
***Ministry of
Health***
Canterbury
District Health
Board Stage Two
Financial Review

3 November 2016





Paki Ormsby
Director, Critical Projects
Ministry of Health
PO Box 5013
WELLINGTON 6140

3 November 2016

Canterbury District Health Board Stage Two Financial Review

Dear Paki,

In accordance with the terms of reference stated in our Letter of Engagement dated 14 March 2016, we attach our draft report for the Stage Two Financial Review of Canterbury District Health Board.

The report should be read in conjunction with the restrictions and disclaimer set out in Appendix A. We completed our fieldwork for the report in May 2016.

Please do not hesitate to contact us if you would like to discuss any aspect of this report.

Yours sincerely,

A handwritten signature in black ink that reads 'Bruce Wattie'.

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Executive summary

Scope

In late 2015, a stage one review of CDHB's financial planning processes and outputs identified, among other things, the need to update CDHB's financial projections to confirm the impact of its capital programme on its future financial performance.

We have been engaged by the Ministry of Health, following on from the stage one review, to work with CDHB to:

- Validate CDHB's current deficit forecasts through re-modelling the forecast assumptions and projections underpinning the 2012 Detailed Business Case (DBC).
- Re-validate CDHB's activity and implementation plans to return CDHB to a breakeven financial position.

The updated financial forecasts presented in this report should be considered in conjunction with the observations and conclusions in the stage one review. The stage one review provided an overview of CDHB's model of care and the implications of operating within a post natural disaster environment.

The important notice in Appendix A sets out the restrictions and disclaimers governing our work and this document.

Key findings

Financial projections have been produced for the ten years ending 30 June 2025. The projections show:

- A surplus before depreciation and capital charge in each year of the projection period.
- A net deficit after depreciation and capital charge in every year. The net deficit grows significantly over the medium term.
- Insufficient cash flow to support CDHB's current capital expenditure plan.

As outlined in the stage one review, the deficits in the short term are marginal and ordinarily, in the first instance, can be managed through regular and expected financial management of key cost categories.

Reducing the size of the capital expenditure plan – through rescoping, delaying or dropping existing projects – or a consideration of alternative capital delivery options would also assist in improving the deficit.

Assuming no changes to the capital expenditure plan, an annual cumulative reduction in operating costs of:

- Approximately 0.8% p.a. would be required to breakeven by 2021 – 0.8% p.a. of projected 2017 expenses (\$1.6 billion) is approximately \$13m. As advised by the Ministry, this is in line with annual efficiency targets all DHB's are expected to find.
- Approximately 0.4% p.a. would be required to breakeven by 2025.

These savings rates of 0.8% p.a. and 0.4% p.a. respectively are in addition to an annual cost saving of \$13.4m that CDHB has identified it can achieve in each year from 2017 onward.

We have identified indicative cost saving scenarios in addition to the \$13.4m identified by CDHB. These provide short to medium term benefits to reduce the net deficit and maintain the cash position but are not at the level needed to achieve breakeven by either 2021 or 2025.

CDHB management have been considering opportunities to deliver cost savings. These initiatives need to be agreed to by the CDHB Board and developed into a detailed cost savings plan accompanied by an agreed process to enable appropriate monitoring of achievement of the targeted cost savings.

Updated projections

Financial performance

CDHB's net result is projected to decrease from a deficit of \$0.5 million in 2016 to a deficit of \$38.5 million in 2017. The causes of this decrease include: one-off revenue of \$16.4 million that was received from MoH in 2016, an increase in personnel costs of approximately \$20 million attributable to both price and volume increases, additional core operating costs and additional capital charge resulting from the transfer of Burwood to CDHB in 2017.

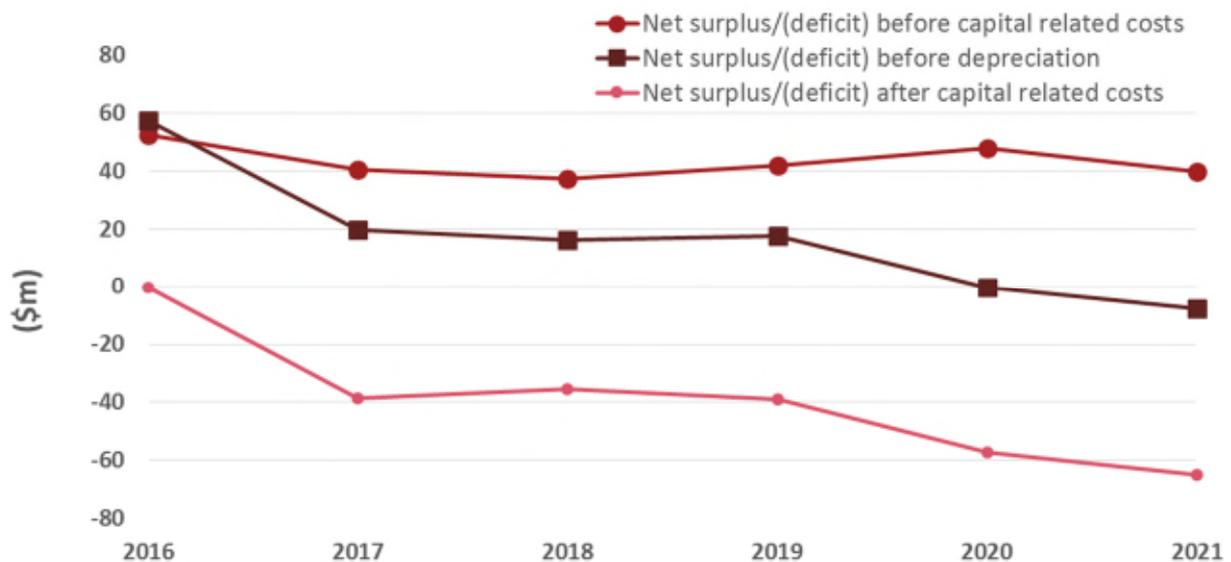
Most of CDHB's revenue is population based funding. The assumed year-on-year growth rates for this revenue have been provided by the Ministry. The additional funding announced in the 26 May 2016 Budget has been included in the projections with corresponding costs for delivering the required additional services.

Cost categories that have an important influence on the operating surplus are DHB employed personnel (the single largest cost), aged residential care (ARC), clinical supplies and community services. Each of the costs is driven by reasonably complex interactions between demographic changes (which influences demand), cost escalation and CDHB's capacity.

A key driver of the net deficit trend is capital charge and depreciation. In particular, the accumulated capital charge on earthquake remediation, the Programme of Works (PoW), over the ten-year projection period is \$109 million, which CDHB is expected to meet from its operating surpluses. The forecast financial performance of CDHB assumes a capital charge rate of 7.0% effective from 1 July 2016 for FY17 and then a revised capital charge rate of 6.0% effective from 1 July 2018 onward.

For every \$10 million of capital expenditure requiring additional equity, CDHB will incur an additional \$600,000 in capital charge (from FY18 onward) and between \$260,000 and \$1 million in depreciation (depending on the asset type).

Figure 1 Net Surplus/(Deficit) before and after Capital Related Costs¹



Cash flow

CDHB's capital expenditure plans have a very significant impact on its projected cash flow:

- Equity funding has been approved for the ASB and Burwood projects and for \$216 million of the PoW for earthquake rehabilitation (insurance proceeds). However, planned total capital expenditure is greater than assumed equity funding over the projection period.

¹ Note that these values are based on estimated asset revaluation figures. Actual revaluation values have subsequently been received which are greater than the modelling assumptions which will increase depreciation by around \$10-11m per annum from 2018 onward, and have an adverse effect on the net deficit.

- The cumulative capital charge over the projection period is a substantial proportion of the cumulative cash operating surplus, leaving little operating cash flow to fund the difference (excess) between capital expenditure and equity funding.

The implications of this can be seen in Figure 2. Major capital expenditure projects have little impact on cash flow in the short term. However, in 2020 the Programme of Works equity funding (from insurance proceeds) is exhausted and any further PoW capital expenditure will need to be funded from operating cash flow.

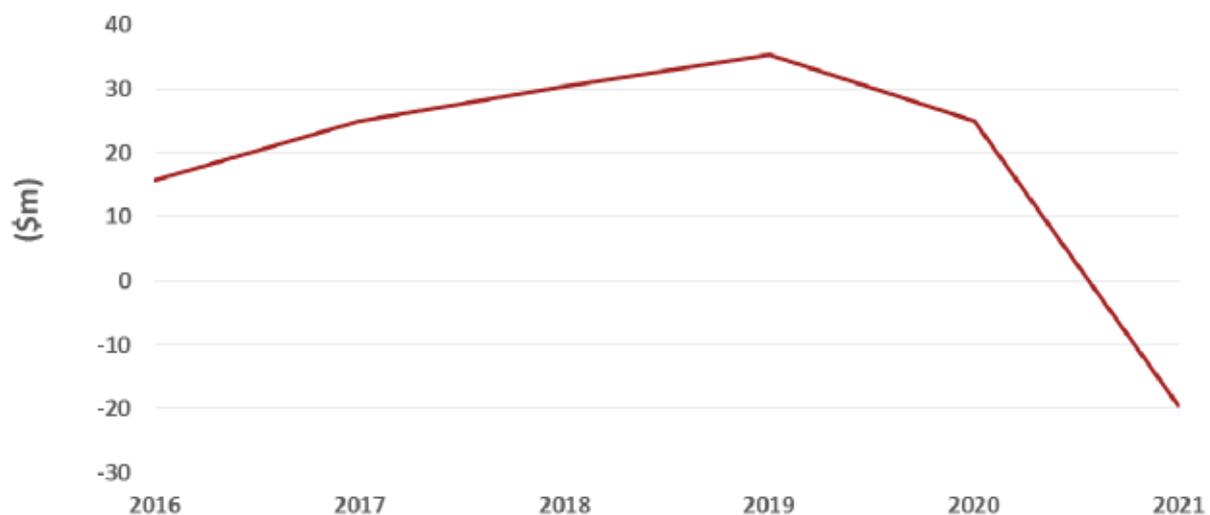
In short, the projections indicate that CDHB will not generate sufficient operating cash flow to support its current capital expenditure plan.

There are four categories of projects within the capital programme:

- Business-as-usual (BAU).
- Programme of Works (PoW).
- Strategic approved (Burwood and ASB).
- Strategic unapproved.

Strategic unapproved projects total approximately \$255 million. Given the “unapproved” nature of this capital expenditure it has not been included in the projections. If it were to be included in the projections it would result in an increase in capital charge in the longer term in excess of \$15.3 million (and an increase in depreciation by approximately \$8.8 million by 2025). This would directly increase the cash flow deficit if it is not funded.

Figure 2 Closing Cash Balance



Deficit management

Indicative efficiency savings for FY17

CDHB has identified indicative efficiency savings for FY17 of \$13.4m across personnel (\$9 million), clinical related costs (\$2.2 million) and non-treatment related operating costs (\$2.2 million). These savings are included in the projections for FY17. We have assumed that the savings are permanent savings and so are included in the projections for 2018 and beyond.

