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Did the 2017 Budget provide enough for health?

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Key points

This analysis compares the 2017 Budget with the analysis of the Health Vote which the CTU/ASMS 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 2017 Budget is an estimated $215 million behind what is needed to cover announced new services, the pay equity settlement for care and support workers, increasing costs, population growth and the effects of an ageing population, compared to the 2016 Budget.
- While the 2017 Budget listed services that will receive more funding, and new initiatives costing a net $269 million, most of these will need to be paid for by reductions in other services.

- We estimate that $2.3 billion was needed to restore funding for 2017/18 to 2009/10 levels. Only $0.8 billion was provided so the shortfall compared to 2010 is $1.4 billion. This shortfall has steadily grown over those years. It means that the next Government will need to find well over $2 billion for 2018/19 if it wishes to restore the value of funding.
- The Health Vote is forecast to rise slightly as a proportion of Gross Domestic Product (GDP), but only because of the pay equity settlement for care and support workers. If it had maintained the proportion of GDP it had in 2009/10, it would be $1.6 billion higher in 2017/18.
- District Health Boards (DHBs) are underfunded by an estimated $107 million below what they need to cover increased costs and demographic changes.
- In 2017/18, mental health services funded by the Health budget will receive just $18 million extra funding compared to what they spent in 2016/17 – an increase of approximately 1.2 percent, which is a cut in real terms.
- Centrally managed national services such as National Disability Support Services, National Elective Services, and Public Health services received $101 million below what they needed to cover cost increases and demographic changes and to fund $22 million in new services, offset by $15 million being shifted to DHBs.
- The pay equity settlement for care and support workers was funded $279 million, being a cost of $303 million offset by pay rises that would have occurred in any case. At Budget time it had not yet been distributed to DHBs and National Disability Support Services.
- The Ministry of Health itself was underfunded by $5.1 million and has had significant reductions in staff numbers since 2010.
- Our estimates in previous years have been conservative compared to estimates made by the Ministry of Health and Treasury prior to Budget-setting and with findings on DHBs by Treasury.

Assumptions

Our pre-Budget analysis assumed that CPI would rise by 2.0 percent in the year to June 2018 (the Budget period), which was the Treasury forecast in its December 2016 Half Year Economic and Fiscal Update (HYEFU). However, Treasury changed that forecast to 1.6 percent in the year to June 2018 in the Budget Economic and Fiscal Update (BEFU), a significant reduction on its December forecast. We assumed wages would rise in line with Treasury's HYEFU forecast of a 2.2 percent rise in the average hourly wage; Treasury has revised this up to 2.6 percent. In this post-Budget analysis we use these new forecasts for costs and wages except for an average 3.1 percent wage rise in minimum wage intensive services. We allowed for an increase of 2.5 percent for the growing and ageing population, but with differential increases for each DHB, which we continue to do[1]. See the report on the pre-Budget analysis for further details.

The pay equity settlement for care and support workers is funded through a new national appropriation ("Supporting Equitable Pay for Care and Support Workers"). While the cost to the Health Vote detailed when the settlement was announced was estimated at $303 million[2], only $279 million was provided. We assume this is due to it being offset by pay rises that would have occurred

[1] These are calculated from data provided by the Ministry of Health.
[2] See https://www.beehive.govt.nz/sites/all/files/TerraNova%20Questions%20and%20Answers.pdf

in any case. At Budget time it had not yet been distributed to DHBs and National Disability Support Services from where these care and support services are funded.

Did the Health Vote keep up with rising costs?

The Health Vote's operational funding increased by $785 million between Budget 2016 and Budget 2017, from $15,323 million to a comparable $16,108 million. This is $54 million[3] more than the $16,055 million we estimate is needed just to keep up with costs, population growth and aging without providing for new or improved health services.

