ISBN 978-92-64-05429-5
OECD Economic Surveys: New Zealand

Chapter 3

Health-care reform: Challenges for the next phase

New Zealand spends less per capita on its health-care system than many OECD countries, yet as elsewhere, trends in demography, technology and costs will exert mounting and unaffordable pressures on spending over the long run. Policy-makers can manage the fiscal challenge by controlling health-care costs and putting limits on public coverage. The fiscal framework, which imposes hard budget constraints on health and other spending, provides a good foundation for cost control. However, government intervention to blunt price signals in health care systems and enormous supplier influence over patient demand mean that health care markets do not behave like other markets and there can be no guarantee that best value for money is being extracted from health budgets. While health-care reforms in the past have attempted to improve incentives for efficient health-market behaviour, over the past decade or so, large boosts to hospital wages and primary care subsidies have most likely failed to elicit commensurate gains in either the quantity or quality of output. Another concern is the sustainability of the health-care service-delivery model in the face of rising demands and looming health-care workforce shortages. As a high-immigration country, with large and poor minorities, New Zealand is striving to promote equality of health outcomes, improved access to care and more efficient management of chronic conditions, the big clinical challenge of an ageing society. Efforts are also underway to rationalise the hospital sector to assure its clinical viability. To achieve these important goals, there is still a need to improve efficiency incentives and information, clarify institutional roles, and enhance the attraction of New Zealand as a place in which to live and practise medicine.

At the macro level, New Zealand has shown relatively good performance. Indeed, efficiency was a central objective of health reforms during the 1980s and the major, "quasi-market" reforms of the 1990s. But a number of factors are putting pressure on the financial and clinical sustainability of the system. In the 2000s, a new round of reforms followed, whose stated key aims were to improve equity, quality of services and population health (Ashton, 2009). Because these objectives were deemed to require increased resource investments in the health system, and cyclical conditions were strong, public health spending grew at over double the rate of GDP and the damping effect of earlier cost-cutting reforms proved to be temporary, as was the case in many other OECD countries. Soon demographic ageing will be added to the list of pressures, but it may pale against the forces of advancing technology, public-sector cost disease and ever rising public expectations of what the health system can deliver.

Good health lies at the foundation of the quality of life and economic growth, and medical breakthroughs have produced truly spectacular gains in this domain. High cost growth partly reflects genuine quality improvements. Yet health care has its limits, whether in the share of production or taxes it can absorb or in how much it can achieve on its own. Lifestyles and environmental degradation harmful to health may warrant as much attention as allocating more money to treatment. The last dollar spent on education or other social spending may yield greater benefits to national health outcomes than the last dollar spent on health care. Moreover, lack of cost consciousness under widespread insurance and lack of information due to the special nature of the service may misallocate health-care resources and generate waste. While there is scope for efficiency gains, society also has a clear choice to make: should the supply and quality of health-care resources be improved and if so, who should finance it? Should service provision and financing be reconfigured to improve access? Health-care issues are therefore germane to both the macroeconomic and structural challenges facing New Zealand. Continuing and deepening the reform process in health care and other structural-policy areas discussed in Chapter 2 would constitute a coherent package to secure fiscal sustainability and bolster New Zealand's advantage as an investment and work location – thereby acting to redress the macroeconomic imbalances that have been a point of vulnerability in the crisis and also to close the productivity gap that continues to depress living standards.

This chapter examines health-care reform challenges as follows. The first section looks at the aggregate performance of the system in terms of its ability to get the best possible outcomes at lowest possible cost to the public. The second section describes the main drivers of health spending in the past and the need for better spending control so as to preserve long-run fiscal sustainability. The third section discusses the parallel need for a reformed health-care delivery model to assure sufficient capacity and the ability to keep up with rapidly changing technology and population needs. Lastly, the chapter identifies future directions for reform; it emphasises the need for enhanced economic incentives and better information to improve cost and quality performance, restrain patient demand and

boost institutional accountability by funders, purchasers and providers so as to get the best value for money.

Health-system performance

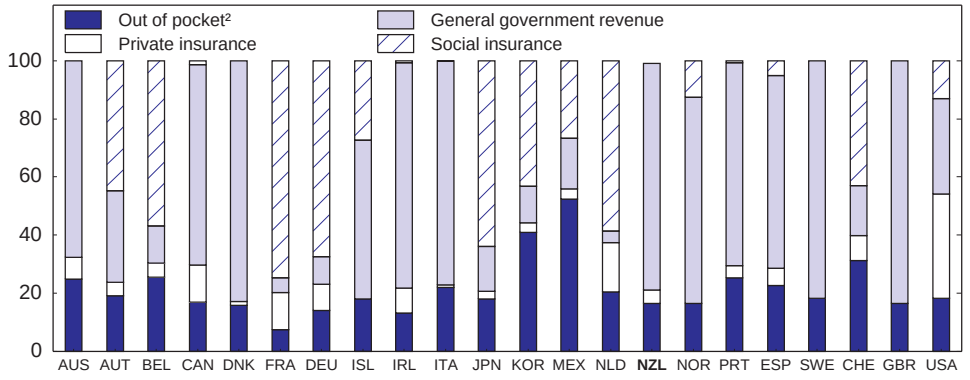
The NZ health care system performs quite well, expending somewhat fewer resources on health care per capita than the OECD average, while achieving some good population-level health outcomes along with universal public coverage. However, available productivity indicators suggest declining value for money more recently and, as elsewhere in the OECD, social inequalities in health status persist.

Overview of funding arrangements

As in most OECD countries, the bulk of health spending in New Zealand (some 80%) is from the public purse. New Zealand also belongs to the group of countries that finances public health spending mainly out of general taxation rather than social insurance (Figure 3.1). Systems based on individual premia and/or out-of-pocket payment tend to shift costs onto higher risk groups, which may be considered inequitable insofar as health status is often linked to income and sometimes to individualised insurance premia. General tax-financed health spending is likely to be more redistributive (even if that is not its principal goal), as it provides subsidies not only to the sick from the healthy through insurance risk-pooling but also (implicitly) to the poor from the rich *via* progressive taxation.

Figure 3.1. **Financing of health care in OECD countries**

As a percentage of total health expenditure, 2006[1]



StatLink http://dx.doi.org/10.1787/563015806622

1. 2002 for Denmark, the Netherlands and the United Kingdom.
2. For some countries, sum differs from 100. Differences have been added to out of pocket data.

Source: OECD, *Health Data 2008*.

Public health spending in New Zealand thus has the character of a public service provision, which is partly outsourced to the private sector. The main hospitals are public, with smaller private hospitals focused on elective surgery. Ancillary services can be provided in public hospitals or privately. Doctors are either salaried public hospital employees (mostly specialists) or self-employed practitioners (mostly GPs), sometimes both. Out-of-pocket and private insurance payments go to private providers. Patients generally have a free choice of GP, though for publicly-funded elective care they are assigned to a specialist.[1] This arrangement most closely resembles integrated systems that

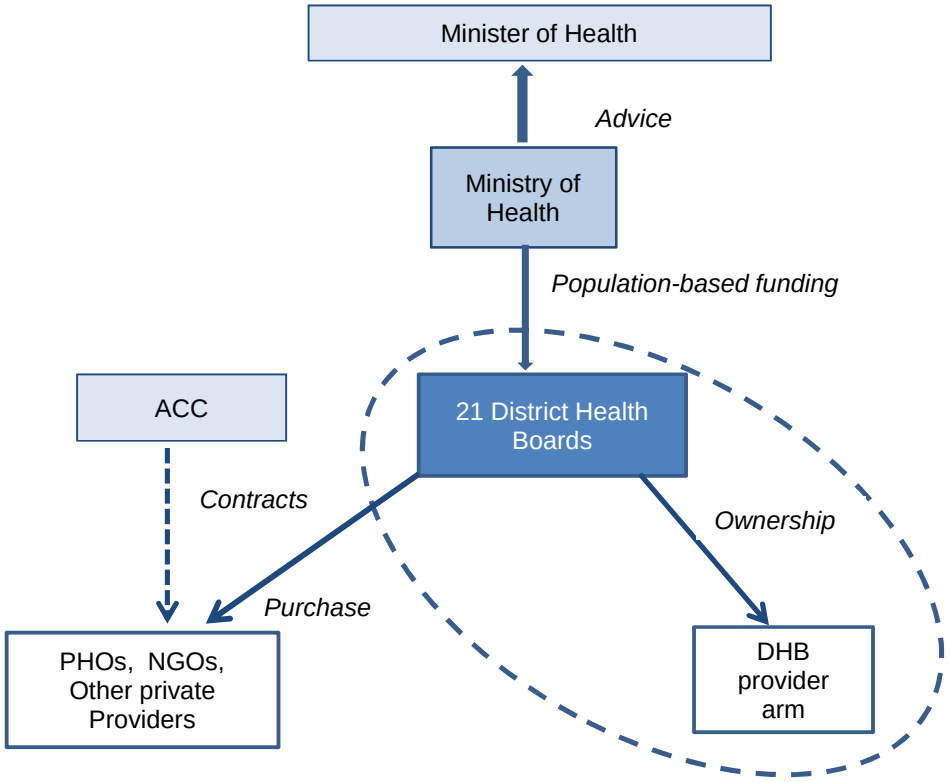
merge insurance and provision functions (*i.e.* combining on-budget financing of health care provision with publicly-owned hospital providers) in a number of OECD countries (*e.g.* the Nordics, southern European countries and Australia); such countries are able to exert a high degree of central control and achieve universal coverage, but at the cost of weak incentives to increase output, improve efficiency or maintain quality and responsiveness to patient needs (Docteur and Oxley, 2003). Countries following the public contract model (Canada, other Europe including England, and Japan) have attempted to bolster such incentives by means of public payers contracting with private providers, ideally on an *ex ante* volume and cost basis.

Public funding pays for most personal health care for the entire population, with the exception of adult dentistry, optometry and medically non-essential services such as cosmetic surgery. Private insurance can be purchased to cover such excluded services and to access elective services where there are public hospital waiting lists. Co-payments for primary care and pharmaceuticals are required for everyone except children under six and some chronic care patients, and can be covered by supplementary private insurance (as, for example, in France), though since 2002 they have been lowered due to increased government subsidies. There are no co-payments for hospital care. About one-third of the population carries private insurance, but the total amount of funding provided is minor. Countries like the United States, Switzerland, the Netherlands and Germany rely much more on private insurance (in the last two, in lieu of public coverage for certain groups), implying mixed systems with potentially more consumer choice and competition by multiple insurers for enrolees. However, in practice such systems have been plagued by weak cost control. Managed care plans have been developed featuring incentives for volume and price control by means of insurer selective contracting with competing providers and restricted consumer choice.

Public health spending is funded for the most part from the Core Crown budget under the line item Vote: Health. The government, on the advice of the Ministry of Health (MoH), divides this sum across the broad categories of public health, personal health-care services (primary, hospital and pharmaceutical) and disability services.[2] The MoH purchases maternity care and working-age disability services for the entire country, besides providing (along with the District Health Boards, DHBs) public health services. It devolves the remaining budgets to the DHBs according to demographic-based funding formulae. The DHBs, which both own and fund the public hospitals, devolve the bulk of their primary care budgets to the Primary Health Organisations (PHOs), which in turn pass it on to their GP affiliates mainly as capitation payments based on patient lists (Figure 3.2). The national pharmaceuticals purchaser (Pharmac) manages the pharmaceutical schedule, negotiates prices and sets access criteria on behalf of the DHBs. The whole health system is guided by the NZ Health and Disability Strategies, which set broad policy orientations and detailed objectives and initiatives. The DHBs must negotiate annual plans with the MoH to implement these strategies and are monitored for their performance against the plans.

The main exception to the global budget model is the Accident Compensation Corporation (ACC), which insures accident-related injuries and is partly self-funded from compulsory employer and employee social contributions and partly subsidised by the Crown to cover non-workers, while it contracts out its health services to public (for emergency hospital services) and private providers (in the main). The ACC was briefly exposed to competition in 1999, when private entry was allowed into the market for work-related accident insurance, but the change was repealed a year later. Budget control by the

Figure 3.2. **The structure of the NZ public health system**



ACC seemed to improve under the pressure of competition, but then deteriorate as it reverted to public monopoly status (see Chapter 1). This may suggest a potential for insurer competition to stimulate cost efficiency in both ACC and the sector more broadly (see below).

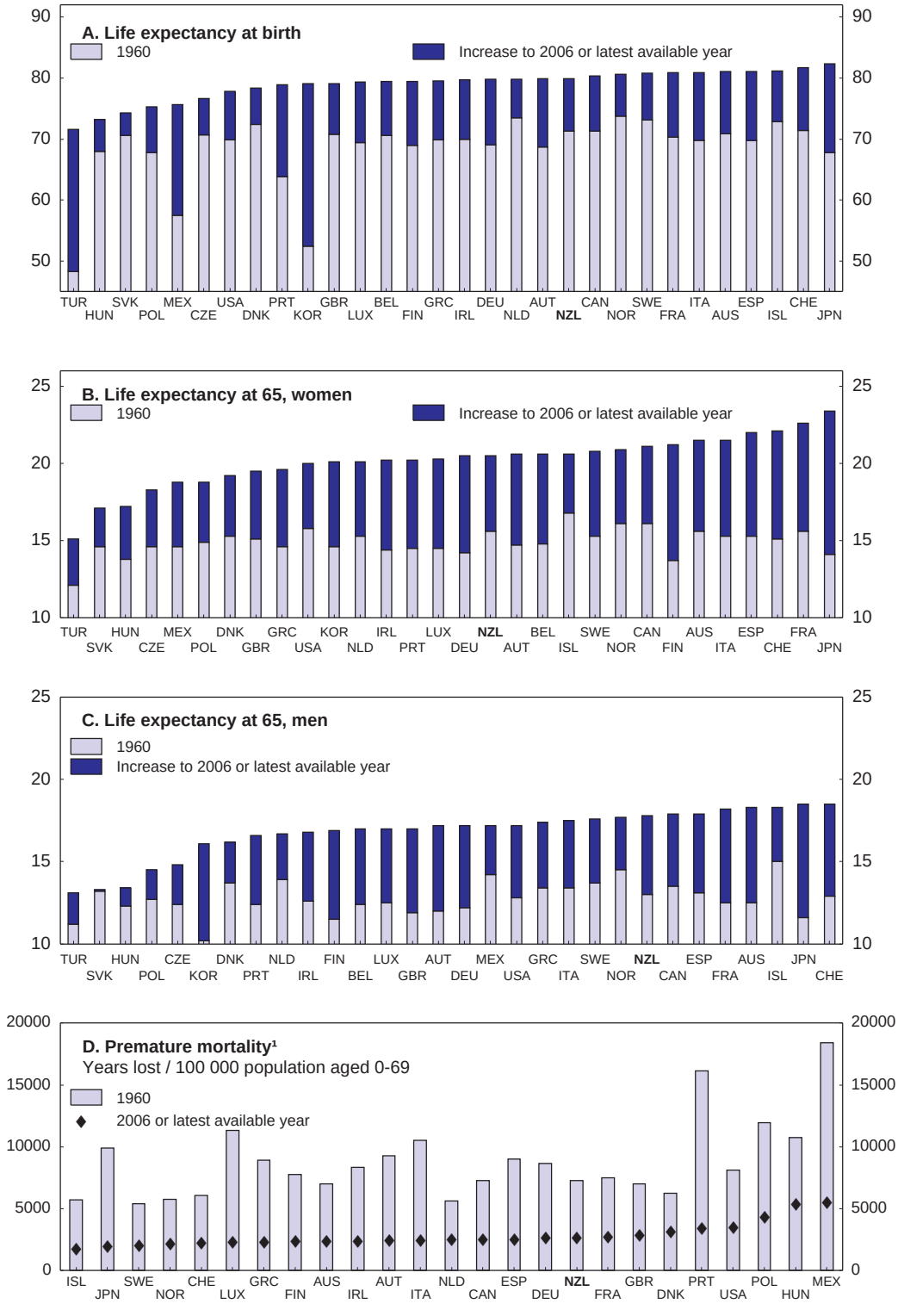
The link between spending and outcomes (system efficiency)

Health system efficiency results from achieving the best balance between different kinds of care, and the cost and technical efficiency with which inputs going into that care are used in order to achieve highest possible outputs of health care services and, ultimately, the best possible health outcomes. The simplest measure of aggregate health outcomes is life expectancy at birth, which is a weighted average of age-specific mortality rates. Because of dramatic declines in premature mortality since as recently as 1960, mainly reflecting reductions in infant mortality, along with lengthening life spans for survivors into older age, this indicator has improved markedly for nearly all OECD countries.[3] New Zealand now has the 11th highest life expectancy out of the 30 OECD member countries, though premature mortality is above the OECD median, and at age 65, NZ women have a significantly lower life expectancy ranking within the OECD than NZ men, even though as elsewhere women tend to live longer than men (Figure 3.3).

Refining the indicator to reflect quality as well as quantity of life, *i.e.* adjusting for incidence of chronic illness and disability, and mapping such "health-adjusted life years" against total per capita health spending across the OECD countries, gives a health efficiency frontier, assuming for the time being that health system spending is the only determinant of healthy life years (Figure 3.4).[4] New Zealand is found to be close to the

Figure 3.3. **Indicators of health outcomes**

Years



StatLink http://dx.doi.org/10.1787/563025208250

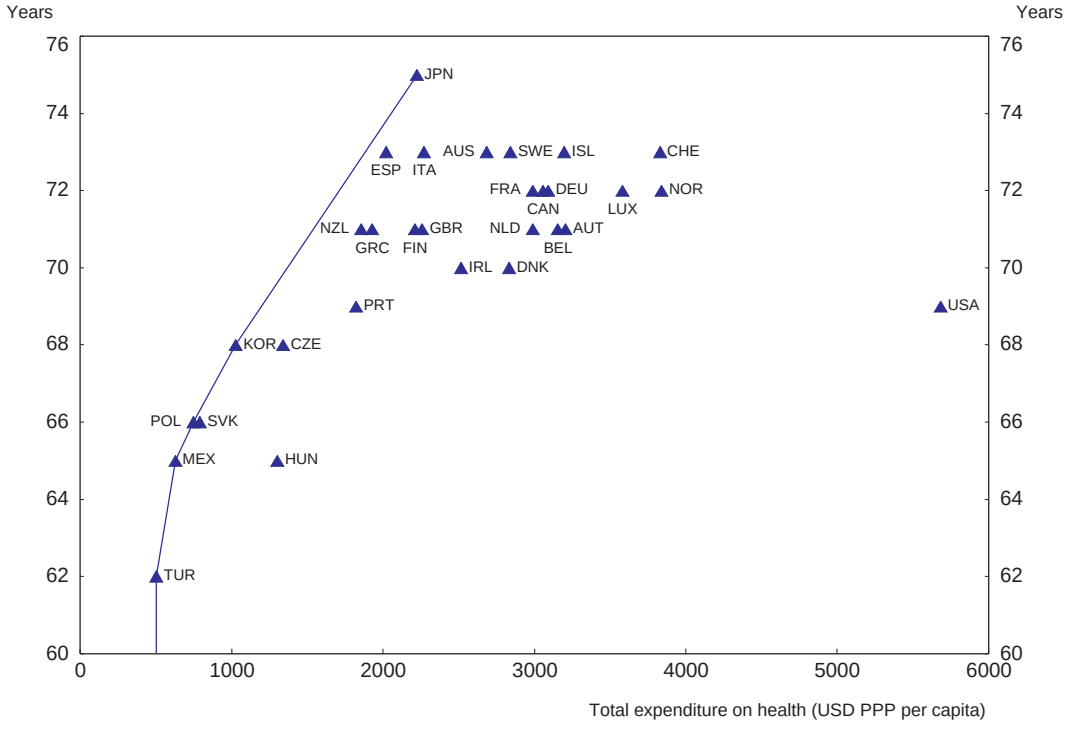
1. Potential years of life lost excluding external causes (land transport accidents, falls, assaults, suicides, etc).

Source: OECD, *Health Data 2008*.