The approach and underlying assumptions for the indicative efficiency savings identified by CDHB helped to inform the scenarios for deficit management presented in Section 5 of this report. However, the assumptions that drive these efficiencies were not used in every instance, in particular, for personnel expenditure. This was

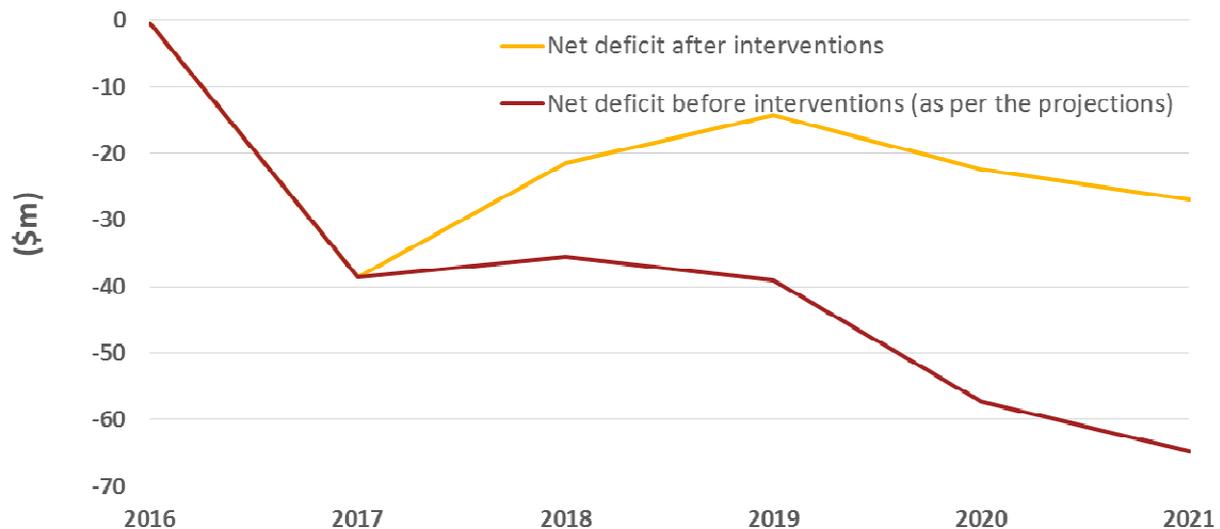
due to a difference in modelling approach between the analysis performed by CDHB and the detailed workforce modelling developed during the DBC and adapted for the purpose of this review.

Financial performance and cash flow

As outlined in the stage one report, the deficits in the short term are marginal and ordinarily, and in the first instance, can be managed through regular and expected financial management of key cost lines.

Scenarios for reducing the net deficit, over and above efficiencies already included in the projections, have been modelled. These interventions could moderate the net deficit in the short to medium term but will not be sufficient to deliver a breakeven result at any time during the projection period.

Figure 3 Net Surplus/(Deficit)



Changes could also be made to capital expenditure to reduce the impact of depreciation and capital charge. However, as the Burwood and ASB capital related costs are unavoidable, substantial changes in the remaining components of the capital expenditure plan would be needed to deliver meaningful savings. Scenarios for changes to projected capital expenditure do not result in a net (accounting) surplus but will help to maintain a positive cash position through to 2020. After 2020, closing cash moves into deficit, although the modelled interventions considerably moderate the level of the cash deficit.

Operating expenditure

Management of operating costs will moderate the impact of the capital expenditure plan. Scenarios for reductions in operating costs across four cost categories have been considered:

- Personnel – constraining total personnel cost increases (\$9.0 million in FY17).
- ARC – managing the impact of the ageing population (\$0.3 million in FY17).
- Clinical supplies – enhanced procurement/inventory management (\$2.1 million in FY17).
- Other expenditure – targeted savings initiatives (\$2.0 million in FY17).

Provision of community services, other than ARC, is a reasonably significant cost for CDHB. Increases in this cost category are largely driven by population changes and price escalation. CDHB’s operating model uses community service provision to manage the impact of demand and more expensive hospital based services. Accordingly, there is unlikely to be major savings opportunities within this cost category.

Table 1 Deficit management – operating expenditure

Savings type (\$million)	FY17²	FY18	FY19	FY20	FY21
Personnel – constraining total personnel cost increases	9.0	13.4	18.2	23.0	35.0
ARC - attenuation	0.3	0.6	0.9	1.3	1.7
Clinical supplies – inventory/procurement management	2.1	3.9	5.5	6.8	7.0
Other expenditure:					
Hotel services, laundry, cleaning	0.4	0.7	1.0	1.2	1.3
ITS&T	0.4	0.8	1.2	1.5	1.8
Facilities, Repairs and Maintenance and rental	1.2	2.3	3.4	4.2	4.9
Total estimated savings	13.4	21.8	30.2	38.0	51.7

Personnel

Personnel costs are approximately 43% of CDHB’s total operating expenditure. Growth in personnel costs is largely driven by wage inflation and, to a lesser degree, the costs of additional staff to meet demand and changes in staff mix.

Scenario

Control personnel expenditure by constraining/slowing the growth in costs by 0.5%-1.0% p.a. across all staffing categories, including management and support staff.

Aged residential care

Savings in ARC could be achieved by:

- Restricting the price growth for ARC.
- Increasing the client contribution rate.
- Managing the effects of increased demand.

Scenario

Reduce the number of bed days required by an additional 10%, saving against population-driven growth expectations through further community service provision.

Clinical supplies

A reduction in clinical supplies expenditure can be achieved through improved inventory management and procurement price savings.

Scenario

Overall cost reduction of 1.5% is achievable in 2017, with additional potential savings that reduce by 0.25% for each subsequent year.

² FY17 figures represent cost savings identified by CDHB

Other expenditure

CDHB has identified a number of specific savings targets for other expenditure in 2017.

- Hotel services, laundry and cleaning – 1.5%
- ITS&T – 2.5%
- Facilities – 1.5%
- Other facilities and rental – 2.5%
- BAU Repairs and maintenance– 1.5%

Capital related expenditure

Changing capital expenditure

The impact of capital expenditure can be moderated, subject to meeting service needs, through:

- Rescoping – reducing the size/scale of projects (reducing total costs).
- Delaying – delivering projects at a later date (incurring costs, but later than forecast).
- Dropping – no longer undertaking some projects (removing the costs).

These options will presents different potential risks that would need to be considered.

In the short term, the impact of rescoping is similar to delay, as both limit the total capital spend in a given year. However, in the long term, rescoping will result in a permanent cost saving; delaying changes the timing of costs but does not provide a permanent cost reduction.

Rescoping/delay scenarios have been modelled for both Business as Usual (BAU) and the PoW capital expenditure. A 10% reduction in BAU and certain PoW projects has been assumed from FY18 onward.

Another option to mitigate the impact of the capital programme involves reducing depreciation rates from 2.6%³ to 2.0% for new buildings (primarily Burwood and ASB). A 2.0% depreciation rate is consistent with depreciation rates commonly used for buildings by a wide range of entities. Changing depreciation will impact the net deficit but not have a significant impact on cash flows.

Table 2 Deficit management – capital expenditure

<i>Savings type (\$million)</i>	<i>FY17</i>	<i>FY18</i>	<i>FY19</i>	<i>FY20</i>	<i>FY21</i>
Depreciation – rescoping/delaying	-	0.1	0.5	0.9	1.2
Depreciation – Burwood & ASB (2.0% depreciation)	-	1.3	2.5	4.2	4.2
Capital charge	-	0.1	0.4	0.7	0.7
Total estimated savings	-	1.5	3.4	5.8	6.1

Other capital considerations

Reducing capital charge requires a reduction in the level (dollar value) of CDHB's net assets. This can be achieved by one or a combination of the following:

- Reducing capital expenditure.
- Removing surplus assets from the balance sheet.
- Ensuring assets resulting from capital expenditure are not included on the balance sheet.

³ This rate represents the weighted average depreciation rate across building-related assets.

Removing assets from the balance sheet will result in a net benefit if the assets are surplus to requirements. However, to make a sizable impact on capital charge and depreciation, assets with a significant book value would need to be removed. CDHB does not have significant surplus assets so it would need to secure the ongoing use of any assets “removed” from its balance sheet. This could be achieved through an alternative financing model, for example, some form of sale and lease back.

A sale and lease back transaction would replace capital charge and depreciation with a lease payment. To achieve a net cash financial and accounting benefit from such a transaction would require the lessor to finance the asset at a lower rate than the capital charge rate.

New Zealand is in a very low interest rate environment at present so it is an opportune time to consider this form of “balance sheet” management. An important factor that will influence pricing for this form of transaction is the creditworthiness of CDHB and the security of cash flows to service the lease obligations.

Breakeven by 2021 or 2025

The projections have been tested to quantify reductions needed in operating and capital related costs to achieve breakeven by 2021 and 2025.

Assuming capital expenditure is incurred as planned, achieving breakeven:

- By 2021, would require a reduction in operating costs on the order of an average cumulative saving of around 0.8% of operational expenditure every year (i.e. \$13 million saving in the first year, \$26 million in the second year and so on).
- By 2025, would require a reduction in operating costs in the order of an average additional saving of around 0.4% of operational expenditure every year (i.e. \$6 million saving in the first year, \$12 million in the second year and so on). This is a lower than the 2021 breakeven requirement because the net deficit plateaus after 2021.

These savings rates of 0.8% p.a. and 0.4% p.a. assumes that CDHB meets its identified savings target of \$13.4m for 2017 which will flow through to subsequent years.

To reduce the net deficit and achieve breakeven through managing capital expenditure and the balance sheet alone is not feasible, as the substantial ASB and Burwood expenditure is already committed and there are significant elements of the PoW that are also unavoidable.

If \$70 million to \$80 million is required to eliminate the net deficit, net assets would have to be reduced by \$600 to \$700 million in order to reduce depreciation and capital charge, which is clearly not possible.

However, while reducing capital expenditure and balance sheet management will not by themselves be sufficient to achieve breakeven, they can assist in reducing the net deficit. As noted earlier, for every \$10 million reduction in equity injections required for capital expenditure, CDHB will reduce capital charge by \$600,000 (from FY18 onward). If this is achieved through a reduction in fixed assets, it will result in a reduction in depreciation of between \$260,000 and \$1 million (depending on the asset type).

FY17 compared to FY16

A net deficit of \$0.5 million was forecast for FY16 and a net deficit of \$38.5 million is projected for FY17. The more material differences between the years in revenue and cost items are presented Table 3. Key differences include:

- One-off revenue of \$16.4m that was received from MoH in 2016 but is not included in 2017.
- Increases in personnel costs of approximately \$20 million due to increases in both price (cost per FTE) and volume (the number of FTEs).
- Additional core operating costs, which are largely offset by additional funding.
- Additional capital charge, largely arising from Burwood. This asset was previously transferred to MoH reducing the capital charge expense for CDHB. It will be transferred back to CDHB during 2017 on completion of its capital works.

Table 3 FY17 compared to FY16

<i>Line item (\$m)</i>	
2015/16 Net Deficit	(0.5)
Increases in revenue/decreases in costs:	
PBF (excl. One-Off Revenue)	20.1
Budget FY16 Funding	17.2
Non-Devolved Contracts	5.0
Other Government Funding	3.4
IDF Outflows	2.6
Other	4.1
Total increases in revenue/decreases in costs	52.4
Decreases in revenue/increases in costs	
Personnel Costs	(20.2)
One-Off Revenue	(16.4)
Community-Based Services (excl. ARC)	(10.9)
Capital Charge	(7.5)
Additional Costs Corresponding to Budget FY16 Funding	(9.8)
Clinical Supplies	(2.7)
Sub-contracts Funding	(4.8)
ARC	(3.7)
Transition Costs	(3.0)
Other	(11.4)
Total decreases in revenue/increases in costs	(90.4)
2016/17 Net Deficit	(38.5)

Next steps

In recent months CDHB management have considered initiatives to deliver future reductions in costs. These have been developed taking into account the:

- Rationale for change.
- National alignment to service specification.
- Impact on service users/providers/other DHBs.
- Risks.
- Financial impacts (including cost of service change).

The initiatives focus on service type rather than cost type. This means that the potential savings may not necessarily align with the scenarios we have identified.

There is a potential lead time of 3-6 months to embed changes and start realising benefits – this will impact on the level of potential savings for 2017.

The next steps will involve:

- Confirming the nature, scope and scale of the initiatives and the associated timetable.
- Board sign-off of the proposed initiatives.
- Undertake any necessary consultation.
- Developing a detailed cost saving plan that can be used to monitor progress in achieving the targeted savings.
- Designing, agreeing and implementing the monitoring process.