In addition the Vote listed "new policy initiatives" totalling $824 million in operational funding, but the bulk of that ($501 million) is simply partial recognition of cost and population increases rather than new initiatives. The largest part of the remainder is the $279 million towards the pay equity settlement for care and support workers. For the first time in several years no "savings" are identified in the Estimates to offset this, demonstrating the difficulty of finding new savings. However, funding of DHBs is reduced by a net $56 million due to a reduction from 8 percent to 6 percent in the 'capital charge' the government extracts on the DHBs' capital (equity), offset by an increase in costs created by a mandated restructuring of their debt to equity. The debt was costing DHBs an average of 4.5 percent compared to the 6 percent capital charge (until it is reviewed again). The net cost of total "new initiatives" is $269 million.

The total shortfall is therefore $215 million.[4] Effectively, all but $54 million of the initiatives were unfunded.

Two changes do not alter the bottom line. Firstly $15.0 million in funding for hospices is being "devolved" to the DHBs, reducing requirements of the National Personal Health Services appropriation and increasing those of the DHBs. Secondly, among the DHBs, paediatric cardiac services, paediatric rheumatology and paediatric and adult metabolic services are being transferred to Auckland DHB by other DHBs, resulting in an added cost to Auckland DHB of $30.7 million and a combined reduction of the same amount distributed among all other DHBs.

District Health Boards

Budget appropriations for DHBs were thrown into confusion by mistakes in the Budget Estimates and in the information conveyed to DHBs following the Budget[5]. In previous years, DHBs had been given indicative information about six months before the Budget, giving them time to plan for the new financial year. The change this year to providing the information only at Budget time, which was always going to be problematic for the DHBs, was compounded by the errors.

The errors resulted in a total of $37.8 million being wrongly allocated. In addition, the Ministry is reallocating $31.845 million of In-Between Travel (IBT) funding, already devolved to DHBs but that was not included in published revised "final" totals, causing further confusion. It is also devolving $3.1 million in "Diabetes Care Improvement Packages" from the National Personal Health Services

[3] After rounding.
[4] This is less than the $305 million we estimated on Budget day. The difference is mainly because we had not included the effect of the reduction in the capital charge rate.
[5] See for example http://www.stuff.co.nz/national/politics/93754412/budget-blunder-at-ministry-of-health-sees-millions-clawed-back-from-dhbs.

appropriation to DHBs, but given this will occur within the 2017/18 financial year, we do not include it. There is additional "residual $0.18 million [which] relates to funding that has yet to be allocated to DHBs".[6] The following corrects the figures as far as we are able to (it assumes that the redistribution of IBT funding will not make significant differences to individual DHB appropriations).

On the other hand, these figures do not yet include the DHBs' share of funding for the pay equity settlement for care and support workers which currently sits in a national appropriation. Therefore the total funding for each DHB and all DHBs together will be changed during the year.

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

Note: figures for individual DHBs should be regarded as approximate only for reasons given in the text

Red indicates shortfall

DHB	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]
Auckland	1,231,793	1,250,594	-18,801	-10,248	-29,049	31,289	2,240
Bay of Plenty	703,172	693,974	9,198	-1,187	8,011	-1,370	6,641
Canterbury	1,395,374	1,372,679	22,695	-2,893	19,802	-2,757	17,045
Capital and Coast	739,223	735,192	4,031	-594	3,437	-38	3,399
Counties-Manukau	1,397,757	1,371,175	26,583	-3,433	23,150	-2,113	21,037
Hawkes Bay	489,769	482,197	7,571	-1,039	6,532	-1,170	5,362
Hutt	389,765	384,465	5,300	-1,204	4,096	641	4,737
Lakes	312,949	313,549	-600	-1,108	-1,708	-560	-2,268
MidCentral	503,347	493,960	9,387	-2,002	7,385	-1,078	6,307
Nelson-Marlborough	424,419	418,167	6,252	-1,298	4,954	-762	4,192
Northland	565,403	563,461	1,941	-1,835	106	-853	-747
South Canterbury	179,527	176,919	2,608	-472	2,136	-375	1,761
Southern	856,884	846,419	10,465	-1,753	8,712	-1,362	7,350
Tairawhiti	161,574	160,572	1,002	-259	743	-257	486
Taranaki	341,140	335,485	5,655	-808	4,847	-605	4,242
Waikato	1,151,603	1,139,123	12,479	-2,886	9,593	-1,838	7,755
Wairarapa	137,069	135,179	1,890	-231	1,659	-284	1,375
Waitemata	1,479,984	1,463,411	16,573	-2,763	13,810	-1,165	12,645
West Coast	129,575	128,042	1,533	-58	1,475	-112	1,363
Whanganui	219,606	218,200	1,406	-414	992	-187	805
Unallocated[1]				1,500	1,500		1,500
Totals	**12,809,933**	**12,682,765**	**127,168**	**-34,985**	**92,183**	**15,044**	**107,227**

