NEW ZEALAND COUNCIL OF TRADE UNIONS
Te Kauae Kaimahi

Working Paper on Health

Number 16, 10 June 2016

Did the 2016 Budget provide enough for health?

Bill Rosenberg, Policy Director/Economist, NZCTU Te Kauae Kaimahi

Lyndon Keene, Director of Policy and Research, Association of Salaried Medical Specialists

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Key points

This analysis compares the 2016 Budget with the analysis of the Health Vote which the CTU carried out prior to the Budget. It estimated the additional funding required to maintain current levels of services and pay for new initiatives announced by the Government prior to the Budget.

- The Health Vote in the 2016 Budget is an estimated $248 million behind what is needed to cover announced new services, increasing costs, population growth and the effects of an ageing population. This is after $197,000 of "reprioritised savings" identified in the Budget.
- While the Budget listed services that will receive more funding, and new initiatives costing $117 million, these will need to be paid for by reductions in other services.

- We conservatively estimate the funding shortfall in core government health expenditure for 2016/17 compared to 2009/10 is $1.2 billion. This shortfall has steadily grown over those years.
- The Health Vote is forecast to fall as a proportion of Gross Domestic Product (GDP). If it had maintained the proportion of GDP it had in 2009/10, it would be $0.95 billion higher in 2016/17.
- District Health Boards (DHBs) are underfunded by an estimated $152 million to cover increased costs and demographic changes, and to fund $55 million worth of new initiatives and $45 million of expenses shifted from central funding.
- Centrally managed national services such as National Disability Support Services, National Elective Services, and Public Health services received $79 million below what they needed to cover cost increases and demographic changes, and are $90 million short when $56 million in additional services are included after taking account of $45 million in shifting expenses to DHBs and "reprioritisation".
- The Ministry of Health itself was underfunded by $5.5 million.
- Our estimates are consistent with estimates made by the Ministry of Health and Treasury prior to Budget-setting in previous years. We have checked the recent release by the Minister of Health to Fairfax providing figures purporting to show that the Government's Health Votes had "covered population growth, ageing and inflation"[1]. These figures are flawed and do not support the Minister's claim.

This analysis and our pre-Budget analysis assumed that CPI would rise by 1.6 percent in the year to June 2017 (the Budget period), which is the NZIER consensus forecast for the year to March 2017 and the Reserve Bank's forecast to June 2017 in its March 2016 Monetary Policy Statement. Treasury forecasted 1.5 percent in the year to June 2017 in the Budget Economic and Fiscal Update (BEFU), a significant reduction on its December forecast. We assumed wages will rise 2.42 percent in DHB provider services and similar services in other parts of the Vote, 3.0 percent in minimum wage intensive services, and 1.8 percent elsewhere. We allowed for an increase of 2.57 percent for the growing and ageing population[2]. See the report on the pre-Budget analysis for further details.

Due to some restructuring of the Vote since last year, the comparison in this report has some minor differences to our pre-Budget estimates. The main change is that the Health Services Funding appropriation has been discontinued and transformed into a capital appropriation, "Deficit Support for DHBs". This reduces the total operational funding requirement to provide for increased population, ageing and increased costs from the $691 million in the pre-Budget report to $689 million. Further details of these changes are described below. However if the need for deficit support is included for comparability, the $691 million estimate is still valid.

[1] Stacey Kirk, "Government returns fire over health funding: figures show new funding keeping up", 7 June 2016, http://i.stuff.co.nz/national/politics/80794791/government-returns-fire-over-health-funding-figures-show-new-funding-keeping-up

[2] In our pre-Budget analysis this came from a report obtained by the Labour Party but the figure has now been confirmed by the Ministry of Health at 2.575 percent, applied to DHB operations. We estimate figures for the remainder of the Health Vote such as national services.

Did the Health Vote keep up with rising costs?

The Health Vote's operational funding increased by only $558 million (after rounding) between Budget 2015 and Budget 2016 from $14,765 million (without the Health Services Funding appropriation) to a comparable $15,324 million. This is $131 million short of the $689 million we estimate is needed just to keep up with costs, population growth and aging without providing for new or improved health services.