Table of contents

1. Introduction	13
1.1. Background	13
1.2. Scope	13
1.3. Structure	13
1.4. Approach	14
1.5. Assumptions and limitations	14
1.6. Financial Years and Roundings	15
1.7. Engagement letter and important notice	15
2. Summary projections	16
2.1. Introduction	16
2.2. The Updated Base Case	16
2.3. Surplus/deficit projections	18
2.3.1. FY17 compared to FY16	19
2.3.2. Cash flow projections	20
3. Revenue and cost projections	22
3.1. Introduction	22
3.2. Revenue Forecasts	22
3.2.1. PBF & sub-contracts	22
3.2.2. IDF Revenue	23
3.3. Expenditure Forecasts	24
3.3.1. Personnel	24
3.3.2. Aged Residential Care (ARC)	30
3.3.3. Clinical Supplies	31
3.3.4. Community-based services	32
4. Capital related expenditure	35
4.1. Introduction	35
4.2. Capital plan	35
4.2.1. Business as Usual (BAU)	35
4.2.2. Programme of Works (PoW)	35
4.2.3. Strategic approved	35
4.2.4. Strategic unapproved	35
4.3. Modelling approach	36

4.4. Depreciation profile	36
4.5. Capital charge	37
4.6. Strategic unapproved expenditure	37
<hr/>	
5. Deficit management	39
<hr/>	
5.1. Introduction	39
5.2. Breakeven by 2021 or 2025	39
5.3. The intervention case	39
5.4. Funding options	40
5.5. Personnel	41
5.6. Aged residential care	41
5.7. Clinical supplies	41
5.8. Community services	42
5.9. Other expenditure	42
5.10. Capital related costs	43
5.10.1. Reducing capital spend	43
5.10.2. Depreciation rates	44
<hr/>	
Appendix A. - Important notice	45
Appendix B. - The wider CDHB context	46
<hr/>	
B.1. Introduction	46
B.2. Key financial performance considerations	46
B.2.1. The impact of population changes	47
<hr/>	
B.3. Revenue	48
B.3.1. PBF & sub-contracts	48
B.3.2. Other revenue	49
<hr/>	
B.4. Expenditure	50
B.4.1. Personnel costs	50
B.4.2. Aged residential care	52
B.4.3. Clinical Supplies	53
B.4.4. Community-based services	53
B.4.5. Other expenditure	54
B.4.6. Capital-related costs	55
<hr/>	
Appendix C. - Modelling assumptions & data	57
<hr/>	
C.1. Workforce model assumptions	57
C.2. Detailed breakdown of PoW capital projects	59
C.3. CDHB capital plan	60

Appendix D. - Scenario three (FY16 – FY25)	61
.....
D.1. Income statement	61
D.2. Balance sheet	63
D.3. Cash flow statement	64
.....
Appendix E. - Revenue and cost projections (FY16-FY25)	65
.....
E.1. Surplus/deficit position	65
E.2. Revenue forecasts	68
E.3. Expenditure forecasts	69
E.4. Capital	72
.....
Appendix F. - PBF sensitivity analysis (FY16 – FY25)	73
.....
F.1. PBF sensitivity analysis	73
F.2. Income statement	75
F.3. Balance Sheet	77
F.4. Cash Flow Statement	78

1. Introduction

1.1. Background

In late 2015 a review (the stage one review) was undertaken of certain aspects of Canterbury District Health Board's (CDHB's) financial planning processes and output. The review focused on:

- The assumptions and drivers underpinning CDHB's financial forecasts.
- Financial and planning documentation for consistency with CDHB's other key documentation.
- Information provided to the CDHB Board to inform financial and planning decisions.
- CDHB's (internal) assumptions regarding revenue variance calculations based on population issues.

The stage one review identified the need to update CDHB's financial projections to confirm, among other things, the impact of its significant capital programme on its fiscal performance.

On 24 December 2015 the Minister of Finance and the Minister of Health wrote to CDHB and set out their expectation for a stage two financial review that will deliver a fully costed view of CDHB's planned investment over the next 10+ years. The letter noted the expectation that these investments will be affordable and be aligned with a plan for operational break-even after considering business-as-usual activities, the Programme of Works (PoW) and information and communication technology investments.

This report summarises the results of the stage two financial review. It builds on, and should be read in conjunction with the observations and conclusions in the stage one review. It addresses the recommendations in the stage one report that work should be undertaken to:

- Validate the current deficit forecasts through re-modelling the forecast assumptions and projections underpinning the 2012 Detailed Business Case (DBC).
- Re-validate CDHB's activity and implementation plans to return to a breakeven financial position.

1.2. Scope

We have been engaged by the Ministry of Health (MoH or the Ministry) to carry out the stage two review. The scope of our engagement, set out in our engagement letter with the Ministry, has been to:

- Remodel the financial projections included in the DBC with a focus on revisiting key revenue and operating expenditure categories – this includes agreeing assumptions for longer term revenue and costs including all funder activity, personnel costs and other key drivers of expenditure such as Aged Residential Care.⁴
- Overlay the impact of the capital programme on CDHB's financial performance and position through capital charge and depreciation.
- Facilitate a reprioritisation of the capital programme with CDHB to test the viability of variations in project sequencing and to identify which projects are the most critical to be completed and when.

1.3. Structure

This report is in four sections:

- **Summary of projections:** Projections have been produced for the ten years ending 30 June 2025⁵. This includes the 2016 financial year. Although projections have been produced for ten years, there has been a particular focus on the period through to June 2021, reflecting that the longer the

⁴ This engagement does not undertake an in-depth review of revenue categories, and relies on growth assumptions provided from the MoH and CDHB.

⁵ We commenced our work for the stage two review prior to 30 June 2016 and so the 30 June 2016 financial year has been treated as the first year of the forecasts.

projections period the more uncertain the assumptions. Consequently, the projections presented in this summary section are for the six years ending 30 June 2021. The full ten year projections are included in the appendices to this report.

- Revenue and cost projections: This section provides analyses of the key revenues and costs in the projections. It includes a discussion on the approach to modelling and on the key assumptions.
- Capital related expenditure: The implications of the capital programme on CDHB's financial performance.
- Deficit management scenarios: Potential opportunities and scenarios to reduce the level of the projected net deficit.

A number of appendices are included with the report. Appendix B includes analysis of CDHB's historical revenue and costs relative to comparable DHBs and the sector more widely. This analysis has been included in an appendix to aid with the readability of the report. However, it provides important context for the review and builds on the analysis provided in the stage one report.

1.4. Approach

The DBC model has been used as the starting point for developing the updated projections. Revised inputs and assumptions have been developed using information and analysis provided by both the Ministry and CDHB. We have worked collaboratively with both parties to:

- Adapt the forecasting approach, based on the 2012 DBC model and methodology.
- Determine key drivers, modelling assumptions, and obtaining supporting data.
- Test the forecast scenarios.

1.5. Assumptions and limitations

Developing assumptions for projections, particularly long term projections is an art not a science. Inevitably, there are limits to the level of sophistication that can be incorporated into the approach to the projections – pragmatism requires compromise. Overarching assumptions underpinning the approach to the projections and important limitations include:

- General assumptions and limitations:
 - All financial inputs and data is in nominal New Zealand Dollars (inflation inclusive).
 - No income tax is included in the projections.
 - The projections are prepared on a GST exclusive basis.
- Population projection assumptions use Statistics NZ projections.
- Modelling of CDHB's workforce numbers and costs was an important part of developing the projections. The following assumptions and limitations apply to the workforce modelling:
 - The workforce was modelled using activity demand out to 2020. From FY21 onward, it has been assumed that key costs (personnel costs and clinical supplies) will grow in line with funding expectations.
 - Capacity constraints used in the workforce modelling will not change when the ASB is commissioned.
 - The theatre hours activity driver applied to the surgical service level has been modelled without a capacity constraint. The forecast theatre events formed an incomplete dataset meaning that the aggregate capacity could not be compared against the forecast theatre events.
 - A current "as-at" picture was used and a population based growth profile was applied to model mental health related work force costs due to a lack of mental health activity measures.

- The capital charge rate for FY17 will be 7.0%. The rate for FY18 and subsequent years will be 6.0%⁶.
- Capital charge has been separately calculated for different components of the asset base. Capital charge is calculated on the book value of the PoW, revaluations and the strategic approved assets, and is then calculated on the residual net assets of CDHB.
- The modelled capital charge is calculated annually using opening book value except for strategic approved assets and the PoW. Additions to these two asset categories during the projections period are particularly significant and so the capital charge is calculated semi-annually. Calculating the capital charge annually for the other asset categories is pragmatic but is a modelling limitation and creates a minor lag between the date of asset capitalisation and the date of the first capital charge for the asset.
- One-off revenue received from MoH, other than the confirmed amount in FY16, has not been included in the projections.
- BAU capital expenditure is normally expected to be depreciation-funded (i.e. from cash surpluses from operations). Equity will be provided to fund any shortfall between cash from operations and business-as-usual capital expenditure.
- Strategic unapproved capital expenditure has been excluded from the capital expenditure programme for modelling purposes.
- Any existing debt has been reclassified as equity. This applies to Crown debt existing as at the opening of 2016 and to strategically approved projects (Burwood and ASB). Capital charge is differentially funded as at the start of the model in line with a recent Ministry announcement (April 2016). The increased revenue that compensates for the capital charge on Crown debt that is shifted to equity uses the ten-year average bond rates provided by CDHB. The increased revenue that compensates for the debt that is shifted to equity for the strategically approved projects (Burwood/ASB) has been provided by the Ministry.
- Our fieldwork for this review was completed in May 2016. There will have been a range of factors since that date that may have an impact on CDHB's future results that will not be reflected in the projections in this report.

1.6. Financial Years and Roundings

Generally, references to “year” or “FY” should be taken as referring to financial years ended or ending on 30 June. For example, references to “2017” or “FY17” refer to the year ending 30 June 2017.

Certain numbers included in tables throughout this report have been rounded and therefore the tables might not add exactly.

1.7. Engagement letter and important notice

This report has been produced in accordance with our engagement letter with the Ministry dated 14 March 2016 and should be read in conjunction with the important notice in Appendix A.

⁶ Assumptions provided by Treasury.

2. Summary projections

2.1. Introduction

The financial projections are summarised in this section. This section includes:

- Summary projections for the 30 June 2016 – 30 June 2021 financial years. Historical financial results are included for comparative purposes.
- The projected surplus/deficit and cash position for the 30 June 2016 to 30 June 2021 financial years (inclusive).

The financial projections are referred to as the Updated Base Case (UBC).

2.2. The Updated Base Case

The UBC is based on the original DBC forecasts. Changes have been made to incorporate new and/or updated information.

The modelling is assumption and data driven. The assumptions and data have been tested with both CDHB and the Ministry to ensure that they provide a fair reflection of key revenue/cost drivers.

The UBC includes efficiencies in key activity drivers for personnel costs, clinical supplies and outsourced personnel based on existing operational intentions⁷. It does not include efficiencies that may be achieved by further management intervention (outlined in section 5 of this report). These efficiencies are separate from the indicative savings of \$13.4m identified by CDHB.

Personnel is CDHB's largest single cost item. Projecting the rate of growth of FTE numbers and costs per FTE is challenging. Consequently, three personnel cost scenarios have been modelled. This results in a range for the net surplus deficit. The summary projections presented in Table 4 and the scenario analysis in Section 5 assume personnel costs grow in line with historical growth plus 1.0% (referred to in our analysis as Scenario 3).

The projections have been prepared for ten years. Table 4 includes a summary of historical and projected financial performance and cash flow for 2013 to 2021 financial years. The detailed financial statements are included in Appendix D.