OECD ECONOMIC SURVEYS: NEW ZEALAND – ISBN 978-92-64-05429-5 – © OECD 2009

Figure 3.4. **Spending to outcome frontier, 2003**

Health-adjusted life expectancy (HALE)



StatLink http://dx.doi.org/10.1787/563063844082

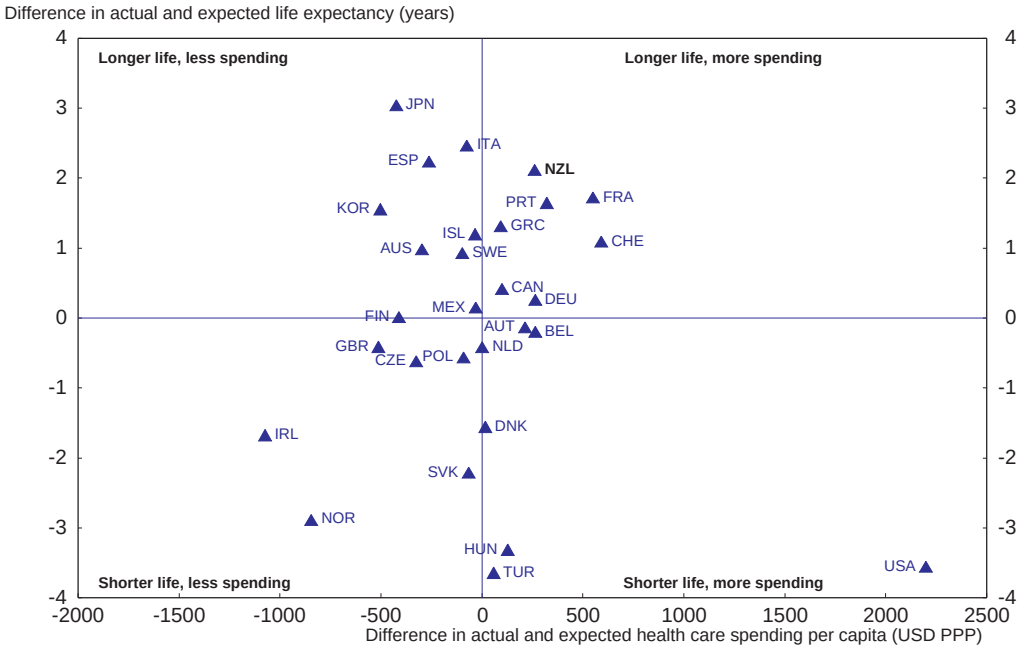
Source: World Health Organisation and OECD Health Data 2008.

efficiency frontier, in the company of countries (except Hungary) where spending and outcomes are both low, as well as Japan and southern European countries (except Portugal) enjoying high life expectancies for modest outlays. At the other, far extreme is the United States. Figure 3.5 looks at the issue by normalising the latest observations for per capita health spending and life expectancy on per capita GDP according to the respective cross-country correlation coefficients. New Zealand occupies a high point in the second-most favourable quadrant: it spends somewhat more but its residents live significantly longer than would be predicted by its standard of living alone, and only Japan, Italy and Spain (all known for their healthy diets) appear to do significantly better within this optic. However, as recently as 2003, New Zealand could be found in the efficient "longer life, less spending" (north-west) quadrant, suggesting a need for monitoring and better understanding in order to ensure that higher spending continues to be associated with better health (Ministry of Health, 2008).

To be sure, factors other than health care influence health outcomes.[5] Like health care itself, these factors are often correlated with income, though sometimes ambiguously; for instance, sedentary lifestyles are associated with rising prosperity, but so are better diet, education and environmental quality. Addictive behaviours associated with social and mental-health conditions, and sometimes policies, pose a particular burden to the health-care system. With a more refined analysis that controls for such other factors, New Zealand's relative efficiency performance seems even better, at least in 2003, the year for which the analysis was carried out, than suggested by the mappings shown above

Figure 3.5. **Difference between actual and expected health-care spending per capita and actual and expected life expectancy**[1]

2006[2]



StatLink http://dx.doi.org/10.1787/563102861488

1. Expected values for health-care spending and life expectancy are based on cross-country regressions on per capita GDP, with respective coefficient estimates of .12 and .0002.
2. 2005 for Canada, Turkey, United Kingdom and United States; 2004 for Italy and Netherlands.

Source: Ministry of Health, *Health Expenditure Trends in New Zealand*, 1996-2006; OECD Health Data 2008 and OECD *National Accounts Database*.

(Joumard *et al.*, 2008).[6] This does not mean that there is no room for improvement, however.

Inputs and outputs (the production technology)

Health-care inputs and outputs can provide further insights into the system's production technology and performance. New Zealand seems to do well in terms of the most commonly used indicators. In the hospital sector, the reduction of bed utilisation was a main success of the 1980s and 1990s reforms and a key factor in controlling costs in New Zealand, as in many other OECD countries (Table 3.1). A partly compensating rise in the intensity of hospital care, as measured by case-weighted discharges or throughput,[7] has largely reflected a rising number of day patients made possible by new technologies such as endoscopies (non-invasive surgery), implying productivity gains. New Zealand is well ahead of Australia and the UK National Health Service[8] in reducing hospital bed utilisation, and spending on inpatient care appears to have fallen faster than in most other OECD countries, particularly during the decade of the 1980s (Docteur and Oxley, 2003, Table 12). Nevertheless, results from a large health maintenance organisation based in California (Kaiser Permanente) suggest that hospital spending could be cut further, perhaps dramatically, by greater use of community services (Table 3.1). Large differences across DHBs within New Zealand also suggest that low-utilisation benchmarks could be

Table 3.1. **Indicators of resource use in the health-care sector**
2006 or latest available year

	New Zealand	Australia	United Kingdom	United States	Iceland	Norway
Physicians per 1 000 population	**3.0**	3.3	n.a.	3.1	6.1	n.a.
of which: GPs	**0.8**	1.4	0.7	1.0	0.7	0.8
Nurses per 1 000 population	**10.0**	9.7	11.9	10.5	13.7	31.6
Hospital beds per 1 000 population	**2.0**[1]	3.9	3.6	3.2	n.a.	3.6
Hospital discharges per 1 000 population[1]	**157**	341	200	69[2]	n.a.	n.a.
Average length of stay, hospitals	**6.9**	17.2	8.7	6.4	n.a.	7.7
Medical consultations per person per year	**3.2**	6.1	5.1	4.0	6.3	n.a.
Doctors' compensation[3]						
GPs	**n.a.**	2.5	5.4	4.4	3.0	n.a.
Specialists	**3.6**	5.2	n.a.	6.5	2.9	1.5
MRI units per million population	**3.7**	4.9	5.6	26.5	19.7	n.a.
Computer tomography units per million population	**12.1**	51.1	7.6	33.9	26.3	n.a.

1. Source: Malcolm (2007), which may not be fully comparable with OECD data.
2. *Ibid.*, results for Kaiser Permanente, a large managed care organisation in California.
3. Self-employed, except for New Zealand where salaried; annual income as a share of per capita GDP.

Source: OECD Health Data 2008 and Malcolm (2007).

established to which high-utilisation public hospitals could aspire, providing substantial scope for efficiency gains (Malcolm, 2007).

More direct measures of hospital productivity and efficiency have been developed, though these are fraught with difficulties, especially regarding the elusive quality dimension. New Zealand has developed many performance and some quality metrics (Box 3.1), though they are rarely used very assertively to monitor performance or linked to

Box 3.1. **Measuring productivity, efficiency and quality of health services**

A critical issue in New Zealand is developing measures of productivity (outputs per input), efficiency (costs per output) and quality (various proxies) in the health sector in order to assess the impact of reforms, monitor provider performance and potentially link funding to performance (output-based funding). This constitutes an integral part of the government's pursuit of greater value for money because of rising health-care expenditures and the public's increasing expectations of health services. Major measurement challenges concern:

- inputs as defined by full-time equivalents (FTE) of nursing and physician staff, which are not standardised across time and hospitals because of the need to properly weight the different classes of nurses and doctors, with costs representing corresponding weighted averages of such staff's wages;
- outputs of outpatient (including emergency-room) services, which must be valued by rough price estimates used to settle accounts between hospitals where data are highly inconsistent and observations often missing (whereas inpatient services are relatively straightforward to value in terms of diagnosis-related groups, using case-weighted discharges);
- sector coverage, which has been restricted to public hospitals by NZ studies to date, whereas England, for example, has developed performance measures also for primary care in the context of the Quality and Outcomes Framework in the 2004 GP contract with the NHS;

Box 3.1. **Measuring productivity, efficiency and quality of health services** *(cont.)*

- quality improvements (changes in medical treatment, technology and modes of service delivery), which can lead to improved health outcomes that are not reflected in outputs, require that productivity measures be adjusted for various measures of quality, e.g.: i) mortality within 30 days of hospital admission, ii) health effects of treatment and waiting times, *iii*) value weight for statin use, iv) blood-pressure control, *v*) heart-attack survival, *vi*) patient experience and *vi*) the value of health; items *i*) to *v*) are based on increases in quality-adjusted years of life (QALYs) and *vi*) on additional years of employment.

According to the Treasury (2007), which conducted its study in 2005, hospital efficiency fell by 2.6% per annum over the three years 2000-01 to 2003-04 (June years). Over half of the increase in staff costs went into increased wage costs per doctor, the other half into increased doctor numbers, which however did not result in a corresponding increase in output. By contrast, hospital efficiency had increased by 1.1% per annum over the previous three years 1997-98 to 2000-01. Treasury acknowledged that further work is needed, *i.e.* to construct output measures for other hospital and non-hospital services (notably outpatient services), develop robust input data and cost deflators for key staff groups and clinical supplies, and in the longer term build quality into output and productivity constructs.

The Ministry of Health (2008a) improved on the Treasury methodology by including outpatient in addition to inpatient services and refining FTEs. It found that hospital productivity itself declined from 2001-02 to 2005-06 although it increased in 2006-07, indicating perhaps an efficient shift from inpatient to cheaper outpatient care made possible by new technologies (bronchoscopies, colonoscopies, etc.). Costs per output increased markedly over the entire six-year period, well above the rates of increase in both the CPI and DHB revenues, explained largely by significant wage settlements during this period. As a result, efficiency fell, especially in the latter part of the period, both corroborating and extending the Treasury results. However, the quality of hospital care improved as measured by rates of in-hospital mortality and hospital-acquired infections; adjusting for such effects implies a more moderate reduction in efficiency. If there are inter-DHB variations in trend productivity and cost efficiency, they may relate in part to staff mix, where greater use of senior doctors and registered nurses leads to higher output. This implies potentially substantial savings to be realised from benchmarking to the most efficient provider, though allowance has to be made for diseconomies of small scale and other local circumstances.

Academic studies have also looked at performance impacts of the long history of structural reforms in New Zealand. The most comprehensive is Davis *et al.* (2005), which assesses the impact on patterns of care, output and patient outcomes of a substantial reduction in bed availability and multiple reorganisations in the NZ public hospital system between 1988 and 2001. The authors find that despite substantial bed reductions and other structural changes during the period of experimentation with market reforms during the 1990s, hospitals maintained, and even increased throughput by means of compensatory mechanisms such as workload adjustments, whereas patient access, particularly for vulnerable groups, did not suffer. This suggests that national public hospital systems can maintain high levels of performance and patient responsiveness while undergoing drastic organisational change. On the other hand, apart from discharge numbers, the final reform phase (2000-01) showed a sharp reduction in the impact of reform – an increase in beds available, no decline in average length of stay, and an increase in the rate of unplanned admissions. This would tend to corroborate the government's own findings of declining public hospital efficiency under the DHB reforms.

resource use. The main implication of this work is that hospital labour productivity declined in the aftermath of the DHB reforms (as government reduced its focus on performance and allowed providers to take on staff, etc.), but there are signs of improvements more recently, perhaps as the transition phase is ending. Nevertheless, hospital cost efficiency has persistently declined, reflecting large wage awards under centralised wage bargaining that have not been compensated by the modest recent rise in productivity.

Physician and nurse "density" of supply seems in line with comparator countries. The rate of medical consultations is nevertheless low, making it appear that doctors are perhaps underemployed, but this may be partly explained by a smaller proportion of GPs in the overall doctor numbers than, for example, in Australia, which has almost double the GP and consultation rates.[9] Data on doctors' wages are generally unavailable, except for salaried specialists in public hospitals, where they do not appear to be extreme, despite recent rapid growth. The use of expensive high-tech equipment, a major spending drain in OECD health systems but also sometimes a sign of innovation and insurer competition, remains quite low in New Zealand. Pharmaceuticals expenditure per capita is relatively moderate, partly because of reduced unit prices negotiated by Pharmac.

Although some of the above indicators of resource use may support a positive assessment of health-sector cost efficiency in comparison with other OECD countries, the recent trend within New Zealand itself is less encouraging. Furthermore, there remains the question of whether the quality of output is adequate – higher cost efficiency coming at the expense of quality would be clearly unacceptable. International indicators of survival rates for major illnesses give a mixed picture for New Zealand's quality of acute-care services, though its negative rankings seem to outweigh the positive ones (Table 3.2). Hospital errors (medical misadventure) are also an increasing source of concern to public-hospital owners (DHBs), who have made reducing such errors a high priority.[10] Quality monitoring in medical care is becoming more prevalent in OECD countries, and will be important for New Zealand (see Box 1.1). These measures will need to be improved since modelling the hospital production function is very difficult (Glazer, McGuire and Normand, 2008). For example, mortality rates should be adjusted for *ex ante* patient health status, because otherwise hospitals or doctors may be reluctant to treat sicker, high-risk patients for fear of spoiling their performance scores.

Table 3.2. **Health-care quality indicators**

Indicator	Rank[1] within OECD	New Zealand data	Highest and lowest in sample (percentage points)
Breast cancer 5-year survival rates	10 out of 19	83.5%	(89.4; 75.7)
Colorectal cancer 5-year survival rates (males)	4 out of 11	59%	(69.5; 4.9)
In-hospital mortality rate, stroke			
Hemorrhagic stroke	20 out of 23	31%	(36.9; 10.9)
Ischemic stroke	18 out of 23	12%	(20.1; 3.3)
In-hospital mortality rate, myocardial infarction	1 out of 24	5.4%	(24.5; 5.4)
Mortality rate from asthma	22 out of 25	0.35 per 10 000	
Amenable mortality[2]	14 out of 19	9.56 per 10 000	

1. Number 1 means highest performance.
2. Death from treatable conditions.

Source: E. Nolte and C.M. McKee (2008), "Measuring the Health of Nations: Updating an Earlier Analysis", *Health Affairs*, January/February; OECD (2007), *Health at Glance*, OECD, Paris.

Equity of access and outcomes

Social disparities in health are a common feature of industrialised OECD countries and are likely to reflect inequalities in per capita incomes and a host of factors strongly related to income (education, jobs, housing, lifestyles, attitudes, etc.). New Zealand does not score particularly badly in terms of regional variations, but, despite some recent progress, substantial minorities, the Maori and Pacific Islanders, face worse health outcomes and demonstrate higher risk factors for chronic disease than New Zealanders of European or Asian descent (Table 3.3). Socio-cultural barriers may imply reluctance by ethnic minorities to seek primary care. Co-payments for such care until recently were high, covering close to the full cost of service. Maori and Pacific peoples also have lower rates of private health-insurance coverage, which is often used by wealthier people to "skip the queue" in order to gain faster access, in private hospitals, to elective treatments for which there are public hospital waiting lists. For such reasons, low-income minority groups have been the heaviest users of hospital emergency-room services, for which there are neither co-payments nor closing hours. This is obviously highly inefficient, given that the treatment sought is for problems of often routine nature or afflictions that could have been easily avoided with prompt primary care. Indeed, the absence of a long-term relationship with a primary-care physician is detrimental to the quality of care.

Eliminating barriers to health-care access for disadvantaged groups has been an important public policy goal. Waiting lists and problems in access were identified as key issues by the previous government's New Zealand Health Strategy. People in New Zealand are now encouraged to enrol with a GP in order to access higher public funding *via* lower

Table 3.3. **Health indicators for Maori, Pacific Islanders and others**

Unadjusted prevalence, total men and women

	Maori	Pacific	Asian	European/ Other	Total
Does not have private medical insurance	76.8	81.1	61.9	59.2	61.6
Has a health practitioner or service they usually go to first when unwell or injured	92.7	92.9	84.8	94.9	93.8
Has been diagnosed with a chronic health condition	65.5	48.7	37.3	69.9	65.7
Has ever been diagnosed with high blood cholesterol	13.6	13.4	13.6	19.2	18.2
Not currently taking any treatment for IHD[1]	24.3	23.0	10.8	11.1	12.0
Has ever been diagnosed with diabetes	5.8	10.0	6.5	4.3	5.0
BMI: Obese (all classes) – adults	41.7	63.7	11.0	24.3	26.5
Obese – child	11.8	23.3	5.9	5.5	8.3
Has ever been diagnosed with asthma	24.5	17.8	6.8	19.0	17.9
Current smoker	42.2	26.9	11.2	18.6	19.9
Hazardous drinking among drinkers	39.2	39.2	9.4	20.1	21.1
Hazardous drinking among total population	32.9	23.0	5.6	17.7	17.7
Life expectancy at birth (2005-07)					
Male	70.4	←	79	→	78.0
Female	75.1	←	83	→	82.2
Perinatal deaths (rates per 1 000 births, 2003)	9.1	11.9	n.a.	9.0	9.4
Fetal deaths (rates per 1 000 births, 2003)	6.5	7.7	n.a.	6.9	6.9
Memorandum item:					
Share in total population[2]	14.9	7.2	9.7	77.7	…

1. Ischaemic heart disease (for those with IHD).
2. Total does not equal 100 because ethnicity is self-reported and an individual can belong to more than one ethnic group.

Source: Statistics New Zealand and Ministry of Health (2008), *A portrait of Health – Key results of the 2006/07 New Zealand Health Survey*, 4 June.

co-payments. There has also been substantial momentum in opening Maori clinics, using Maori staff and allowing traditional Maori healing techniques for the Maori population. It is true that lower per capita health spending for such groups could reflect a local optimum, insofar as other needs, such as housing, education, and disposable incomes, may be more pressing. Levelling out health outcomes would, all else equal, entail lower spending (and worse outcomes) for the currently better-performing groups, but if equality is a major shared objective this would be justified (Sassi and Hurst, 2008).

The fiscal sustainability challenge

The challenge for policy is to ensure a high level of health-system performance in the future – that is, high quality and accessible care providing satisfactory health outcomes – at as little as possible extra cost, despite inexorable demographic, wage and technology pressures. Increased private cost-sharing, major budget reallocations from other items to health, or some further rationing of care are the only alternatives.