Notes to table:

(1) For the "Quality initiative in mental health". Its distribution between DHBs has not been published.

DHBs received $463 million more than in last year's Budget (increasing from $12,220 million to $12,683 million). This falls $127 million short of the $590 million that we estimate they need just to cover increased costs and demographic changes. However, they have a net $19.9 million reduction in additional costs. This is made up of $15.0 million in costs transferred from the Ministry for

[6] Answer by Minister of Health to Parliamentary Written Question 5828 (2017).

hospices, $20.0 million for more medicines, and $1.5 million for the "Quality initiative in mental health", offset by the $56.5 million net reduction in capital charges described above. DHBs are therefore underfunded by a total $107.2 million.

A line item in the appropriations for each DHB was a reduction of $9.1 million for "DHB Efficiency Savings". In effect this is an intended part of the $107.2 million shortfall.

This year $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 the same as last year, but $24.6 million less than the government estimates will be actually paid in 2016/17. DHBs ended the year to June 2016 with total deficits of $57.8 million, $38.4 million larger than planned. The most recent financial data available shows DHBs recording combined deficits of $50.6 million for the ten months to April 2017, $38.3 million larger than their plans but smaller than the $63.3 million deficit at the same time a year before[7].

As mentioned there was major capital restructuring of the DHBs in 2016/17 with the government paying off their debt and converting it to equity. This resulted in $2.6 billion in paper injections of capital by the Crown into DHBs, and $76.0 million in operational expenses "to enable the early termination of DHB Crown loans, described as a "technical financial matter". They do not benefit the DHBs. We therefore have not included the latter in the total actual operating expenses for the 2016/17 year, and the apparently large capital expenditure for the year ($3.3 billion) should not be misinterpreted as all being the provision of additional funds to the DHBs.

Primary health care

Most primary health care is funded from DHB budgets so does not appear as a line item in the Budget. We note, however, that Treasury has found that as "DHBs are under pressure to meet hospital output targets and avoid running deficits" there has been a tendency for most DHBs to prioritise funding for their own provider arms at the expense of externally provided services such as primary health care.[8] Continuing funding shortfalls for DHBs generally are likely to see this trend worsen.

There is a further $195.4 million funded through the central Primary Health Care Strategy appropriation. The great majority of this is channelled through DHBs to fund various special programmes in general practices such as the Very Low Cost Access practices which are focused on low income and high need patients, the Under 13s provision of free access to doctors, and the Care Plus funding for general practices for high need patients.

National Services

The centrally managed national programmes such as Primary Health Care Strategy, National Disability Support Services, National Mental Health Services, National Māori Health Services and National Electives Services gained just over $320 million in operational funding (rising from $2,880 million to $3,200 million), which is $184.5 million more than what is needed to maintain the status

[7] 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

[8] "District Health Board Financial Performance to 2016 and 2017 Plans", Treasury, February 2017. Available at http://www.treasury.govt.nz/publications/informationreleases/health/dhb-performance

quo. However, the bulk of this increase is to pay for the additional cost of $279 million for the pay equity settlement for care and support workers which will eventually be divided among the DHBs and National Disability Support Services.