The Vote listed "new policy initiatives" totalling $568 million, but the bulk of that ($462 million) is simply partial recognition of cost and population increases rather than new initiatives. This is offset by "reprioritised savings" identified in the Estimates of $197,000 in funding for the 'Social Sector Trials' which has been moved to the Social Development Vote. The remainder, $106 million pays for initiatives, but in addition DHBs have been required to contribute an additional $11 million to funding of medicines through Pharmac, bringing the total requirement for new services to $117 million. The total shortfall including the $131 million needed to maintain current service levels is therefore $248 million[3].

As well as the disestablishment of the Health Services Funding appropriation, the National Advisory and Support Services appropriation, $260,000 in 2015/16, has been disestablished and its functions transferred to National Contracted Services - Other ($240,000 in the 2015/16 supplementary Estimates) and National Māori Health Services ($20,000 in 2015/16)[4]. There are other relatively minor changes in responsibility for funding certain programmes.

Another important change that does not alter the bottom line is that $32 million funding for the In-Between Travel settlement to pay travel time to carers of people living at home is being "devolved" to the DHBs, reducing requirements of the National Disability Support Services appropriation and increasing those of the DHBs. Similarly $13 million for Improving Hospice Community Palliative Care Services has been devolved to the DHBs.

District Health Boards

Budget appropriations for DHBs are $500 million more than in last year's Budget (increasing from $11,720 million to $12,220 million). This falls $52 million short of the $552 million that we estimate they need just to cover increased costs and demographic changes. However, they have $100 million in additional costs: $50 million additional funding for medicines including $11 million from their existing budgets, $5 million for Canterbury DHB for "supporting health services", and $45 million in additional costs transferred from central services as described above. DHBs are therefore underfunded by a total $152 million.

As mentioned above, funding of $50 million is set aside under capital for DHB "Deficit Support", an acknowledgement by the Government of the ongoing financial stress in the DHBs. This is $5 million less than the $55 million in 2015/16, but more than the $39 million the Government estimates will actually be funded this year. DHBs ended the year to June 2015 with total deficits of $65.8 million, $41.9 million worse than planned. The most recent financial data available shows DHBs recorded

[3] This is less than the $304 million we estimated on Budget day. The main difference is because we had mistakenly included Health Services Funding in operational funding.
[4] Vote Health Supplementary Estimates 2015/16, p. 345.

combined deficits of $60.5 million for the nine months to March 2016, $17.0 million worse than their plans and somewhat worse than the $59.5 million at the same time a year before[5].

National Services

The centrally managed national programmes such as National Mental Health Services, National Māori Health Services and National Electives Services gained just $55 million in operational funding (rising from $2,825 million to $2,880 million), which is $79 million below what is needed to maintain the status quo.

In addition the providers of these national services, which include non-government organisations and health agencies as well as DHBs, have to provide new services costing $56 million, offset by $45 million devolved to DHBs and $197,000 in "reprioritised savings". These national services are therefore underfunded by an estimated $90 million.

Table 1: National Services funding provided in the Budget and cost of additional services ($000)

National Service	Required for rising costs and pop'n	Appro-priation	Shortfall on rising costs and pop'n	Initiatives	Shortfall after initiatives	Devolved to DHBs/ transfers	Shortfall after transfers & savings[1]
Health Workforce Training and Development	177,256	180,014	-2,758	0	-2,758	0	-2,758
Monitoring and Protecting Health and Disability Consumer Interests	27,563	27,596	-33	0	-33	0	-33
National Advisory and Support Services[2]	264	0	264	0	264	-260	4
National Child Health Services	89,329	85,001	4,328	70	4,398	0	4,398
National Contracted Services - Other	47,349	37,155	10,194	4,500	14,694	-12,760	1,934
National Disability Support Services	1,217,333	1,165,888	51,445	0	51,445	-31,845	19,600
National Elective Services	331,511	355,517	-24,006	24,000	-6	0	-6
National Emergency Services	100,629	99,946	683	0	683	0	683
National Health Information Systems	15,144	13,065	2,079	0	2,079	0	2,079
National Māori Health Services	7,625	6,828	797	0	797	20	817
National Maternity Services	158,855	146,767	12,088	0	12,088	0	12,088
National Mental Health Services	58,441	58,962	-521	4,000	3,479	2,309	5,591
National Personal Health Services	81,626	98,694	-17,068	0	-17,068	15,321	-1,747
Primary Health Care Strategy	179,607	186,019	-6,412	14,329	7,917	0	7,917
Problem Gambling Services	17,874	17,440	434	0	434	0	434
Public Health Service Purchasing	447,749	400,644	47,105	9,456	56,561	-17,630	38,931
Totals	**2,958,157**	**2,879,536**	**78,621**	**56,355**	**134,976**	-44,845	**89,934**