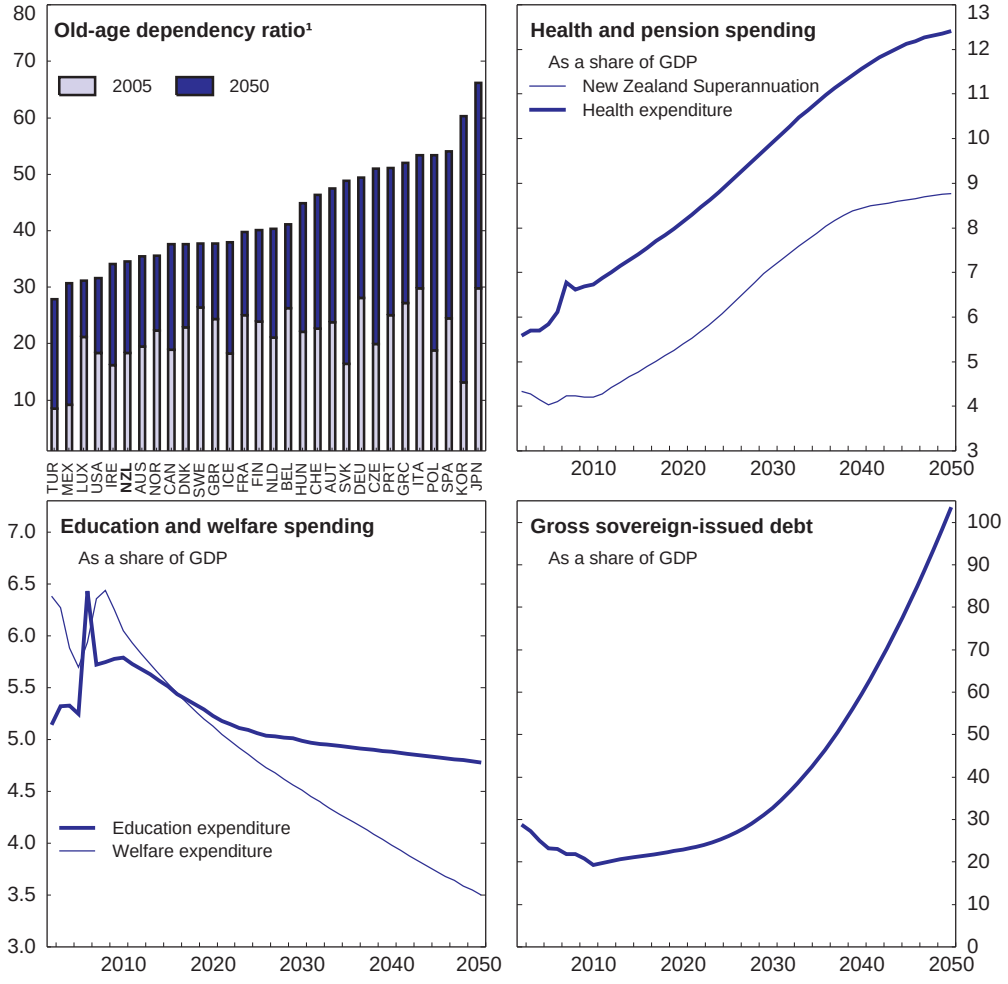
The long-run fiscal context

Given the demographic shifts discussed in Chapter 1, the old-age dependency ratio is projected to increase from one-fifth today to one-half by 2050 (*i.e.* from five people of working age per retired person to just two), around the OECD average (Figure 3.6). The greater proportion of elderly and especially of the very old will put pressure on the fiscal situation through higher health and pension spending. Technology and cost pressures will be the main factor driving higher health spending, however. Public health expenditure in New Zealand is officially projected to more than double as a share of GDP (from 6 to over 12%) in the base-case scenario (Treasury, 2006). NZ Super Fund payments may likewise double (from 4 to 8%), but this smaller absolute rise is effectively offset by decelerating spending on education and welfare, if these are held fixed in real per capita terms. With assumed stability in the tax-to-GDP ratio, the debt would rise gradually from around 2010 to 2025 and thereafter accelerate, ending up at 100% of GDP by 2050 from 20% in 2020. In this scenario, in order to keep the debt ratio stable while honouring pension promises and preserving the present scope of social services, other (non-social) spending would have to fall by fully half relative to GDP, or else taxes would have to go up by some 11 percentage points of GDP. Uncertainty applies to the demographic, technological and other spending determinants, since even small differences from the base-case assumptions can cumulate over the long term to relatively large fiscal impacts. And as seen in Chapter 1, without fiscal consolidation in coming years recent economic events would be on track to push the debt ratio up very substantially by 2023, before ageing pressures even start, rendering the current long-run projections out of date. Nonetheless, the exercise is imperative to be able to plan for the future and react appropriately to events as they develop.[11]

Major drivers of health-care spending

Per capita real growth in health spending has averaged 3% since 1950 but accelerated to over 4% in the last decade. Similar trends are observable among all OECD countries, but New Zealand's recent public-spending acceleration has been relatively sharp. Such a pace cannot continue without limit. Official projections show that if the ratio of public health spending to GDP is to (merely) double in the next 50 years – just as it did over the last 50 under conditions of far more favourable population dynamics[12] – then the excess of spending growth over that of GDP must greatly diminish in intensity compared with the

Figure 3.6. **Long-term fiscal story**



StatLink http://dx.doi.org/10.1787/563127782352

1. Share of population aged 65 and over in population aged 15-64.

Source: Treasury (2006), *New Zealand's long-term fiscal position database* and World Bank, *World Development Indicators Database*.

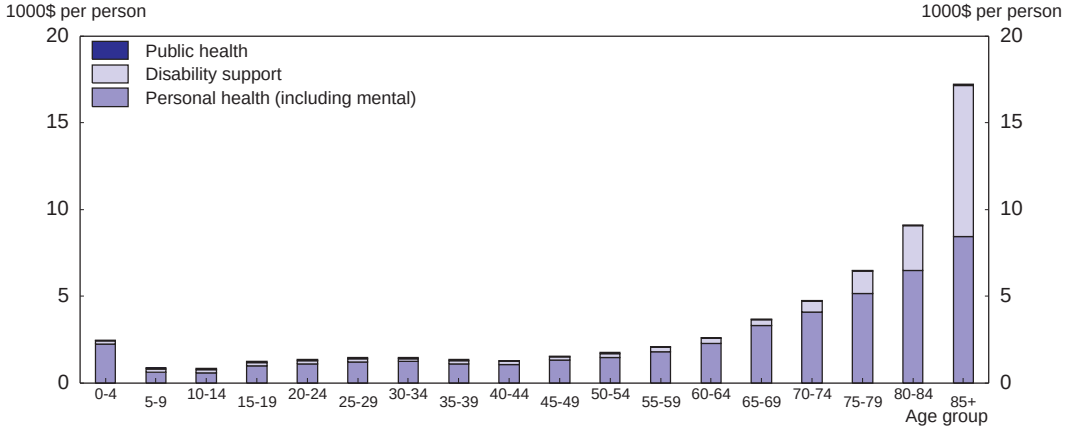
past, even turning negative for a time. And if recent fiscal trends are not reversed (Chapter 1), even this may not suffice for achieving fiscal sustainability.

Ageing and health effects

The projected future rise in public health-care spending is explained in part by ageing, although this is assumed to occur mainly through disability and proximity-to-death factors rather than ageing *per se*. Older people use health-care services more intensively than younger ones as their "health capital" depreciates at an accelerating rate, culminating in the last year of life which typically absorbs a disproportionate share of lifetime health expenditures.[13] The use of long-term care (disability) services rises dramatically at older ages (Figure 3.7). In other words, a rising share of older people means more years spent in disability and a higher frequency of death, hence higher health and long-term care costs during the transition to a new steady-state demographic structure. Declining disability rates for given age groups should attenuate these impacts, however: in dynamic equilibrium, or so-called healthy ageing, an

Figure 3.7. **Government health expenditure by age and service group**

Males and females combined, 2003/04



StatLink http://dx.doi.org/10.1787/563160674401

Source: Treasury (2006), *New Zealand's Long-Term Fiscal Position Database*.

extra year of life should bring an extra year of good health. Also, "distance to death" (the proportion of people in their last year of life) rises more slowly than the share of older people thanks to lengthening life spans. OECD (2006) estimates that, for the OECD on average, roughly half of the pure ageing *cum* (small) death effect is offset by healthy ageing. For New Zealand this implies that ageing may add on balance 2½ percentage points of GDP to public health-care spending by 2050, of which the lion's share is absorbed by long-term care, given the high incidence of disability in the elderly population. These net ageing effects are subject to forecast risk, and in particular the healthy-ageing assumption might be seen as optimistic. Policy-makers should build in a safety margin for disability-rate uncertainty and also attempt to influence disability rates by cost-effective preventive public-health measures.

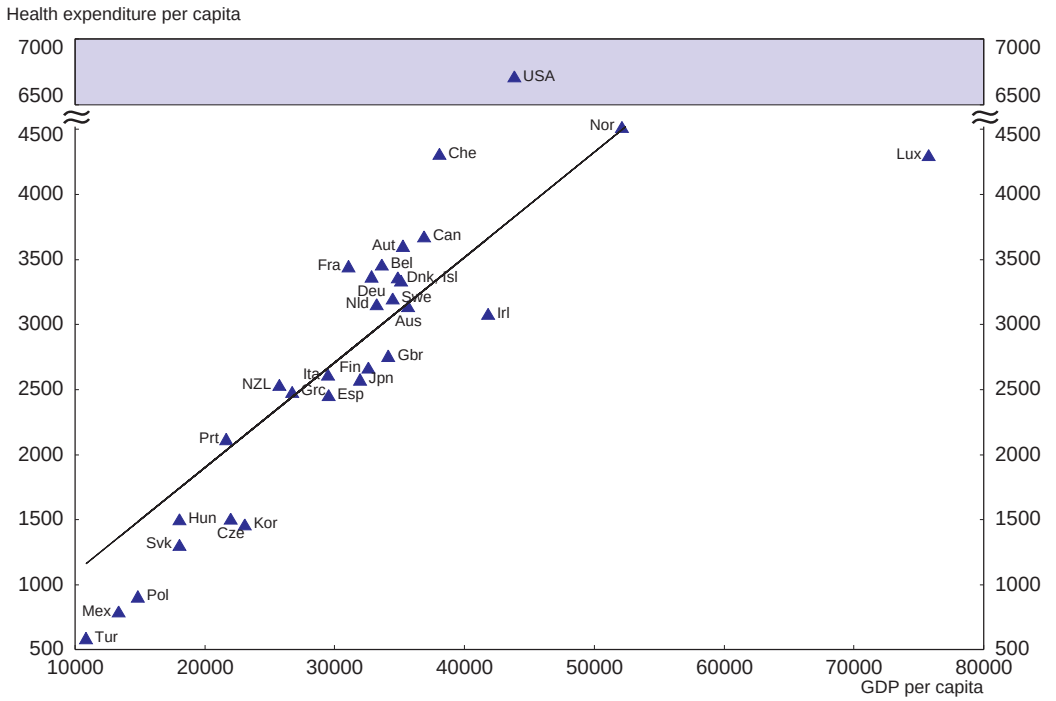
Income (coverage) and price effects

But the predominant spending drivers are inherent in the demand for health care as a benefit, independent of age or health status. The aggregate pure income elasticity of demand for health care is estimated to be around unity for OECD countries.[14] This suggests that at the national level, medical care is less a necessity than a normal good, with health spending driven not by the amount of disease but by the amount available to spend (Getzen, 2008). Insurance coverage thus expands in tandem with rising living standards, boosting demand and spending. Technological progress not only meets society's existing health needs but also enlarges them further as new procedures become available or more affordable. In this perspective, New Zealand's below-average level of per capita health-care spending partly reflects a below-average level of per capita GDP (Figure 3.8).[15] One positive implication is that, in principle, rising health spending and pressures to spend more can be controlled by government. They are not inevitable and inescapable but part of an implicit political deal as to what is affordable and reasonable in return for political support.

Yet such income effects cannot explain a doubling of the health spending to GDP ratio, as an elasticity of 1 implies a stable ratio.[16] Therefore the demand "residual" is large. It has grown over the past 35 years by around 1% per year on average for the OECD countries (OECD, 2006) and also for New Zealand (Treasury, 2006), and it is thought to reflect relative-price and cost-of-technology pressures (Box 3.2). This hypothesis is partly corroborated by

Figure 3.8. **Per capita expenditure on health and GDP, 2006**

USD PPPs, 2006[1]



StatLink http://dx.doi.org/10.1787/563202652043

1. Or latest available year.

Source: OECD *Health Data 2008* and OECD, *Annual National Accounts*.

Box 3.2. **Health-care cost pressures**

Econometric estimates show a large, positive and persistent time trend in health-care spending across OECD countries, after controlling for age, health and income determinants.[1] There are a number of reasons to suspect that this reflects high cost and price pressures in the health-care sector, as follows.

- *Technology.* There is a genuine social need for returns to innovation to be sufficient to provide incentives to undertake further R&D. Policies typically try to assure this (as marginal cost pricing does not) by means of patent protection, basic research grants and insurance listings – which, respectively, keep prices high, reduce investment costs and expand the market – notably in pharmaceuticals that are at the forefront of medical innovation (see Sloan and Hsieh, 2008). However, this channel is weakened in New Zealand because of tight policy control over the prices of imported pharmaceuticals and the lack of any significant domestic production. In other words, New Zealand receives technology (and its costs) exogenously.
- *Wage push.* Doctors' exceptionally long training periods, highly specialised skills and increasing use of high-tech diagnostic tests and equipment push up their fees relative to those earned by other professions, and also those of physician specialists relative to GP's. Such wage inflation is often exacerbated by rents secured by entry barriers into the medical profession or union activism by public employees.[2] New Zealand faces a highly mobile international market for health-care professionals. As a small distant country it must offer competitive wages to lure them back in. There is little policy can do besides educating more doctors, domestic and foreign, and offering them attractive working conditions and other non-pecuniary rewards.

Box 3.2. **Health-care cost pressures** *(cont.)*

- *Baumol's cost disease*. Prices of health care rise faster than those of other goods and services due to a lack of productivity growth in labour-intensive public services (such as public hospitals) and economy-wide convergence of nominal wages. Hence, GDP generates little in the way of increased resources to be spent in the public sector, and taxes must rise faster than GDP in order to keep financing the same level of public services. This problem affects long-term care in particular, since it is generally more labour-intensive and lower-skill than are acute services.
- *Health-care market failures*. A key problem afflicting OECD health-care markets is weak price signals due to extensive insurance, implying demand well in excess of socially desirable levels (moral hazard). Doctors, with superior information and implicit patient trust, have considerable discretion over practice patterns. These are influenced *inter alia* by ethical constraints, practice protocols, time available and income targets (Simoens and Hurst, 2006). If paid on a fee-for-service basis, doctors may induce overprovision of non-essential care, over-utilisation of expensive diagnostic technology (especially if they have an ownership interest in these facilities), inadequate access and quality, and unsafe care; on the other hand, doctors can be important rationing agents for the state in tax funded systems, internalising available resource levels and practising accordingly even as they simultaneously act as advocates for their patients.[3] Disease boundaries are expanding fast as new treatments become available. Many conditions that were formerly considered risk factors, or just part of life, are now officially labelled as "diseases" needing treatment.[4] Industry also has a very significant effect on increasing the demand for extra spending on new drugs and technologies often before they can be independently assessed for cost effectiveness. Because of resource constraints, the resulting excess demand spills over into wages and waiting lists. Budget caps, regulations and microeconomic incentives can offset moral hazard, at least in part.

1. OECD (2006) runs a panel of 30 OECD countries with health expenditures per capita (H/N) as the dependent variable regressed over the period 1970-2002 on: average population age (A), per capita income (Y/N), and time trends for the 70s, 80s, and 90s/00s (T70, T80 and T90). The estimated coefficients from the specification with income per capita constrained to 1, are as follows (with all being significant at the 5% level; $R^2 = 0.49$):
   Log (H/N) = 1*Log (Y/N) + 1.56*Log (A) + .021*T70 + .013*T80 + .010*T90. The declining time parameter is thought to reflect efficiency-enhancing reforms in health care.
2. There is evidence in the United States that some medical specialties command extremely high rents, notably radiology, anaesthesiology and dermatology, with estimated IRRs near 100% per year (Nicholson, 2008).
3. The incidence of iatrogenic illness (provoked by unsafe or unnecessary treatment) is far from trivial in many OECD countries (see *e.g.* OECD, 2006, Health Care Quality Indicators Project). On the other hand, it is also true that there is no other profession where ethics is so thoroughly inculcated into the whole training and preparation process (Golden and Sloan, 2008).
4. See Berndt and Donohue (2008) on the effects of direct-to-consumer advertising of pharmaceuticals (interestingly, allowed only in the United States and New Zealand), often promoting "lifestyle drugs" or ones of dubious necessity, and Leader and Corfield (2008) on psychosomatic causes of disease.

available price data. According to OECD national accounts, New Zealand's health-sector price deflator is high in relation to the overall GDP deflator, and not far below the OECD average (Table 3.4).[17] This reflects the fact that New Zealand is not only a small country in a global labour market for doctors and nurses but also that New Zealanders tend to form their expectations based on comparisons with Australia, the United States and the United Kingdom – countries which are wealthier. New Zealand should be taking its cue from countries with comparable per capita GDP.

Table 3.4. **GDP price deflators for health**
2005 PPP benchmark

	Health price levels relative to OECD (OECD = 100)	Health price levels relative to GDP (GDP = 100)	*Memo.*: GDP per capita (OECD = 100)
Australia	99	96	113
New Zealand	**90**	**106**	**85**
Portugal	77	113	69
United Kingdom	98	103	109
United States	125	116	144

Source: OECD, *National Accounts database*.

According to OECD (2006), if the residual growth factor continues unabated at its past trend rate of 1%, considered the benchmark ("cost-pressure") case, it would add an extra 3.6 percentage points of GDP to New Zealand's health spending bill by 2050 and be most likely attributable to acute rather than long-term care.[18] Together with the above adjusted ageing effects, this would bring the health-spending-to-GDP ratio to 12.6% by 2050. On an alternative "cost-containment" scenario, whereby policies force the residual cost growth factor to converge to zero by 2050, health costs could be kept to 10% of GDP, still leaving a challenge for fiscal policy (Table 3.5). The most recent government projections are over 2% of GDP more pessimistic than those of the OECD, despite a somewhat lower 2005 starting point and using apparently similar methodology, albeit without the cross-country constraints that were imposed by the OECD for purposes of comparability and using different assumptions regarding GDP and disability rates.[19] In the Treasury's cost-pressure scenario, public health spending including disability services, comparable to the OECD's definition of long-term-care spending, balloons to 15.2% of GDP in 2050. In the baseline projections (underlying Figure 3.6), which corresponds to the OECD's cost-containment scenario, health spending rises to 12.4% of GDP. On either set of scenarios, fiscal sustainability would require convergence to zero (or even below) in the residual growth factor much sooner than 2050.

Table 3.5. **Projection scenarios for public health expenditure in New Zealand**
Per cent of GDP

	1970-2002 changes	2005-50 changes		Level 2005	Level 2050	
	Historical back cast	Cost pressure scenario	Cost containment scenario		Cost pressure scenario	Cost containment scenario
OECD (2006)						
Age effect	0.2	2.4	2.4	–	–	–
of which: long-term care	–	1.5	1.5	–	–	–
Residual	1.4	3.6	1.2	–	–	–
of which: long-term care	–	0.4	–0.3	–	–	–
Total	**1.7**	**6.2**	**3.6**	**6.4**	**12.6**	**10.0**
of which: long term-care	–	1.9	1.2	0.4	2.4	1.7
NZ Treasury (2006), total	–	**9.4**	**6.6**	**5.8**	**15.2**	**12.4**

Source: OECD (2006), "Projecting OECD health and long-term care expenditure: What are the main drivers?", *OECD Economics Department Working Papers*, No. 477, OECD, Paris; Treasury (2006), *New Zealand's Long-Term Fiscal Position*, Wellington.

OECD ECONOMIC SURVEYS: NEW ZEALAND – ISBN 978-92-64-05429-5 – © OECD 2009

Macro control instruments

New Zealand's health system, like other "integrated" models, features one dominant payer (plus ACC) with tight budget control over the health spending envelope and regulatory and/or monopsonistic power to keep prices and volumes down. Efforts at priority setting have sought to get the most out of each health-care dollar *via* allocative and technical-efficiency gains. Shifting costs onto the private sector through increased cost-sharing has been another policy used in the past, but partially reversed under the last set of reforms to primary health care.

Budget caps

The single most important strategy used in New Zealand for containing overall health expenditure is the setting of a national global budget for health by the central government (Ashton, 2009). The budgeting approach requires discrete decisions by Ministers to increase original nominal allocations. It also sets an allowance for new spending which, if it exceeds that allowance, must crowd out other options (Chapter 1). Trends in health spending thus largely reflect deliberate policy choices – putting into perspective the foregoing discussion of cost drivers and projections. In the 1980s and early 1990s, budgets for health spending were necessarily tightened, and structural reforms contributed to the effort by emphasising cost control and price competition. Since the late 1990s, health funding rebounded and structural reforms changed course as priorities shifted toward output, equity of access and quality. Higher public hospital salaries and reduced patient cost sharing for primary care were pursued as the principal means to these ends. Efficiency, even if less explicitly formulated as an objective, remained implicit in the quest for quality. Robust cyclical conditions facilitated a reallocation of government spending from welfare and debt finance toward health, among other items (Table 3.6). Other OECD countries have had similar experiences, sometimes involving backlashes from earlier unpopular cost-cutting (Docteur and Oxley, 2003). There is a considerable number of OECD countries, in addition to New Zealand, where health spending has grown at more than double the rate of GDP since the turn of the decade (Figure 3.9).