Table 2: National Services funding provided and cost of additional services ($000)

Red indicates shortfall

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
Auckland Health Projects Integrated Investment Plan	0	650	-650	650	0	0	0
Health Workforce Training and Development	184,028	186,745	-2,717	0	-2,717	0	-2,717
Monitoring and Protecting Health and Disability Consumer Interests	28,211	28,746	-535	0	-535	0	-535
National Child Health Services	87,407	85,001	2,406	0	2,406	0	2,406
National Contracted Services - Other	38,937	28,720	10,217	0	10,217	0	10,217
National Disability Support Services	1,225,427	1,208,374	17,053	0	17,053	0	17,053
National Elective Services	372,570	346,517	26,053	0	26,053	0	26,053
National Emergency Services	104,740	109,958	-5,218	8,571	3,353	0	3,353
National Health Information Systems	13,356	8,236	5,120	0	5,120	0	5,120
National Māori Health Services	7,184	6,828	356	0	356	0	356
National Maternity Services	153,982	146,767	7,215	0	7,215	0	7,215
National Mental Health Services	63,291	62,183	1,108	0	1,108	0	1,108
National Personal Health Services	103,428	84,057	19,371	700	20,071	-15,044	5,027
Primary Health Care Strategy	194,942	195,405	-463	0	-463	0	-463
Problem Gambling Services	18,277	17,521	756	0	756	0	756
Public Health Service Purchasing	419,862	405,471	14,391	11,618	26,009	0	26,009
Supporting Equitable Pay for Care and Support Workers	0	279,000	-279,000	279,000	0	0	0
Totals	**3,015,643**	**3,200,179**	**-184,536**	**300,539**	**116,003**	**-15,044**	**100,959**

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 $21.5 million, offset by $15.0 million devolved to DHBs. These national services therefore have a total of $285.5 million in additional costs on top of what is needed to maintain the status quo. That results in them being underfunded by $101.0 million.

These additional services are $650,000 for an "Auckland Health Projects Integrated Investment Plan" which "is intended to establish the Auckland Health Investment Planning Group to assist the Auckland metro DHBs to develop a comprehensive integrated investment plan to meet the forecast significant population pressures"; $8,571,000 for double crewing of ambulances; $700.000 for an

organ donation national strategy; $7,238,000 for the national bowel screening programme; $3,000,000 for water fluoridation; and $1,380,000 for contraceptive services for low income women ($120,000 is also funded for administering the programme).

Mental Health

There have been numerous media reports of a growing crisis in mental health services, showing up both in people being unable to access both primary and crisis-level services and in staffing shortages. The latest data available shows client numbers increased by 5.8 percent in the year to June 2016, and the average annual increase since 2004 has been 5.1 percent. We estimated increasing funding needs based on an increase of 5.0 percent in client numbers in the year to June 2018. National Mental Health Services funds only a small part of total mental health services within the Health Vote (the Minister asserts $1.4 billion was spent on mental health in the 2015/16 year but we have seen no information on how that was calculated) but on our estimate, though it rose $3.2 million, it is $1.1 million short of what is required, receiving only $62.2 million compared to our estimate of $63.3 million needed. Further, the 2017 Budget estimates that National Mental Health Services will in fact spend $69.2 million or $10.2 million more than budgeted in 2016. What has been provided in for 2017/18 is therefore $7.0 million short of what has actually been spent in 2016/17.

A separate cross-Vote Budget announcement proclaimed a "$224 million boost" for mental health services over four years, but it included $100 million from DHB baseline budgets. The other $124 million comes from other Votes, including a $100 million cross-government "social investment fund". However, a CTU/ASMS analysis of this initiative[9] has found the "boost" in funding is largely illusory as far as the Health Vote is concerned. In 2017/18, mental health services funded by the Health budget are likely to receive just $18 million extra funding compared to what they spent in 2016/17 – an increase of approximately 1.2 percent, which is a real cut.