⁷ The analysis of personnel costs, clinical supplies and outsourced personnel in the next section demonstrates the impact of these efficiencies (showing the costs with and without the efficiencies).

Table 4 Summary historical and forecast summary of financial performance and cash flows⁸

Consolidated Financial Summary	Jun 2013	Jun 2014	Jun 2015	Jun 2016	Jun 2017	Jun 2018	Jun 2019	Jun 2020	Jun 2021
	\$m								
Statement of Financial Performance									
PBFF and sub-contracts	1,272	1,306	1,311	1,350	1,365	1,406	1,445	1,483	1,525
Other Revenue	520	230	247	254	281	280	277	276	283
Total Revenue	1,792	1,536	1,559	1,604	1,646	1,686	1,722	1,759	1,808
Personnel Costs	600	622	644	670	690	718	747	777	799
ARC	129	128	127	128	132	135	137	140	144
Clinical Supplies	123	130	140	134	136	142	147	153	158
Community Based Services	452	456	456	479	497	506	503	506	516
Other Expenditure	133	118	130	144	152	149	148	149	151
Total Expenditure	1,438	1,453	1,497	1,554	1,606	1,650	1,682	1,726	1,768
Net Surplus/(Deficit) before Capital Charge and Depreciation	354	83	62	50	40	36	40	46	39
Net Capital Charge and Net Interest	(19)	(24)	(19)	(9)	(20)	(20)	(23)	(46)	(47)
Deficit Funding				16	-	-	-	-	-
Net Surplus/(Deficit) before Depreciation	335	58	43	57	20	16	18	(0)	(8)
Depreciation	(48)	(58)	(61)	(58)	(58)	(52)	(57)	(57)	(57)
Net Surplus/(Deficit)	287	0	(18)	(0)	(39)	(36)	(39)	(57)	(65)
Statement of Cash Flows									
Opening Cash Balance	52	87	91	1	16	25	30	35	25
Net Operating Cash Flow (CFO)	25	330	47	76	45	43	47	41	45
Net Investing Cash Flow (CFI)	19	(6)	(9)	(72)	(263)	(60)	(602)	(57)	(66)
Net Financing Cash Flow (CFF)	(9)	(321)	(128)	11	227	22	560	6	(24)
Closing Cash Balance	87	91	1	16	25	30	35	25	(20)

⁸ Note that one-off revenue received from MoH in the historical years is presented below net surplus/(deficit) before capital charge and depreciation.

2.3. Surplus/deficit projections

Figure 4 to Figure 6 provide three views of the forecast surplus/deficit:

- Surplus/deficit before depreciation, net interest and capital charge.
- Surplus/deficit after net interest and capital charge but before depreciation.
- Surplus/deficit after net interest, capital charge and depreciation.

The figures show the net surplus/(deficit) as a range, reflecting modelled personnel cost scenarios. The figures highlight the financial implications of core operational activities, financing costs, and the total overall performance respectively. They also show the impact of the capital programme through depreciation and capital charge.

CDHB’s net deficit is projected to increase from 2016 to 2017 (from a deficit of \$0.5 million to a deficit of \$38.5 million respectively). This is largely due to 2016 including one-off revenue of \$16.4 million, additional capital charge resulting from Burwood and growth in personnel costs in 2017, due to increases in personnel numbers and wage/salary rates.

The net deficit after capital related costs is projected to increase over time. CDHB’s significant capital expenditure programme will result in very substantial increases in capital related costs (particularly capital charge) that will outweigh, by a considerable margin, the forecast growth in operating surplus before capital related costs. The reduction in capital charge to 6.0% from FY18 acts to improve CDHB’s financial performance over the medium to long term.

Total depreciation is relatively constant through to June 2021. This is somewhat coincidental as there is considerable change in the composition of the depreciation profile over the period. Depreciation on existing assets declines as assets are fully depreciated (including accelerated depreciation on some assets) but this is replaced by depreciation on new assets resulting from the capital expenditure programme.

Figure 4 Surplus/deficit before depreciation, net interest and capital charge

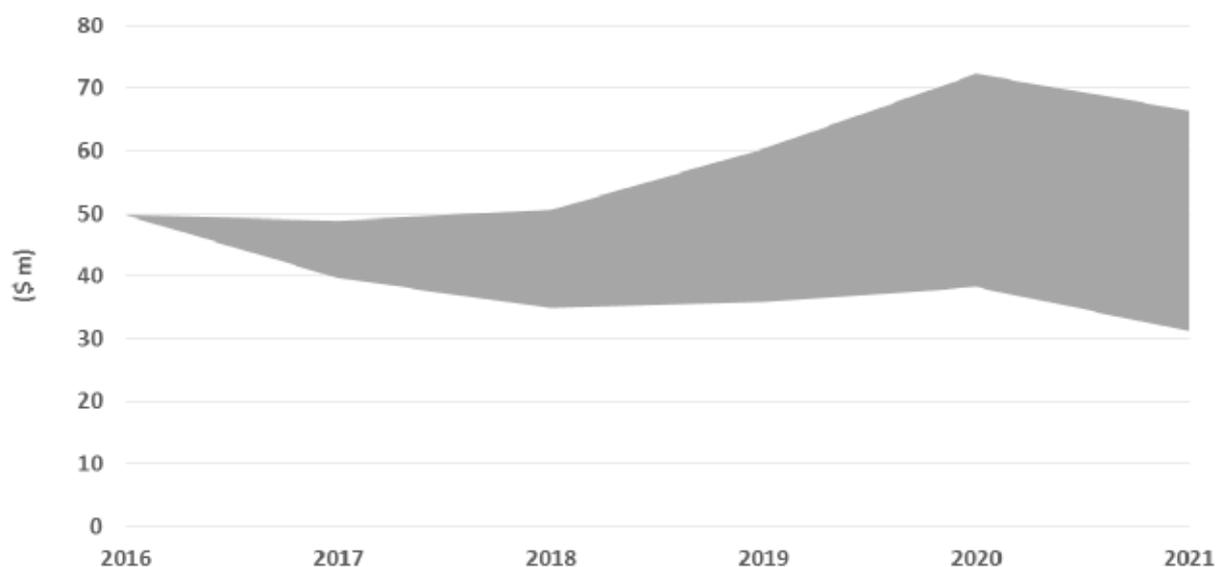


Figure 5 Surplus/deficit before depreciation

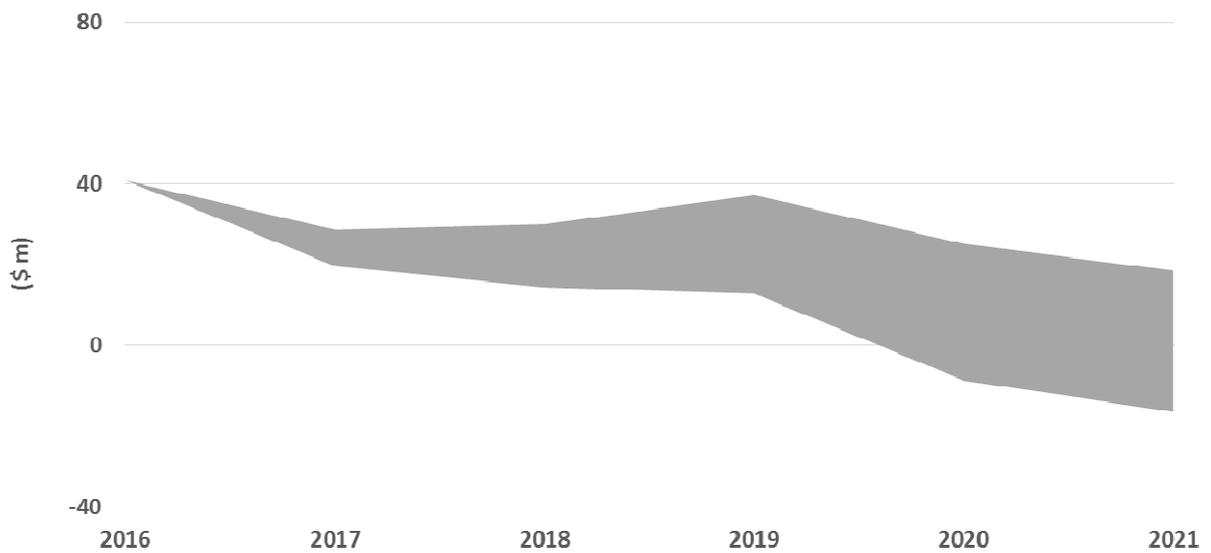
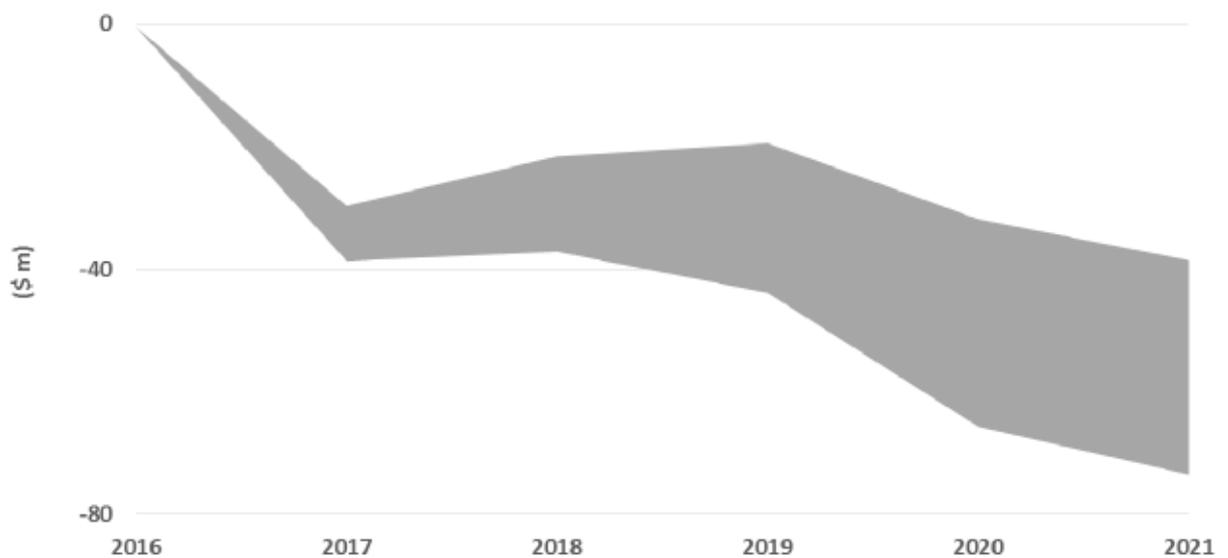


Figure 6 Surplus/deficit



2.3.1. FY17 compared to FY16

FY16 had a net deficit of \$0.5 million and a net deficit of \$38.5 million is projected for FY17. The more material differences between the years in revenue and cost items are presented Table 5. Key differences include:

- One-off revenue of \$16.4m that was received from MoH in 2016 but is not included in 2017.
- Increases in personnel costs of approximately \$20 million due to increases in both price (cost per FTE) and volume (the number of FTEs).
- Additional core operating costs, which are largely offset by additional funding.

- Additional capital charge, largely arising from Burwood. This asset was previously transferred to MoH reducing the capital charge expense for CDHB. It will be transferred back to CDHB during 2017 on completion of its capital works.

