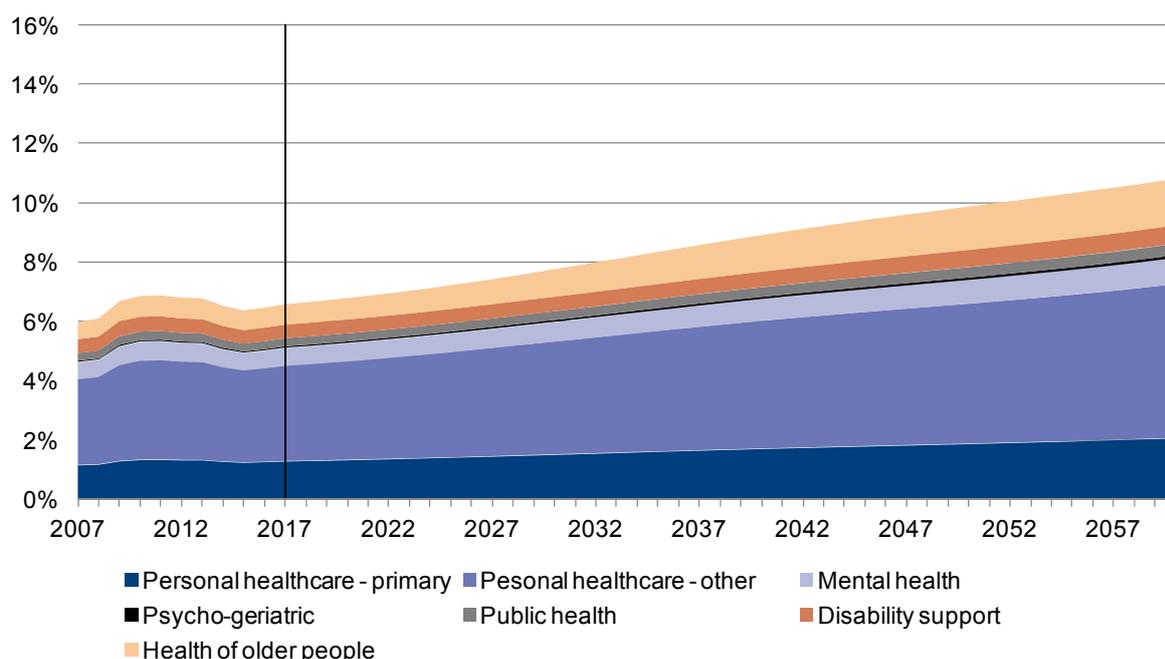
Figure 20: Core Crown Health expenditure ‘bottom up’ projections (% GDP)



Source: The Treasury

Figure 21 below illustrates the share of cost pressures which are projected to come from each of seven different categories of health care. The largest cost category is ‘personal health care – other’ which is mostly care provided in a non-community setting (e.g. a hospital). The category which is expected to experience the greatest growth is ‘health of older people’ which includes both residential care and home-based support services for older people. A more detailed discussion of the projections for long-term care spending is provided in the companion paper ‘Long-term Care and Fiscal Sustainability’.

Figure 21: Core Crown Health expenditure bottom-up projections by cost category (% of GDP)⁵



Source: The Treasury

2.1.2 Comparison with OECD projections

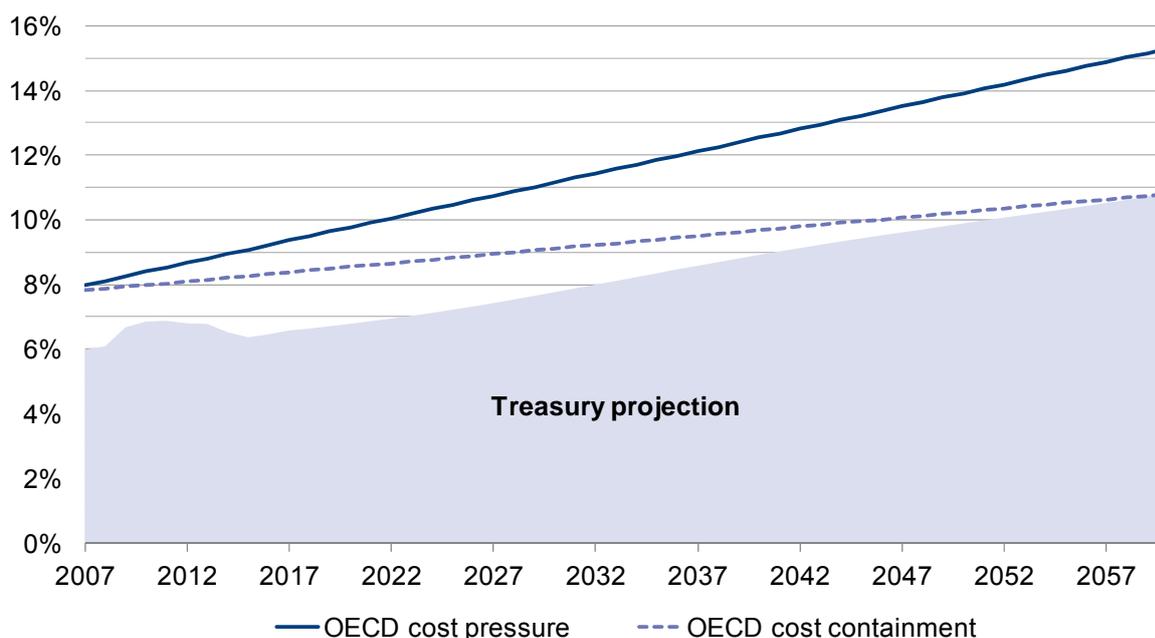
OECD projections for publicly-financed health and long-term care spending in New Zealand out to 2060 are shown in Figure 22 below (OECD, 2013), set against the bottom-up projection for core Crown health expenditure under the Treasury's long-term fiscal model.

Our projections show core Crown health expenditure increasing from 6.8% of GDP in 2012 to 10.8% by 2060. OECD projections for two alternative scenarios are shown in figure 22. Under the OECD's 'cost pressure' scenario, total publicly-financed spending in New Zealand is projected to increase from 7.7% of GDP (2006-2010 average) to 15.3% of GDP in 2060. Under the 'cost containment' scenario, which implies that (unspecified) future policies are more successful at controlling long-run expenditure growth than in the past, spending is projected to increase 10.8% of GDP in 2060.⁶

⁵ 'Personal healthcare – primary' relates to professional health care received in the community, usually from a general practitioner (GP) or practice nurse.
 'Personal healthcare – other' covers hospital services (and equivalent ambulatory and domiciliary services provided outside a hospital setting).
 Together, 'Health of Older People' and 'Psycho-Geriatric' cover residential care and home-based support services for older people, mainly the over 65s.
 'Disability Support' covers disability support services funded by the Ministry of Health, mainly although not exclusively for people aged under 65.
 'Mental health' covers care, treatment, and support for people with mental illness, or mental health problems.
 'Public Health' covers services for the whole population or population groups, being primarily services of a protective and promotional nature, as distinct from individual personal health services.

⁶ The methodology used by the OECD for projecting health expenditure is as follows. There are three main drivers: demographic effect, income effect and a residual. Demographic effects are modelled on the assumption that all longevity gains are translated into additional years of good health. Income elasticity is assumed to be 0.8. The methodology used for projecting long-term care expenditure in these projections is to split the population into dependants and non-dependants based on projections of future life expectancy and healthcare spending. Income elasticity is assumed to be equal to 1. The key differences between the OECD's two scenarios are as follows. For the health element, residual expenditure growth (growth not attributable to demographic and income effects) is assumed to be 1.7% a year in the cost

Figure 22: 2013 OECD projections for New Zealand health spending (% of GDP)



Source: The Treasury & OECD

Note: The OECD measures expenditure using its System of Health Accounts and includes all public spending on health care. This is a different (broader) measure to core Crown Health expenditure, as projected under the long-term fiscal model.

2.1.3 Comparison with the 2009 Long-term Fiscal Statement

In the 2009 Statement, core Crown health spending was projected to increase to 10.7% of GDP by 2050. The current projections are for spending to reach 9.9% of GDP by 2050 and 10.8% of GDP by 2060. Although the headline figures are similar, there have been some important changes to the underlying assumptions. Assumptions about ‘healthy ageing’ have now been incorporated into the model, which tends to reduce projected expenditure growth. On the other hand, the assumed rate of non-demographic volume growth (income and residual effects) has increased from 0.8% to 1.5%, increasing projected growth. These issues are discussed further below.

2.2 Drivers of health spending

Spending on health care is driven by a range of interacting demographic and non-demographic factors. Most research suggests that non-demographic factors, such as income growth and technological change, have historically played a larger role in the growth of health spending than demographic factors, such as population ageing (Bryant, Teasdale, Tobias, Cheung, & McHugh, 2004; OECD, 2006; Smith, Newhouse, & Freeland, 2009).