The analysis, summarised in Table 3, estimates a 7.3 percent funding increase is needed 2017/18 to keep up with demand, though this would not be enough to improve access to services. For the full analysis, see https://www.asms.org.nz/news/asms-news/2017/06/07/called-budget-mental-health-funding-boost-cut-real-terms/.

Table 3: Summary of identified increases in mental health funding in 2017/18

Announcement	2017/18 ($000)	New funding ($000)	Vote	Notes
New cross-government social investment fund	25,000	25,000	Not allocated	Trials which have not yet been identified
MSD trial of integrated employment and mental health services	103	103	Social Development	Adds to existing benefits and services for people with mental health conditions; seems unlikely to get substantially under way in 2017/18
Improve management of prisoners at risk of self-harm	1,883	1,883	Corrections	Adds to funding of $6,725,000 in 2016/17 for an initiative on mental health. From following years,

[9] See https://www.asms.org.nz/news/asms-news/2017/06/07/called-budget-mental-health-funding-boost-cut-real-terms/.

Announcement	2017/18 ($000)	New funding ($000)	Vote	Notes
and suicide				funding is reduced to $3,223,000
Rangatahi Suicide Prevention Fund Extension	1,500	-209	Māori Development	Continuation of existing program "Rangatahi Māori Suicide Prevention" which is estimated to spend $1,709,000 in 2016/17
DHB mental health and addiction services	25,000	25,000	Health	Not a special appropriation or initiative: part of general funding increase, but appears to be at a lower rate of increase than the overall Health vote
National Mental Health Services	3,221	-6,986	Health	$3,221,000 is part of the general funding increase on Budget 2016, but the new budget is a $6,986,000 ***reduction*** on estimated actual spend in 2016/17
Total for Health		**18,014**		
Total for other or unknown votes		**26,777**		

Disability Support

Last year we reported on funding for National Disability Support Services proving insufficient mainly because of the move to individualised funding. During the 2015/16 year, $20.2 million were transferred to it from other Health appropriations and $840,000 was provided in new funding. This year the same occurred and $16.7 million of additional funding had to be provided, taking the 2016/17 funding to $1,184 million. While National Disability Support Services received $42.5 million more in this year's Budget than last year's Budget, that was only $25.0 million more than it actually received. We estimate that it is $17.1 million short on need, even with a $42.5 million increase. It seems likely more funds will again have to be provided during the year and there will be a continuation of pressure to cut spending.

Surgery

We calculate that National Elective Services, that funds elective surgery over and above that paid for by DHBs directly, is underfunded by $26.1 million in real terms. It received an additional $6 million but a previous funding initiative from the 2015 Budget, called "More Elective Surgery, Reducing Pain, and Increasing Prevention" will reduce by $15 million from $27 million in 2016/17 to $12 million in 2017/18 – much more than this Budget's increase in funding. Next year it will disappear entirely. This is therefore an effective cut in funding for elective surgery from this source.

This follows a Ministry of Health assessment, revealed in notes for a meeting with the Minister of Finance[10] (fn, p.1) showing that the Government's target of 4,000 new elective surgery discharges each year is routinely underfunded:

> Our analysis suggests that of the annual 4,000 new elective surgery discharges target, 1,500 discharges can be funded by DHBs, with the remainder requiring central funding. Historically, DHBs have received central funding for 2,000 new elective surgery discharges, with the remainder to be funded through efficiency savings.

With the 2017/18 National Electives Services budget being underfunded by $26.1 million, if DHBs collectively are to continue to provide more elective operations to help address well-recognised unmet need, any further elective operations will need to be paid for from the DHBs' baseline budgets. Alternatively, under changes to the electives health targets introduced from 1 July 2015, DHBs need only to provide 4000 additional operations on average each year (ie, averaged over an unspecified number of years).[11] Further, since 2015, the definition of an elective surgery hospital discharge has been extended to include discharges from non-surgical departments where a patient has had a surgical procedure, such as interventional cardiology, renal stents or dental surgery. The new definition also includes 'arranged' admissions, such as for cancer-related conditions. It is unclear how this change affects the calculation of averages over an unspecified period. DHBs collectively may not necessarily need to increase elective surgery volumes substantially in 2017/18 while technically still being able to meet the health target.