Notes to table:

(1) There was a $197,000 "reprioritised saving" in National Mental Health Services (included in final column but not tabled).

(2) National Advisory and Support Services has been disestablished.

New initiatives within the National Service appropriations in 2016/17 include $14.3 million in additional support for the "under 13s" programme of free access to primary health care which has

[5] See http://www.health.govt.nz/new-zealand-health-system/key-health-sector-organisations-and-people/district-health-boards/accountability-and-funding/summary-financial-reports

had greater than forecast uptake; support for mental health services in Canterbury, which received $1 million; the Healthy Home Initiative expansion ($4.5 million); incremental roll-out of the National Bowel Screening Programme ($6.5 million); extension of the Intensive Alcohol and Drug Support for Pregnant Women services ($3 million); and responding to Mental Health Concerns at an Early Stage ($3 million).

During the 2015/16 year, there was an extensive exercise moving funds from other appropriations into National Disability Support Services. In total $20.2 million were transferred to it from most other National Services (totalling $19.3 million). A further $840,000 was provided in new funding "to account for the impact of the 2015 annual general adjustment on the income thresholds for the disability allowance and the Community Services Card". Documents addressed to Bill English released by Treasury under the Official Information Act[6] give various explanations for the need for the $19.3 million. One from Treasury stated (p.2) that "An overspend is expected in this demand driven appropriation due to a mixture of increasing costs for packages of care for people with complex needs and continued pressure from Funded Family Carers and Sleepover settlements". Another stated (p.5): "The main driver of the increased expenditure is a change in families drawing on entitlements and changes in the sleep-over regime due to changes in health and safety requirements."

The Minister of Health Jonathan Coleman explained it differently again (p.13): that there has been a blow-out due to individualised funding:

> Beginning in 2008 with a Select Committee Inquiry, the policy direction for disability support services has undergone a significant change in direction, towards more choice, control and flexibility in the way disabled people access and use funded supports. In response to the new direction, client and provider behaviour has also changed resulting in increases in costs, primarily in community care and residential services.
>
> The Ministry of Health is undertaking a number of activities to manage these pressures. The focus over the short term will be managing demand growth, ensuring internal tools and processes to manage contracts are robust and reviewing whether contracts are achieving value for money. Over the longer-term the Ministry will be examining some aspects of how the system operates, including the role of Needs Assessment and Service Coordination services.

Whatever the reason, it suggests that the underfunding of Disability Support Services is significantly more than estimated above and that there are problems with the individualised funding regime.

In addition during the 2015/16 year, shuffling of appropriations provided National Emergency Services with an additional $2 million "due to increased utilisation of air ambulances" (at a time when road ambulance services are forced to single-crew vehicles for funding reasons), and Sector Planning and Performance with $1.5 million "due to shifts in the departmental work programme and the need to align funding with changes". The Government's favourite, National Elective Services, also received $8 million additional funding during the year, transferred from the National Maternity Services, National Contracted Services - Other, Public Health Service Purchasing, and Provider Development appropriations.

[6] "Disability Support Services Expenditure", released 26 May 2016 (oia-20160068.pdf), available at http://www.treasury.govt.nz/publications/oiaresponses.

Ministry of Health operational funding

The Ministry of Health received $196 million, including multi-category expenses, which is only slightly below what we estimated it needed to cover increased costs on current services. However, Budget 2016 includes additional services to be provided by the Ministry relating to the roll-out of the National Bowel Screening Programme worth a total of $5.4 million, leaving a funding shortfall of $5.5 million.