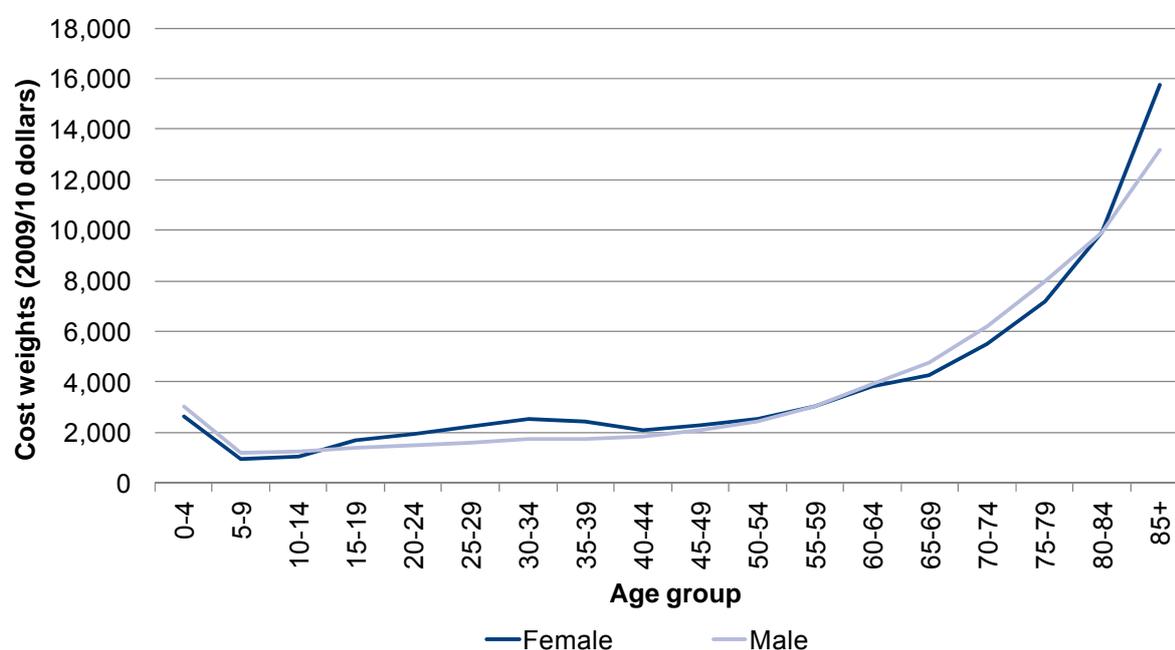
pressure scenario, whereas this residual is assumed to reduce to zero by 2060 in the cost-containment scenario. For the long-term care element, unit costs are assumed to increase in line with labour productivity in the cost pressure scenario, whereas this effect is halved in the cost containment scenario.

2.2.1 The impact of demographic change

Demographic factors that affect health spending include population growth and the age distribution of the population. Population ageing affects health spending, since older people tend to need more health care. Figure 23 below shows relative health spending on people by age and sex. It indicates a small spike in spending at very young ages, followed by low but gradually increasing spending through working ages, with a higher rate for women of childbearing age. There is a sharp increase in spending in the older age-bracket. In reality, the stronger driver of health spending at old ages is ‘distance to death’, rather than age per se (‘distance from birth’), but age provides a useful proxy.

Past analyses show that the contribution of population ageing to past health spending growth has been modest. Estimates range from 6.5% to 9% of the increase in total health care spending over the period 1960 to 1990 (Dormont, Grignon, & Huber, 2006; OECD, 2006; Smith, et al., 2009).

Figure 23: Health cost weights, by age groups, 2009/10 dollars



Source: Ministry of Health

In the future, it is likely that ageing will make a larger contribution to increasing health costs, at least on current policy settings. However, this may be partially offset by a decreasing average cost per individual in older age groups. A large proportion of health costs come at the end of life. Insofar as increasing longevity means that more individuals ‘exit’ an age group by living into an older age group (rather than by dying) the average costs of the age group will fall. There is also evidence that ‘the costs of dying’ are falling as age at death increases (OECD, 2006).⁷

Moreover, if increases in longevity are accompanied by an increase in the number of years lived in good health – so called ‘healthy ageing’ – this should also help to offset demographic cost pressures to some extent. The international evidence for healthy ageing is mixed, with recent empirical data not clearly indicating whether dependency levels by age will rise, fall or remain constant as life expectancy increases (European Commission, 2012).

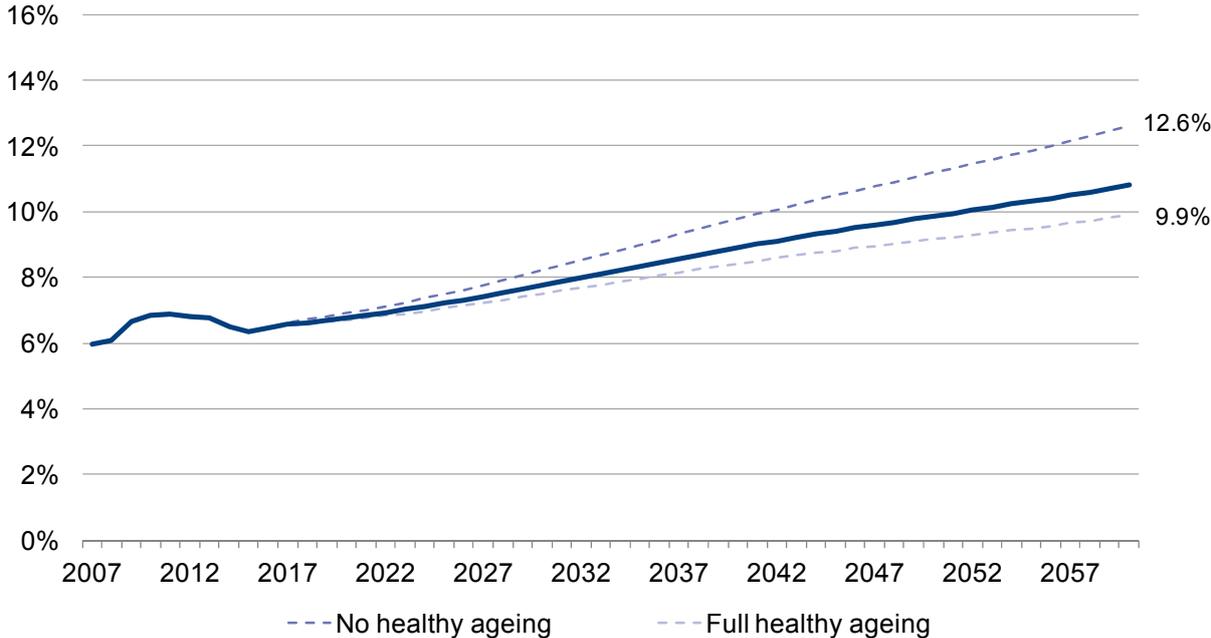
⁷ Note that these two points are related. The logical correlate of health costs being death-related is that the survivors are living in relatively good health, or at least not using much health resources. This implies that longevity gains are translated into years in good health.

Different health status scenarios have been envisaged in the literature. In an ‘expansion of morbidity’ scenario, the share of life spent in bad health would increase as life expectancy increases (Gruenberg, 1977). In a ‘compression of morbidity’ scenario, the opposite would occur (Fries, 1980). The balance between longevity gains and the reduction of morbidity can be altered by a range of factors. For example, an increase in the survival rates of sick people would result in an expansion of morbidity, whereas an improvement in health status of new cohorts would be a compression (Michel & Robine, 2004).

It has been suggested that a ‘dynamic equilibrium’ scenario provides the best fit with available New Zealand evidence, with increased longevity being associated with a redistribution of disability from more to less severe (Graham, Blakely, Davis, Sporle, & Pearce, 2004). Earlier versions of Treasury’s long-term fiscal model assumed a straightforward expansion of morbidity: current health cost weightings (shown in Figure 23 above) were applied to future years, with no adjustment. This version attempts to model a dynamic equilibrium scenario, meaning that part of every additional year of life expectancy is assumed to be spent in good health.⁸

Figure 24 illustrates the impact of different assumptions about healthy ageing. Under an ‘expansion of morbidity’ scenario (no assumption of healthy ageing), projected expenditure increases to 12.6% of GDP. If full ‘compression of morbidity’ were assumed, projected expenditure would reduce to 9.9% of GDP.