Table 3.6. **Core Crown expenditures**

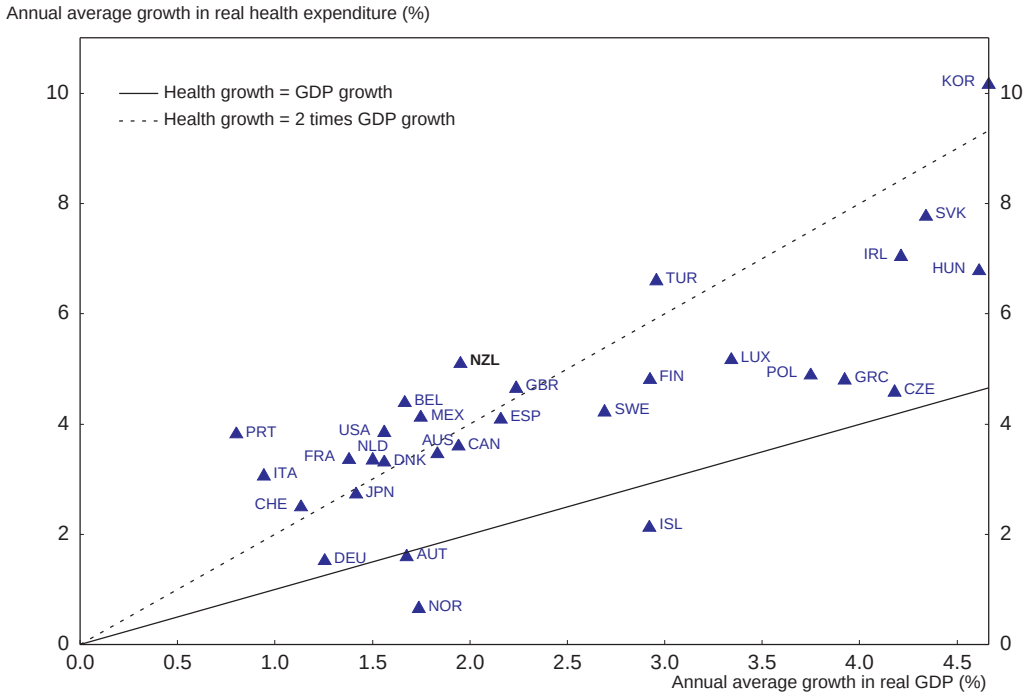
As a percentage of GDP, June years

	1972[1]	1980	1990	2000	2008
Social security and welfare, Government Superannuation Fund	5.7	10.9	14.5	12.2	10.3
Health	4.3	5.7	5.3	5.5	6.3
Education	4.9	5.1	5.7	5.1	5.3
Core government services	1.7	2.3	3.3	1.8	1.9
Law and order	0.5	0.8	1.3	1.4	1.6
Defence	1.7	1.7	1.9	1.0	0.9
Transport and communications	2.1	1.3	1.2	0.8	1.2
Economic and industrial services	0.6	2.0	1.2	0.8	1.6
Heritage, culture and recreation; Primary services, housing and community development; Other	1.9	2.4	0.4	0.7	1.2
Finance costs	2.4	3.8	6.6	2.0	1.4
Total	**25.8**	**36.1**	**41.7**	**31.4**	**31.7**

1. March year.
Source: Treasury.

Figure 3.9. **Annual average growth in real expenditure on health and GDP**

USD PPPs, 2000-06[1]



StatLink http://dx.doi.org/10.1787/563203583344

1. 2005 for Australia, Japan, Slovak Republic and Turkey.

Source: OECD *Health Data 2008* and *Annual National Accounts database*.

Looking ahead, however, the budget context will deteriorate significantly due to both discretionary measures and cyclical factors (see Chapter 1). A much tighter constraint on Vote: Health appears inevitable in the short term, given the current economic and fiscal context. Although this reduces the danger that the health-spending boom will be prolonged, budgetary tensions will intensify. If public expectations – whether related to doctors' income or citizens' access to free care – are unwilling to accommodate sharply lower health spending growth, *i.e.* close to constant real levels henceforth, political risk would spill over into other sensitive items like pension promises, public employment or taxes, leaving policy makers in a quandary. In the long run, the budget constraint must be respected, one way or another, and, because of negative debt dynamics, the longer the adjustment is put off, the more wrenching it will be.

Shifts in spending mix

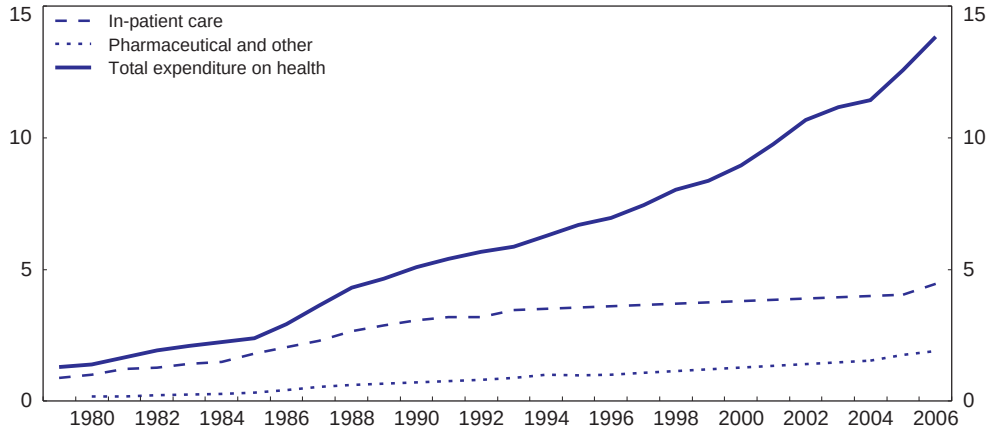
Another approach is to use budget policy levers to direct health-care resources toward cost-efficient primary care away from relatively expensive hospital care, where this is feasible. Similar considerations might hold for drug therapies as substitutes for invasive procedures. Research has shown that in countries where primary care is strong, *i.e.* comprehensive and accessible, health spending is lower, all else equal (*e.g.* Starfield *et al.*, 2005, cited in Mays and Blick, 2008). Such a shift can be accomplished in two ways: i) by a pre-emptive strategy based on timely use of primary care to avoid allowing problems to fester to the acute stage (resulting in so-called ambulatory-sensitive, or

preventable hospital admissions); and *ii*) by generating community clinics to substitute for less complex types of hospital care, notably for persons with chronic conditions who account for a disproportionate share of hospital discharges.[20] The first method is easier to exploit in the short run, while the second requires more gradual structural change. Shifting the distribution of national health spending toward regions of higher productive efficiency, or toward population groups of high ability to benefit, might likewise boost its overall efficiency. The more targeted approach would tweak strictly population-based allocation criteria by increasing funds for the higher marginal productivity areas, such as underserved populations or undersupplied services, or for hospitals in more efficient jurisdictions that could intensify their specialisations and serve wider population areas, with significant economies of scale – a development which, if desired, would be facilitated were there a purchaser-provider split for most hospital services.

The 2001 Primary Health Care Strategy (PHCS) in fact signalled such funding shifts in pursuit of the overarching goals of quality, equitable access and health outcomes. Significant funding was given to reducing patient co-payments, and funds were also provided for special incentives to DHBs serving populations with high shares of minority groups and the elderly. In principle, such a budget allocation is consistent with the above described targeted approach to enhancing efficiency. Though it is still early in the process, and research linking policy changes to specific outcomes has not been attempted, a significant part of the new money may have gone into provider or consumer windfalls. Primary-care demand expanded in response to lower co-payments, but its supply apparently did not (see further below). Hospital and primary-care costs have shot up even faster than overall spending, given exceptionally low pharmaceuticals spending growth (Figure 3.10).

Figure 3.10. **Trends in health care spending mix**

Billions of NZD



StatLink http://dx.doi.org/10.1787/563213572618

Source: OECD, *Health Data 2008*.

Implications

Although budget control can be effective in promoting the parsimonious use of health-care resources, budget caps remain blunt instruments. Wage squeezes and capital investment cuts under tight budgets may by themselves lower provider effort and

productivity, which only exacerbates excess-demand pressure and patient dissatisfaction. There may even be over-spending and consequent hospital deficits in order to justify a higher budget allocation the following year. Conversely, in the absence of increased supply, rising budget allocations could spill over into higher wages and prices with little gain in output or quality, as seems to have happened in the 2000s in New Zealand. With zero or only symbolic prices at the point of demand due to insurance as patient co-payments declined, demand expanded and worsened such pressures. While budget constraints are important, and have underpinned New Zealand's periods of efficiency gains, their ability to deliver better "value for money" requires meaningful incentives to achieve overall system objectives in both quality and cost dimensions by way of behavioural changes.

Priority setting, a legacy of the quasi-market reforms, is a more refined macro control instrument. An earnest effort has been made to allocate funding according to economic and not political criteria, *i.e.* channelling resources into those services that provide the greatest benefit. However, choices have occurred mainly at the margin, while ignoring the much vaster historical spending base where disinvestments in some areas may be needed. Indeed, almost no country looks into the base systematically (Ettelt *et al.*, 2007). Priority setting has also been hobbled by inadequate information or lack of knowledge of exactly where the biggest marginal benefits in terms of health outcomes may lie.

The clinical sustainability challenge

Clinical sustainability challenges are no less daunting than their financial counterparts, since not only the level but also the nature of health care will be changing profoundly in the years to come. Increasing prosperity and modern life stresses, and the corresponding tendency to adopt sedentary lifestyles and unhealthy diets or other such habits, have already produced a worrying rise in chronic diseases (*e.g.* diabetes). Patients are increasingly afflicted by multiple chronic conditions, implying an attendant high risk of disability, especially among low income and minority groups. Demographic trends will further raise disability and chronic disease rates, but the capability to meet these growing needs will be hampered by the ageing of the medical workforce itself, and high global mobility of medical professionals.

Innovation and infrastructure needs

The New Zealand Health Strategy, introduced in 2001 by the previous government, set out its ambitions for improving population health by means of increased equity in the allocation of available resources according to health need, behavioural changes toward more collaborative models of health care delivery and an increased focus on patient wellness instead of instances of illness (Minister of Health, 2001). Whereas the Strategy did not explicitly identify either cost containment or efficiency as objectives of policy, the new focus on population health was a clear effort to start addressing a number of chronic health problems that could potentially result in a massive increase in health care costs over the next few decades (Ashton, 2009). Substantial efficiency savings due to better incentives to innovate *via* new health care delivery models were therefore an important implicit longer-run objective. These models would embody fundamental shifts in clinical focus: *i*) from acute-care to chronic-disease-management (ageing, diabetes) approaches, *i.e.* increasing capacity for chronic care and reducing that for acute care; *ii*) from merely trying to increase the efficiency of treatment to pre-emptive population health and prevention policies to reduce health care costs; and *iii*) from doctor supply-led demand to

multidisciplinary (holistic) patient-centred care, often focused in community clinics, and importantly including new modes of delivery for minorities (Maori-based clinics, etc.). International evidence is strongly suggestive of large efficiency gains from such integrated systems.[21] The aims of the strategy were thus consistent with addressing the twin challenges of clinical and fiscal sustainability. New Zealand may in fact be able to provide leadership within the OECD in terms of coalescing national health policies around innovative visions for a sustainable future.

The Strategy has been changing the health-care landscape in some encouraging ways. The Health Ministry launched public health campaigns and other policies to promote public health, and engaged the newly created DHBs in its efforts. Primary care was a main field of action: radical transformations in its funding and organisation, grouping GPs into networks (PHOs) and publicly funding them on a largely capitation basis, were implemented with a view to promoting intersectoral linkages, equitable access and preventive care. However, Treasury has been concerned that the DHB model has failed to encourage hospital efficiency (Box 3.1) and that the costly PHCS is not likely to have been very effective in value-for-money terms (Mays and Blick, 2008). Indeed, the new integrated care models have largely failed to evolve (see further below).

The new government has reaffirmed the principles of the New Zealand Health Strategy, particularly regarding the need for innovation in clinical care. At the same time, it plans to place greater emphasis on achieving efficiency in hospitals (Ryall, 2008). Hospitals will also have to become more specialised in order to keep up with fast changing technology and its appropriate application to patients, leaving community clinics as envisaged above to undertake more routine acute care (see Hofmarcher, Oxley and Rusticelli, 2007). As a small country, New Zealand can afford to have only a limited number of highly centralised tertiary (advanced specialist) services because of the critical mass of cases needed to provide a sufficient volume of treatment and build the necessary clinical experience and expertise.[22] Large catchment areas are also needed to attract staff in sufficient number to allow large teams critical to high-tech, often high-risk procedures. The need to maintain quality and patient safety, coupled with questions of financial sustainability, will mean a consolidation of the range of services delivered by most local hospitals, while still ensuring that people have adequate access to necessary hospital-based care (either through visiting specialist teams or by facilitating patient travel to specialist hospitals). This will be difficult politically, especially if it were to involve local hospital closures, but could be overcome with strong national leadership. New hospital facilities may at the same time need to be built or consolidated from former uses. The same holds for the new community clinics which will require physical structures that are pleasant and functional, able to house multidisciplinary staff, on-site laboratory services and attract patients. Individual decision-making by 21 DHBs may be too fragmented to make rational and coherent capital allocation plans; more regional and national collaboration is called for. Some steps in this direction have been taken, for example regional groupings of DHBs are jointly funding management service agencies to co-ordinate their hospital capital planning and management.

Information in the medical field is growing exponentially and technology is racing ahead of many health professionals' capacity to absorb it efficiently. The ability to process such information and to harness new technology will be important. ICT diffusion could help the clinical revolution by: *i*) managing fast-changing medical best practices in a centralised database made available to all doctors, along with software that can suggest

state-of-the-art diagnoses and treatments after doctor input of key parameters for any given case; and *ii*) allowing shared electronic records of patient information, so as to allow new modes of patient-centred delivery that minimise error and duplication (though privacy issues remain to be resolved). And as hinted above (Box 1.1), better information on costs, output and quality would allow funders to monitor providers more effectively and to develop payment incentives attached to their performance.

Looming workforce shortages

To staff the new clinical arrangements implied by the Strategy, profound workforce changes will be required. The traditional small business model of GPs' practices funded by fee-for-service arrangements ("piecework") is becoming less relevant. The rising "feminisation" of the health care workforce (the proportion of women doctors rose from 15% to 40% between 1984 and 2004) may make it more adaptable to such an evolution, as many women prefer stable lifestyles and the reduced financial and clinical risks of team settings within bureaucratic organisations. Women as relative newcomers are also likely to be more flexible about innovations in forms of pay (salaries, capitation *cum* fee regulation), softening the traditional resistance of the profession. Women (and, increasingly, men) often prefer shorter working hours and time off for family duties – a "work-life balance" that is probably easier to achieve in a team working environment than in solo practice. Devolving more of their routine tasks to practice nurses and/or nurse-practitioners would also importantly raise doctors' hourly productivity.[23] Furthermore, while ageing of the physician workforce is in itself a problem, it also presents an opportunity to change professional attitudes through a rapid generational change.

Population ageing, plus a continued rising share of Maori and Pacific Islander people, and their impact on the demand for the health workforce is a major issue in New Zealand, as the future supply of such workers is thought to be grossly insufficient.[24] Stepped up immigration to alleviate general working-age population shortages, possibly amplified by declining participation rates due to rising needs to take time off to care for ageing parents (informal care), will put added strains on the health care system. Tight human resource constraints will call for many more health care professionals, both native and foreign. In New Zealand's specific context, with a high rate of inward and outward migration of talent but especially in the health profession, planning in health human resources is probably more of a challenge than in most other OECD countries (Zurn and Dumont, 2008).

As New Zealand is a small open country, there is already a dearth of specialists, and, even if only a few opt to emigrate, that can have a major impact on health care delivery.[25] As in most OECD countries, there is also a significant imbalance in the geographical distribution of medical professionals. International migration plays a key role in balancing health care labour supply and demand needs. New Zealand has the highest proportion of migrant doctors in the OECD (foreign-born and foreign-trained doctors were respectively 52% and 36% of the workforce in 2006), and one of the highest for nurses. The number of NZ-born doctors living abroad represents half of foreign-born doctors living in New Zealand, and the number of NZ nurses living abroad is matched by those born abroad living in New Zealand. An increasing part of the foreign workforce, in particular doctors, is in New Zealand on a temporary basis, perhaps reflecting improving opportunities in their home countries (*e.g.* India and East Asia). While helping significantly to address rural workforce shortages, temporary migration is costly, especially as attrition and turnover rates tend to be quite high. This implies a need for health and immigration policy co-

ordination to assure more stable and adequate health immigration.[26] Education is likewise essential. New Zealand trains proportionately fewer medical graduates than the OECD on average (7.9 *vs*. 9.4 per 100 000 population), and trains very few foreign students. The annual intake of medical students (capped at 285 nationally) should be raised sooner rather than later, given the long training periods, and, given the importance of immigration, the proportion of foreign students should be increased, especially in light of the existing flexibility to accommodate changes in NZ immigrant status. Improved wages and working conditions in the health sector will be needed to attract back health workers who have emigrated abroad and to draw new entrants into the medical profession.

These solutions may involve delicate trade-offs, nonetheless. Importing doctors on a non-temporary basis could be internationally inequitable if health needs in the country of origin are more acute. There is a need to consider dynamic- as well as static-efficiency implications of wage policies: if pay is set too low, it will discourage young people from entering medical studies while provoking greater brain drain of current professionals, while if set too high, it would not be affordable in the long run and would continue to contribute to the cost push seen in recent years. The existing *numerus clausus* on medical school intake may reflect the risk of investing too heavily in skills which have a high propensity to emigrate, but more significantly, it has been an important means of centrally enforcing aggregate health cost control. It will be important to find the right balance between maintaining a level of physician density compatible with satisfactory system responsiveness and health outcomes, on the one hand, and validating unaffordable social demands for better health care by excessive expansion of its supply, on the other. In this context, incentives for higher physician productivity and activity rates (*e.g.* later retirement) should be an important means of expanding supply capacity. Incentives could also play a role in improving geographic and specialisation distributions (Simoen and Hurst, 2006).

Incentives for efficient health care choices ("value for money")

A universal theme in health economics is that the market for health care is bedevilled by information problems – both acute asymmetries and missing knowledge about the effectiveness and costs of various treatments – among patients, providers, purchasers and payers. Information asymmetry can greatly exacerbate insurance moral hazard and generate high agency costs. In most publicly funded systems where patients are provided services free of charge, scarce health-care resources have typically been rationed by queuing or restricted access, ideally but not always in practice, on the basis of relative need. By contrast, bottom-up cost control that is based on (at least rough) appreciation of the opportunity costs of health-care choices and incentives to respond to them accordingly, would improve the ability to reach equity objectives, rather than coming at their expense. Top-down budget control would then be consistent with internalised incentives setting the right allocations, rather than misallocations that may arise from perverse incentives. Policies will need to establish: *i*) a well informed reckoning of costs, outputs/outcomes and behavioural responses that link them; and *ii*) financial, competitive and/or reputational inducements to price sensitivity by all parties. This section looks at reinforcing macroeconomic control by microeconomic incentives.

Strengthening the agency role of purchasers

The DHBs

The 1990s "quasi-market" health-care reforms, one of the most radical and rapid reforms of a public health system ever undertaken, entailed enormous administrative costs in the setting up of new purchasing agencies and, in particular, of efficiency-oriented, corporatised public hospitals (Box 3.3). Yet in conjunction with the macro budget squeeze, it enabled significant rationalisation of the hospital sector, along with rising hospital output, and hospital efficiency is estimated to have grown in the last three years of the regime (see Box 3.1). However, on the whole, gains were less than proponents expected, perhaps because the reform was not given enough time to work, though authors have cited high transactions costs of contracting, burdensome political costs of closing down inefficient services, and difficulty in generating competition when many public hospitals have geographic monopolies (Ashton, 2009). The ensuing 2000s counter-reform virtually reversed institutional arrangements for hospital services, creating the DHBs and imposing major adjustment costs all over again, and hospital performance again worsened, as discussed above. DHB hospitals furthermore inherited significant deficits which had developed during the 1990s. The Ministry of Health placed considerable pressure on DHBs to work within their global budgets from their inception, adding modest financial rewards

Box 3.3. **Reform shocks and political economy in the hospital sector**

There have been significant alterations in New Zealand's system of health-care delivery in the past two decades. Reforms up until the inauguration of the New Zealand Health Strategy in 2001 focused mainly on the hospital sector, where cost pressure was endemic as in all OECD countries. In the 1990s these reforms featured a purchaser-provider split and heightened cost consciousness. In 1993, purchasing of health-care services was devolved to four regional health authorities (RHAs). The public providers were set up as corporatised "profit-maximising" public hospitals, the Crown Health Enterprises (CHEs) vying for contracts with the RHAs in a quasi-competitive setting. The CHEs were deeply resented, however, as: *i*) their boards were entirely appointed by the RHA and accountable only to the RHA, rather than the communities they served, while *ii*) their running was fully entrusted to general management professionals, with health-care professionals sidelined. It would be hard to overstate the public's antipathy to the CHEs. Doctors saw it as their duty to protect the interests of patients against the perceived insensitivity of CHE "penny-pinching bureaucrats", and they consequently amassed considerable power and respect in civil society. In 1997, as the politics were already shifting with a new coalition government, purchasing was recentralised in a national agency, the Health Funding Authority (HFA), at strict arms-length from the Ministry of Health in an effort to keep political objectives out of the picture, and the CHEs were refashioned as not-for-profit Crown companies.