Table 5 FY17 compared to FY16

<i>Line item (\$m)</i>		
2015/16 Net Surplus/(Deficit)		(0.5)
Increases in revenue/decreases in costs:		
PBF (excl. One-Off Revenue)	20.1	
Budget FY16 Funding	17.2	
Non-Devolved Contracts	5.0	
Other Government Funding	3.4	
IDF Outflows	2.6	
Other	4.1	
Total increases in revenue/decreases in costs		52.4
Decreases in revenue/increases in costs		
Personnel Costs	(20.2)	
One-Off Revenue	(16.4)	
Community-Based Services (excl. ARC)	(10.9)	
Capital Charge	(7.5)	
Additional Costs Corresponding to Budget FY16 Funding	(9.8)	
Clinical Supplies	(2.7)	
Sub-contracts Funding	(4.8)	
ARC	(3.7)	
Transition Costs	(3.0)	
Other	(11.4)	
Total decreases in revenue/increases in costs		(90.4)
2016/17 Net Surplus/(Deficit)		(38.5)

2.3.2. Cash flow projections

Figure 7 presents the forecast movement in annual cash flow. Figure 8 presents the closing cash balance. Annual cash flow is projected to deteriorate, reflecting the impact of the capital expenditure programme and will be negative from 2019.

For modelling purposes, it is assumed that CDHB will not receive one-off revenues from MoH and that it will have to finance any unfunded proportion of the PoW from operating cash flows (Appendix D.3 contains the full cash flow statement that corresponds to Scenario 3).

Figure 7 Net movement in cash flow

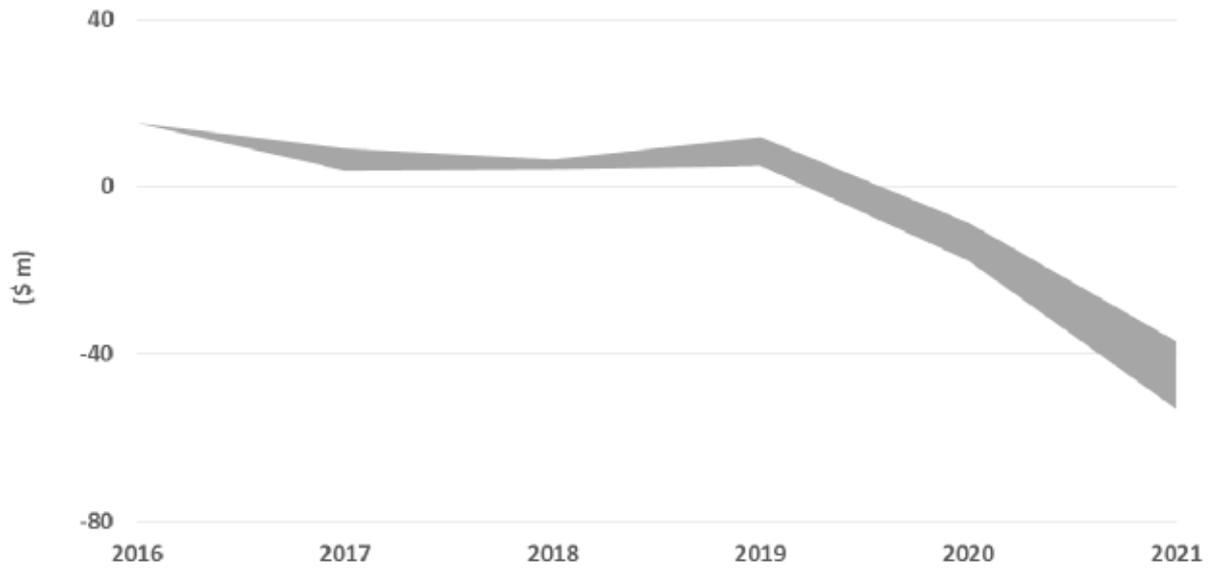
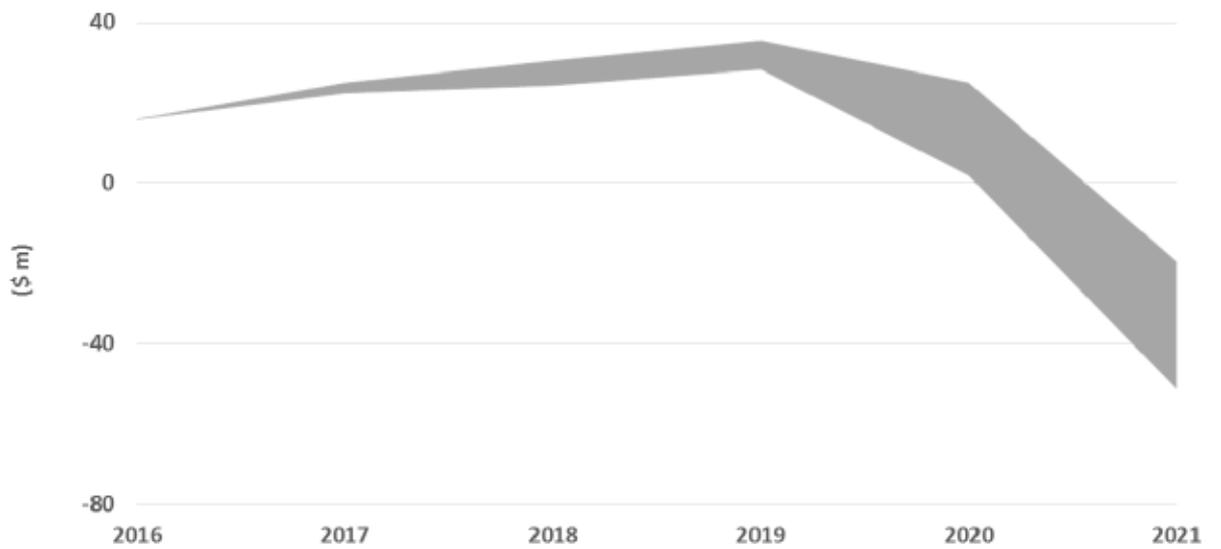


Figure 8 Closing cash balance



3. Revenue and cost projections

3.1. Introduction

This section describes the approach to modelling the key line items in the forecasts and the principal assumptions.

3.2. Revenue Forecasts

3.2.1. PBF & sub-contracts

Approach

Population based funding (PBF) and sub-contracts revenue provides the bulk of CDHB's total revenue – 84% of total revenue in FY16 (excluding one-off revenue from MoH). Sub-contracts revenue consists of funding for electives, under 13's health care and other Government initiatives.

These two revenue categories have been projected using year-on-year growth rates – the same growth rate has been used for both revenue categories. Two scenarios have been modelled: conservative growth and aggressive growth, to reflect the uncertainty in the longer term growth rates. This results in a range for CDHB's PBF and sub-contracts revenue.

Key assumptions and drivers

The key assumption is the year-on-year growth rates applied the PBF and sub-contracts revenue. The rates were provided by the Ministry.

The conservative and aggressive scenarios use the same growth rates for FY17 – FY20. FY16 and FY17 funding levels were known at the date of this report and were incorporated directly into the UBC (see Table 6 below). The growth rates diverge from 2021 onwards, resulting in a \$63 million difference in revenue by FY25.

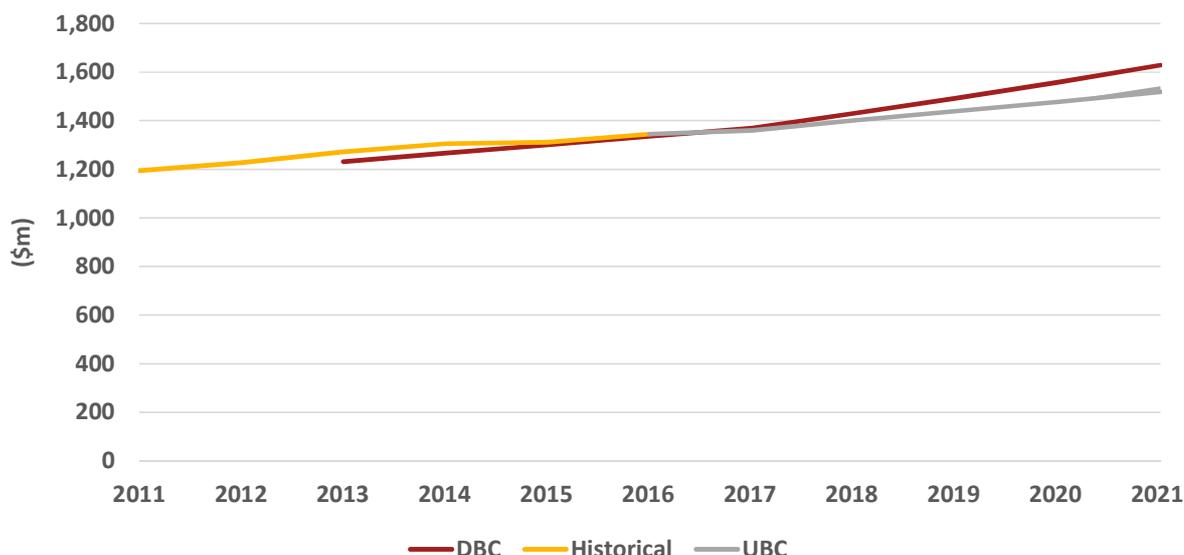
The projections presented in Section 2 and in the remainder of the body of this report use the conservative (lower) growth rates. Refer to Appendix F. - for standalone analysis that presents the impact on Scenario 3 of an increase to the conservative PBF funding profile over the period FY18 – FY20 for Treasury's view.

Table 6 PBF and subcontracts revenue growth rates (FY17 – FY21)

<i>Growth scenario</i>	<i>FY17</i>	<i>FY18</i>	<i>FY19</i>	<i>FY20</i>	<i>FY21</i>
Conservative (%)	N/A	3.04	2.75	2.64	2.81
Aggressive (%)	N/A	3.04	2.75	2.64	3.56

The DBC modelled these revenue streams using the same approach, but with different growth assumptions.

Figure 9 PBF & sub-contracts forecast



3.2.2. IDF Revenue

Approach

IDF revenue has been modelled using year-on-year growth rates, similar to PBF and subcontracts revenue.

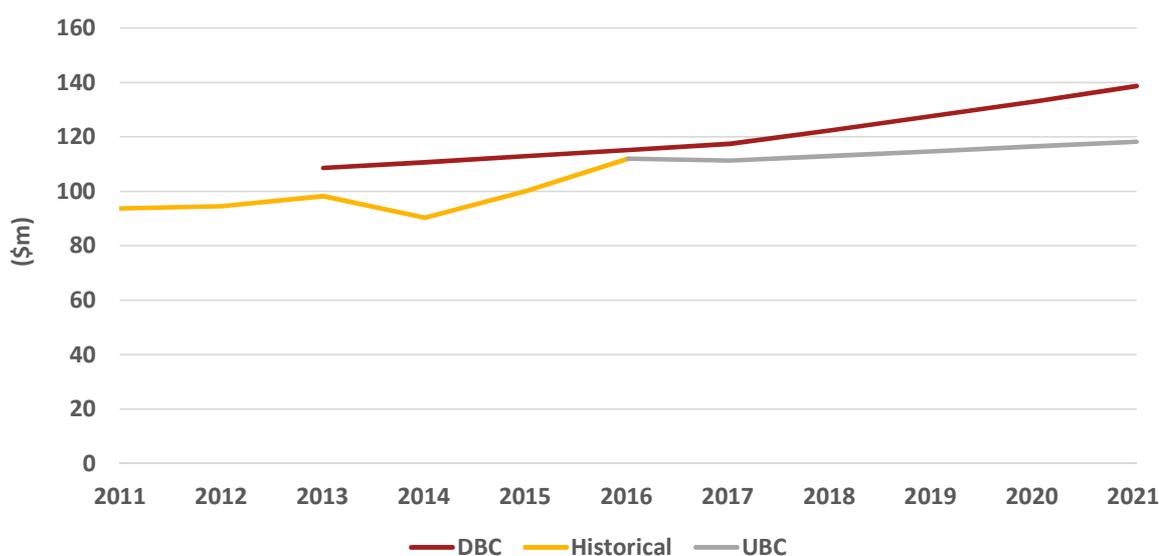
Key assumptions and drivers

Projected increases in IDF revenue reflect assumed changes in prices only; the projections assume no change in IDF volume. This implies that the current composition of service delivery does not change and that CDHB manages volumes within their existing levels.