Figure 24: Impact of ‘healthy ageing’ assumptions on projected expenditure (% GDP)



Source: The Treasury

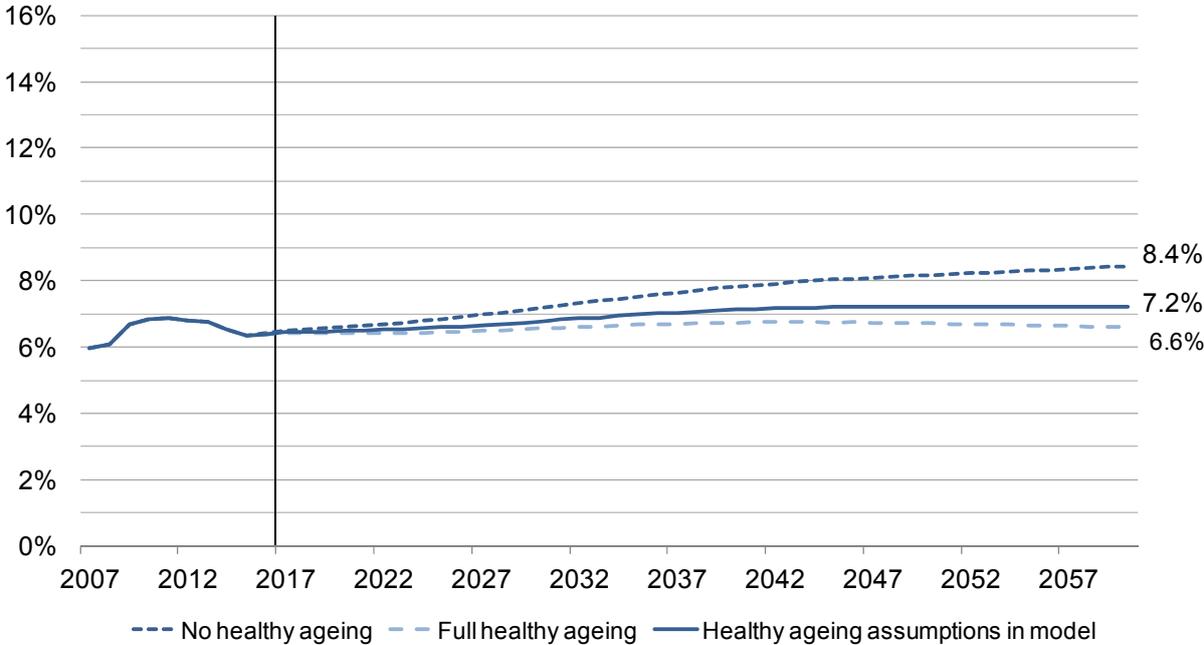
Assumptions about healthy ageing are important both to the headline projection and to the relative importance of demographic change within it. Figure 25 shows the demographic component of projected health expenditure in isolation.⁹ With the new assumptions about

⁸ This has been modelled by adjusting cost weights for most categories of health spending as life expectancy increases. Generally, the rate of shifting applied is 0.75 for every year of additional year of life expectancy. For categories more closely related to aged care (psycho-geriatric and health of older people), the rate of shifting is 0.5. No shifting is applied to the public health category, which is more focused on younger people.

⁹ This has been done by assuming that ‘non-demographic volume growth’ is equal to 1.5% per annum, which implies that demand for health care will rise in line with economy-wide per capita real incomes (section 2.2.3 below), with a neutral impact on health spending as a percentage of GDP. We have further assumed, for these purposes, that health

healthy ageing, demographic effects alone increase expenditure by about 0.4 percentage points (from 6.8% to 7.2% of GDP) by 2060 – about 11% of total projected growth. With an assumption of no healthy ageing (used for previous statements), expenditure would increase to 8.4% of GDP by 2060 on a purely demographic basis, with demographic trends accounting for over a quarter of total projected expenditure growth.¹⁰ As well as showing the sensitivity of the projections, Figure 25 illustrates the impact that having a healthier (or less healthy) older population could have on future spending.

Figure 25: Pure demographic effects



Source: The Treasury

2.2.2 The impact of cost inputs and productivity assumptions

National income growth drives increased health spending. As income growth increases so does the long-run cost of labour, which is the major input into health services. Since productivity gains tend to be relatively low in labour-intensive service industries like the health sector, the cost of delivering health care has tended to rise over time at a rate faster than national income. This relative price effect – also known as Baumol's cost disease – has been calculated using an assumption of annual public sector productivity growth of 0.3% (compared to an assumption of economy-wide annual productivity growth of 1.5%).¹¹

Empirical evidence of public sector productivity growth is limited, particularly for New Zealand. The basis of the assumption of 0.3% annual growth has been discussed elsewhere (Bell, Blick, Parkyn, Rodway, & Vowles, 2010). Evidence of productivity growth in

sector productivity gains of 1.2% per annum, fully offsetting assumed unit cost increases (section 2.2.2 below). This means that the same outputs can be achieved for the same inputs, again with a neutral impact on spending as a percentage of GDP. Figure 25 therefore shows the pure demographic effects within the model.

¹⁰ With an assumption of no healthy ageing, total projected expenditure increases by about 5.8 percentage points (from 6.8% to 12.6%), with 1.6 points (about 28% of the total) attributable to pure demographics.

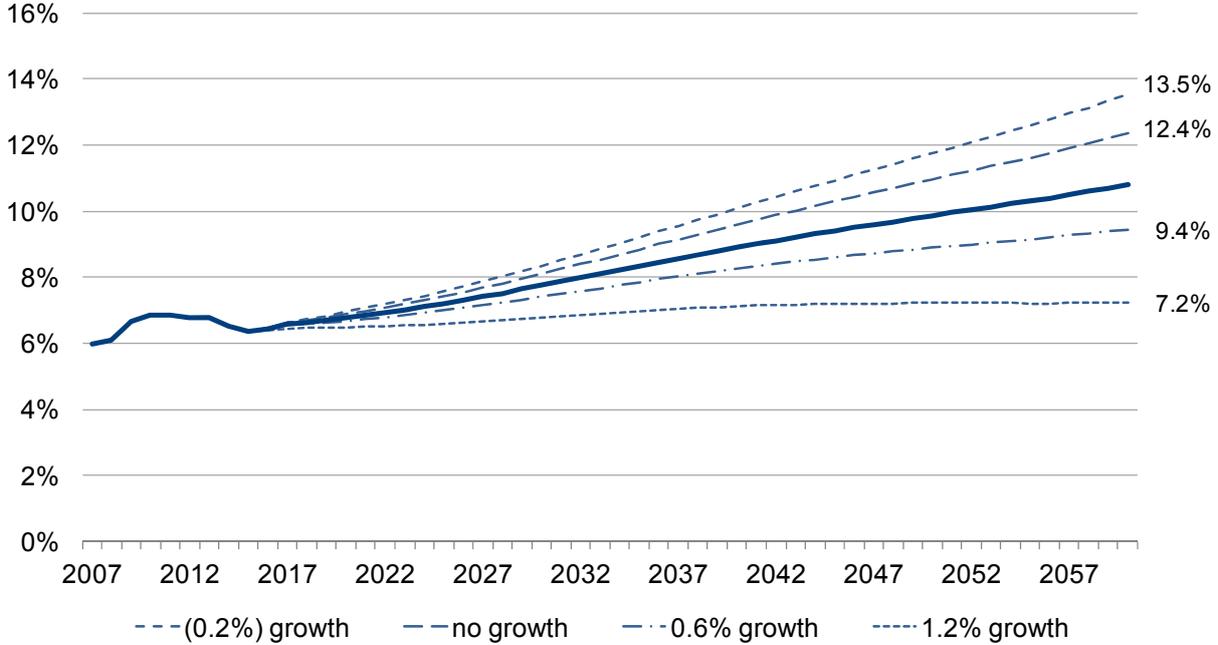
¹¹ Public sector wages are assumed to rise in line with labour productivity growth in the economy as a whole (assumed to be 1.5% per annum), with a scalar of 0.8 applied, reflecting that not all price inputs are driven by labour costs. The 1.2% per annum real input price growth thus calculated is offset by 0.3% assumed public sector productivity growth. This gives a relative price effect of 0.9% per annum (Rodway, 2012).

United Kingdom’s health sector shows considerable variation over time: productivity is estimated to have increased by an average of 1.7% a year over the period 1979-80 to 1995-96; while the Office of National Statistics estimates that productivity has declined on average 0.2 a year since 1995 (Office for Budget Responsibility, 2012).

Figure 26 shows the impact on the projections of different assumptions about productivity gains in the public sector. Productivity gains of 0.6% a year, for example, would reduce projected health spending in 2060 to 9.4% of GDP. Achieving productivity gains of 1.2% a year (eliminating the relative price effect) would constrain projected expenditure to 7.2% of GDP, illustrating the extent to which productivity assumptions drive projected expenditure growth once assumptions about healthy ageing are incorporated into the model.

Achieving significant productivity gains can be challenging, particularly in labour intensive sectors such as health. As discussed in the following section on policy choices, New Zealand competes in an international labour market, with clinical skills at a premium. If no productivity growth is assumed, for example, projected expenditure increases to 12.4% of GDP by 2060. If negative growth of 0.2% is assumed, in line with the UK experience since 1995, this increases to 13.5% of GDP.