Intense dissatisfaction with health-care reforms is thought to have been a major factor leading to the change of government (from centre-right to centre-left) in 1999. The new government quickly overturned the quasi-market experiment. Purchasing was again devolved, this time to 21 District Health Boards (DHBs). The DHBs took over the 23 former CHEs, putting an end to the purchaser-provider split in the hospital sector, while also being responsible for purchase of primary care. The DHB governing boards now have a majority of locally elected members, while government appointees still make up the balance. The HFA was abolished and its functions were integrated into the Ministry of Health, whose bureaucracy subsequently increased.

Box 3.3. **Reform shocks and political economy in the hospital sector** *(cont.)*

The new arrangement seems more stable, as the DHBs are quite popular, but abandonment of economic incentives in favour of a co-operative approach may not be sustainable. A synthesis of the two reform tracks now seems desirable, and this is what has happened to some degree. Indeed, differences between the two regimes are less stark and similarities greater than suggested by the political rhetoric (Ashton, Mays and Devlin, 2005). As seen, quasi-markets and private entry never really took off. DHBs remained legally accountable to the Ministry despite perceived accountability to their local electorate. The vast majority of resources were locked into existing services, with little possibility for reallocation. General taxation remained the basic method of financing across both regimes, with funding allocations likewise continuing to be based on population-linked formulae. The methods of paying health professionals did not change – a common missed opportunity to introduce micro-incentives for efficiency along with macro-level restructuring. The key differences observed, notably in the measures of hospital efficiency, probably boil down to a tight budget constraint in the former period and a looser one in the latter, with much ideological "spin" used to justify these shifts.

This experience also goes to show that significant political economy risks are attached to micro reforms in health care and must be managed. Even though the integrated system in New Zealand suggests a high feasibility of macro policy control, governments cannot simply decide what to do in a top-down manner without adequate public consultation, because they would stand to be rebuffed at the next election. Well meaning reforms could be derailed without strong public support and comprehension. Reform backlash can give rise not only to renewed rapid growth of spending but also loss of confidence in incentive-based reforms altogether. OECD countries in general are putting more emphasis on public satisfaction as an indirect measure of quality of the health-care system, imperfect as that may be. Cross-country experience also shows, perhaps unsurprisingly, that public satisfaction with the health-care system is highest in countries where spending is also highest. The lesson seems to be that efficiency reforms cannot neglect quality and equity of outcomes, nor public perceptions thereof. Because of the unique agency relationship between doctors and patient, and patients' implicit trust in their doctors, co-operation with professional stakeholders is more important than for other sectors, and their acceptance of reforms is critical. Health professionals must be involved in design and execution of reforms, and not be bypassed as they may have been on some occasions in the past (Docteur and Oxley, 2003).

Instability of reforms and frequent regime changes may have also reflected, in New Zealand's case, the effects of the move from a first-past-the-post to a mixed-member-proportional (MMP) electoral system in 1996. Under proportional representation, governments led by the largest party have not had majorities except with the co-operation of other smaller parties. This has weakened executive leadership and authority required to push through difficult health-system changes. The MMP electoral system may also play a part in reducing the odds of being able to close local hospitals where overall system efficiency would require this.

and penalties as levers. However, nationwide wage bargaining, including a policy of catch-up across different public services (notably nurse and police pay parity) worked at cross purposes with such controls (see Chapter 2), and more funding was provided to cover DHB hospital wage costs and deficits. DHB deficits were eventually eliminated (except for eight in chronic deficit) and debt fell, though Ministry cash infusions remained at high levels after 2004 (Table 3.7).

Table 3.7. **DHB financial performance**

NZD millions, June years

	2002	2003	2004	2005	2006	2007	2008
Revenue	**5 516**	**5 736**	**7 492**	**8 361**	**9 180**	**10 032**	**10 923**
Expenses	**5 803**	**5 906**	**7 540**	**8 392**	**9 224**	**10 013**	**10 966**
of which:							
Public hospital and health service providers	4 085	4 295	4 531	4 927	5 323	5 749	6 249
of which:							
Wages and salaries	2 533	2 711	2 867	3 107	3 439	3 718	4 021
Surplus/deficit	**–287**	**–170**	**–49**	**–32**	**–44**	**20**	**–44**
As per cent of net assets	–15.3	–7.9	–2.1	–1.3	–1.4	0.6	–1.2

Source: Statistics New Zealand.

The persisting problems in the hospital sector, *i.e.* declining efficiency and a sharp reduction in beneficial reform impact in the final reform phase (Box 3.1), appear to be symptoms of inadequacy in the role of DHBs as purchasing agents for their patient-principals and de-emphasised cost consciousness under the new reform philosophy. In theory, the DHBs should be well positioned to enforce greater efficiency of provision in their regions of responsibility. As budget holders, receiving formula-determined financing (capital investment budgets are allocated separately) from government under a hard budget constraint and able to keep any efficiency savings to better satisfy local needs, they should have an incentive to deliver maximum value to local citizens from the fixed pot of money. However, their incentives to do so may be weakened by two key factors.

First, accountability to the community is largely hypothetical, despite the presence of locally elected board members, in part because the local election process elicits scant interest. Board accountability goes solidly upwards towards the Ministry of Health, as enshrined in the legislation (the local accountability is only subjective). There is also a lack of operational autonomy *vis-à-vis* the Ministry, as lines of responsibility are not well drawn; the Ministry ties a large part of DHB funding to national objectives, whereas local objectives may differ, and imposes a heavy reporting burden with the negotiation of annual detailed DHB plans and their frequent monitoring. It also effectively devolves part of primary-care funding directly to the PHOs and their providers in order to be sure to reduce co-payments in line with Ministerial commitments and in so doing bypasses the DHBs. National wage bargaining for hospitals further rob the DHBs' of financial room to manoeuvre and innovate. The *de facto* lack of financial autonomy reduces the DHBs' ability to reallocate resources toward severely underserved areas, for instance outpatient radiology clinics, where marginal productivity gains would be enormous. The Ministry's monopoly over the purchase of working-age disability and maternity services[27] – because they are politically sensitive areas – may also interfere with the DHBs' ability to develop cost-effective models of integrated-care provision at the community level to relieve hospital waiting lists. Efficient disability services also rely very much on local knowledge and should be integrated for all ages.

Second, the potential agency role of the DHB is undermined by its concurrent ownership of public hospitals. The amalgamation of the purchaser and provider roles is a classic recipe for conflicts of interest and anti-competitive behaviour.[28]

- The DHBs face weak incentives to shift care away from hospitals toward primary care or disability services where suppliers could capture associated public subsidy rents. This

could also leave some hospitals with excess capacity and put a dent in public hospital employment. Circumventing this problem was probably one reason that the government found it necessary to develop a separate primary care strategy with additional funding, though it was never articulated explicitly as such.

- The DHBs may also be reluctant to outsource hospital services (except low-skill services), *e.g.* for laboratory tests or diagnostics, since outsourcing reduces business for its own hospital. Severe overcrowding in hospital radiology units arises from insufficient community radiology services outside hospitals, as DHBs have failed to make the needed investments or to attract private entry, forcing primary-care doctors to send their patients to the hospital for diagnostic x-rays, resulting in unnecessary cost in terms of both hospital resources and patients' time. Specialists tend to keep patients in hospital longer than warranted merely to benefit from priority access to hospital radiology services for inpatients (Mays and Blick, 2008). The system, in other words, seems stacked against greater substitution away from expensive hospital services, working at cross-purposes with the New Zealand Health Strategy.
- Shifting care outside hospitals, outsourcing and private entry may be tolerated only far enough to relieve pressure on waiting lists. However, such tolerance seems low. Despite a political commitment to reduce waiting lists, DHBs responded to incentives introduced in 2001 by bouncing patients on waiting lists back to their primary-care doctors – an unsustainable backwards shift (Howell, 2007b).[29]

Getting better efficiency in the public hospital system may require operational separation between ownership and purchase functions of the DHBs. If transferring public hospital ownership back to central government or, better still, to an arms-length public agency is not a viable option, then at a minimum, DHBs should jointly finance an independent management agency at either regional or national level, empowered with the autonomy to make investment decisions, oversee the running of public hospitals and monitor performance. Some steps in this direction have been taken, partly as a response to the previous health minister's keen interest in encouraging DHBs to collaborate on planning services and rationalisations, and to avoid unnecessary duplications. DHBs are jointly funding shared management service agencies to co-ordinate hospital capital spending and some service provision at the regional level.[30] Granting fuller operational autonomy to the DHBs in purchasing would, furthermore, greatly enhance their ability to be responsive to local circumstances and to set the right priorities. Therefore, the MoH should devolve all local spending and wage-setting powers to the DHBs, and replace annual DHB-negotiated agreements and associated obligations with fewer measures and simpler reporting focused on a "vital few" indicators that do provide insights into performance, particularly regarding the use of resources.

The PHOs

The 2001 PHCS provided two main instruments to achieve the goals of the national health strategy: increased budget subsidies to GPs and creation of the PHOs, *i.e.* networks of GPs and other primary health care providers, to channel these subsidies to members as capitation payments based on patient lists.[31] It was expected that private co-payments for primary-care treatment would decline substantially as capitation payments to doctors grew, which would in turn favour access. The cost of the increased subsidies absorbed a substantial portion of the extra budget room accorded to health over the years 2002-08, not being offset by reduced spending elsewhere in the health budget, and as noted there is no

room for further use of the budget policy lever. The challenges are serious, and the former government was anxious to make good on its investment.

The results for the first six years of the PHCS have been mixed, and mostly disappointing. Patient co-payments have generally fallen, but apparently by less than government subsidies rose. It is important in this context to note that co-payments have not been statutorily regulated, as they are in other countries (often *via* collective agreements between government and physicians' organisations establishing allowable fees), and, though there are local agreements between DHBs and PHOs and systems for arbitrating if practices seem to be charging excessively, these are not legally binding.[32] It is not clear what proportion of increased funding was retained by practices as additional income, but survey data suggest that GP incomes have increased considerably, in some cases doubling. Access has improved particularly for over 65s and ethnic groups belonging to Access PHOs (those who received funding earliest), although changing relative needs as well as access costs appear to have influenced this result, and overuse of hospital emergency rooms has continued to grow. But despite changes in consultation rates and co-payments in the desired direction, it does not seem likely that the reformed system is making a contribution that is commensurate with the large increase in public funding (Mays and Blick, 2008).

The results in terms of improved health through early detection and public health promotion – some of the ultimate goals of the PHCS – remain to be seen. GPs' ability to manage patient demand by use of preventive tools, a purported benefit of the capitation incentive, is likely to be small (Howell, 2007a), though general practice will still be a main way of reaching people in need of care. It is somewhat ironic that under blended payment systems, fee-for-service must be offered for preventative treatments such as inoculations, anti-smoking treatments, etc. (Robinson, 2001; Docteur and Oxley, 2003). Health education and awareness-raising activities may be best undertaken by DHBs and the Ministry because of their ability to exploit critical economies of scale and social externalities.

The PHCS has likewise failed by and large to deliver on its promise of more effective outpatient care for chronic conditions by means of a major structural shift in the primary care services toward innovative, co-ordinated, multidisciplinary and efficient forms. The envisaged role of the PHOs in leading this change was ill defined, as they have no particular powers or incentives to do so. They are also weakened by widespread lack of the requisite management skills. Nevertheless, there is considerable variability in performance. The smaller PHOs tend to be community based, intrinsically motivated and receptive to community needs, and they have achieved some encouraging local successes, especially in deprived, poorly served areas with obviously high needs. On the other hand, they are too small to effectively pool risks across member practices, engage in joint ventures with physician groups or justify high fixed costs of management. Larger PHOs, on the other hand, may be geographically scattered with little local loyalty and often appear to be mostly business propositions to capture and channel public money.

A fundamental problem is the lack of fully formed accountability relationships between PHOs and practices. PHOs simply pass on to doctors the majority of the capitation budgets (the First Contact funding stream) handed down to them by their DHBs. There is no conditionality attached to capitation payments to doctors, either on the bundle of services to be provided or the additional fees that can be charged to patients.[33] Entrenched resistance by physicians to loss of their autonomy as professionals and of their freedom to

set charges as independent small business owner-operators has resulted in a messy compromise and a unique form of capitation contracting with no effective regulation of variable fees. The traditional independence of the GPs may also explain their lack of interest in collaborating with colleagues in search of system efficiencies. However, it is also true that Independent Practitioners' Associations arose spontaneously in the 1990s, making notable movement toward collaborative forms of primary care delivery in the face of potentially influential purchasers, but which were superseded by the PHOs (Box 3.4).

A lack of accountability means that financial risk is progressively passed up the funding chain, leaving the DHBs as the residual risk holders, while the new funding arrangements have magnified such risks; that is, DHBs allocate capitation budgets to all

Box 3.4. **Developments in organised primary care***

The 1990s quasi-market regime

General practice physicians (GPs) in New Zealand have traditionally been solo practice operators. This began to change with the 1990s quasi-market reforms setting up four regional purchasing agencies (later merged into a central agency). GPs saw it in their interest to band together as not-for-profit independent practitioners' associations (IPAs) as a counterweight to the new monopsonies in contracting. The government also recognised the inefficiency of individual GP contracting and it funded some initial studies and IPA pilots in consultation with GP representatives. The associations swiftly grew. By the late 1990s, over 70% of GPs were members of over 70 IPAs nationwide. Many IPAs began to contract with the purchasing bodies for bulk funding for referred services such as prescribing and laboratory testing, reinvesting retained savings in new primary care services such as health promotion, screening, patient fee reductions, integrated care clinics, mobile services and continuing doctor education. The larger ones built up considerable infrastructures of managers and support staff, provided their members with patient-management software, collected and disseminated best practice guidelines and clinical protocols, and experimented with quality monitoring tools.

The purchasing model spawned other types of primary care organisations as well. A small number of community nonprofits, with a focus on serving deprived populations and having their roots in the pre-1990s trade union-sponsored community health clinics and some indigenous Maori health organisations, were generally funded on a capitation basis and paid their doctors by salary. They stressed multi-disciplinary, patient-centred approaches to primary care delivery within a community-wide service setting attending to the whole person, and charged minimal patient co-payments.

The Primary Health Care Strategy (PHCS, 2001)

The government that came into power in 1999 wished to create a primary care-focused health system aligned with the principles of the Alma-Ata declaration of the World Health Organisation. The subsequent PHCS circumvented IPAs as the key vehicle for delivering organised primary care, and instead tried to emulate the community non-profit model and generalise it *via* establishment of the PHOs with universal capitation and community-based governance. Gauld (2008) notes that the motivation for reforms seemed more ideological than evidence-based; in particular, a high degree of public oversight and control was preferred to private initiative and (even non-profit) ownership. The government implemented PHO formation quickly, without experimental pilots, using money as a driver: new capitation money for GPs designed to reduce patient co-payments, as well as extra funding for chronic illness prevention and treatment, could flow only through membership with a PHO.

Box 3.4. **Developments in organised primary care*** *(cont.)*

Some IPAs have evolved into PHOs, while others continue to exist as management support agencies serving the larger PHOs. But, the overall structure of primary care has become more complex and unwieldy. Performance varies widely and management costs range between 7 and 15% of total PHO costs with smaller ones at the high end: this suggests the need for mergers or pooling management services across smaller PHOs. The establishment of a new bureaucratic layer has created demand, without a corresponding increase in supply, for skilled staff particularly in administration, service commissioning, public health and community service delivery. This may partly be, as Gauld suggests, a legacy of the 1990s, when national workforce planning was suspended, and partly due to the sheer number of primary bodies.

Toward a synthesis?

Despite the tacit attempt to relegate the role of the IPAs through the establishment of the PHOs, the IPAs have focused on other functions (management services, clinical support services and advocacy) while doctors continue to control patient charges, albeit with some new constraints on year-on-year increases. The DHBs, themselves quite new, lacking expertise in primary care, focused on hospital services and lacking accountability levers, did not play a driving role in the PHO establishment process. While this hands-off approach left open the possibility of local innovation, it also left unresolved many issues. In time the distinctions between IPAs and PHOs may fade but the question remains as to why so many bureaucratic layers are needed and whether this is efficient. Funding remains an unresolved issue. GPs have always reserved the right to levy patient co-payments and accept government subsidies in order to limit these. Despite government's efforts, there has never been a fixed or standardised co-payment level, although his has begun to change for some patients, where their general practice has joined the Very Low Cost Access scheme.

Ultimately, if DHBs are to be the planners and purchasers of services for their population, and if they are to be held to account for making progress towards the goals of the PHCS, they will need more autonomy and flexibility to determine the role and configuration of the range of primary health care bodies in their districts, as well as the contractual relationships that they maintain with those agents.

* Draws extensively on Gauld (2008) and numerous primary sources cited therein.

PHOs situated on their territories according to risk-adjusted enrolled population formulae. However, such risk adjustments, based mostly on gender, age and ethnicity, are extremely rough and have been estimated to account for only about 20% of actual risk (Newhouse, 1996). The main type of "unforeseeable" risk to the DHB is that primary care providers will shift patients to hospital or deny care to sick patients because of the disincentives to effort and incentives to excessive referrals embodied in capitation funding – though they are just as likely to shift extra costs into patients in the form of higher user fees. Insofar as DHBs are not able to cover the resulting deficits of public hospitals (which by definition cannot go bankrupt), they pass risk up to the Ministry, which must award larger budgets, with the taxpayer being the final risk-bearer.

Physician-practitioners also hold some residual risk under this system (Howell, 2007b). If their patients happen to be particularly sick (and likely poor), they have to provide a greater volume of services than anticipated by the capitation payment, and

possibly raise their fees in order to survive as a business concern, as every patient clearly cannot be shifted into hospital. So risk gets passed down to sick people as well. Fortunate practices with healthier (often richer) patients may reap windfall profits under a notional average capitation formula. The question remains why providers have not sought efficiency improvements, such as combining with other providers, in order to avoid losing patients. But if all doctors end up raising their fees in tandem (which is not difficult, given that the PHCS has greatly increased the transparency of fees due to physician representation on PHO boards; see Howell, 2007a), then windfall profits are even higher, the risk of patients dropping out from the lists of struggling practices is alleviated and competition will take place on the basis of quality. The inability of the individual practitioner to fulfil the insurance function, as is required by capitation funding, means that the PHCS is likely to produce perverse results in terms of equity, with doctors engaging in cream skimming like any insurer. Indeed, a number of practices have "closed" their lists – potentially to lock in their good luck, or else as a response to more demand than they can handle.[34] Poorer, often transient, people are having difficulty getting access to doctors and forced to go the emergency room for treatment as before.

It should be the PHOs that absorb such risks because of their greater ability to pool risks, assuming that the smaller ones could be made to consolidate in some fashion. They are likewise best placed to regulate physician remuneration in the context of its risk management. Currently, the PHOs do not bear any risk, nor do they possess any risk-management expertise. They merely pass the financial risk on to service providers. The situation might be little altered even if capitation budgets were directly passed from DHBs to doctors, skipping the PHO middleman and associated costs. Critically, the PHOs are not the only payers: patients are still paying largely unregulated, private fees and the PHO does not know precisely what these are or how they will be set.

In conclusion, the PHOs are sorely in need of a *raison d'être* as an institution: if they were developed as a single payer, they could control both the fixed and variable portion of the physician's payment, with special attention given to their proper role as risk manager, and they could then be held accountable by the DHB for primary care overspending. Capitation payments to physicians should not be tied to their membership in PHOs, as this may act as a barrier to entry and restriction of competition, even if this was done initially in order to encourage GPs to join the new system.