Ministry of Health operational funding

The Ministry of Health received $198 million, including multi-category expenses, which is only $1.7 million below what we estimated it needed to cover increased costs on current services. This makes no allowance for an increasing population. However, Budget 2017 includes additional services to be provided by the Ministry relating to the Disability Support Services "Enabling Good Lives" programme ($3.3 million) and Contraceptive Services for Low Income Women ($120,000), leaving a funding shortfall of $5.1 million.

The Ministry of Health has seen severe funding cuts, repeated restructuring and staff loss over successive years. In the 2010 Budget it was allocated $216 million for 2010/11 ($233 million in June 2018 dollars according to Treasury's forecast). In this year's Budget it received $198 million – a real cut of $35 million (14.8 percent) since 2010/11.

While the fiasco over the error in DHB funding after the Budget should not have happened if there were good management processes, it is inescapable that staff in the Ministry are under much increased pressure and errors are more likely to occur. The Ministry had 1,338 full time equivalent staff as at 30 June 2010, which was cut by almost 200 during the following year down to 1,156 at 30 June 2011, according to the Ministry's Annual Report for 2011. By 30 June 2016 it was down to 1,038

[10] "Meeting with Minister of Finance 15 March 2016", Ministry of Health to Hon Dr Jonathan Coleman, Minister of Health, 15 March 2016, p.17. Released under the Official Information Act.
[11] Ministry of Health. Electives: Health target changes: Information pack. Prepared by the National Health Board, February 2015. Also: Letter to DHB CEOs from J Hazeldine, Acting Director, DHB Performance, NHB, 27 February 2015. Available: https://nsfl.health.govt.nz/system/files/documents/publications/letterelectiveshtrevison_0.pdf

despite growing demands: a loss of 22.4 percent in the 6 years from 2010. New Zealand's population increased by 7.9 percent over the same period. Staff turnover in the year to June 2016 was 14.8 percent compared to 11.1 percent in the Public Service as a whole, according to the State Services Commission's 2016 "Human Resource Capability" report.

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 in reality 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 $1.20 billion between the 2009/10 and 2016/17 financial years. This year's funding shortfall would make that $1.43 billion. To make good this deficit in the 2017 Budget, almost $2.26 billion was required but only $0.82 billion was forthcoming above 2016/17 estimated actual. It means that the next Government will need to find well over $2 billion for 2018/19 if it wishes to restore the value of funding.

This takes account of the costs of new services and claimed savings in each Budget, the actual expenses each year (estimated for 2016/17, forecast for 2017/18), CPI, demographic growth including ageing (supplied by the Ministry of Health)[12], actual increases in wages for DHB employees (from consolidated DHB accounts) and increases in the average hourly wage in Health Care and Social Assistance for most other employees in services funded by the Health Vote (the increases in the minimum wage are used in minimum wage intensive sectors). Treasury forecasts of CPI and the average wage are used for 2017 and 2018.

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 5.69 percent of GDP (forecast by Treasury as $268.877 billion) by 2016/17 and is forecast to be 5.72 percent (of forecast $ 281.801 billion) by 2017/18. For Vote Health operational expenditure to match 6.28 percent of GDP in 2016/17, it would have needed a further $1.59 billion and on the Budget forecasts would need a further $1.58 billion in 2017/18. The slight rise as a percentage of GDP forecast for 2017/18 would have been a further fall (to 5.62 percent of GDP) without the funding for the pay equity settlement for care and support workers.

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 government operational spending (Core Crown expenses) in 2009/10 to a forecast 19.7 percent in 2016/17 and 20.0 percent in 2017/18, the main reason has been that government operational spending as a whole has fallen as a proportion of GDP by 3.7 percentage points over that period – from 32.3 percent of GDP in 2009/10 to a forecast 28.6 percent in 2017/18.