IDF prices are assumed to increase at 1.51% per annum. This approximates the average year-on-year growth for the caseweight discharges prices set by the Ministry over the period FY11 – FY17.

The same approach was used to project IDF revenue in the DBC but the growth assumption was different.

Figure 10 IDF revenue



The historical figures and the UBC track well below the DBC suggesting the assumed composition of delivery in the DBC did not eventuate.

At the national level, IDF revenues and expenditures should balance. However, IDF revenue and costs at an individual DHB level are driven by a complex set of assumptions about demographic profile and the medical specialties that each DHB provides.

3.3. Expenditure Forecasts

3.3.1. Personnel

Approach

A workforce model has been developed to forecast personnel costs in the short to medium term. The model was adapted from the original DBC workforce model. In the out years (2021 onwards) it has been assumed that the growth in personnel costs will be in line with PBF growth. The activity driven workforce modelling is applied for the period FY16 to FY20.

The key outputs from the workforce model are forecast FTE numbers and corresponding average salaries for each service level within each employee type, for example the AT&R service level under nursing. The aggregate of the service level forecasts is the total projected personnel costs.

The workforce model used for the UBC classifies FTEs and activity drivers at a higher level than the DBC workforce model but at a greater level of detail than used to produce personnel costs for the District Annual Plan (DAP).

The approach used for the UBC was adopted because the demand modelling and workforce breakdown used for the DBC was not available. It is a compromise in approach but nevertheless is reasonably sophisticated and does factor in important assumptions such as key capacity constraints.

The forecast number of FTE's was modelled by allocating each service level's activities across four drivers: bed days, discharges, caseweights and theatre hours. Growth in the activity drivers for each service level was a primary determinant of the growth in the number of FTE's.

The workforce modelling incorporates capacity constraints at a service level. If demanded beds exceeds the physical capacity for the relevant service levels, e.g. surgical beds, the model assumes no additional growth in FTE numbers. There are no constraints placed on caseweights and discharges. Due to data limitations, the theatre hours activity driver applied to the surgical service level was modelled without a capacity constraint

Average costs per FTE have been modelled using year-on-year growth assumptions for each employee category, e.g. year-on-year salary growth for nursing across all service levels.

Key assumptions and drivers

Key assumptions and drivers for the workforce modelling include:

- The workforce breakdown and financial data, such as average salary, by service level and employee category (FY16).
- Forecast activity measures.
- Effort weightings by activity measure.
- Capacity constraints (physical beds).
- Average salary year-on-year growth rates.

Appendix C.1 contains a breakdown of the employee categories, the underlying service levels and the effort weightings. The FTE weightings are a critical driver of the size of the workforce. These weightings are not dynamic with time, but were tested with CDHB and reflect steady state operations.

The principal differences in assumptions and drivers between the DBC and the UBC are that the DBC:

- Incorporated a more detailed service level split.
- Modelled the effort weightings as a static allocation for each employee, whereas the UBC models the effort weightings as a static allocation for each service level.

- Did not incorporate theatre hours as an activity driver for the surgical service level.
- Considered only an aggregate capacity constraint for demanded in-patient beds versus the physical number of in-patient beds. The UBC modelled these constraints by service level where available, e.g. medical beds demanded versus the physical number of medical beds.
- Included different salary growth rate assumptions.

Scenarios

Personnel costs are approximately 43% of CDHB’s operating expenditure (FY16).

Three personnel cost scenarios have been modelled, reflecting uncertainty about future average salary increases and that there are demand based efficiencies impacting on the forecast number of FTE’s. The scenarios result in a range for personnel costs.

The scenarios are differentiated by the assumed growth in volume and price. The growth in volume reflects movements in demand while the growth in price reflects movements in average salaries.

The activity drivers used to forecast demand and, ultimately, the size of CDHB’s workforce, include efficiencies for factors such as the length of stay that result in reduced bed days, caseweights and discharges across a number of service levels. Personnel costs are impacted the most by these efficiencies. However, both outsourced personnel costs and clinical supplies are also impacted but to a lesser degree.

The volume and price assumptions for the three scenarios are:

Table 7 Personnel costs volume and price assumptions

Scenario	Volume	Price
1	Includes efficiencies in the forecast activity drivers	The current composition of the workforce is maintained with assumed churn factors applied to the applicable FTE categories. The weighted average wage rate for each employee category is based on the base/step changes within centrally negotiated contracts, or an assumed uplift for the other employee categories not covered by these contracts.
2	Includes efficiencies in the forecast activity drivers	Historical average wage/salary increases.
3	Includes efficiencies in the forecast activity drivers	Historical average wage/salary increases plus an additional 1.0% per annum for front-line medical staff. Flat 2.0% per annum in total for back-office management/support staff.

Table 8 summarises the year-on-year growth rates in average salary for each of the employee categories:

- Scenario 1 models a weighted average wage/salary rate for each employee category. This calculation assumes the current composition of the workforce does not change but there will be churn within FTE categories to allow for senior employees leaving and new staff being hired at junior levels.
- Scenario 2 models historical wage/salary growth rates that reflect MECA’s that have been lower historically compared to the recently renegotiated rates.
- Scenario 3 uses historical wage/salary growth rates with the addition of a 1.0% uplift reflecting recent changes to the nursing MECA for FY16, while the same has been assumed for the medical and allied health categories.

The analysis in the remainder of this report uses Scenario 3.

Table 8 Salary growth rate assumption scenarios

<i>Categories</i>	<i>Scenario one (%)</i>	<i>Scenario two (%)</i>	<i>Scenario three (%)</i>
Specialist Medical Officers	2.70	1.83	2.83
Registrars	2.68	1.83	2.83
House Officers	2.45	1.83	2.83
Nursing	3.32	1.34	2.34
Allied Health	2.77	1.58	2.58
Support	2.00	2.05	2.00
Management/Administration	2.00	3.29	2.00

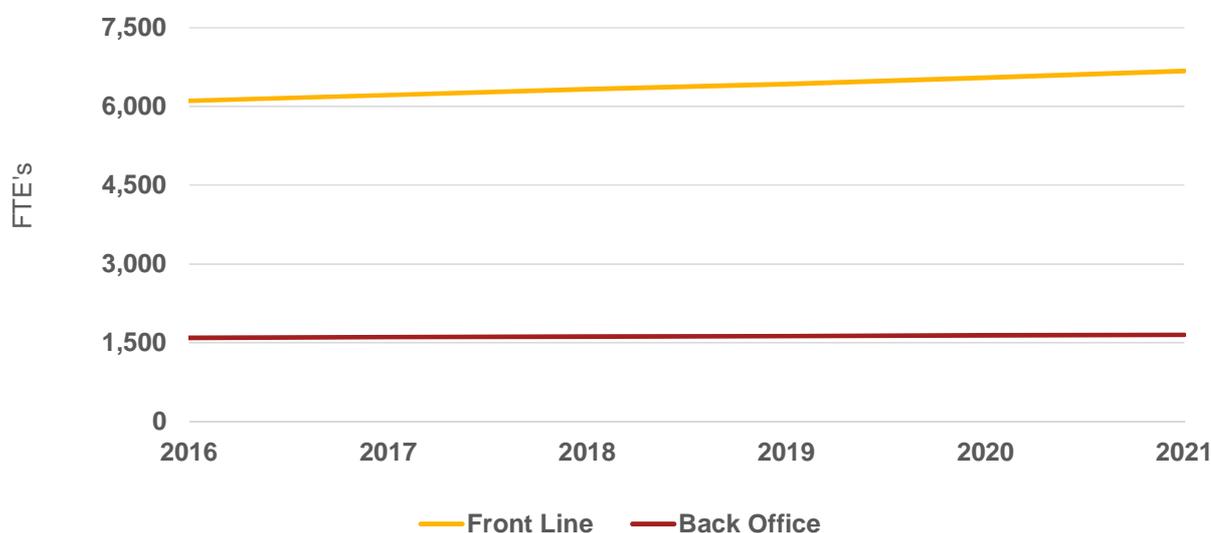
Source: PwC

Workforce analysis

The workforce consists of frontline medical staff and back-office support and management staff. Figure 11 presents projected front-line and back-office FTE numbers.

The projections incorporate demand based efficiencies for the activity drivers that ultimately drive the forecast workforce numbers presented below. The impact of capacity constraints on the demand for beds within each relevant service level has been considered, reflecting the limited number of physical beds available within those services to meet demand.

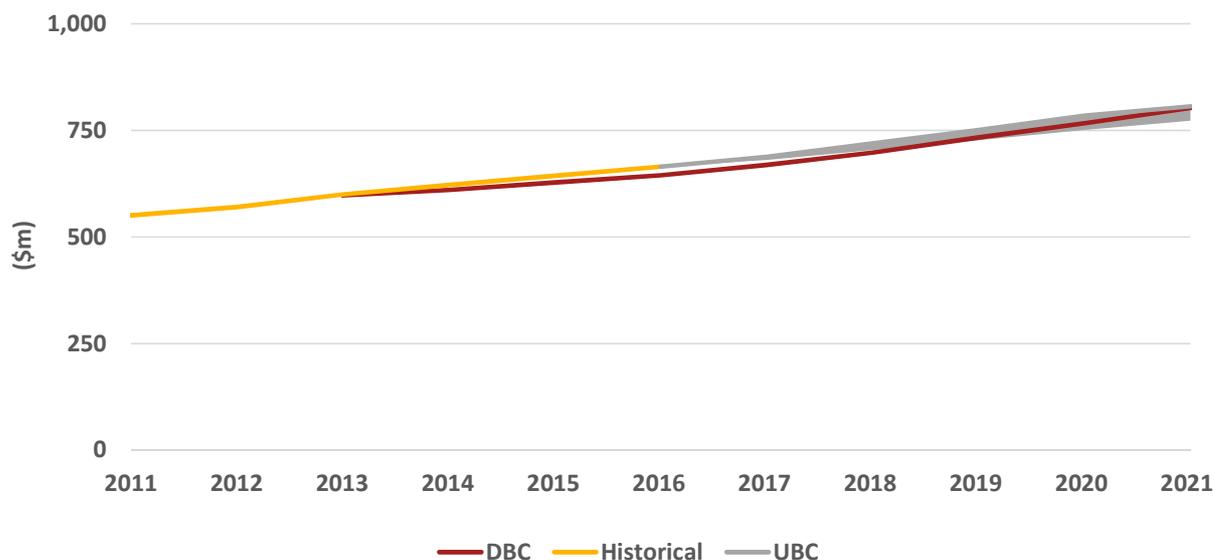
Figure 11 Workforce forecasts for front-line and back-office employees



Forecast expenditure

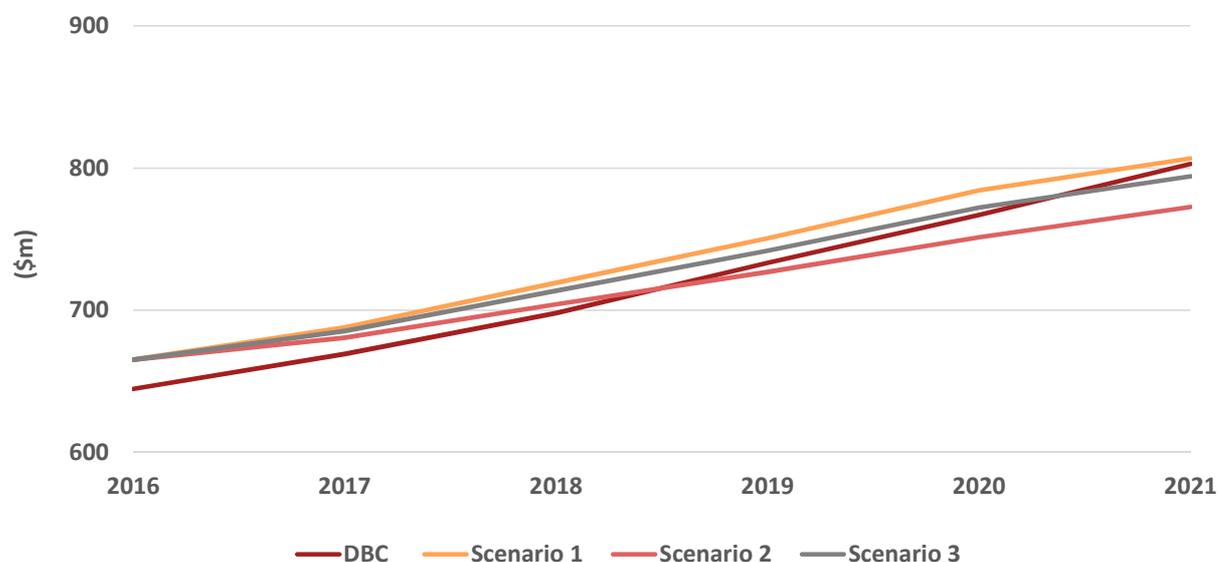
Two illustrations of the forecast personnel expenditure profiles are provided. Figure 12 presents the range of the modelled scenarios relative to the original DBC forecast. Figure 13 presents each specific scenario relative to the original DBC forecast.