Pharmac

Pharmac, the national pharmaceuticals purchasing agency, is a legacy of previous reforms and an exceptionally effective purchaser of international renown. The fact that its budget is tight and hard gives Pharmac enormous leverage in price negotiations with global pharmaceutical giants. In return for low prices,[35] companies get their products listed on the national register of reimbursable pharmaceuticals. The agency thus eschews any "fair value" approach to pricing, as is followed by some OECD countries (Docteur and Oxley, 2003). But the marginal cost of these products is most often minuscule compared to upfront research and development, so that the companies still stand to gain at the margin while assured of a residual market abroad. Pharmac's most impressive tool is its use of a set of decision criteria in choosing which drugs to list on the Pharmaceutical Schedule. On the basis of evidence on each drug's clinical effectiveness, risks and its cost-effectiveness according to cost-utility analysis (drugs can be ranked according to "quality-adjusted life years" gained per dollar, or QALY league tables), it is able to assess the opportunity costs of

alternative choices, which is the key to equalising marginal costs with benefits and achieving an optimal allocation for any given budget. Its ability to assess the true values of alterative products likewise enhances its bargaining position.

Over the 13 years of Pharmac's existence, pharmaceutical expenditure has grown at just 2% per year, less than the average rate of inflation. Pharmac estimates that in its absence, drug expenditure would likely have been significantly higher (for an equivalent bundle of drugs). However, there has been controversy over whether such cost containment has been achieved at the expense of restricted access to new and better drugs.[36] Consequently, access to medicines was one of three key objectives identified in the previous government's Medicines Strategy (2007), and one of the new government's first acts in office was to effectively override a previous decision by Pharmac to restrict access to an expensive new cancer drug – by funding it from the general health budget.[37] It is, however, highly desirable that Pharmac's independence be maintained, given that it is a success story in health-care cost control married with efficiency. It shows the way forward for the Ministry itself in how to set priorities, as technology expands the range of choices, to get most health value for the NZ taxpayer out of limited health-care budgets. If the government really wishes to fund expensive new drugs in the face of public and pharmaceutical industry pressures, it should expand Pharmac's budget but without interfering in its decisions.

The Ministry of Health

The Ministry of Health plays a crucial intermediary role as agent for several principals: it represents the interests of the general taxpayer (*via* the Minister of health and elected government) in getting good value for money in health care, as well as those of citizens as users of health care for an effective functioning of the system that assures patient satisfaction and health. At the same time, it serves as the principal *vis-à-vis* its devolved and distant purchasers, assigning them responsibility to implement the national goals that it has set in consultation with government.

Agents can best promote the interests of their principals if granted sufficient operational autonomy (trust) along with accountability for results (verification). As seen, the Ministry's dealings with the DHBs appear to suffer deficiencies on both counts. The Ministry may do well to divest itself of competing purchaser roles (for disability and maternity services) and delegate them to the DHBs to co-ordinate with other health services for their own populations in the ways they see fit. All funding to PHOs should ideally pass through the DHBs in order to clarify the lines of authority and accountability, and the freedom of DHBs to allocate their budgets should in general not be constrained. Pharmac's broad independence, by way of counter-example, is critical to its effectiveness as a purchaser.

At the same time, the Ministry needs to do better in monitoring by means of more selective performance indicators and motivating DHBs to fulfil their functions. This will require developing: i) pertinent and objectively observable measures of performance in the dimensions of both efficiency and quality; and ii) contractual relationships in the context of DHBs' budget holding that reward or sanction good or bad performance. In England, for example, well performing health trusts are granted greater freedom from central oversight and budget top-ups (which amount to pay for performance) but they are also motivated by highly publicised league tables and a high degree of management accountability. Although New Zealand has similar types of incentives, they are neither used so actively nor

strengthened by sanctions. Hence, conditions might be put on covering DHB deficits, for example replacing managers in chronic deficit hospitals;[38] this would also spur DHBs to reform their own contracting with PHOs and providers. Publishing information in a high profile way on quality of provider services, a growing trend in the OECD, could encourage "benchmark competition" among providers (who incur reputational costs of bad assessments) while also empowering consumers.[39] Incentive design is important as well. The 2001 attempt to reduce waiting times for specialist assessments and treatments to no more than six months by awarding financial bonuses and other rewards to compliant DHBs resulted in unintended effects: the DHBs culled patients from waiting lists just prior to the end of each six-month period, sending thousands of patients back to their GPs for management (Ashton, 2009).

The interests of taxpayers/citizens can be best served by allocating Vote: Health on the basis of economic criteria. Putting extra resources where they can do the most good in terms of health outcomes would guarantee their efficient allocation, making sure that citizens are better off on average.[40] The Ministry should to this end reinforce its current efforts to raise the economic analysis capabilities of its staff. It should also collect evidence on the relative health benefits of various therapeutic approaches and apply these systematically across the board to choose among the multiple competing claims on the overall health budget. As this is clearly globally-relevant information, the OECD or WHO should perhaps do most of the data groundwork for national governments. Information provision for improved health market functioning is likewise needed. To help guide the choices of providers and purchasers, the Ministry should develop databases of clinical best practice and costs of alternative procedures, ideally setting up an agency to perform this task along the lines of the England and Wales National Institute for Clinical Excellence (NICE, which has an international consultancy arm that could help in this regard). Long-run strategic planning to ensure clinical sustainability is a vital Ministry role.

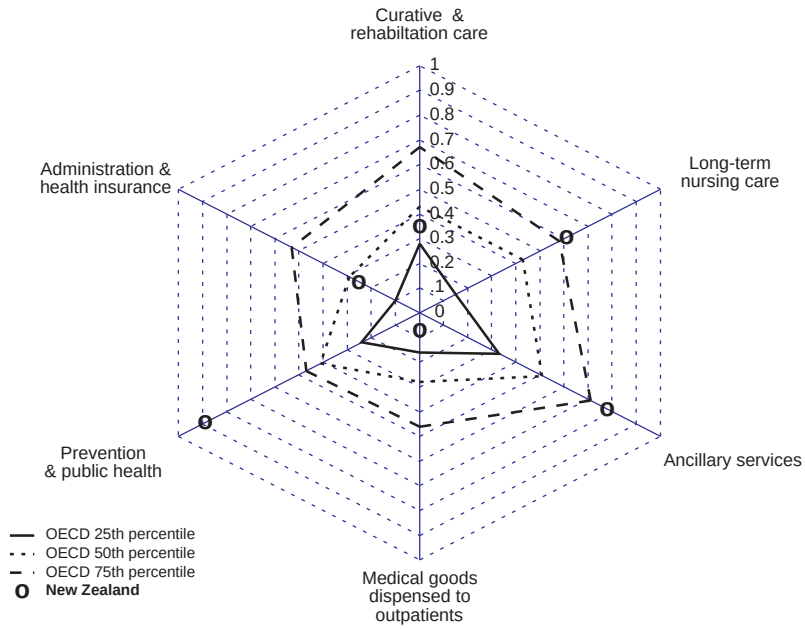
The Ministry has been moving in many of these directions. It is doing more to process and disseminate information, though sometimes in a form that is not easily accessible. It has specified ten health policy targets and has tried to systematise budget priorities in line with these targets, though targets are not always backed up by appropriate instruments to achieve them, as seen above.[41] In line with its national priorities, New Zealand is an OECD leader in spending on preventive care (Figure 3.11). Pharmaceutical and equipment spending is lower than elsewhere, showing an ability to exert strong budget control in these domains but also possibly some missed opportunities. An evidence-based prioritisation along the lines of Pharmac may or may not argue for greater use of drug-based therapy and high-tech diagnostics, to reduce hospital utilisation or extend QALYs. The Ministry has also initiated a process for assessing new technologies that may require collaborative decision-making. It will be important that these decisions be made rigorously on the basis of comparative cost-effectiveness, and that DHBs be fully engaged.

Optimising payment schemes

Hospital reimbursements

The low priority given to cost control under the last reform wave may have sidetracked efforts to measure costs of hospital services, which were being developed in connection with the earlier diagnosis-related group (DRG)- based hospital funding system.[42] Although DHBs continue to pay their "provider arms" using DRG-based cost weights, which are updated annually by a sector-wide working group (the National Pricing Project), service volumes attached to these prices are reimbursed *ex post*, rather than negotiated

Figure 3.11. **Health expenditure by function**
As a percentage of total current health spending in 2006



StatLink http://dx.doi.org/10.1787/563215601452

Source: OECD, *Health Data 2008*.

prospectively. Reimbursing hospitals on a standardised cost-per-case basis, in the hope that this would encourage them to be more efficient (as "beating the national average" would allow individual hospitals to pocket savings for their own uses), is an important first step but still leaves open the possibility of excessive spending through *a)* high volumes and *b)* high DRG prices achieved by all hospitals acting in concert to keep costs up (notably in terms of staff salaries). It may be time to revisit this approach in order to improve hospital cost management and cut operating deficits. Other countries have experienced unintended effects of DRGs offsetting efficiency gains, as hospitals would "game the system" by performing more surgeries in categories that were better remunerated and greatly expand their output.[43] A compromise solution may be to embed DRG awards within a hospital budget-holding approach following a points system as used by Austria (Docteur and Oxley, 2003), effectively allowing DRG payments to be scaled, while retaining initial relativities, so as to fit under the aggregate budget envelope. As the DRG prices are national averages, individual hospitals should be rigorously compared and benchmarked for relative cost efficiency; publication of such results, in addition to track records of types of surgery performed and rates of complications would strengthen reputational efficiency incentives (as seen in England). Hospital doctors' pay should be determined within the budget envelope set by the output-based payment system, rather than by national-level bargaining as at present. This might also imply salary plus pay-for-performance or output contracts for specialists.

Physician fees

Capitation payments should incentivise doctors to keep their patients in good health so as to minimise their own burden, solving the problem of "supplier induced demand" (SID) under fee for service.[44] Capitation, however, does a poor job in motivating physician effort, notably the time and attentiveness the doctor accords a patient, which may be the main determinant of the effectiveness of diagnosis and treatment strategy. The emerging consensus is toward a so-called blended payment system which would include capitation, incentive payments based on quality thresholds or targets, fees for particular services that are underprovided (notably preventive services) and some infrastructure payments. The underlying theory is that some mixture of both capitation and fee for service can combine the best – or equivalently, avoid the worst[45] – of both payment methods, hence the key rationale for the capitation/fee-for-service blend is a diminished incentive to oversupply services but an enhanced one to exert effort. The "optimal" weight to be placed on each method depends on relative marginal utility with respect to each of the physician's two objectives – patient welfare and earnings – which is not observable (McGuire, 2008). But intuition suggests that the more doctors care about earnings, the more risky it might be to rely too heavily on capitation.[46] It is also important in the NZ primary-care context to establish who pays what. If the patient pays the fee-for-service element in the current manner, this is not the same as a single payer devising a blended payment system to balance incentives of each method but rather a "back pocket" that the GP can raid when things get too tough in the public payment system.

Under the PHCS, public funding of primary care, in the form of capitation payments, has greatly increased as a proportion of general practice revenue. It has been estimated that for the majority of practices, capitation now forms between 60 and 80% of revenue for primary care services (report by LECG cited in Mays and Blick, 2008). As noted, doctors continued to increase their fees, partly frustrating the goal of the strategy.[47] To reduce risk and assure quality among providers, the capitation weight should be allowed to drift downward over time, with subsidies applied to rising fees at the patient level.[48] By comparison, Australia has a 10% capitation share for primary care physicians plus target payments for immunisations, with the remainder mostly fee for service; Norway and Denmark both have around 30% capitation/70% fee-for-service shares. The United Kingdom, Sweden and Spain on the other hand pay GPs by majority capitation and/or salary. Most others continue to pay private primary care physicians on a primarily or exclusively fee-for-service basis (Simoens and Hurst, 2006).

Another idea now in vogue is physician pay-for-performance (PfP) top-ups, presumably to reward quality, which is poorly captured by the other two payment methods. Here the evidence is somewhat ambiguous, as two negative effects are possible: gaming the system (as with DRGs) including the turning away of high-risk patients and, more seriously, the blunting of intrinsic motivation.[49] Another recurring problem is that objective measures of quality are hard to develop. The 1990s reform experience suggests that NZ doctors are highly motivated and value their professional image and independence. Therefore, monetary rewards for meeting targets should probably not assume a major role in their compensation. That said, a well-designed payment for performance contract at the practice level is a potentially useful addition to a basic mixed payment system.[50] This is not to be confused with an appropriate role for rewards/sanctions on budget holders (DHBs and PHOs), as recommended above.

Private burden sharing

Another way of coping with health-care spending pressures could be to increase the share of private financing. Private cost sharing, insofar as it succeeds in displacing public spending, reduces the deadweight loss of taxes and supports fiscal sustainability. It could theoretically enhance the price-sensitivity of demand and generate more contestability of public provision through private entry funded by private insurance, in turn improving efficiency, though evidence it has done so in other jurisdictions is scant. On the downside, it may have inequitable impacts on service accessibility and quality, and by extension, health outcomes as between private and public insurance coverage. The main users of health services are older retirees with multiple long-term conditions unlikely to be able to afford private coverage.[51]

Co-payments

Fixed co-payments for care fall disproportionately on the poor, and so are regressive. Looking at costs and benefits over the life cycle can change relative notions of progressivity, though. The rich and educated tend not only to live longer, but also to use primary preventive health care, costly specialist services (*i.e.* electives) and high-tech medical procedures more intensively than do lower-income people (Glied, 2008a). Co-payments can redress such imbalances by making heavy users pay, while also restraining their demand. The recent across-the-board reductions in co-payments have improved financial access for the poor, but at the cost of distortive taxes to pay for increased subsidies to rich and poor alike. However, since co-payments seem to deter effective and ineffective treatment and care about equally, they should not be too large either. Hence, it seems desirable to keep some modest level of co-payments in the system, as indeed seemed to be the policy of the previous government.[52]

Access issues may be best addressed by targeted rather than general subsidies. The risk, however, is that of too many exemptions (Docteur and Oxley, 2003), and of high marginal effective tax rates as targeted benefits are withdrawn. Since hospital care is normally excluded from any co-payment obligation whatsoever (in the 1990s, an attempt to impose them in New Zealand was resoundingly rejected by the public), but accounts for the lion's share of health-care expenses, such a rule is unlikely to be observed in practice in any event. The unplanned use of hospitals – which tends to be the most costly – also tends to be strongly associated with poorer people. Furthermore, rising hospital emergency-room use, despite lower primary-care co-payments, suggests non-financial barriers to access for the poor, though it is also the case that GP out-of-hours clinics are run separately from general practices and still charge sizeable co-payments. These non-financial barriers may reflect inadequate primary-care services in certain locations or at certain times, closing of general practice patient lists, lifestyle or awareness issues, all of which merit policy attention.

Private health insurance (PHI)

PHI, like co-payments, holds the promise of market-like benefits but also carries risks of non-negligible costs (Box 3.5). Competition among multiple insurers should enforce efficiency gains and build needed system capacity. Individual cost-sharing should foster greater responsibility and conscientious use of services. However, PHI interactions with public insurance often lead to more, not less, rent-seeking, pushing up overall health spending. Hence, PHI should not be seen as a panacea for achieving cost containment within

the health system – which is best achieved by other means (Colombo and Tapay, 2004). Yet, health-system responsiveness and quality seem to be higher in mixed systems. A well regulated system of PHI could conceivably help to address long-run challenges.

In New Zealand, the share of the population purchasing PHI is rather high (one-third), and even rising,[53] suggesting that users are willing to pay more to get better access, potentially better quality and new services.[54] Still, PHI accounts for a rather small share of total health financing, having fallen from 6.8% in 1997 to 5.2% in 2002, despite few regulatory constraints on PHI, though earlier tax benefits for employer purchases of PHI were discontinued. It is also mainly a historic legacy of people insuring themselves against the cost of GP fees, which have now fallen radically. Policy makers should consider if private insurance should play a bigger role over the long run, while assessing to what extent the public sector can keep expanding coverage without creating quality gaps. Australia may provide interesting lessons for its trans-Tasman neighbour, regarding the benefits of a mixed system, possible regulations and tax treatment as well as costly pitfalls to avoid (Box 3.5). For instance, it may be possible to recoup richer citizens' burden sharing (given reduced co-payments) by imposing income-tested social charges for public insurance unless a minimum package of PHI coverage is purchased. Tax subsidies for PHI, however, may be quite expensive. Public guarantees to high-risk groups should be circumscribed and conditioned to avoid profitable risk selection by PHI providers.

Box 3.5. **Benefits and risks of PHI**

Governments have often looked to private health insurance (PHI) as a means of addressing health-system challenges. In the experience of some OECD countries with significant PHI alongside universal public insurance systems, there have been major benefits to health-system efficiency and performance but often at an elevated risk of equity and fiscal costs. It is of course up to each country to choose its location on the equity-efficiency frontier.

Benefits

Driven by the profit motive (or budget holding), competing insurers can cater to clients' diverse needs in their product design and responsiveness, improving consumer choice in contrast to bureaucratic rigidity, while putting pressure on health-care service providers to minimise costs, enhancing system efficiency. PHI can take pressure off the public system both in terms of system capacity and financial burden. Competition among multiple insurers has tended to promote innovation, especially in the hospital sector, where faster rates of technology diffusion offer gains of higher intensity of treatments, though such investments can have rapidly diminishing marginal returns and need careful assessment of value for money (Colombo and Tapay, 2004). Nonetheless, because of severe information asymmetries in the health-care market, competition in other ways may be slow to take off. Monopsony power of the single payer could be diluted in the presence of competing private insurers, which would raise health-care prices; but insofar as this would call forth greater supply, it could still be welfare enhancing (Glied, 2008b). Competition can develop around risk selection and rent seeking rather than upon service, quality and efficiency, while higher administrative costs in the private than in the public sectors can diminish net benefits (see the Australia example below); this probably requires limits to the government guarantees to high-risk groups in the extent of service coverage in the public benefit package.

Box 3.5. **Benefits and risks of PHI** *(cont.)*

Risks

PHI can be inequitable in ways that require regulatory vigilance. Risk-adjusted premiums and pre-existing conditions clauses under PHI punish the sick (who are also often poor). Countries like Australia for this reason require community rating and open access to PHI. Some countries (United States, Australia, Canada, Denmark, France) give favourable tax treatment to employer-sponsored PHI premiums, which is particularly regressive (Glied, 2008a). But despite the obvious merits of PHI, subsidising it may be hard to justify in the presence of unintended effects on public insurance. Private insurance that is complementary to public insurance has been shown to increase the demand for the publicly funded services (*e.g.* private cover for pharmaceuticals that increases the demand for publicly subsidised doctors' visits in order to obtain prescriptions), exacerbating system moral hazard and fiscal cost (Glied, 2008a). Private insurance that is substitutable for public insurance can be used to "skip the queue" in countries like New Zealand and the United Kingdom with strong single payers that ration free public services. However, this only lengthens waiting times for those without insurance, can easily be construed as unfair and provokes general dissatisfaction with the system, to which policy makers are increasingly sensitive (Docteur and Oxley, 2003).

In the extreme, with fully competing public and private schemes, cream skimming and adverse selection could bid all the good risks into private insurance, leaving the high-risk individuals to the public sector. A dual health-care delivery system could arise with high quality in the privately funded part and poor quality in the public part. Systems like Canada's or the US old-age Medicare programme prohibit the purchase of private cover for publicly provided services, and Australia's does so for out-of-hospital medical services, presumably for such reasons, yet often stand accused of restricting patient choice (*e.g.* the highly controversial Chaoulli court decision to allow PHI purchase for publicly insured services in Quebec, Canada). Taxing premium payments for private insurance, so as to internalise such negative externalities on public insurance, could avoid the welfare losses of outright prohibition (Glied, 2008b), but it has never been tried, probably for fear of exacerbating inequalities. Other approaches have created "firewalls" between the two sectors, such as Germany and Netherlands which mandate or encourage private coverage above a certain income. An alternative way to extract burden sharing from richer citizens would be to make them pay a premium for public insurance, as in Australia (higher-income earners must purchase PHI or pay a 1% surcharge over the standard 1½ per cent Medicare Levy). Another possibility may lie in restricting public coverage to a basic yet adequate care package, with optional private coverage for all services providing further, more marginal benefits, building on the vaunted 1980s "Oregon model" of hard choices. However, attempts to define such an "essential" public package have usually met with failure (Docteur and Oxley, 2003), including in New Zealand in the past (Ashton, 2009).