Figure 26: Impact of productivity assumptions on projections



Source: The Treasury

2.2.3 Income and other effects

Higher incomes also tend to drive higher public expectations of the range and quality of health services that should be available and, in a broad sense, a higher willingness to pay for these through taxation. Health systems face pressure to respond to people's concerns about quality and access to services. It is generally accepted that, at a national level, growth in per capita income leads to an increase in health spending, although the strength of the relationship is uncertain. Older studies tend to suggest that health care is a luxury good, with demand increasing faster than income (elasticity greater than one). More recent studies have

suggested a weaker causal relationship, although one that is nevertheless significant (European Commission, 2012).¹²

Public expectations of the health system also increase as technology progressively extends the range of potential treatment options. Some studies indicate that between one quarter and one half of the increase in health care spending could be attributed to technology (Smith, et al., 2009). Other studies put the figure at as much as three quarters (Thomson, et al., 2009).

The role played by technological change is complex, and there has been debate about whether technological advances will, on balance, serve to reduce or increase overall health expenditure in future. New technologies can reduce costs through efficiency gains, or through health improvements that reduce the need for further and perhaps more costly care. They can have beneficial flow-on effects in other areas of spending, such as by reducing rates of hospitalisation or duration of hospital stays, or by allowing the aged to remain in their own homes and thereby reducing aged care costs. However, they can also contribute to higher costs in a number of ways: by extending the scope and range of possible treatments available; by extending treatment to a wider set of indications and to more people (expansion); or by replacing an existing and cheaper technology (Thomson, et al., 2009).¹³ Technological improvements may also increase costs if people live on to develop other health problems, which themselves require expensive treatment.

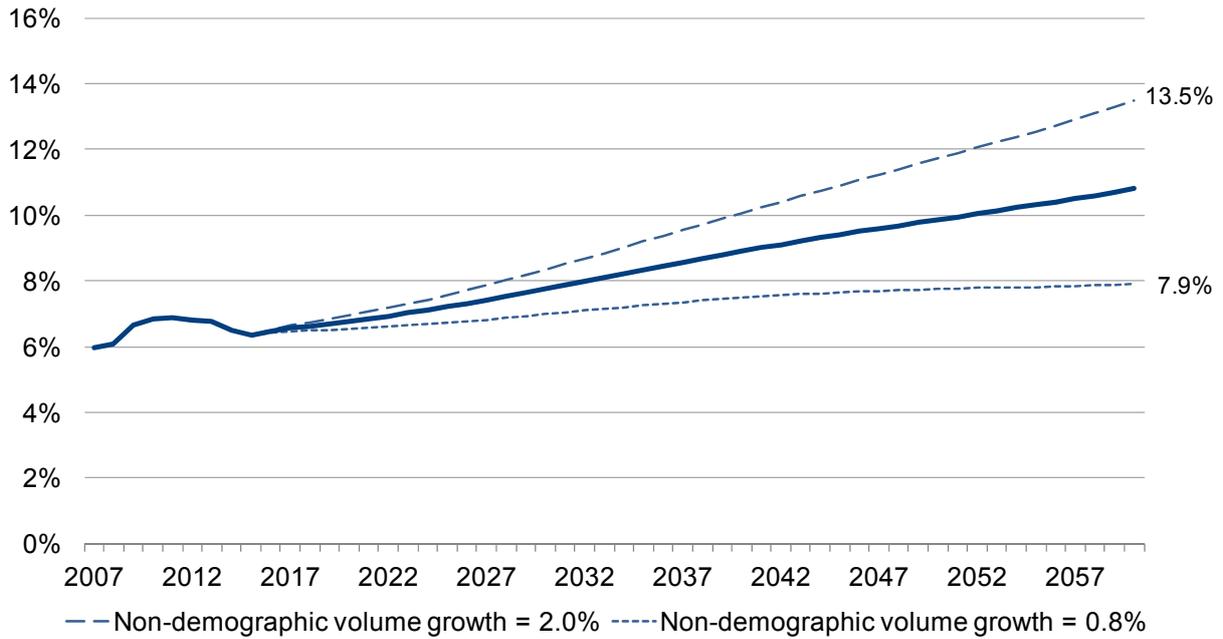
The Australian Productivity Commission surveyed future possible technological developments and assessed that while they were likely to reduce costs elsewhere in the health system, the likely increase in unit costs and treated prevalence would more than offset those savings (Banks, 2008). Genomics is one example of a new technology where the longer-term costs and benefits are uncertain. It has the potential to significantly increase the scope of the healthcare system by increasing the range of possible interventions. At the same time, it may allow earlier or preventive interventions that avoid the need for mostly costly treatment later.

Cost pressures attributable to the income elasticity of demand, technological changes and other factors are reflected in the projections through a residual assumption about expenditure growth not attributable to other drivers. This 'non-demographic volume growth' for health is assumed to be 1.5% per annum, which implies that demand for health care will rise in line with economy-wide real incomes. This assumption has been increased from 0.8% in the 2009 Statement to better reflect historical trends for publicly-funded health spending and for consistency with international practice (Rodway, 2012). As it happens, the new assumption is neutral for health spending as a percentage of per capita GDP, which is also projected to grow at 1.5% a year. Figure 27 below shows the sensitivity of the projections to this assumption.

¹² The European Commission (2012) provides a short literature review and cites a 2009 study that found income elasticity for health care demand of 0.72 with an upper value of 1.13. For its own 2012 projections, the European Commission's baseline assumption is income elasticity of 0.8 for health care and 1.0 for long-term care. The 2006 OECD projections referred to above assumed income elasticity of 1.0 for health care and zero for long-term care.

¹³ Coronary stents, for example, and new prostheses for hips and knees, cost a lot more than the technologies they replace. New diagnostic imaging techniques also cost more and are often used in conjunction with old technologies such as X-rays and ultrasound. Technologies that have contributed to a reduction in the length of hospital stays – for example, improved anaesthetics for older patients and improved cataract surgery – have also led to an increase in the number of patients being treated.

Figure 27: Impact on projects of assumption about non-demographic volume growth



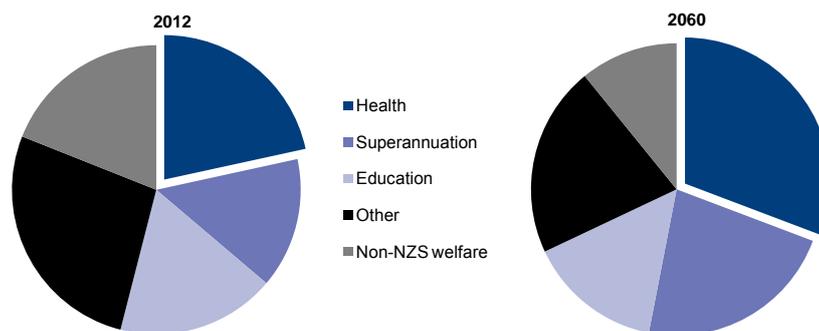
Source: The Treasury

2.3 Implications of projected expenditure growth

The projected increase in publicly-financed health spending represents a significant challenge for policy makers. If health spending continues to increase as it has in the past, it will consume an increasing share of new government spending which will leave less for other priorities.

Figure 28 below indicates the proportion of government expenditure allocated to health in 2010 and the projected proportion in 2060. This shows that health is projected to increase from 22% to 31% of total government expenditure (excluding debt financing costs). Several sectors are expected to decrease as a proportion of government expenditure, including education and working age welfare. Although there are pressures to spend more on health care, and there may be benefits from doing so, governments are faced with limited resources and have to make trade-offs among competing priorities. These trade-offs are reinforced by the deadweight economic costs of taxation and the need for debt to be kept at a prudent level over the long run.

Figure 28: Projected change in composition of government expenditure (excluding debt financing costs)



Source: The Treasury

In considering what changes to make to bridge the gap between current and fiscally sustainable policy settings, governments will need to consider where public money is best spent, and the interactions between spending in one sector on outcomes in another. For example, it may be that investing more money in the health system becomes relatively less important for improving the health of New Zealanders, and that spending in areas like education and housing has a larger impact. Similarly, health spending may improve outcomes in other areas, such as labour market productivity and welfare.

There is no one way to achieve the adjustment that is needed. It is likely to require changes in a number of areas, both within health, and across different areas of expenditure and revenue. Signalling changes early will give people time to adjust help to achieve better outcomes. In addition, many levers for controlling health spending are indirect and will take time to have an impact on efficiency, demand and spending. The policy choices section that follows outlines some of the main options to help manage health spending that we think future governments will need to consider.

3 Policy Choices

3.1 Introduction

In this section, we discuss some of the choices available to governments to moderate the projected growth in publicly-financed health spending. Given the complexity and importance of the health system, there are no simple solutions. Furthermore, it is not possible to synthesise the vast range of literature addressing this subject in a paper of this length. The purpose of this section is not to present firm recommendations for change, but rather to highlight areas for further work and encourage a wider debate about the changes that might be made to the future of New Zealand's health system.

There are also broader questions about how much we want to spend on health relative to other priorities, such as education and superannuation, and the appropriate level of government expenditure on health care (which has implications for taxes and economic growth). Those issues are addressed in a separate paper (Carroll, Bell, & Cruickshank, 2012).