Like the rest of the health system, the Ministry of Health has seen funding cuts over successive years In the 2010 Budget it was allocated $216 million for 2010/11 (approximately $229 million in 2016/17 dollars). In this year's Budget it received $196 million – a real cut of $33 million (14 percent) since 2010/11.

It is difficult to see how the Ministry can fulfil its role to lead and have overall responsibility for the management and development of New Zealand's health and disability system, which is facing considerable challenges, while undergoing continuing budget cuts.

Successive years of under-funding

The funding shortfall in this year's Budget follows significant shortfalls in each Health Vote the CTU has analysed since the 2010 Budget. Data are not available to enable an accurate assessment of how much money has been saved over those years through genuine efficiencies and how much has been "saved" through service cuts and increases in user charges. With that qualification, we estimate an accumulated funding shortfall in spending power of $0.95 billion between the 2009/10 and 2015/16 financial years. This year's funding shortfall would make that $1.2 billion. This takes account of the costs of new services and claimed savings in each Budget, the actual expenses each year (estimated for 2015/16, forecast for 2016/17), CPI, demographic growth including ageing (supplied by the Ministry of Health)[7] and increases in the average hourly wage in Health Care and Social Assistance.

Another way to consider the funding trend is as a proportion of the measured economy – Gross Domestic Product (GDP). The Estimates show that in 2009/10 Vote Health operational expenses were 6.28 percent of GDP, which had dropped to 5.92 percent of GDP (forecast by Treasury as $250.126 billion) by 2015/16 and is forecast to be 5.91 percent (of forecast $259.208 billion) by 2016/17. For Vote Health operational expenditure to match 6.28 percent of GDP in 2015/16, it would have needed a further $895 million and on the Budget forecasts would need a further $948 million in 2016/17.

It is often argued by Government that spending more on health would be at the expense of other government expenditure. However, Treasury's figures show that while Vote Health expenses have risen from 19.4 percent of core government expenditure in 2009/10 to a forecast 19.9 percent in 2015/16 and 19.8 percent in 2016/17, the main reason has been that government expenditure as a whole has fallen as a proportion of GDP by 2.5 percentage points (after rounding) over that period – from 32.3 percent of GDP in 2009/10 to a forecast 29.9 percent in 2016/17.

[7] This is applied to the DHBs and to some of the national services, similarly to the calculation for this Budget.

The conclusion from this is that the Government's overall priority of reducing expenditure has led to a substantial funding shortfall for Health services and an even greater shortfall for combined other government services.

The consequences of chronic underfunding

Finance Minister Bill English told a gathering of analysts and journalists at Parliament on Budget day that New Zealand's level of health expenditure per GDP was not all that relevant. More important was what the health system was achieving. That would be a reasonable argument were it not for our growing unmet health need.

A Commonwealth Fund study on the performance of the health systems of 11 comparable countries found New Zealand's health system performs well on what it actually does, ranking 3rd and fourth respectively on measures of quality and efficiency.[8] And this was achieved despite New Zealand being ranked bottom on health expenditure per capita. But we perform poorly on measures of access to services, indicating significant issues with what our health system *does not* do due to inadequate service capacity. For elective surgery waiting times, New Zealand was ranked 8th; for waiting times to see a specialist: 9th; for cost barriers to primary health care: 9th; for waiting times for treatment after diagnosis: 10th; for measures of equity: 10th; for access to diagnostic tests: 11th.

Each year the Government proudly announces more funding for elective surgery to achieve its annual target of 4000 additional procedures. Relative to the previous year, this appears a reasonable target. However, while international comparisons should be viewed with caution[9], the available data show the number of operations performed in New Zealand relative to the population remains well behind those of comparable countries. A World Bank report, using data from the Lancet Commission on Global Surgery, ranks New Zealand 24th out of 34 OECD countries on the number of surgical procedures performed per 100,000 people.[10] This is supported by OECD figures. In a comparison of the number of 11 common surgical procedures performed per head of population in New Zealand, Australia, the UK and Canada, New Zealand comes last in all but two, where we come second to last.[11]

It is fair to assume most New Zealanders would expect our health system to be at least on a par with Australia's, but if you need a hip replacement, heart bypass, hernia repair, cataract surgery or most other operations, you are far more likely to get it done if you lived across the Tasman.