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.

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

The consequences of chronic underfunding

Ongoing funding shortfalls are creating barriers to accessing services, which in turn is leading to a growing unmet health need. As we previously reported, New Zealand ranks poorly against other comparable countries on access measures such as barriers to primary care, and waiting times for elective surgery, for first specialist appointments, and for treatment after diagnosis.[13] In an Australian-New Zealand comparison of the volume of 11 selected surgical procedures per head of population, New Zealand comes out behind Australia in all, and some by a wide margin.[14] This Budget's real cut in elective surgery funding means the gap is more likely to get wider.

The number of adults experiencing chronic pain (meaning experiencing pain almost every day that has lasted, or is expected to last, more than six months) has increased by 37 percent between 2006/07 to 2015/16. More than one in five adult New Zealanders are now affected, according to the New Zealand Health Surveys.

Access to primary care is also getting worse, with the New Zealand Health Survey 2015/16 showing the number of people experiencing one or more type of unmet need for primary health care increasing. Twenty-nine percent of adults reported one or more types of unmet need for primary health care in the past 12 months, up from 27 percent in 2011/12. Nearly a quarter of children (24 percent) experienced one or more types of unmet need for primary health care at some point in the past 12 months, up from 20 percent in 2011/12. Cost is a major factor for adults, whereas for children the main barrier is not being able to get an appointment at their usual medical centre within 24 hours when their parents wanted them to. (This was also a major issue for adults and adolescents.)

Data from the Organisation for Economic Cooperation and Development (OECD) indicate New Zealand had one of the lowest rates of doctor consultations per capita (all settings, but excluding hospital inpatient consultations), with 3.7 consultations a year in 2014 (or latest year available) compared with the OECD average of 6.9. New Zealand's rates may have improved with the 'zero fees' policy extended from the under-6s to children under 13 in July 2015. However, the New Zealand Health Survey 2015/16 update indicates access to GP services overall has improved only marginally since the policy was implemented.

Unmet health need in mental health is well acknowledged. Health Minister Jonathan Coleman said recently about 60 percent of the people who die by suicide in New Zealand each year have not interacted with a mental health or addiction service in the previous 12 months.[15]

Common health status indictors, such as those listed in Table 4, are determined by a range of factors, of which access to health services is an important one. These indicators also reflect the extent of New Zealand's health needs.

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[13] 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

[14] OECD Health Data, 2016. 'Short list' of surgical procedures per 100,000 population

[15] See https://www.beehive.govt.nz/speech/social-investment-approach-mental-health

Table 4: New Zealand's position in the OECD's health status indicators, 2014*

Health Status Indicator	Position among 35 OECD countries (1 being best)
Life expectancy at birth	14=
Premature mortality	23 (females) 17 (males)
Mortality from ischemic heart disease	23 (females) 22 (males)
Mortality from cerebrovascular disease	23 (females) 15 (males)
Mortality from all cancers	25 (females) 13 (males)
Suicides	20
Infant mortality	29
Obesity prevalence (adults)	33
Diabetes prevalence (adults aged 20-79 years)	20

Source: OECD Health Statistics, 2016; International Diabetes Federation. IDF Diabetes Atlas, 7th Ed. 2014; Ministry of Health 2017.

*Or latest year where data are available

The case for investing in health services

International evidence, through numerous cost-of-illness studies, shows the cost of unmet health need, both to the health system and the wider economy, can be considerably higher than providing timely treatment, as we reported in last year's post-budget analysis of Vote Health The cost of waiting for surgery, for example, can cost many times over the cost of the surgery itself, as well as having a negative impact on the patient's recovery. A Ministry of Health report on *New Zealand Cost-of Illness Studies on Long-Term Conditions* found in general the indirect costs of illness, such as lost productivity, are roughly the same as the direct health service costs, but other intangible costs associated with changes in the quality of life of individuals and carers as a result of illness 'tended to be estimated in the billions'.[16] Conversely, as the World Health (WHO) organisation argues, "The positive association between health and wealth constitutes a vital argument in the justification for greater investment in health systems and services." [17]

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

[16] Ministry of Health. Report on *New Zealand Cost-of Illness Studies on Long-Term Conditions, July 2009.*
[17] WHO (2009). WHO guide to identifying the economic consequences of disease and injury.