As well as thinking about fiscal sustainability, we have been guided by other dimensions of the Treasury's living standards framework in thinking about policy choices (New Zealand Treasury, 2012). The table below explains how we see the five dimensions applying to the health system.

Table 1: Living standards dimensions as applied to the health system

Living standards dimension	Application to health system
<i>Economic growth</i>	<p>A healthy population supports economic growth by enabling greater rates of participation in the labour market and higher productivity.</p> <p>Health spending represents a significant proportion of total government expenditure. As such, the size of the public health system has implications for economic growth through its impact on taxation and associated deadweight economic costs.</p> <p>The productivity of the health sector is also important for economic growth, since if government is providing a significant share of goods and services in an economy and has lower productivity growth than that private sector, it will tend to drag down economic growth (Cook, Schousboe, & Law, 2011).</p>
<i>Sustainability for the future</i>	<p>The level of growth in publicly-financed health spending has implications for fiscal sustainability, and also affects the amount available to spend on other government priorities.</p>
<i>Reducing risks</i>	<p>Public health services and private health insurance both provide mechanisms for risk sharing by individuals, in the face of uncertain health care needs and costs.</p> <p>In terms of New Zealand's ability to withstand macroeconomic shocks, the main contribution that the health system makes is through the level of government spending, which flows through to government debt.</p>
<i>Increasing equity</i>	<p>The health system can increase equity through redistribution of resources based on factors such as ability to benefit (rather than ability to pay) and age.</p>
<i>Social infrastructure</i>	<p>The provision of health services to New Zealanders and the level of public trust in and support for health institutions.</p>

3.1.1 The role of government in health care

Markets for health care have some unique characteristics which have led to significant government involvement in the provision of health services in all OECD countries.

Firstly, patients are highly dependent on doctors in determining which course of treatment is best for a particular illness. This is because doctors generally know a lot more about their patients' conditions and the range of treatments available than their patients. This is known as information asymmetry. As a result, doctors (the suppliers of health care) have more control over the demand for health care than their patients, which may lead to a phenomenon known as supplier-induced demand.¹⁴

Secondly, individuals face considerable uncertainty about the timing and magnitude of potential health care costs, which means that some form of insurance (be it public or private) is desirable. However, as many economists and health systems analysts have outlined, the presence of health insurance gives rise to the problems of adverse selection, risk segmentation and moral hazard (Dolan & Olsen, 2002; Farrington-Douglas & Coelho, 2008):

- **Adverse selection:** Individuals represent different levels of risk to insurers in terms of their health needs. However, insurers do not have complete information about the exact level of risk presented by each individual. This incentivises the insurers to attract low-risk rather than high-risk individuals. Furthermore, individuals face incentives to present themselves to insurers as healthier than they really are which can mean that they end up with insurance plans that are less generous than they would otherwise choose.
- **Risk segmentation:** Individuals with a higher risk of health issues face higher insurance premiums where insurers are able to distinguish between high-risk and low-risk individuals. This situation reduces the benefits of having a large pool in which risks are shared. Much of the projected growth in health care spending is related to older people and those with chronic conditions, who are less well catered for in private insurance markets given their high risk profiles. Given the fact that high health risk is associated with low income, risk segmentation also raises concerns about equity.
- **Moral hazard:** The presence of insurance can mean that individuals over-consume health services, which is known by economists as moral hazard. This is because people are either less likely to look after their own health as the insurer will pay for their health care, or because they do not face costs at the point at which they actually use health services.

Adverse selection and risk segmentation create a strong case for government involvement in the health sector (but they do not rule out a role for the private sector in the financing and delivery of health care). OECD countries have addressed these problems through different combinations of regulatory measures and public financing and provision of health care. It is worth noting that the United States, which has the highest proportion of private financing out of the OECD countries, still finances around half of its overall health care costs from the public purse.

Analysis of health reforms suggests that systems like ours which are predominantly publicly-financed with a single payer make it easier to contain overall health spending (Docteur & Oxley, 2003). One key reason for this is that in such systems, governments have a direct lever for controlling spending as part of budget decisions. Comparisons of different health systems also suggest that there is no one type of system that systematically outperforms the others in terms of efficiency. In fact, estimates of efficiency have been shown to vary more

¹⁴ There is considerable debate in the literature about the extent to which supplier-induced demand actually occurs in practice (Rice & Unruh, 2009)

within groups of health systems sharing similar characteristics than they do *between* different groups (Joumard, et al., 2010).

On this basis, there seems to be no clear rationale for New Zealand to move away from a predominantly tax-financed health system at the present time. However, this does not rule out some shift in the balance of public and private spending on health care, as discussed later. We focus below on the key levers that can be used to influence health care expenditure within this existing paradigm. These are:

- ensuring that we get maximum health gains from every dollar spent through the way the health system is organised and run, and the way that services are prioritised;
- reducing demand for health services as much as possible by keeping people healthy and minimising over-consumption; and
- maintaining a firm and reasonable budget constraint on public health spending, and making adjustments to the coverage of the public health system.
- We consider that action will be needed across all of these fronts in order to achieve a sustainable change in the projected growth path for health expenditure.

3.2 Improving the value for money of the health system

In common with other OECD countries, New Zealand is experiencing both demographic ageing and a greater prevalence of long-term or chronic conditions. These trends, which are partly related, contribute to the competing demands for health care services and the need to make practical choices about how resources are allocated. An on-going challenge, therefore, will be to ensure that public funds are invested in the areas where they can achieve the maximum returns to health outcomes. The health system will need to be reoriented to deal effectively and affordably with the challenges presented by an ageing population and the rising incidence of chronic disease. Changes to improve service mix and quality or drive down costs (or both) will need to form an integral part of any successful strategy to manage expenditure growth.

While health spending has been increasing across the OECD, base levels of spending and growth rates differ, and are only weakly related to health outcomes. This indicates that institutional arrangements within the health system matter and that, as noted above, some countries do better than others at translating health spending into health outcomes.

3.2.1 Shifting health care delivery to more cost-effective and clinically sustainable settings

Encouraging and enabling clinicians to move services into more cost-effective settings can generate efficiencies (Thomson, et al., 2009). For example, avoiding unnecessary hospitalisations might help manage the demand on hospital wards. If people with certain conditions, often chronic, can be safely treated in the community by primary care professionals – in general practice or home-based settings – this is sometimes more cost-effective than treatment in hospital. This is an area where change is already happening (see Box 1 below).

Box 1: Alternative treatment settings: an example from the Auckland region

Primary Options for Acute Care (POAC) is a service run by DHBs in the Auckland region that allows doctors to access investigations, care, or treatment for their patients, as an alternative to an acute hospital admission that would otherwise occur. The aim is to help manage the demand for hospital beds in the Auckland, Counties Manukau and Waitemata District Health Board regions. A range of community diagnostic, therapeutic and logistic services are provided at no cost (except the initial GP consultation) to the patient. These include: diagnostic procedures (e.g. X-Ray, Ultrasound, ECG), incision and drainage, GP or nurse home visits, and intravenous therapies (antibiotics/fluids). A standard requirement is that the patient would otherwise have been referred to hospital for an acute episode.

Studies of certain interventions within POAC have found that the community-based setting for care offers a cost-effective alternative, being able to treat patients with certain conditions in the community at a lower cost than would have been the case with hospital care.

An early evaluation (Aish, Didsbury, Cressey, Grigor, & Gribben, 2003) found that 85% of patients were successfully kept out of hospital and reported high levels of satisfaction from general practitioners and patients. A further study in Counties Manukau DHB (Barker, Bryant, & Aish, 2006) examined the treatment of cellulitis with intravenous antibiotics in the community rather than admission to hospital. That study found that community-based treatment was significantly lower in cost (\$250 per episode) compared with an equivalent hospital based treatment (\$3,700). Part of the difference is due to the avoided accommodation costs and round-the-clock care and monitoring associated with a stay in hospital.

However, although there is good evidence that treatment for cellulitis can be delivered more effectively and cheaply in a community setting, care must be taken in extrapolating this example to other areas of health care. In many cases, it may not be cheaper to move treatment to a community setting, so options need to be considered on a case by case basis.

The accompanying paper by Professor Nicholas Mays, 'Reorienting the New Zealand health system to meet the challenge of long-term conditions in a fiscally constrained environment', looks in more detail at issues relating to chronic and long-term conditions, which account for a high proportion of health care costs in high income countries. Such conditions include diabetes, cardiovascular disease, chronic obstructive pulmonary disease, many cancers and dementia. Health systems in these countries are typically focused on dealing primarily with acute conditions in a hospital setting and are therefore not well adapted to the management of chronic conditions. The paper argues for a sustained process of change, shifting the centre of gravity of the health system towards multi-disciplinary teams working outside hospitals to support those with long-term conditions to manage and improve their health.