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[8] K Davis, S Stremikis, et al. Mirror, Mirror on the Wall: How the performance of the US health care system compares internationally, Commonwealth Fund, June 2014. Available: http://www.commonwealthfund.org/~/media/files/publications/fund-report/2014/jun/1755_davis_mirror_mirror_2014.pdf

[9] There are currently gaps in the New Zealand data for privately provided surgery. However, this is likely to have only a marginal effect on New Zealand's surgery per capita ranking within the OECD.

[10] Lancet Commission on Global Surgery. Number of surgical procedures (per 100,000 population), 2012. World Bank Data, available at http://data.worldbank.org/indicator/SH.SGR.PROC.P5

[11] OECD Online Health Statistics, OECD Library, available at http://stats.oecd.org/index.aspx?queryid=30167

Further, your chances of surviving cancer after diagnosis are significantly better in Australia, for example, than here.[12] In fact overall, as the Commonwealth Fund report shows, New Zealanders have a 39 percent greater chance of dying from a condition amenable to health care than Australians - 79 per 100,000 population under the age of 75 in New Zealand compared with 57 per 100,000 in Australia. If New Zealand had the same rate of mortality amenable to health care as Australia, more than 900 lives would be saved each year.

Poor access to services, reflected in these statistics, has led to a growing unmet health need across a range of health care services. This is reinforced in the health status statistics below.

In a selection of common health status indicators (Table 2) New Zealanders' state of health tends to fall in the bottom half of OECD countries. New Zealand also ranks poorly against comparisons with Australia, Canada and the United Kingdom (UK).

Table 2: New Zealand's position in the OECD's health status indicators, 2013*

Health Status Indicator	Position among 33 OECD countries (1 being best)	NZ position relative to Australia, Canada, UK (1 being best)
Life expectancy at birth	13=	3 (above UK)
Premature mortality	26 (females) 19 (males)	4 4
Mortality from ischemic heart disease	26 (females) 25 (males)	4 4
Mortality from cerebrovascular disease	24 (females) 18 (males)	4 4
Mortality from all cancers	28 (females) 12 (males)	3 (above UK) 3 (above UK)
Youth suicides	33	4
Infant mortality	30	4
Obesity prevalence (adults)	27	2= (behind UK)
Diabetes prevalence (adults aged 20-79 years)	24	3 (above Canada)

*Or latest year where data are available. In some cases data are not available for all 33 countries.

Source: OECD Health Statistics, 2015; International Diabetes Federation. IDF Diabetes Atlas, 6th Ed. 2014; Global Health Observatory Repository, WHO 2015.

An example of what these statistics mean in practice is provided in a recent report on the increasing pressure on our mental health services, with DHB figures showing big rises in crisis mental health referrals at many of the country's hospitals. Data released to Radio New Zealand's *Nine to Noon* under the Official Information Act (OIA) show that at Auckland's biggest DHB, crisis referrals – either

[12] PS Aye, M Ellwood, V Stevanovic. "Comparison of cancer survival in New Zealand and Australia 2006-2010," *NZMJ*, Vol 127, No 1407, 19 December 2014.

from GPs, hospital staff, families or self-referrals – more than doubled between 2010 and 2014. All but one of the DHBs that responded to the OIA request reported increasing crisis referrals over the last five years, including West Coast DHB with a 226 percent increase, Bay of Plenty (210 percent), Canterbury (84 percent) and Hawke's Bay (70 percent).

Andy Colwell, an Auckland mental health worker and co-convenor of the PSA's Mental Health Committee, and Professor Max Abbot, Dean of Health sciences at AUT and former president of the World Federation for Mental Health, affirmed the figures reflected what was happening on the front line.[13] Andy Colwell referred to a recent survey of PSA mental health staff at Auckland DHB highlighting staff shortages and what some described as dangerous situations for patients, including pressure to discharge patients from hospital before they are ready.