The Australian experience

Policy makers in Australia have keenly promoted a private health-financing and -delivery system alternative to Medicare (the public scheme), with the aim of improving competition and efficiency in health care while maintaining a sustainable public health sector (Colombo and Tapay, 2003). Indeed, PHI in Australia enables choice of provider and of level of care, channels finance to private hospital providers, promotes system responsiveness by taking pressure off public hospitals, especially for elective surgery, and generally works well in tandem with complementary public coverage for hospital care. Clearly, there are costs as well. Despite the regulations to ensure equity of access and

Box 3.5. **Benefits and risks of PHI** *(cont.)*

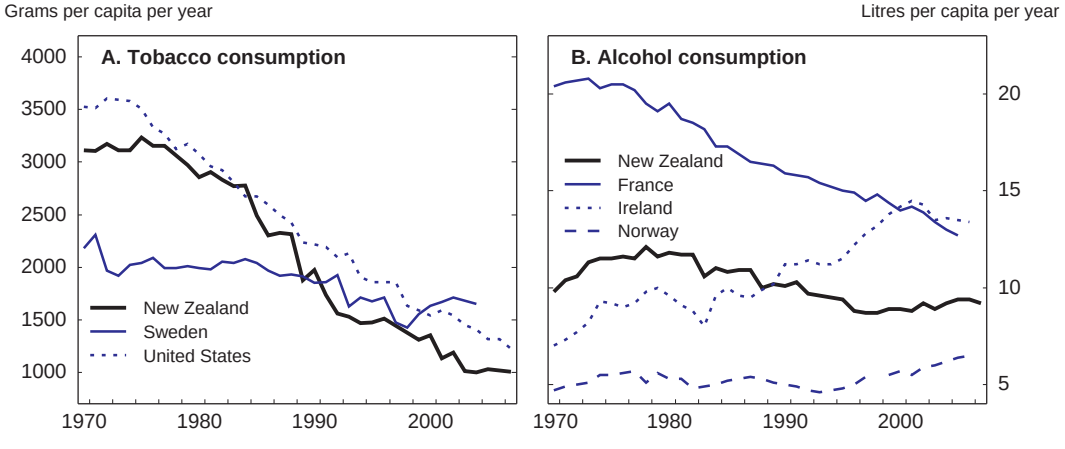
financing of private coverage, insurers can get around these by means of clever product differentiation, and further regulations and tax expenditures have been needed to offset these unintended effects. In particular, public reinsurance of high-risk cases to alleviate adverse selection may have reduced private-sector incentives to be cost-efficient in treatment. Administrative costs also tend to be much higher in the private sector. Tax rebates for 30% of PHI premium payments are expensive, and, even though progressive in structure, they tend to benefit higher-income households who purchase more PHI. Private paying patients in public hospitals may get preferential access and higher treatment quality, given the extra funding that they bring, despite regulatory safeguards. As PHI cannot cover primary care, private insurers are not exposed to the risk of managing the entire continuum of care, implying weakened incentives for cost control and potentially higher aggregate health-care demand.

Prevention as the best medicine

Incentives matter also for the non-health-care determinants of health outcomes (Cawley, 2008). Even advanced medical care may be largely palliative, prolonging years of disabled life. Preventing adverse health conditions from arising in the first place, especially those traceable to unhealthy lifestyles and addictions, rather than ageing *per se*, could improve life quality and avert substantial health-care expense in the future. These savings are augmented by often substantial negative externalities (secondary smoke, drunk driving, family care, etc.). As seen, the budget-allocation process places a high priority on prevention and public health services. Harmful behaviours are being tackled by public health awareness campaigns, taxes and regulations. There have been some encouraging results. Tobacco consumption has dropped sharply from high levels, while alcohol consumption declined up until about a decade ago (Figure 3.12).[55] Obesity rates, on the other hand, have risen markedly in New Zealand as in other countries (Figure 3.13). Obesity, smoking and alcoholism all tend to afflict the poor in affluent countries disproportionately; in New Zealand, the minority Maori and Pacific Islanders are especially

Figure 3.12. **Tobacco and alcohol consumption**

People aged 15 and over

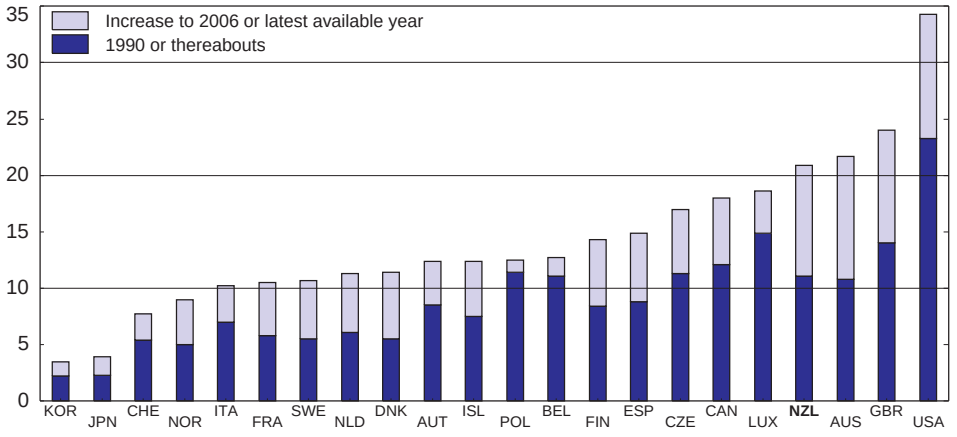


StatLink http://dx.doi.org/10.1787/563218128270

Source: OECD, *Health Data 2008*.

Figure 3.13. **Obesity rates among the adult population**

As a percentage of total population



StatLink http://dx.doi.org/10.1787/563286354508

Source: OECD, *Health Data 2008*

vulnerable (see Table 3.3). The high probability of developing chronic diseases among these groups suggests a trend toward intensifying inequality of health outcomes, in stark opposition to national objectives and requiring a response.

Though the case for pre-emptive actions – notably to encourage healthy lifestyles by information and education or to discourage unhealthy ones by taxes and prohibitions – seems compelling, the proposition that prevention is preferable to cure needs to be carefully evaluated for each policy intervention. Spending for treatments is by definition well targeted, going to the clearly sick person (abstracting from moral hazard), whereas prevention is not, *i.e.* implying possibly large deadweight losses from spending that either fails to change behaviour or does not need to. Moreover, the gains from prevention are often delayed far into the future, which is normally discounted, whereas treatment benefits are immediate. Thus, it is quite possible to overspend for prevention relative to cure. It is even possible to decrease social welfare by an overbearing "nanny state" that does not sufficiently respect individual choices among multiple conflicting objectives, of which health is only one.

The OECD project on the economics of prevention (Sassi and Hurst, 2008) proposed a framework for conducting rigorous cost-effectiveness evaluations (*e.g.* QALYs per dollar spent) of pre-emptive measures. It suggested that interventions will usually be justified where there are clear market, information or rationality failures, notably in the following three cases: *i*) vulnerable populations lacking the maturity or educational/social skills to cope with adverse social and environmental influences and unable to take advantage of what the health system has to offer (*e.g.* children and disadvantaged populations); *ii*) people who acknowledge their addictions (hyperbolic discounters) and want the state to help them achieve better self-control through various incentives and encouragements; and *iii*) public policies fostering public health menaces, such as US subsidies to corn (leading to heavy use of corn syrup in processed foods), transport and urban planning that prevent physical activity and create slums; and industrial and competition policies allowing lifestyle goods industries to have undue influence *via* advertising and increasing market shares. Other factors responsible for adverse lifestyles may be justified by dynamic welfare gains and should not be the subject of health-care prevention policies, notably changes in

working conditions due to globalisation, technology and the like (sedentary work, increased participation of women, increased stress and job insecurity, and longer working hours).

Conclusions

New Zealand's health-care system is comparatively efficient thanks to strong top-down budget control, yet policy makers are right not to be complacent. As elsewhere in the OECD, a "toxic" mix of rising chronic conditions, rampant technological progress (not all of which stands up to cost-effectiveness scrutiny) and rising public expectations poses serious issues of long-run fiscal affordability. The New Zealand Health and Disability Strategy appears to point in the right direction. It attempts to overturn the old approach of mainly treating illness rather than promoting wellness. It establishes the vision of a new health-care delivery model that reduces cost yet improves quality and accessibility, notably by providing a continuum of care that follows patients as they go through an integrated system making better use of IT. This is obviously a highly innovative and gradual process. Fiscal costs associated with establishing the new institutional framework have been high, while many of the stated policy objectives remain elusive, and actions by various health market actors did not always follow the intended script. The next steps in health-care reform will need to address the major shortcomings of the framework, and the new government has promised to do as much. The arguments developed in this chapter give some pointers for further reform of health care, with the following key issues emerging (Box 3.6):

- *Priority setting* by funders and purchasers (the MoH and DHBs) based on an economic approach, notably QALYs gained per dollar spent for alternative expenditures, will be crucial for getting best value for money out of scarce health-care resources, and it will require good information and expertise. Government and society will have to make clear choices between prevention and cure, core services and new technologies, public *versus* private finance, etc. And, even if in the real world other criteria are taken into account, this should be the starting point.
- *Accountable contractual relationships* between funders and purchasers will require granting autonomy to lower levels to manage budgets in line with local priorities and responsibility for results, with roles and obligations clearly specified and a few key performance indicators rigorously monitored but not annually renegotiated. Rewards/sanctions could be designed for promoting national priorities such as integrated service models.
- *Behavioural incentives* to providers that lead to fulfilment of policy goals will require *a*) finding the optimal mix of fixed and variable payments in primary care in order to get the right balance between efficiency, prevention and quality and *b*) implementing standard-cost hospital payments in order to encourage efficiency and innovation by means of a quasi-profit motive, while also contracting for service volumes *ex ante*, all within a budget envelope.
- *What role for private insurance?* Ideally, a PHI pillar could enhance both fiscal sustainability and health-system performance, by way of private responsibility and cost sharing and insurer-spurred competition. But pitfalls regarding equity and unexpected fiscal costs would need to be avoided by careful regulation and tax treatment of PHI. Hence, the recommendation at this stage is to give this option further study rather than acting now.

Box 3.6. **Recommendations for health-care reform**

Draw sharper lines of responsibility between Ministry of Health and its devolved purchasers, DHBs and PHOs:

- Give sufficient spending autonomy to DHBs, including responsibility for maternity and disability spending. Decentralise wage bargaining to allow flexibility by DHBs to innovate.
- Reassess and clarify the role of PHOs. Assure sufficient scale to allow risk pooling at the PHO rather than at the individual-practice level and develop its insurance/ single-purchaser function.

The Ministry should focus on priority setting and information needs:

- Allocate Vote: Health according to economic criteria, emulating Pharmac's approach of examining opportunity costs (*e.g.* in terms of QALYs gained) of alternative allocations of the marginal health-care dollar; wider budget allocations should take health objectives into account, *e.g.* devoting more education resources to alleviating looming health-care manpower shortages.
- Disseminate best practice information to clinicians, develop performance indicators, monitor DHB provider arm (public hospital) performance to stimulate benchmark competition and improve consumer choice;

Enhance competition among providers and purchasers (recovering some positive elements of past reforms):

- Evaluate whether government ownership of public hospitals, or at a minimum outsourcing of hospital management to an independent regional- or national-level agency, might help resolve DHB conflicts of interest and stimulate cost consciousness, efficiency and competition, and rational capital planning in the hospital sector.
- Develop accountable contractual relationships across levels *via* risk sharing/ conditionality/ simple rewards (as for example in England's NHS, where purchaser-provider contracts have been established in general practice and payment for performance is about to be introduced for hospitals). Develop incentives in PHO budgets to promote multi-disciplinary community clinics to serve populations with chronic conditions and special needs.
- Allow capitation payment to better "follow the patient", eliminating restrictions on access to such payments by individual physicians and practices, *i.e.* PHO membership, to encourage PHOs to compete with one another in the same areas for patient enrolments and GP affiliations.
- Consider a role for wider private health-insurance coverage, with appropriate regulation and or taxation, to help spur competition amongst insurers in support of efficient, innovative and responsive health-care markets.

Design payment schemes that optimise efficiency/quality trade-offs:

- Think carefully about the proportions of GP reimbursement paid in different ways, reducing that for capitation, while keeping a modest level of out-of-pocket fees. Too high a share of capitation makes practices vulnerable to risk, higher co-payment by the sick and rents for luckier practices. Fees should be set by the PHO in line with budget holding obligations, levied by the practice on the patient with full or partial reimbursement by the DHB (funder) contingent on patient income.
- Consider social premiums or private insurance obligations for richer citizens to recoup financial burden sharing lost by co-payment reductions, even though they are not relatively high users given the distribution of morbidity.
- Embed DRG payments within a hospital budget-holding approach following a points system as used by Austria (where the absolute but not relative value of the DRG reimbursement is set by the overall budget envelope). Individual hospitals should be rigorously compared and benchmarked for relative cost efficiency; with publication of such results, in addition to track records of types of surgery performed and rates of complications, to motivate efficiency savings and innovation. Hospital doctors' salaries should be determined within the budget envelope set by the output-based payment system, with possibility of modest top-ups for performance to reward quality, and/or fee for service to reward output/productivity.

Notes

1. Publicly-funded elective care must be accessed (and prioritised) through the GP network, and the patient is allocated to a specialist – based on that GP's referral practice (in many regions there may be little/no choice of specialist). However, there is nothing to prevent patients travelling to other regions for specialist care, if they choose to do so. If patients can privately finance their elective care (out-of-pocket or via insurance), they may have a choice if there are multiple privately practicing specialists.
2. Disability services were traditionally funded by the Ministry of Social Affairs and health care by the Ministry of Health, which gave rise to co-ordination issues. Recently, disability and health care have both been administered by the Minister of Health.
3. It should be noted that increasing life expectancy does not necessarily mean that people are living more years *in* old age; the "natural" end to life has not been extended greatly by medical advances. What it means rather is that more people survive *into* old age because of reduced mortality at lower ages. This may make the assumption of healthy ageing a bit more tenuous, however. See Bryant *et al*. (2004).
4. Private as well as public health spending enter the "health production function", as both contribute to the same outcome. However, private spending is a small part of the total and is strongly influenced by public regulations.
5. According to Glied (2008a), a dollar spent on education in OECD countries is far more potent in promoting good health than a dollar spent on health care.
6. In a panel regression across OECD countries, efficiency falls out as the residual factor after controlling for health care and other measurable factors such as dietary habits, smoking, education, pollution and per capita income, all of which affect population health status, represented by life expectancy at birth. This is similar to the method used to estimate economic efficiency (total factor productivity). A welcome result is that health spending is indeed a major contributor to health in the OECD countries. Another is that New Zealand (along with Iceland and Australia) is at the efficient health spending frontier. A caveat is that not all determinants of health outcomes could be included in the regressions, and the resulting specification error may bias the measure of efficiency. See Joumard *et al*. (2008).
7. Over the past decade, public hospital case-weighted discharge rates (a common measure of the volume of hospital output) have grown by almost 20% (Raymont, 2008).
8. It should be noted that since devolution of health to the four countries of the United Kingdom, there has been marked divergence of policy and systems particularly between England and Scotland.
9. OECD estimates (Simoens and Hurst, 2006) show a significant positive association between GP density and the annual number of GP visits. Whether this is due to higher demand for services because doctors may spend more time with patients or charge less, or to supply-led demand as doctors try to generate more business for themselves, is unknown. Higher densities of physicians are also associated with better health outcomes and responsiveness across countries, including shorter waiting times for elective surgery.
10. In a cross-country survey, 25% of sick adults claimed to be the victims of medical errors in the last two years in New Zealand, compared with 22% in the United Kingdom, 23% in Germany, 27% in Australia, 40% in Canada and 34% in the United States. However, 31% of NZ patients and 33% of US patients said that prior medications were not reviewed at discharge, all other countries having lower reported failure rates (Commonwealth Fund International Health Policy Survey of Sicker Adults, 13 November 2005). Reducing errors may therefore often be a simple matter of following established procedures and making checklists, with team-member backup checks, of elementary safety steps by medical personnel to follow.
11. Such a long-run projection exercise is required by law to be undertaken and published at least every four years (Treasury, 2006). Because of the dramatic deterioration of the medium-term fiscal situation, the next update will already be undertaken later in 2009.
12. The post-war baby boomers started to enter the workforce in the mid-1960s and then gained in experience and skill, reducing the dependency ratio and boosting growth (though they will soon start to retire).
13. Cost data by age group is not available for New Zealand, but research from the United States suggests that around 50% of lifetime health-care spending occurs in the last year of life.

14. The pooled elasticity of real health care expenditures per capita with respect to real GDP per capita for a panel of 30 OECD countries is estimated at 1.15 (and once adjusted for age, at 1), over an estimation period of 1970-2002 (OECD, 2006); the corresponding time series estimate for the income elasticity of demand for New Zealand is 1.16 over an estimation period of 1951-2005 (Treasury, 2006).

15. In developing countries, the causation is often thought to go the other way, as improving health through disease eradication raises rates of infant survival, children's school attendance and performance, and adult labour force participation and productivity. However, the link by itself is long-lagged and relatively weak, which may reflect the fact that complementary policies are needed to get the full benefits on income growth, notably to ease resource constraints on faster population growth. See Ashraf, Lester and Weil (2008).

16. This assumes essentially price-inelastic demand. If demand were price-elastic, a higher relative price of health care would lower total health spending, both absolutely and in relation to GDP.

17. Health-specific PPPs have drawbacks. They are based on prices for market outputs, which may not be very relevant for New Zealand where the public sector is responsible for a large share of outputs. And for some services, outputs are calculated on the basis of inputs assuming the same productivity across countries, which is a debatable assumption. On another measure, the increase in the health and community services component on the consumer price index has exceeded the economy-wide annual change in this index by an average of 0.7 percentage point per year since 2002.

18. Compared to acute care, long-term care is more exposed to competitive pressures, given its low-skill nature and greater ease of private entry, underlying its much lower price inflation despite higher volume growth.

19. The long-run average per capita GDP growth assumption is 1.5% in the Treasury projections as against 1.8% in the OECD projections.

20. A Christchurch study examining the relationship between primary and secondary care showed that in one large local health centre registered patients with chronic diseases (High User Health Card holders) accounted for less than 9% of all health-care users but 42% of hospital services. See Malcolm (2007).

21. According to a 2007 study, integrated systems like Kaiser Permanente's (a large Health Maintenance Organisation, or HMO, in California) provide 22% greater cost efficiency than competing systems (J. Rae-Dupree, "Distruptive Innovation, Applied to Health Care", *The New York Times*, 1 February 2009). Sochalski *et al.* (2009) find that multi-disciplinary provider teams with in-person (*i.e.* not telephone) communication lead to significantly fewer hospital readmissions for people with heart failure.

22. There have been recent scandals involving grave medical errors in specialised clinics located in rural areas where the number of specialists (*e.g.* in neurosurgery) had fallen to as low as 1 or 2 as the population had also shrunk due to out-migration to cities.

23. Allowing nurses to prescribe in highly specific circumstances was instituted in 2003, and it would be desirable that this trend go much further by a fundamental change in regulations regarding the division of labour.

24. Projection scenarios by NZIER (2004) suggest an imbalance, depending on the assumptions, of demand over supply for health professionals of between 28% and 42% of the 2001 health-care workforce in 2021.

25. In some specialties such as in vascular, paediatric or neurosurgery, there are no more than 20 specialists registered, and only five in breast medicine, 12 in rehabilitation medicine and 13 in oral and maxillofacial surgery (Zurn and Dumont, 2008).

26. For example, MoH and DHBs should contribute to international recruitment policies by specifying their needs in the occupational shortage lists; the points system for immigrants settling outside Auckland should allow for greater regional variations; and bilateral agreements with the Pacific Islands for visitor programmes to supply the many low-skill workers that will be needed in the long-term care industry should be established, along with training programmes (Zurn and Dumont, 2008).

27. The maternity budget is inexplicably large, despite more intensive use of midwives than elsewhere in the OECD, while not preventing high rates of complications among newborns. According to *OECD Health at a Glance*, 2007, conditions originating in the perinatal period are in the 90th percentile of the OECD while congenital malformations, deformations and chromosomal

abnormalities are among the highest in the OECD. This may however explain a high *ex ante* need for maternity spending.