New Zealand faces additional challenges in organising its health services from having a small, geographically-dispersed population. Where there are low numbers of doctors in a particular specialty and/or low levels of demand for specialised services, it will be more sustainable – in terms of government finances, quality of health care and workforce sustainability – to concentrate these services in fewer hospitals. This already occurs to a considerable extent in the New Zealand health system, and regional/national networks of care are beginning to be established. The health system will need to continue to look for ways to reconfigure services across the country to deliver safe, high quality care sustainably and efficiently.

Government policy and funding decisions can support or encourage such changes to achieve more efficient service delivery. For example, because of the long life of buildings, when government makes decisions to invest in hospital developments it can influence the

shape and supply of future hospital services many years into the future. It is highly unlikely that our current hospital system is optimally configured.

3.2.2 Institutional organisation and incentives

The main functions of health systems can be grouped into six categories: financing, funding, purchasing, provision, consumption, and regulation (Mays & Hand, 2000). There are a number of ways of structuring these functions. Different structures have different impacts on the incentives facing the politicians, officials, health professionals, and users who make up the health system, and therefore on the system's efficiency and its ability to manage within a budget constraint. The relationship between purchasing and provision functions is particularly important in this regard.

In New Zealand, DHBs combine two different purchaser-provider models. For public hospitals and related services, DHBs mainly operate as both purchaser and provider. This is known as a 'vertically integrated' model.¹⁵ However, for a range of other services, such as disability support for older people, there is a separation of purchase and provision functions, whereby DHBs purchase these services from private or non-government providers.

The OECD has suggested that the role of DHBs as purchasers should be strengthened through a greater operational separation between DHB purchaser and provider functions (OECD, 2009). The main argument in support of a split between purchasers and providers is that it will prevent the conflict of interest and anti-competitive behaviour that results where these functions are carried out within the same organisation. In such cases, because the purchaser is also in the business of providing the services it wishes to buy, it faces weak incentives to seek out more cost-effective providers which could deliver higher quality care at reduced cost. On the other side of the argument, health services are complex, and therefore can be difficult to specify in contracts between separate purchasers and providers, leading to high transaction costs. Furthermore, a number of services in New Zealand are subject to local provider monopolies, meaning that purchasers have few providers with which to contract.

However, as the New Zealand system shows, the choice of purchasing arrangements does not have to be between one type of system or another. Rather, the relationship between purchasers and providers can be determined on a service-by-service basis. A split between purchasers and providers appears to perform well only when there is potential for competition between providers, when providers are not tied to specific purchasers, when uncertainty and complexity are low and when few economies of scale apply (Figueras, Robinson, & Jakubowski, 2005). New Zealand's small size and geographically dispersed nature mean that these conditions will not always be met. The case for separation is much stronger for services such as elective surgery, where purchasers can choose between several providers and there is potential for competition. Acute services, on the other hand, may be less amenable to such a split.

The role of Primary Health Organisations (PHOs) as purchasers may also need to be revisited. At present, DHBs contract PHOs to deliver primary health care. However, there is a lack of clarity between DHBs and PHOs about where the responsibility for primary care ultimately lies, which means that DHBs end up bearing the cost of more expensive hospital treatment for conditions that could have been managed in a primary care setting. This issue has also been raised by the OECD (OECD, 2009). Clearer accountabilities between DHBs

¹⁵ There is also some outsourcing of hospital services to the private sector.

and PHOs and different funding models could better support the critical role of primary care in keeping people out of more costly hospital care.

Governments could also reconsider the number of purchasers in New Zealand's health system. As well as reducing administrative costs, fewer purchasers would concentrate scarce health planning, funding, contracting and procurement expertise, leading to better decision-making and prioritisation. The case for fewer purchasers is strengthened if governments prefer national consistency over local variation.

3.2.3 Adapting the skill mix of the health workforce

New Zealand's health workforce accounts for about 70% of the costs of delivering public health services (Zurn & Dumont, 2008). There is a high level of inward and outward migration of health professionals. Foreign-born doctors and nurses made up 52% and 29% of the workforce respectively in 2005/06, while emigration rates are 28.5% for doctors and 23% for nurses (Zurn & Dumont, 2008).

As a result, New Zealand's health workforce must be considered in the context of an international labour market in which there is likely to be increased demand for health professionals and upward pressure on wages. This points to the need to find innovative ways of maximising labour productivity within the sector.

One way of doing this may be to adjust the skill mix within the sector, to make sure that professional skills are put to best use. The density of different types of health professionals differs widely across countries, indicating that many different skill mixes are possible. As doctors are most costly, allowing other professionals such as nurses and pharmacists to perform some of the tasks previously performed by doctors could create efficiencies. For example, literature reviews of the role of advanced practice nurses suggest that nurses can supply equivalent care to that provided by doctors in primary care settings for certain patients (OECD, 2008). Similarly, the role of physician assistant, which has been used in the United States, is now being trialled in other OECD countries, including New Zealand, with promising results (Health Workforce New Zealand, 2011).

3.3 Managing the demand on the health system

Another way of slowing the growth of health care spending would be to reduce future demand for health services. This might be achieved if people became generally healthier, so they had less need of health care. It might also be achieved through initiatives such as patient charges or co-payments, designed to reduce the amount of health care demanded for a given level of need and counteract the risk of overconsumption.

3.3.1 Preventive initiatives

Preventive initiatives aim either to prevent illness from developing in the first place (primary prevention) or to stop illness from getting worse (secondary and tertiary prevention). Primary prevention aims to tackle the determinants of ill health that lie outside the health system itself, such as living conditions and lifestyles.

It is often suggested that investing now to prevent people getting sick later will save money in the long term, as healthier people will require less treatment. This thinking underpinned the influential Wanless Review in 2002, which recommended increased investment in prevention

to address the future sustainability of the National Health Service in the United Kingdom (Wanless, 2002).

However, there is a range of different preventive measures and some are better value for money than others. Some prevention programmes – such as vaccination against communicable diseases – are highly effective (OECD, 2010b) and can even be cost saving (Maciosek, et al., 2006). Others, especially those requiring behavioural change through information provision and social marketing, can be difficult and costly.

Even where preventive measures are effective in terms of improving health outcomes and may be worth investing in, they may not necessarily save money for government in the long run. There are two key reasons for this:

- **Service delivery costs:** Given the long and uncertain lags between spending and outcomes and the need to address large population groups, there is no assurance that mass prevention will be less expensive than subsequent targeted care.
- **Impact on lifetime costs of care:** Preventing a fatal disease, for example, leads to downstream care costs as people live longer and develop other conditions, so the costly last year of life is simply postponed.

There is a need to build the evidence base about the cost-effectiveness and distributional impacts of particular preventive interventions, and to critically assess the evidence on a case by case basis before implementing policies. Ultimately, it is important to get the right mix of preventive, diagnostic, curative, rehabilitative and palliative services operating in the health system, which underlines the importance of good prioritisation (as discussed in section 3.4.2).

Box 2: Does prevention save money?

Example 1: A recent study of interventions to reduce non-communicable diseases in Mexico found that, overall, community and public health interventions for alcohol use, tobacco use, and cardiovascular risks tended to have lower cost-effectiveness ratios than many clinical interventions. Even within the community and public health interventions there was a 200-fold difference between the most and least cost-effective strategies examined (Salomon, et al., 2012).

Example 2: Recent micro-simulation analysis by the OECD on interventions to prevent obesity has found favourable cost effectiveness and distributional impacts (OECD, 2010a). In contrast, programmes aimed at keeping individuals fit and in good health as they age, rarely appear to be cost effective, or lead to overall reductions in health care costs (Oxley, 2009).

Example 3: A US study which reviewed 25 preventive services recommended by the US Preventive Services Task Force or the Advisory Committee on Immunisation Practices found only five out of the 25 services to be cost saving (Maciosek, et al., 2006). They were: aspirin use, childhood immunisation, tobacco counselling and pharmacotherapy, pneumococcal immunisation, and vision screening.

3.3.2 Reducing demand through pricing (co-payments)

Health services in New Zealand, as well as in many other OECD countries, are mostly provided free at the point of need. One drawback associated with this is moral hazard, with the risk that people will tend to over-consume services in the absence of price signals. One way of addressing this issue is through the use of co-payments, where people are required to meet part of the cost of treatment themselves. Co-payments may help to reduce overconsumption, as well as reducing the direct fiscal cost of a particular service.