The programme also reported the number of suicides in New Zealand is now the highest on record and that a former chief coroner believes the real figures is likely to be higher.

The economic cost of unmet need

International evidence shows the cost of unmet health need, both to the health system and the wider economy, can be considerably higher than providing timely treatment.

A Canadian study of patients waiting for treatment longer than medically recommended for total joint replacement surgery, cataract surgery, coronary artery bypass graft (CABG) and MRI scans estimated a conservative cumulative economic cost of $14.8 billion to the Canadian economy, taking into account lost productivity, caregiver costs and additional costs borne by the health system.[14]

In other examples, longer waits for total hip arthroplasty have been shown to incur greater economic costs and deterioration in physical function while waiting.[15] And timely cataract surgery has been found in a number of studies to reduce road accidents and hip fractures. A recent American study estimated the total net return on investment from timely cataract surgery, including benefits to the United States economy, to patients, and in savings in the health system, amounted to US$123 billion over 13 years for patients receiving such operations in one year.[16] In New Zealand terms (relative to GDP), that would be worth approximately $1.6 billion.

In primary healthcare a measure of unmet need is well established through the New Zealand Health Surveys, which indicate nationally one in five children and 27 percent of adults have an unmet need for primary healthcare. In some regions more than a third of children and adults report an unmet need. The worst served region is Hawkes Bay with 35 percent of children with an unmet need and 43 percent of adults. The total economic and health costs of this unmet need are not known but it is reasonable to assume they are substantial.[17]

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[13] Radio New Zealand: Nine To Noon, 7 June 2016. Available at http://www.radionz.co.nz/national/programmes/ninetonoon/audio/201803524/pressure-on-the-front-line-of-mental-health

[14] Centre for Spatial Economics 2008. *The Economic Cost of Wait Times in Canada*, Canadian Medical Association, January 2008.

[15] JM Fielden, J Cumming et al. "Waiting for hip arthroplasty: economic costs and health outcomes," *J Arthroplasty*, 2005 Dec, 20(8): 990-7.

[16] G C. Brown, et al. *Cataract Surgery Cost Utility Revisited in 2012*. *Ophthalmology*, 2013; 120 (12). Available at http://www.ncbi.nlm.nih.gov/pubmed/24246824.

[17] NZ Health Surveys 2011-2014.

The new initiative in the 2015 Budget which extended free GP visits and prescriptions for children under six to all children under 13 from 1 July 2015 addresses a part of that unmet need. However, the new services were partly funded by cuts in other services.[18] This Budget provides some additional funding to recognise uptake was higher than budgeted for last year.

Failure to invest in effective population health programmes and policies can also lead to substantial hidden costs. For example, a recently published international study estimates the effects of sugar-related conditions such as diabetes and obesity could lower the country's economic growth by more than 20 percent over 20 years.[19] New Zealand is the third biggest consumer of sugar and sweeteners per capita in the OECD; it is the third most overweight country in the developed world, with an estimated third of New Zealanders obese. The annual cost of weight-related health care in this country is estimated to be around $1 billion a year.[20]

Negative impact on the health workforce

One of the ways the health system has adapted to the funding constraints has been by suppressing wage and salary rises, in both the private and public sector. Between June 2010 and June 2015, the labour cost index for all salary and wage rates in Health Care and Social Assistance rose 6.3 percent in the public sector, compared to 8.3 percent in the private sector. Central Government rose 6.8 percent and the whole labour force rose 9.3 percent. So people working in the public sector of health did worse than those in the private sector of health, in central government, and (on average) people working in the economy as a whole.

The squeeze on health funding can therefore be thought of as having been paid for by two groups: by patients and users of health services generally in deteriorating services, and by people working in the sector by slower pay rises as well as increased work pressures.

A currently prominent example is the mainly low paid women who work in residential and home care, and whose claim for equal pay has been recognised by the courts and is currently under negotiation with employers and government.