Figure 12 Projected personnel expenditure



Scenario 1 is the upper bound of the range while Scenario 3 is the lower bound. Scenario 1 assumes no demand based efficiencies while Scenario 3 assumes historical averages for the growth in salaries. These scenarios maintain consistent volumes and serve to present a range that highlights the impact differences in price.

Figure 13 Personnel expenditure forecast (Scenarios 1-3)



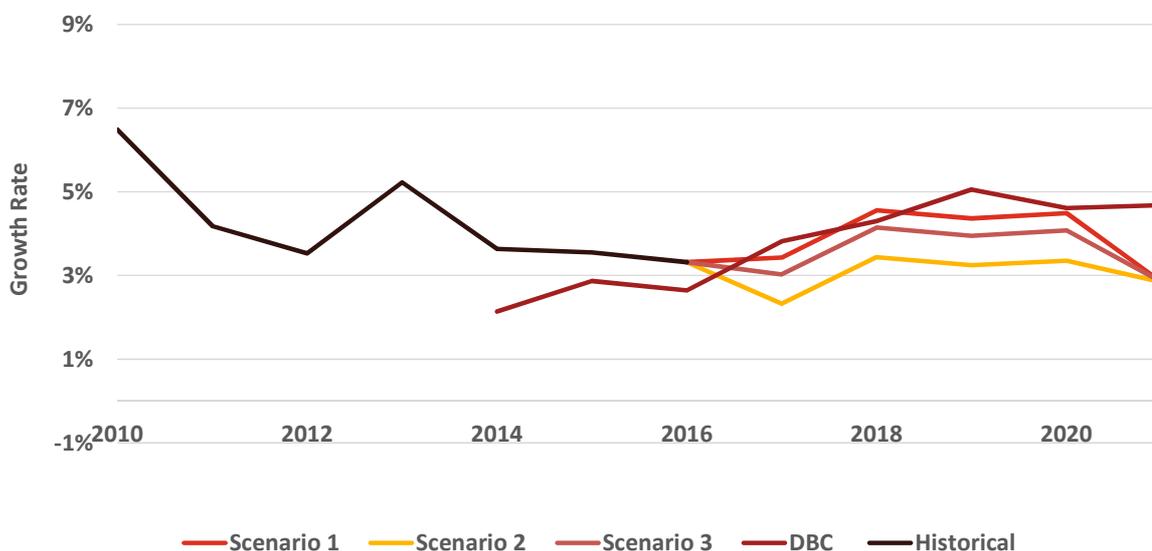
Key points to note from Figure 13 include:

- Assumed wage/salary growth rates are the key drivers of the projected increase in personnel costs.
- The DBC assumed lower personnel costs as at FY16, but also assumed a higher rate of growth relative to the UBC scenarios.
- Scenario 3 has been used as the basis for the summary projections in Section 2 and the analysis in subsequent sections. Scenario 3 accounts for the assumed volume efficiencies and reflects a price adjustment that is over and above the historical averages for front-line staff, but lower for back-office staff. The higher rate of growth in wage/salary rates than recent historical trends is based on

recently negotiated central agreements that include a higher rate of wage/salary increase than in previous agreements. The current agreement for nursing has been in place since 24 August 2015 and will finish on 31 July 2017.

- The forecast personnel expenditure presented above includes the indicative savings of \$9m identified by CDHB.

Figure 14 Personnel costs – annual percentage change



Capacity

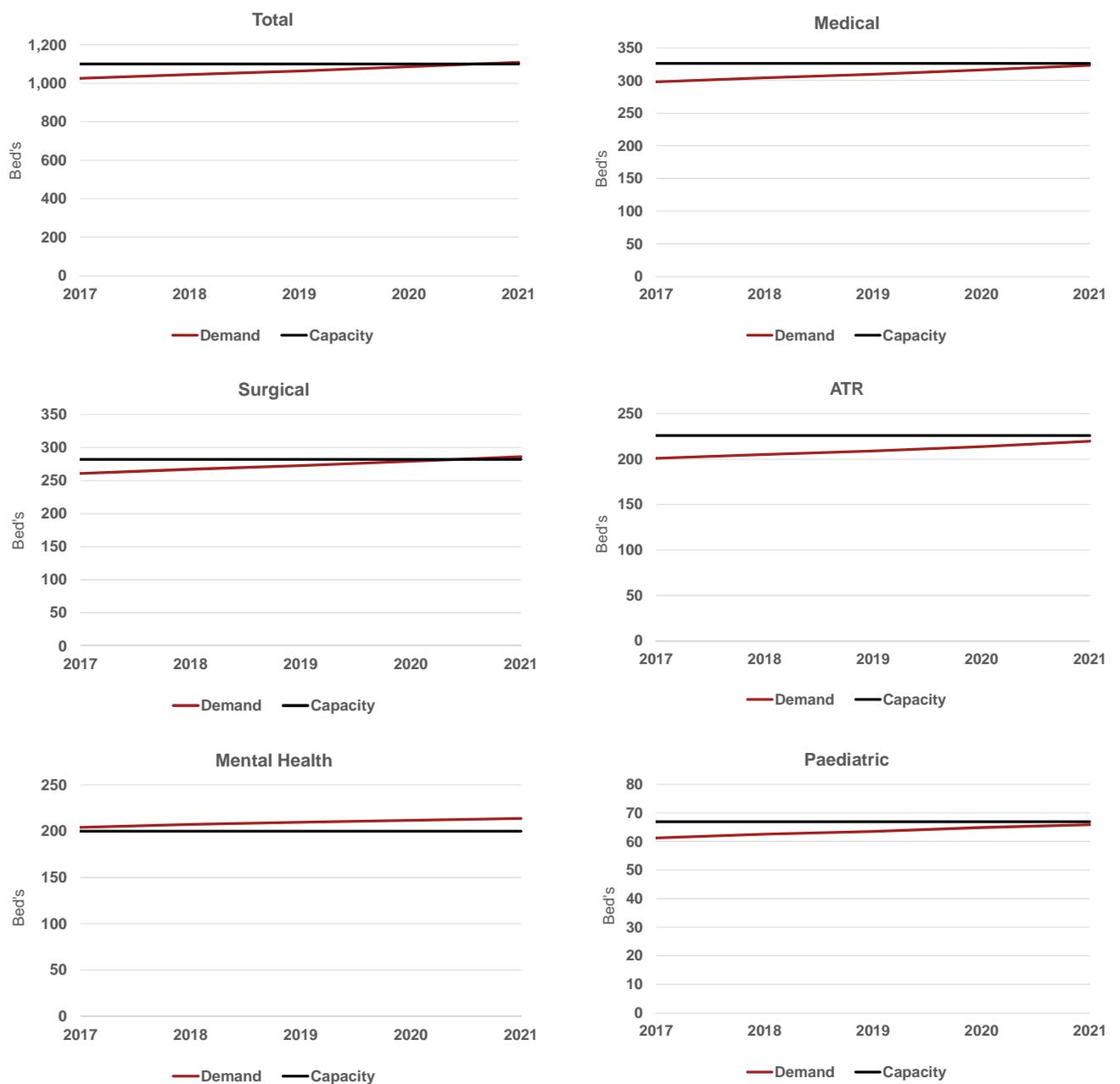
Important assumptions underpinning the workforce modelling are capacity constraints and beds demanded. Each of the following service levels have a weighting placed on bed days that is subject to capacity constraints in the longer-term:

- Total⁹
- Medical
- Surgical (includes Gynecology)
- AT&R
- Mental health¹⁰
- Paediatrics

⁹ Total refers to the sum of the other five service levels listed above. This is applied as a proxy to the maternity service level in lieu of a forecast for maternity bed days.

¹⁰ Bed days for mental health were forecast by applying a population-based growth rate to the latest historical bed days data given no demand forecasts were available.

Figure 15 Beds demand and capacity



Key points to note from Figure 15 include:

- The capacity constraints are assumed to remain constant and have been set using an asset stock-take as at April 2016. This does not reflect a step-change in the physical capacity when ASB comes online. This is a limitation of the analysis. The addition of ASB is not expected to result in a significant uplift in capacity but its exclusion from the analysis means that there is a risk that actual personnel numbers and therefore costs will be higher than the projections.
- The data provided for mental health beds demanded did not align with the asset stock take and as a result the capacity constraint is applied over the full ten-year forecast. This is a limitation of the analysis.
- The dates on which capacity constraints will be reached for the other service are:

- Medical (FY22).
- Surgical (FY21).
- AT&R (FY22).
- Paediatric (FY23).
- These constraints have not had an impact on the forecasts as they fall within the period where personnel costs are assumed to grow in line with the PBF.

3.3.2. Aged Residential Care (ARC)

Approach

Expenditure in the provider arm is largely focussed on community-based services, which encompasses aged residential care, IDF outflows and other, wider community-based services.

ARC is a large component of CDHB's community-based expenditure. ARC costs are a function of a complex set of factors. Consequently, ARC costs have been modelled using a more complex approach than used for other community-based services.

Aged residential care expenditure has been forecast for four types of care:

- Dementia.
- Hospital-based.
- Psychogeriatric.
- Rest home.

The number of bed days has been modelled for each type of care using population changes as the underlying driver. Total expenditure has then been projected using the forecast bed days, projected prices, DHB subsidy and client contribution. The four types of care were all modelled using the same approach.

Key assumptions and drivers

The ARC forecast relies on the following assumptions:

- Population projections (*Source*: Statistics New Zealand, December update).
- Analysis of bed days (FY15).
- Assumed price growth (0.7% in FY16, 1.0% in FY17 and 1.25% FY18 – FY25).
- Forecast growth in client contribution.
- Efficiency adjustments on the volume of bed days.

ARC incorporates efficiencies that moderate the impact of changes in population (volume) on growth in bed days. This attenuation effectively means that bed days grow at a lower rate than the relevant population. Each type of care has been forecast with an assumed attenuation efficiency applied to the number of bed days required:

- Dementia, hospital-based, psychogeriatric: assumed attenuation of 30% against the population growth.
- Rest home care: CDHB's occupancy rate will revert to the national average over the ten-year projection period, resulting in a reduction in the total number of rest home bed days.

The approach to the ARC modelling is the same as that used for the DBC projections except for the treatment of the client contribution. The client contribution in the DBC projections was assumed to be constant across each of the four types of care. The availability of more detailed data for the UBC has allowed the client contribution to be modelled by age bracket and type of care using historical averages.