28. US managed care organisations are also often simultaneously purchasers and providers; however, there is countervailing competition among insurers. Also, such purchaser-providers rarely own hospitals.

29. There is a national points system to determine who gets elective surgery, and so the notion of returning patients to their GPs for "watchful waiting" if they do not reach the threshold is well understood.

30. For example, Otago DHB and Southland DHB established a shared regional Executive Management Team in 2007, with a joint CEO appointed in 2008. Joint teams are working across the service planning and funding functions, as well as the 'back office' areas of finance, information systems, procurement, and human resources. The DHBs are collaborating on joint services, for example, blood and cancer services (reference: *www.healthdownsouth.co.nz/index.php?pageLoad=53*). Also, in 2008 the six Central Region DHBs (lower North Island) jointly released a draft Regional Clinical Services Plan for the delivery of secondary and tertiary hospital services in the Central Region over the next 10 to 15 years. The purpose is to provide direction about the services that will be provided, propose a joint decision making framework, and to promote debate about the plan (reference: *www.rcsp.org.nz/Home-0.html*).

31. Additional public funding primarily aimed at reducing patient out-of-pocket fees (co-payments) for general practice consultations and pharmaceuticals in a phased manner, starting with PHOs serving deprived and/or higher-need populations as of October 2003 (Access PHOs) and by 1 July 2007 extended universally to PHOs serving the rest of the population (Interim PHOs) by progressive gradations of age, from youngest to oldest to prime-age groups. Another lever was support for the development of services by Maori and Pacific Island providers.

32. Fees are in principle regulated by a committee of DHBs: any fee increase beyond a "reasonable" level, as defined by Future Funding Track inflation (*i.e.* that which would maintain the purchasing power of Vote: Health), must be approved by the committee. So far, however, most increases have been approved.

33. An interesting counterfactual can be seen in the DHBs' relationships with pharmacies, another type of primary health-care provider. The DHBs collectively contract with the pharmacies' organisation for their entire pharmaceuticals needs. The types of services to be provided and allowable prices to be charged by the pharmacies are all carefully specified in the contracts. The result is no cost overruns and gradual structural change in the pharmacy market induced by the DHBs' power to influence price. See Mays and Blick (2008).

34. There are media reports of GPs in some areas closing their patient lists, restricting enrolments to, for example, family members of existing patients or else high-needs patients. This is partly driven by an under-supply of GPs in rural areas, although 'overworked' GPs in some urban areas have also closed their books to new patients. (References: *www.nzdoctor.co.nz/news?article=814f1160-1444-44e4-8ea4-e1d0874c8174* and *www.nzherald.co.nz/health/news/article.cfm?c_id=204&objectid=10546483*).

35. Strategies like reference pricing and cross-product bundling arrangements are also used by Pharmac. Reference list pricing means that drugs in the same therapeutic group are all subsidised at the level of the lowest price in the group; if companies want to charge a higher price, then the consumer must pay the difference. This stimulates price competition to gain market share. In a cross-product arrangement, a company agrees to lower its reference price for a drug in one therapeutic category in exchange for Pharmac agreeing to list another drug produced by the company in another therapeutic grouping.

36. The Pharmaceuticals Industry Taskforce claims that in the six years to 2006, Australia subsidised 78 new innovative medicines, of which 72 were registered in New Zealand. However, New Zealand chose to subsidise only 20 of them (Ashton, 2009).

37. The case in point was Pharmac's 2008 decision to allow public insurance to reimburse only nine weeks' of treatment of an expensive new breast cancer drug (Herceptin) – whereas 30 countries are funding a 12-month regime – on the basis of one trial (among many) that showed that nine weeks did not deliver much less benefit than 12 months, the manufacturer's recommended dose. There was a loud outcry from consumers and disease interest groups putting pressure on Pharmac to reconsider, including a judicial review. However, the previous government stood firm (Ashton and Wells, 2008). The new government, on the other hand, as part of its 100-day programme decided to fund 12 months of Herceptin treatment by special funding outside Pharmac's budget (Ryall, 2008).

38. This is an interesting difference from England. According to NZ public-sector management principles the ministry can only replace and directly influence the governance board, and since in the NZ system senior managers never serve as executive directors on boards, the ministry in this case cannot currently do what happens in England.

39. There is little evidence, however, that consumers act on such information if they receive it, normally preferring to choose hospitals close to their home and deferring to their treating doctor's choice of hospital and surgeon. The main effect is on managers and senior clinicians who wish to defend their reputations.

40. Currently, the Ministry appears to allocate resources more on the basis of need than on the capacity to benefit. See Devlin and Hansen (2004).

41. The ten targets are (with accompanying quantitative targets not shown): improve immunisation coverage; improve oral health; improve elective services; reduce cancer treatment waiting times; reduce ambulatory-sensitive hospitable admissions; improve diabetes services; improve mental health services; improve nutrition, increase physical activity and reduce obesity; reduce harm caused by tobacco; and reduce the percentage of the health budget spent on the Ministry of Health. See Tenbensel (2007).

42. DRGs are designed to group similar cases and each has a weight based on the average cost of providing services, which is country-specific and must be frequently updated.

43. Norway solved the problem of waiting lists for elective surgery in its 2001 reform by instituting a DRG-based hospital reimbursement system, but at high cost. Re-classification of procedures in line with DRG groupings resulted in much faster growth of hospital services (Bibbee and Padrini, 2006).

44. Patient satisfaction and choice have tended to deteriorate under systems using capitation payment methods to control costs under either budget holding or profit maximising. There may also be excessive referrals to external specialists and hospitals, though such risks have been mitigated in some US HMOs, which share some of the cost of hospital referrals.

45. According to Robinson's (2001) seminal article: "Fee-for-service rewards the provision of inappropriate services, the fraudulent up-coding of visits and procedures, and the churning of 'ping-pong' referrals among specialists. Capitation rewards the denial of appropriate services, the dumping of the chronically ill, and a narrow scope of practice that refers out every time-consuming patient".

46. Another factor to consider is that primary-care doctors, unlike hospital doctors or specialists, or indeed any other professionals, face high dependence on unpredictable variations in individuals' demand for services, with such risks being serially correlated due to repeated contacts with the same people (Howell, 2007a). Fee for service obviates serious financial risks to doctors under these circumstances, whereas capitation leaves them exposed.

47. According to Howell (2007a), the "dumping" of patients on hospital waiting lists back onto primary-care providers may have contributed to this problem as resulting primary-care cost increases had to be passed through into fees, the more so as their proportion in total pay had shrunk. The PHO, as the natural locus of risk pooling, should instead design balanced payment contracts based upon the *actual* demand each provider faces, and the extent to which financial risk-sharing can realistically control SID.

48. According to Howell (2007a), the ACC is probably the best template for the PHCS. It is a partially subsidised, population-based insurance and risk-management system, collecting premium top-ups (payroll taxes) to meet costs, providing care co-ordination and management and purchasing care from the same providers as the primary health-care system. Hence, having fixed annual fees by all patients on PHO lists has some advantages, which would be akin to social insurance premia and could be reduced for those on low incomes.

49. Some research has found that highly motivated doctors, who are the best performers to start with, have little to gain from PfP, especially if it is specified in terms of improvement (specifying absolute standards might discourage poor performers altogether), while the offer of monetary rewards itself devalues intrinsic motivation, perhaps even leading to worse performance (Golden and Sloan, 2008). However, this has not shown to be the case so far in experience of the United Kingdom (see next note).

50. The UK experience with its GPs is instructive given that they are culturally and economically very similar to NZ GPs in owning their own business. Take-up of the payments under the Quality and Outcomes Framework of the 2004 GP contract with the NHS has been enthusiastic and evidence of "gaming the system" has been modest, and most GPs support the areas targeted for performance

payments. However, the UK PfPs may represent a kind of fee for service in that they reward outcomes as well as quality.

51. Some leading health economists contest the desirability of any user charges whatsoever. See Evans *et al*. (1993).

52. It is interesting to note that in the United Kingdom, Scotland and Wales are busy removing all co-pays from the NHS, and pressure is mounting on England to do the same.

53. Since 2002, there has also been a trend away from comprehensive health insurance towards elective surgical and specialist cover. See Health Funds Association of New Zealand, "Health Insurance Statistics December 2008", *http://www.healthfunds.org.nz/Statistics.asp*.

54. It is not a given that privately-financed care is of higher quality. See, for example, "Spotlight on safety in private hospitals", *ONE News*, 25 May 2008, *http://tvnz.co.nz/view/page/1796861*.

55. However, there is a festering problem with certain drug addictions (that for amphetamines is one of the highest in the world). The government is emphasising better law enforcement to address this problem.

Bibliography

Ashraf, Q., A. Lester and D. Weil (2008), "When Does Improving Health Raise GDP?", *NBER Working Papers*, No. 14449, October.

Ashton, T., N. Mays and N. Devlin (2005), "Continuity through change: The rhetoric and reality of health reform in New Zealand", *Social Science and Medicine*, Vol. 61, pp. 253-62.

Ashton, T. and S. Wells (2008), "Herceptin (trastuzumab): The NZ debate", *Health Policy Monitor*, The University of Auckland Survey, No. 11.

Ashton, T. (2009), "New Zealand", in J. Rappaport, P. Jacobs and E. Jonsson (eds.), *Cost Containment and Efficiency in National Health Systems: A Global Comparison*, WILEY-VCH Verlag GmbH & Co. KGaA, Weinheim.

Berndt, E.R. and J.M. Donohue (2008), "Direct-to-Consumer Advertising in Health Care: An Overview of Economic Issues", in F.A. Sloan and H. Kasper (eds.), *Incentives and Choice in Health Care*, The MIT Press, Cambridge, Massachusetts and London.

Bibbee, A. and F. Padrini (2006), "Balancing health care quality and cost containment: the case of Norway", *OECD Economics Department Working Papers,* No. 481, OECD, Paris.

Bryant, J., A. Teasdale, M. Tobias, J. Cheung and M. McHugh (2004), "Population ageing and government health expenditures in New Zealand, 1951-2051", *New Zealand Treasury Working Paper* 04/14, September.

Cawley, J. (2008), "*Reefer Madness*, Frank the Tank, or *Pretty Woman*: To What Extent Do Addictive Behaviors Respond to Incentives?", in F.A. Sloan and H. Kasper (eds.), *Incentives and Choice in Health Care*, The MIT Press, Cambridge, Massachusetts and London.

Colombo, F. and N. Tapay (2003), "Private Health Insurance in Australia: A Case Study", *OECD Health Working Papers,* No. 8, OECD, Paris.

Colombo, F. and N. Tapay (2004), "Private Health Insurance in OECD Countries: The Benefits and Costs for Individuals and Health Systems", *OECD Health Working Papers,* No. 15, OECD, Paris.

Davis, P., R. Lay-Yee, A. Scott and R. Gauld (2007), "Do Hospital Bed Reduction and Multiple System Reform Affect Patient Mortality? A Trend and Multilevel Analysis in New Zealand Over the Period 1988-2001", *Medical Care*, Vol. 45, No. 12, December, pp. 1186-1194.

Devlin, N. and P. Hansen (2004), "Allocating Vote: Health – 'Needs Assessment' and an Economics-Based Approach", *Treasury Working Paper* 00/4, March.

Docteur, E. and H. Oxley (2003), "Health-Care Systems: Lessons from the Reform Experience", *OECD Health Working Papers, No.* 9, OECD, Paris.

Ettelt, S., E. Nolte, S. Thomson and N. Mays (2007), "The systematic use of cost-effectiveness criteria to inform reviews of publicly funded benefit packages", London: London School of Hygiene and Tropical Medicine (unpublished report).

Evans, R.G., M.L. Barer, G.L. Stoddart and V. Bhatia (1993), "Who are the zombie masters and what do they want?", Health Policy Research Unit, Centre for Health Services and Policy Research, University of British Columbia, *www.chspr.ubc.ca/files/publications/1993/hpru93-13D.pdf*.

Gauld, R. (2008), "The Unintended Consequences of New Zealand's Primary Health Care Reforms", *Journal of Health, Politics and Law*, Vol. 33, No. 1, February.

Getzen, T.E. (2008), "Health Care is an Individual Necessity and a National Luxury: Applying Multilevel Decision Models to the Analysis of Health Care Expenditures", mimeo, March.

Glazer, J., T. McGuire and S.-L.T. Normand (2008), "Mitigating the Problem of Unmeasured Outcomes in Quality Reports", *The Berkeley Electronic Journal of Economic Analysis and Policy*, Vol. 8, Issue 2.

Glied, S. (2008a), "Health Care Financing, Efficiency, and Equity", *NBER Working Paper* 13881, March.

Glied, S. (2008b), "Universal Public Health Insurance and Private Coverage", *Canadian Public Policy*, Vol. 34, No. 3, September.

Golden, B.R. and F.A. Sloan (2008), "Physician Pay for Performance: Alternative Perspectives", in F.A. Sloan and H. Kasper (eds.), *Incentives and Choice in Health Care*, The MIT Press, Cambridge, Massachusetts and London.

Hofmarcher, M.M., H. Oxley and E. Rusticelli (2007), "Improved Health System Performance through Better Care Coordination", *OECD Health Working Papers,* No. 30, OECD, Paris.

Howell, B. (2007a), "Contractual Pitfalls in Capitated Primary Health Care: Sharing Random Demand Risk in New Zealand's Strategy", Wellington, New Zealand: Institute for the Study of Competition and Regulation, Wellington, May, *www.iscr.org.nz/documents*.

Howell, B. (2007b), "Paying for the Hospital Waiting List Cull at the GP's Surgery: The Changing Locus of Financial Risk-Bearing in New Zealand's Primary Health Care Sector", Institute for the Study of Competition and Regulation, Wellington, May, *www.iscr.org.nz/documents*.

Joumard, I. *et al*. (2008), "Health status determinants: lifestyle, environment, health care resources and efficiency", *OECD Economics Working Papers,* No. 627, OECD, Paris.

Leader, D. and D. Corfield (2008), *Why Do People Get Ill?*, Hamish Hamilton, London.

Malcolm, L. (2007), "Trends in hospital bed utilisation in New Zealand 1989 to 2006: more or less beds in the future?", *The New Zealand Medical Journal*, Vol. 120, No. 1264, pp. 1-12, 26 October, *www.nzma.org.nz/journal/120-1264/2772*.

Mays, N. and N. Devlin (2005), "The public-private mix in health services in New Zealand", in Maynard, A. (ed.), *The Public-Private Mix for Health*, The Nuffield Trust, Radcliffe Publishing, Oxford.

Mays, N. and G. Blick (2008), "How can primary health care contribute better to health system sustainability? A Treasury perspective", mimeo, New Zealand Treasury, Wellington.

McGuire, T.G. (2008), "Physician Fees and Behavior: Implications for Structuring a Fee Schedule", in F.A. Sloan and H. Kasper (eds.), *Incentives and Choice in Health Care*, The MIT Press, Cambridge, Massachusetts and London.

Minister of Health (2001), *The Primary Health Care Strategy*, Ministry of Health, *www.moh.govt.nz/primaryhealthcare*, Wellington.

Ministry of Health (2008a), *Health and Independence Report 2008*, Ministry of Health, Wellington. *www.moh.govt.nz/moh.nsf/indexmh/health-independence-report08*.

Ministry of Health (2008b), *How efficient is New Zealand's health system?* Public Health Intelligence Internal Report, No. 3, January.

Newhouse, J.P. (2006), "Reimbursing Health Plans and Health Providers: Efficiency in Production *versus* Selection", *Journal of Economic Literature*, Vol. 34, No. 3, September, pp. 1236-63.

Nicholson, S. (2008), "Medical Career Choices and Rates of Return", in F.A. Sloan and H. Kasper (eds.), *Incentives and Choice in Health Care*, The MIT Press, Cambridge, Massachusetts and London.

NZIER (2004), *Ageing New Zealand and Health and disabilities services: demand projections and workforce implications 2001-2002*, *www.nzier.org.nz*.

OECD (2006), "Projecting OECD health and long-term care expenditures: what are the main drivers?", *OECD Economics Department Working Papers,* No. 477, OECD, Paris.

Price, R., I. Joumard, C. André and M. Mingishi (2008), "Strategies for countries with favourable fiscal positions", *OECD Economics Department Working Papers,* No. 655, OECD, Paris.

Raymont, A. (2008), "Hospital discharges in New Zealand 1991-2005: changes over time and variation between districts", *The New Zealand Medical Journal*, Vol. 121, No. 1279, pp. 66-74, 8 August, *www.nzma,org.nz/journal/121-1279/3188*.

Robinson, J. (2001), "Theory and Practice in the Design of Physician Payment Incentives", *The Milbank Quarterly*, Vol. 79, No. 2.

Ryall, T. (2008), "Better, Sooner, More Convenient", *Health Discussion Paper by Hon. Tony Ryall MP*, National Party Health Spokesman, National, *www.national.org.nz*.

Sassi, F. and J. Hurst (2008), "The Prevention of Lifestyle-Related Chronic Disease: an Economic Framework", *OECD Health Working Papers*, No. 32, OECD, Paris.

Simoens, S. and J. Hurst (2006), "The Supply of Physician Services in OECD Countries", *OECD Health Working Papers*, No. 21, OECD, Paris.

Sloan, F.A. and C.-R. Hsieh (2008), "The Effects of Incentives on Pharmaceutical Innovation", in F.A. Sloan and H. Kasper (eds.), *Incentives and Choice in Health Care*, The MIT Press, Cambridge, Massachusetts and London.

Sochalski, J. *et al.* (2009), "What Works in Chronic Care Management: The Case of Heart Failure", *Health Affairs*, Vol. 28, No. 1, pp. 179-89.

Tenbensel, T. (2007), "Health targets", *Health Policy Monitor*, The University of Auckland Survey, No. 10.

Treasury, The (2006), *New Zealand's Long-Term Fiscal Position*, Wellington, *www.nztreasury.govt.nz*.

Treasury, The (2007), "Value for Money in health – the DHB sector", Wellington, 25 February, *www.nztreasury.govt.nz*.

Zurn, P. and J.-P. Dumont (2008), "Health Workforce and International Migration: Can New Zealand Compete?", *OECD Health Working Papers,* No. 33, OECD, Paris.

Table of contents

Boxes

Tables

Figures

This Survey is published on the responsibility of the Economic and Development Review Committee of the OECD, which is charged with the examination of the economic situation of member countries.

The economic situation and policies of New Zealand were reviewed by the Committee on 10 March 2009. The draft report was then revised in the light of the discussions and given final approval as the agreed report of the whole Committee on 25 March 2009.

The Secretariat's draft report was prepared for the Committee by Alexandra Bibbee and Yvan Guillemette under the supervision of Peter Jarrett. Research assistance was provided by Françoise Correia.

The previous Survey of New Zealand was issued in April 2007.

BASIC STATISTICS OF NEW ZEALAND

THE LAND

Area (1 000 km^2)	268.0
Percentage of total pasture and arable land, 2003	51.3

Urban population,* percentage of total (30 June 2008)	78.2
Population of major urban areas (30 June 2008, 1 000 persons):	
Auckland	1 313.1
Wellington	381.9
Christchurch	282.2

THE PEOPLE

Resident population, 31 December 2008 (1 000)	4 291.9
Inhabitant per sq. km	16.0

Civilian employment, 2008 (1 000)	2 168.2
of which:	
Agriculture, forestry and fishing	150.7
Manufacturing	273.8
Trade (wholesale and retail)	487.2
Education, health and community services	377.1

PARLIAMENT AND GOVERNMENT

Present composition of Parliament:	
National Party	58
Labour Party	43
Green Party	9
ACT New Zealand	5
Maori Party	5
Jim Anderson's Progressive	1
United Future	1

Present Government: National Party-led
Next general election: November 2011

PRODUCTION (2008)

Gross Domestic Production (NZD millions)	180 444

GDP per capita (NZD)	42 268

FOREIGN TRADE (2008)

Main exports (percentage of total):	
Dairy products	22.1
Meat and edible offal	12.0
Forest, wood and paper products	7.9
Machinery and equipment	5.8

Main imports (percentage of total):	
Machinery and transport equipment	34.6
Manufactures	16.3
Mineral, chemicals, plastic materials	33.5
of which:	
Mineral fuels, lubricants, etc.	17.8

THE CURRENCY

Monetary unit: New Zealand dollar

Currency units per US dollar, average of daily figures:	
Year 2008	1.4255
March 2009	1.8808

* Defined as the population in the 30 main and secondary urban areas.