This trend will inevitably lead to poorer recruitment, retention, and staff morale, across the public health sector. In such a labour-intensive service, the quality, stability and morale of the workforce are critical to an efficient and accessible service. This is especially so considering a significant proportion of New Zealand's health workforce is approaching retirement age. On current retirement trends, in the next five years an estimated 19 percent of the medical specialist workforce could be lost due to a drop-off of doctors from the age of 55; New Zealand already has the 3rd lowest number of medical specialists per population in the OECD. Also, in the next 10-15 years up to 50 percent of nurses are likely to retire resulting in a predicted shortfall of 15,000 nurses by 2035. New Zealand is in an especially vulnerable positon as we rely heavily on overseas recruitment in many health

[18] B Rosenberg, L Keene. *Did the 2015 Budget Provide Enough for Health?* Working Paper on Health, No 14, 7 June 2015.
[19] E Bartsch, C Nuzzo, J Alsford. "Sustainable Economics: The Bitter Aftertaste of Sugar," Morgan Stanley Research, 18 March 2015. Available: https://s3.amazonaws.com/s3.documentcloud.org/documents/1694675/mseu20150318279202.pdf
[20] M Cropp. "Sugar hit is no GDP sweetener," *RNZ News*, 26 March 2015.

professions (for example an estimated 25 percent of nurses and 43 percent of doctors come from overseas) which are either facing or about to face growing international shortages.[21, 22, 23]

Medical specialists (including GPs) and registered nurses are already on Immigration New Zealand's Long-Term Skills Shortage List where there is "sustained and ongoing shortage…both globally and throughout New Zealand", along with a raft of other health professionals, such as clinical psychologists, radiation therapists, physiotherapists, sonographers, medical laboratory scientists and medical physicists. A further group are on the Immediate Skills Shortage List, indicating "there are no New Zealand citizens or residents available" for the positions, including resident medical officers, dentists, and technicians in areas such as anaesthesia, dentistry, pharmacy, dialysis and medical laboratories. Government funding policies that are making careers in the public health sector an unattractive prospect raise serious questions about the future viability of many services.

How reliable are our estimates of funding needs and underfunding?

The estimates of funding needs and gaps depend on forecasts, largely from official sources. Inevitably applying forecasts to the different parts of the Vote requires judgements to be made which must take a simplified view to abstract from the underlying complexity. Some interpretation is also needed of the Estimates and other Budget information which are often far from clear. The shortfall is calculated from the difference between two large numbers, one of which has significant uncertainty, magnifying the uncertainty around the estimated value of the shortfall. The spreadsheet published with this report provides greater detail of the forecast assumptions.

Our results have been presented each year to a meeting of senior Ministry of Health officials, Treasury officials with responsibility for Vote Health, and senior DHB and health union representatives.

The Ministry of Health and sometimes Treasury make their own estimates, some of which become available when the background papers are published by Treasury following each Budget. Unfortunately the necessary information is increasingly being redacted or perhaps is no longer part of official advice. The following table gives comparisons of our and Ministry/Treasury estimates where they are available for previous years. Some of our estimates are recalculated from the published ones to be comparable to the government's (e.g. with or without 'initiatives').

On average our shortfall estimates for the full Vote are very close to those of the Ministry, but for the part that refers to DHBs they are consistently lower than the Ministry's. It is possible we are underestimating the pressure on DHBs because of transfers of responsibility ("devolution") from central services to DHB which are not well documented, and because some of the national services are carried out by DHBs but not fully funded.

[21] ASMS. *Taking the Temperature of the Public Hospital Specialist Workforce*, August 2014.
[22] J Clendon, L Walker. "The juxtaposition of ageing and nursing: the challenges and enablers of continuing to work in the latter stages of a nursing career", *Journal of Advanced Nursing*, 2016.
[23] OECD Health Workforce Statistics, 2014.

Table 3: Shortfall estimates compared – government and CTU[24]

	DHB Shortfall estimate ($m)			Vote Health Shortfall est ($m)		
Year to June	**Government: pre Budget**	**Government: post Budget**	**CTU**	**Government: pre Budget**	**CTU**	**Notes**
2012	144	136	38	157	170	Includes allowance for "technology"
2013	240	122	88	376	254	Includes initiatives
2015	17	115	94	90	186	Excludes initiatives
2016	141	179	131		171	Excludes initiatives
Mean 2012-15	**134**	**124**	**74**	**208**	**203**	
Mean 2012-16	**135**	**138**	**88**		**195**	

Recently the Minister of Health released figures to Fairfax purporting to show that "from Budget 2009/10 to today, the Ministry advice shows Vote Health has covered population growth, ageing and inflation."[25] We have obtained the document which shows the figures on which this claim was based, a memorandum from the Ministry of Health in response to a request from the Minister[26].