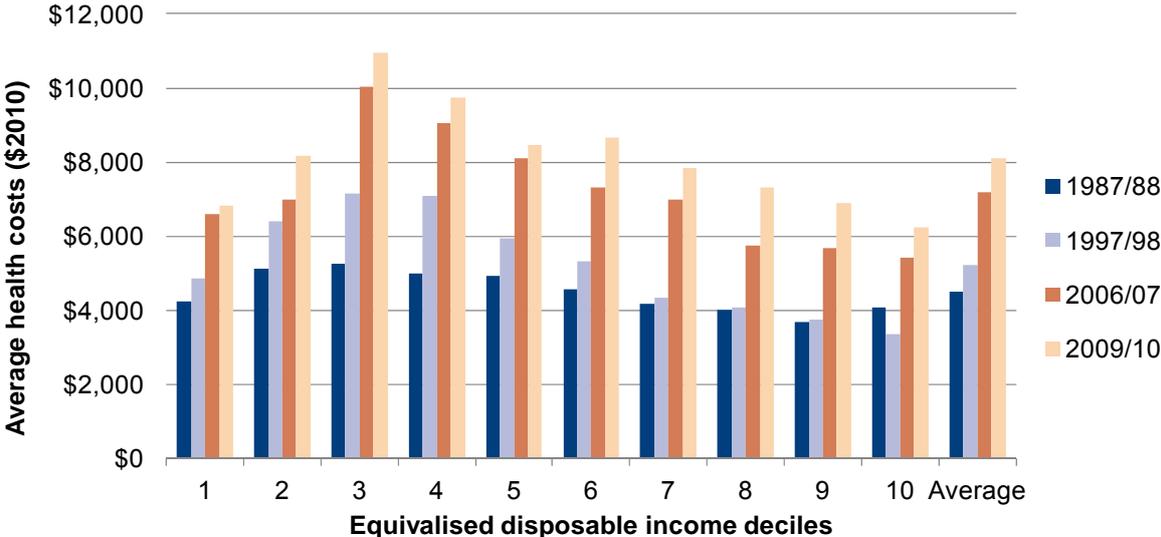
New Zealanders currently face co-payments for visits to General Practitioners and prescription drugs. Increasing the proportion of costs covered by co-payments, or extending the range of services to which co-payments apply, is one option for managing demand. However, some economists have argued that moral hazard is less applicable to health insurance than it is to other markets, because of the strong 'gate keeping' role of health professionals in guiding patients' choices about which health interventions are necessary (see also section 3.1.1). For example, access to pharmaceuticals is controlled by doctors' prescriptions, which limits scope for over-consumption. On the other hand, there are arguments that since neither doctors nor patients face the ultimate cost of the consumption decision and sometimes doctors benefit financially, doctors may induce demand for services.

Co-payments may also have negative impacts on fiscal sustainability and equity if poorly designed. If co-payments are too high, they may deter individuals from purchasing appropriate services or treatments. This can lead to unintended fiscal pressure if decisions to forgo appropriate medical treatment in the short term lead to people eventually requiring more expensive treatment. Co-payments can also lead to inefficient allocation of resources if patients forgo services like GP visits in favour of services without co-payments such as accident and emergency services.

Co-payments also tend to be a regressive way of financing health care, since individual contributions are not always related to income or ability to pay. However, these regressive effects can be mitigated in countries like New Zealand, where those on low incomes are exempt from cost sharing (World Health Organization, 2004). Greater use of co-payments for those on higher incomes could be one way of targeting limited resources towards disadvantaged groups, potentially improving equity as well as limiting pressure on the public purse. Since 1998, publicly-financed health expenditure on high income earners has increased more quickly than on low income earners (Figure 29).

Given the important role that co-payments play in our health system, there is scope to examine whether more or different patient charges would be a useful way of reducing growth in health expenditure.

Figure 29: Average cost of health services received by households in each decile



Source: The Treasury

3.4 Funding controls and coverage of the health system

Another way of controlling the cost of a public health system is by limiting its coverage (what benefits are provided to whom). Any public health system is inevitably subject to constraints.

New Zealand already makes use of a number of mechanisms for defining the coverage of its health system (such as waiting lists to ration elective services). We also use co-payments in some areas, as well as fixed budget constraints, to manage expenditure. It may be appropriate to consider whether there is a case for adjusting some of these parameters over time, in order to better target resources and manage expenditure growth. Mechanisms for adjusting the coverage of the system are discussed in sections 3.4.1 to 3.4.3 below.

The boundaries of the public health system have implications for the mix of public and private funding for health care in New Zealand. For example, if government decided to exclude certain services from the public system or increase co-payments then individuals would either need to fund this privately or do without. This could help to make public spending on health more sustainable over the longer term. However, there is a balance to be struck here. As noted in section 2.3.2, changes need to be carefully designed to ensure that they do not have adverse impacts in the longer term.

There is no ideal mix of public and private financing. By way of a stylised example, if the proportion of private financing within the system was assumed to increase from its current level of 17% to 25%, the projected level of core Crown health expenditure in 2060 would reduce from around \$158 billion to around \$142 billion, or by about 1 percentage point of GDP.¹⁶ It is much harder to predict the effect that changes in the financing mix would have in practice, in terms of the effect on total health spending and the mix and distribution of services provided by the health system.

There are some difficult trade-offs here in terms of the fairness of the system and access to services. One consequence of reducing the coverage of the universal public system could be that those on higher incomes increasingly seek to meet their demand for additional health care through the private sector. This already happens to some extent in the current system and may provide opportunities to target public funding towards those on lower incomes. This could be regarded as improving equity. However, if the gap between the types of health services available to people at either end of the income scale were to widen significantly, this could equally raise equity concerns, as well concerns about the social infrastructure supporting New Zealanders. Income testing can also create complexity and impact negatively on labour market incentives.

As noted earlier, we do not currently see a clear rationale for New Zealand to move away from the basic paradigm of a universal public health system funded from general taxation. This would be unlikely to reduce the overall costs of health care borne by New Zealanders. However, the private sector already plays a role in meeting additional demand for health services, and its relative importance seems likely to increase over time in response to expenditure constraints in the public system. The implications that this would have for the private insurance market are discussed in section 3.4.4 below.

3.4.1 Fixed budget constraints

Under New Zealand's predominantly publicly-financed health system, governments have the ability to set firm spending constraints for health care each year as part of the budget process. This is a strength of our system as it gives government a high degree of control

¹⁶ This stylised calculation assumes that total public spending on healthcare would be unaffected by a change in the mix of public and private expenditure. Projected core Crown Health expenditure in 2060 is \$157.9 billion. In 2009-10, out-of-pocket spending, health insurance and the not-for-profit sector together accounted for approx 16.8% of total current health expenditure (Ministry of Health, 2012b). Applying the same ratio to core Crown Health expenditure implies total spending (public and private) of \$189.8 billion in 2060. If only 75% of that spending were publicly funded (rather than 83.2%), public expenditure in 2060 would be \$142.3 billion.

over spending. Budget constraints or targets have become widely used instruments, with nearly all OECD countries now having some form of constraint or target (OECD, 2010b).

Fixed budget constraints are also a way of adjusting the coverage of the public system. For example, tighter constraints can lead to longer waiting times and reduced quality of care. However, it may be possible to mitigate these impacts through improvements in the performance of the health system as discussed above. There are risks to constraining spending too tightly for too long without such improvements. Progressively increasing political pressure resulting from public satisfaction can force governments to reverse policies and increase spending, leading to an undesirable boom and bust cycle (OECD, 2010b). This can lead to poor value for money over the long term.

3.4.2 Defining services covered

Another way that the scope of the public system may be limited is by expressly defining services that are, or are not, covered. New Zealand already excludes certain services, including optometry and most adult dental care.

Governments around the world have faced political, technical and financial difficulties in trying to define minimum levels of public coverage (World Health Organization, 2004). New Zealand has its own experience in this regard.¹⁷ In light of these difficulties, discussions about removing services from the public system have tended to focus on 'services that may be deemed alternative or less medically necessary, or which may be more readily paid for on an out-of-pocket basis by a majority of the population' (OECD, 2004).

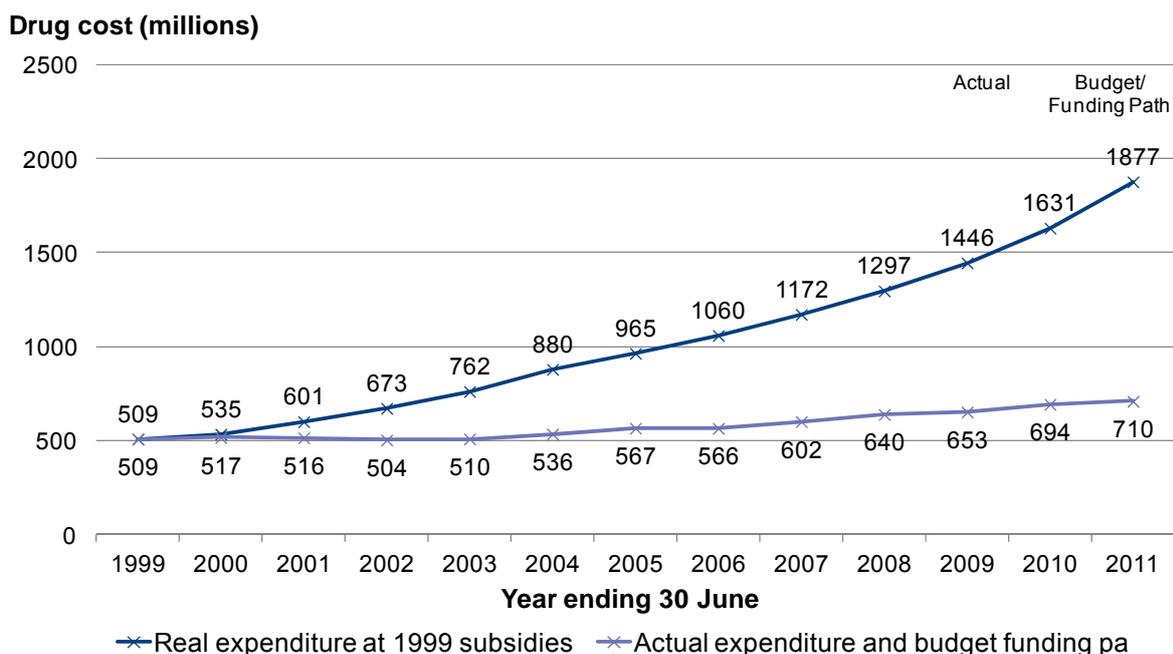
One important way to manage the expansion of the health system is to exclude new treatments that are not supported by good evidence of cost-effectiveness. Health Technology Assessment (HTA) is a process by which health purchasers decide which new health technologies are worth investing in. HTA is now widely used by OECD countries as a means of deciding how to allocate health budgets, but is most well developed in the pharmaceutical sector (OECD, 2010b).