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').

Table 5: Shortfall estimates compared – government and CTU[18]

	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**	

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.

The Ministry also provided new estimates of funding shortfalls experienced by DHBs, euphemistically calling them "required efficiencies", in the March 2016 Note for the Minister quoted above[19]. It set them out as follows:

[18] 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

Table 6: DHB efficiency expectations

DHB efficiency expectations	Budget 2011	Budget 2012	Budget 2013	Budget 2014	Budget 2015	Total
Required efficiency ($m)	-118	-161	-78	-91	-142	**-590**
% of baseline	1.17%	1.53%	0.72%	0.81%	1.25%	**5.48%**

Most of these estimates of shortfalls are higher than ours for those years. They average $118 million a year compared to ours averaging $90 million a year calculated on a similar basis. The Note also estimated the shortfall for 2016/17 to be $244.8 million or 2.09 percent which it describes as "challenging" coming on top of the above shortfalls. Our estimate was just $52 million. Again, this suggests we underestimate the shortfall in DHB funding.

It is notable that the Minister frequently denies (or implies) that there is any shortfall. His own officials disagree and indeed consider the situation is even worse than we estimate.

Further confirmation appears in Treasury's February 2017 annual report on "District Health Board Financial Performance to 2016 and 2017 Plans" [20], Treasury acknowledged that

> Ministry of Health figures (based on historical cost weights by age, ethnicity and deprivation) generally suggest that health spending growth has kept pace with demographic cost pressures, but has only made a contribution to other cost pressures, although this analysis does not include funding for new initiatives.

In other words, DHB funding has failed not only to keep up with "other cost pressures" (such as price increases and wages) but has also failed to fund the new initiatives Ministers have announced.

Recently the Minister of Finance has tried to relabel shortfalls as "productivity gains", in effect admitted the funding shortfall exists.[21] However, this confuses funding shortfalls with productivity and efficiency. Only if spending reductions are achieved without cuts in services or loss of quality of services would this have some validity (even then it does not take into account the changes in capital and labour used). Yet deterioration and loss of services is widely reported.

In its DHB performance assessment, Treasury calculated that on one measure "DHBs' hospital productivity has remained relatively constant over the time period 2009 to 2016" (p.37) or in other words, no productivity gains were found. They note that measurement of productivity is problematic. In its 2013 Long Term Fiscal Projection, Treasury assumed that productivity growth in Health would be as little as 0.3 percent[22]. Productivity increases are not only difficult to measure in Health and other public services, but difficult to obtain because these are intrinsically people-to-people services which have a high labour content leaving fewer opportunities for technology improvement.

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[19] "Meeting with Minister of Finance 15 March 2016", Ministry of Health to Hon Dr Jonathan Coleman, Minister of Health, 15 March 2016, p.17. Released under the Official Information Act.
[20] p. 12. Available at http://www.treasury.govt.nz/publications/informationreleases/health/dhb-performance
[21] For example The Nation: Lisa Owen interviews Steven Joyce, 27 May 2017, transcript available at http://www.scoop.co.nz/stories/PO1705/S00425/the-nation-lisa-owen-interviews-steven-joyce.htm; and *Hansard* published 24 May 2017, available at https://www.parliament.nz/en/pb/hansard-debates/rhr/document/HansS_20170524_051525000/4-budget-2017-spending-increase.
[22] "Long-term Fiscal Projections: Reassessing Assumptions, Testing New Perspectives", Treasury, July 2013, p.26. Available at http://www.treasury.govt.nz/government/longterm/fiscalposition/2013.