The document, whose figures are inconsistent with the Ministry's own figures quoted in Table 3 above (and which on average are close to our own estimates) do not support the Minister's claim. They are also inconsistent with the papers released after each year's Budget on the Treasury web site which make it clear that underfunding (a requirement to make "efficiencies" or" re-prioritisation") has been deliberate.

They have a number of flaws. Firstly, they are based on funds voted rather than actual spending so do not represent what actually occurred as would be expected when looking back in this way. They do not count the cost of new initiatives. These increase costs, reducing the funding available to meet cost and population pressures. Treasury on a number of occasions complained in its advice on Budget setting that Ministers were not funding additional services. One of the most explicit was in the lead up to the 2013 Budget where officials advised:

> We understand the Minister of Health has signalled that Budget 2013 is likely to see much less in the way of unfunded additional services expected of DHBs, allowing DHBs to focus on managing their

[24] Sources for government pre-Budget estimates: **2012**: Vote Health Four-year Budget Plan as at 8 December 2010 for 2011 Budget, document b11-2097610, p.7,11. **2013**: Vote Health Four-year Budget Plan for 2012 Budget, document b12-2265841.pdf, p.6. **2015**: Vote Health Four-year Plan (2014/15 to 2017/18), 6 January 2014, by Hon Tony Ryall, Minister of Health, document b14- 2837340.pdf, p.43 (noting that $275 million was funded for DHBs and $350 million for Vote Health that year). **2016**: e.g. Treasury Report: T2015/2057: Advice on District Health Board Funding Signal for 2015/16, 28 November 2014, document b15-3073550, p.2. Source for government post-Budget estimates for DHBs: answer to Parliamentary Question 4628 (2016), available at http://www.parliament.nz/resource/en-nz/QWA_04628_2016/47f1d2dc148ea73fa6981fef8b41f2402da79c49

[25] Stacey Kirk, "Government returns fire over health funding: figures show new funding keeping up", 7 June 2016, http://i.stuff.co.nz/national/politics/80794791/government-returns-fire-over-health-funding-figures-show-new-funding-keeping-up

[26] Ministry of Health "Memorandum: New funding and savings 2009/10 to 2016/17", to Hon Dr Jonathan Coleman (Minister of Health), File number: AD62-14-2016, undated.

> current cost pressures within available resources. We would like the Ministry of Health to provide robust analysis to Ministers on the resource implications to DHBs of setting new targets.[27]

In addition they use the Labour Cost Index (LCI) to estimate the cost of wage increases. The Labour Cost Index is not appropriate for this calculation because it does not include pay increases for individual performance. A more suitable measure is the Health Care and Social Assistance average hourly wage[28]. There are other methodological issues, including using the forecast population and ageing (demographic) estimates available at the time of the respective Budgets rather than actuals.

A final major issue is that the Ministry's estimates disregard accumulating shortfalls. Their comparisons are only between funding and cost pressures (excluding new services) in each year, as if the previous year's shortfall did not exist. That is acceptable when looking at one Budget at a time (such as the current Budget), but not when looking back over a period of years.

Testing we have carried out indicates that if the correct wage series, actual spending and demographics are used, the cost of new and expanded services (less savings) is included, and the accumulating shortfalls are recognised, it is likely that the Ministry's methods would produce a result very similar to ours. As theirs stands however, it significantly misrepresents the situation.

[27] Aide Memoire: Update on four-year plans for Health, Education, Social Development to MoF, AssMoF, MoSS, 11 December 2012, p.6, document b13-2505130.pdf, available at http://www.treasury.govt.nz/publications/informationreleases/budget/2013/other-e-h/index.htm#health

[28] Statistics New Zealand, InfoShare series QEX001AA.