New Zealand's Pharmaceutical Management Agency (PHARMAC) is a highly successful example of what can be achieved through good prioritisation using HTA. PHARMAC decides which community medicines are to be subsidised by government on behalf of District Health Boards. It does this by assessing different medicines against a range of factors, such as the health needs of New Zealanders, government priorities, evidence of clinical effectiveness, and the amount of health gained for each dollar spent. This approach ensures that New Zealanders get maximum health benefits from a given pharmaceutical budget. A large part of PHARMAC's success relies on the fact that it carries out HTA within a fixed budget constraint, is responsible for procurement as well as prioritisation, and operates at arms' length from government.

Figure 30 shows PHARMAC's success in containing the cost of community medicines. This has been achieved even while PHARMAC has made a greater range of subsidised medicines available. PHARMAC is currently in the process of expanding its role to cover all hospital medicines and medical devices.

¹⁷ In the early 1990s, the National Advisory Committee on Core Health and Disability Services was established to define a list of publically-funded services, but was unable to complete this task (Mays & Hand, 2000).

Figure 30: Impact of PHARMAC on community pharmaceutical expenditure



Source: PHARMAC

It would not be possible to apply the PHARMAC model to all health spending. Pharmaceuticals are subject to rigorous clinical trials which provide a robust evidence base from which to make prioritisation decisions, and this level of evidence is not available for all health interventions. However, there are opportunities to use evidence more systematically where it is available. The National Health Committee (NHC) is currently being reformed to focus on making recommendations to the Minister of Health on the relative priority of health interventions. Given the structure of the New Zealand health system, the NHC will not hold its own budget and its recommendations will not be mandatory. However, its new focus is an important step in the right direction. Rigorous assessment of the economic case for new and existing interventions will be increasingly critical in the future in order to ensure that we get the best value out of our health spending.

3.4.3 Co-payments

Co-payments restrict the proportion of services that are provided free of charge. In doing so, they may reduce demand (as discussed earlier). They also directly limit the coverage of the public system, since only part of an affected service is funded by the taxpayer. Information on the effects of co-payments can be found in section 2.3.2.

3.4.4 Private health insurance

A likely response to greater restrictions on public coverage would be for more people to take out private health insurance (PHI). Two different types of insurance could emerge in response to the reductions in coverage outlined above:

- **Complementary:** Complementary PHI covers gaps in public coverage. It can either cover services that are completely excluded from the public system, or it can cover user charges on services where public funding only covers a portion of the cost. In New Zealand, this includes things like adult dental care and coverage for co-payments on pharmaceuticals and visits to the doctor (Thomson, et al., 2009).

- **Supplementary:** Supplementary PHI covers faster access to services and increased choice, usually through access to private providers. It is sometimes referred to as 'double coverage'. In New Zealand, this includes services like elective surgery, where those with private insurance can access services more quickly than those without, and also have a greater degree of choice over who performs their surgery (Thomson, et al., 2009).

In New Zealand, we currently have a mixture of complementary and supplementary PHI. There may be an increased role for PHI in adjusting the overall funding mix in future. The OECD has noted that 'PHI could enhance both fiscal sustainability and health system performance, by way of private responsibility and cost sharing and insurer-spurred competition' in New Zealand (OECD, 2009). However, the extent to which PHI will reduce pressure on the public purse should not be overstated for the following reasons:

- Where complementary PHI covers co-payments, it can undermine their demand-management effect by insulating people from the costs of using health services. Complementary PHI for co-payments has been found to increase public expenditure in the United States, France and Spain (OECD, 2004; World Health Organization, 2004).
- As discussed in section 3.4.3, it has proven very difficult for governments to explicitly exclude services from the public system beyond those that New Zealand already excludes. This means that it might be challenging to increase complementary PHI by limiting public coverage and leaving people to make their own arrangements for funding additional services.
- The scope for supplementary PHI to influence fiscal sustainability may also be modest in practice. The private sector tends to focus on lower risk procedures such as elective surgery, leaving the public sector to carry out the higher risk (and hence more costly) procedures. The ability of supplementary PHI to reduce pressure on the public purse can also depend on the extent to which there are clearly defined boundaries between the public and private sectors: 'Where doctors can work in both sectors, supplementary cover may create incentives for providers to stimulate demand for private services, perhaps by developing waiting lists' (Thomson, et al., 2009).

Governments cannot directly control the amount of PHI in health systems. However, they can influence the development of PHI markets through both fiscal and regulatory levers. Some countries have used tax subsidies to encourage uptake. However, evidence from the United Kingdom suggests that such subsidies have not been successful at increasing the demand for PHI (World Health Organization, 2004). Furthermore, such subsidies are generally regressive. Other countries have used regulation to limit the adverse effects of PHI markets. For example, Canada, Sweden, Luxembourg, Greece and Italy all prohibit their doctors from practicing in both the public and privately-financed sectors in order to prevent them from using the public system to stimulate demand for private services (OECD, 2004).

An increased role for either complementary or supplementary PHI may increase inequality in terms of access to health services, as PHI is predominantly purchased by those on higher incomes. An OECD study of income-related inequality in the use of medical care shows that PHI has created a 'pro-rich' distribution in the probability of visiting a doctor in the United States, Ireland and France, and to a lesser extent in the United Kingdom and Australia (van Doorslaer & Masseria, 2004).

In spite of the potential downsides of PHI, it is likely to increase as a proportion of total health spending as the public system comes under greater fiscal pressure. Therefore, governments should consider whether regulatory measures may be necessary in future to avoid adverse impacts on the public health system.

3.5 Conclusion

Our projections show core Crown health spending growing from 6.8% of GDP now to 10.8% of GDP by 2060. Although there is considerable uncertainty around the assumptions underpinning these projections, it is clear that there are a range of cost drivers which are likely to increase health spending as a proportion of GDP over the next fifty years.

As a country, it is likely that we will want to increase our health spending over the long term. However, we may not want to grow spending by the magnitude indicated in our projections when we consider the implications this would have for taxation and/or for spending on other areas like superannuation and education. Furthermore, international comparisons show weak relationships between health spending and outcomes, suggesting that more health spending does not necessarily generate improvements in health.

We do not currently see a clear case for moving away from a predominantly single-payer, tax-financed health system. Systems like ours are typically better at containing health spending and there is no one system that presents a clearly more efficient alternative. However, there are number of improvements that could be made within this existing paradigm.

We have considered three broad areas for change: improving the performance of the health system, managing the demand on the health system, and making adjustments to what the public health system covers (which has flow-on effects to the balance of public and private financing). These are not 'either/or' choices. Rather, it is likely that we will need to look at a range of options in each of these areas in order to achieve sustainable change.

We will need to keep looking at ways to improve the performance of the health system. The health sector is currently undertaking change in a number of the areas we mention to meet the Government's fiscal strategy, but this will need to be an on-going focus, including as the short-term fiscal position improves.

Options to manage demand are also important. However, the potential fiscal gains may not be large. Only a limited number of preventive initiatives have cost-saving potential, and increases in co-payments tend to have a one-off effect on spending and therefore do not fundamentally alter the growth path. The design of demand-management initiatives is critical. Both preventive initiatives and co-payments can impact negatively on fiscal sustainability if poorly designed.

Given the level of uncertainty around what can be achieved through performance improvements and demand-management initiatives, we will also need to think about the coverage of the public health system. A widening gap between what the public system can deliver and what is medically possible may result in a greater role for private spending and insurance, as people who can afford it choose to purchase additional services themselves.

This paper has discussed a range of ideas aimed at ensuring we get the maximum outcomes for patients from our health system and managing growth in health spending over the long term. Our projections assume that the current fiscal strategy is met for the next three years, so we are not suggesting that a tighter growth path is necessary in the short term. However, given the long lead times needed for some changes, our view is that we need to start talking now about options to moderate long-term spending growth.

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