Figure 16 provides the forecast ARC expenditure in total, including and excluding the efficiencies described earlier. Without efficiencies the projected costs are in line with the DBC projections but are lower than the DBC projections when efficiencies are included.

Figure 16 ARC expenditure forecast

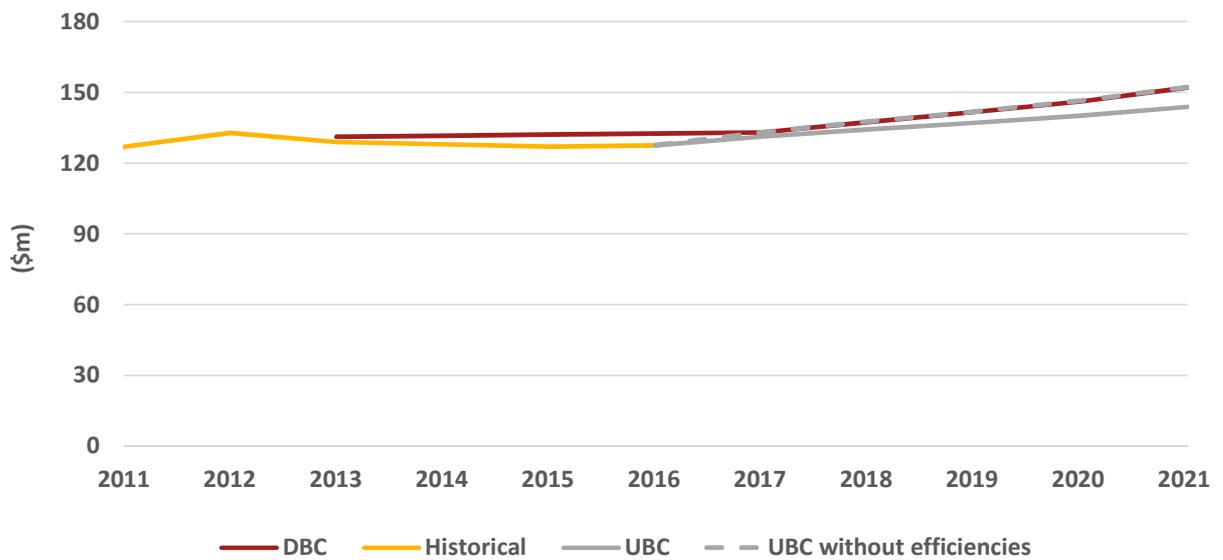
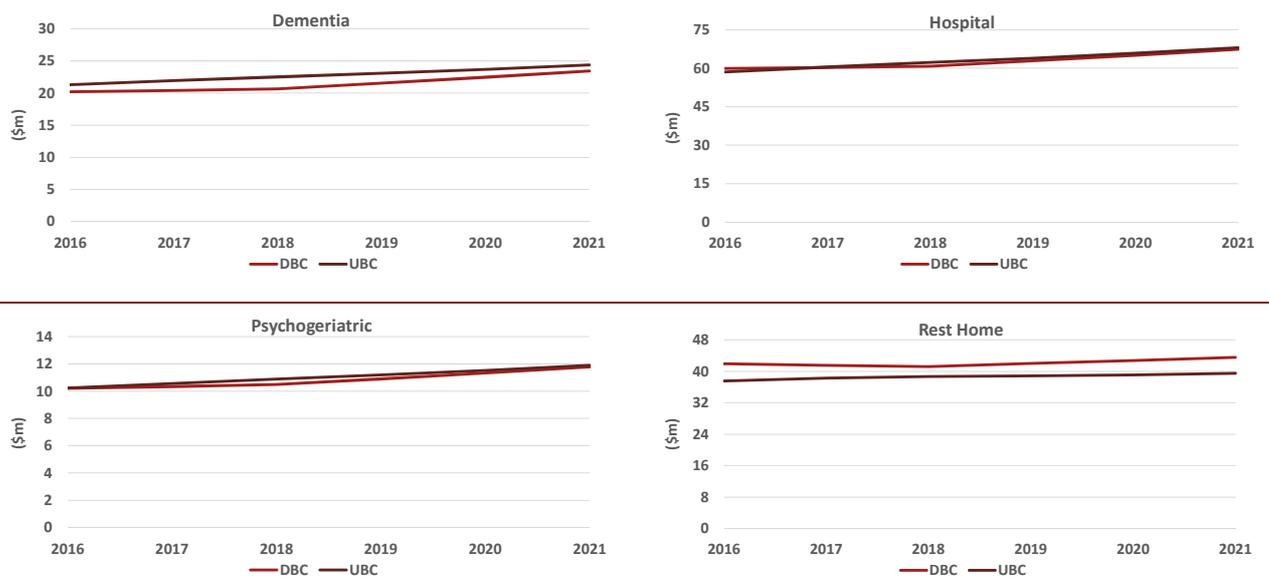


Figure 17 presents the projections for each type of care.

Figure 17 ARC expenditure by type of care



Source: PwC

The UBC projections are largely in line with the DBC projections except for dementia and rest home care which is lower as a result of CDHB's management of ARC costs over recent years.

3.3.3. Clinical Supplies

Approach

Projected clinical supplies costs are modelled with a proportion of the costs being fixed and a proportion varying with volume (the total number of medical and surgical caseweights). A price escalation factor is applied to both the fixed and variable cost components.

Key assumptions and drivers

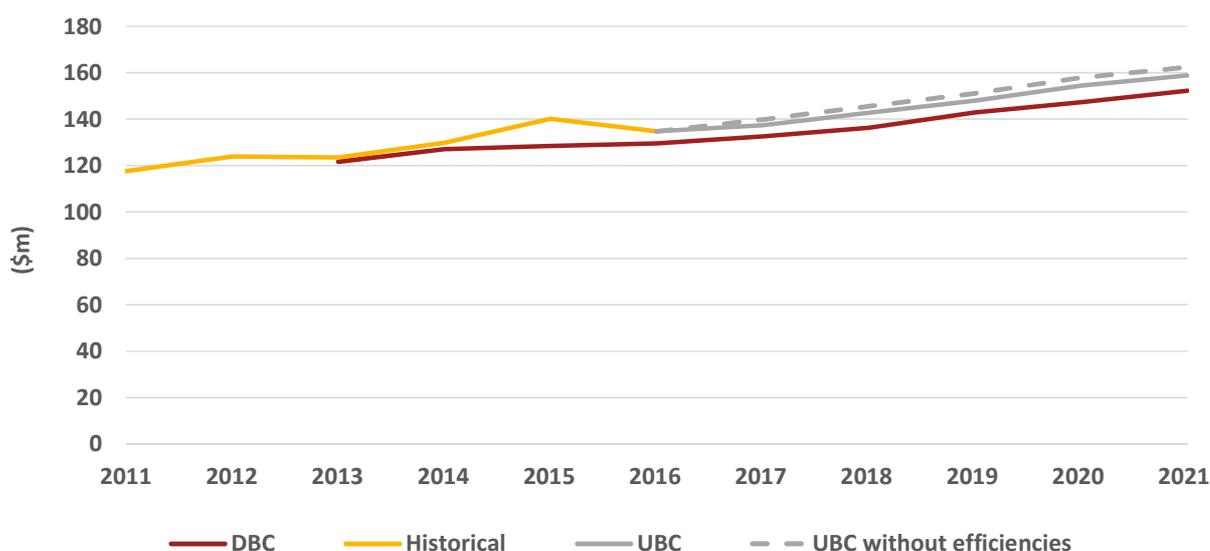
The two key assumptions that drive the clinical supplies projections are:

- Price escalation (projected CPI) on a cost base that is assumed to be 100% variable.
- Total medical and surgical caseweights (for the Burwood and Christchurch facilities).

Modelling separate fixed and variable costs was not used to project clinical supply costs in the DBC. The DBC clinical supply costs included price escalation only – there was not a volume related change in costs. The DBC also incorporated assumed savings from the activities of Health Benefits Limited (HBL). Similar savings have not been incorporated into the UBC as HBL is no longer operating.

In the out years, clinical supplies expenditure is assumed to grow in line with the PBF growth.

Figure 18 Clinical supplies costs



The forecast trend for the UBC costs is higher than the DBC costs primarily as a consequence of the variable component included in the UBC modelling.

Assumed efficiencies in demand, in line with personnel projections have been incorporated.

3.3.4. Community-based services

Approach

The community-based services (other than ARC) comprises costs for:

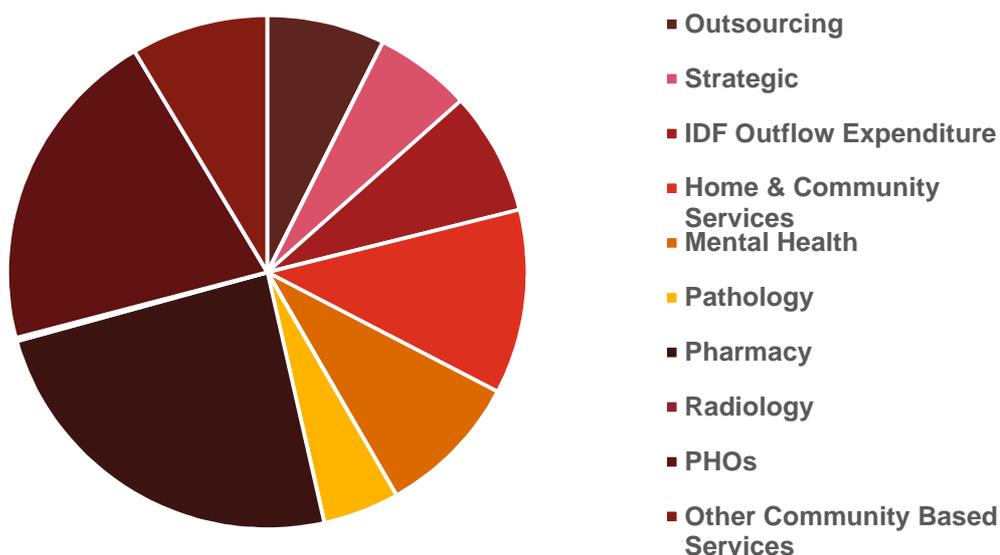
- Outsourcing.
- Strategic.
- IDF expenditure.
- Home and community services.
- Mental health.
- Community referred services:
 - Pathology.
 - Pharmacy.
 - Radiology.
- PHOs.

- Other community-based services.

Figure 19 provides a breakdown of CDHB’s community-based services costs for FY16. Pharmacy, PHO’s, home and community-based services and mental health together accounted for approximately 80% community based costs (excl. aged residential care) in FY16.

The community-based services costs are modelled on a fixed and variable basis, with a price adjustment applied to both the fixed and variable cost components. The variable cost is driven by forecast changes in population.

Figure 19 Community-based services costs (FY16)



Separate disclosure of outsourcing and strategic costs reflects the approach used in the DBC. It is also helpful because expenditure on these activities is expected to decrease to a lower level over the period FY16 to FY21. This decrease, for outsourcing in particular, recognises savings as key activities are brought in-house at a lower direct operating cost as Burwood and ASB both come online (although Burwood and ASB will result in an increase in capital related costs).

Key assumptions and drivers

Outsourcing/Strategic: The projected reduction in outsourcing and strategic expenditure has been provided by CDHB and has been determined by assessing specific initiatives and activity areas for expected changes in the future as new facilities are commissioned (such as Burwood and ASB).

IDF: The projection for IDF costs assumes that CDHB will manage the current composition of service delivery to maintain the existing volume of procedures. Consistent with the approach taken for IDF revenue projections, the change in IDF costs is a function of changes (increases) in prices.

Other: Projections for the remainder of the community-based expenditure assume 40% of the costs are fixed, with price escalation (CPI) applied, and 60% of the costs vary with changes in population. The variable component also includes a price escalation (CPI).

The demographic factors (growth in age bands) applied to each expenditure category are:

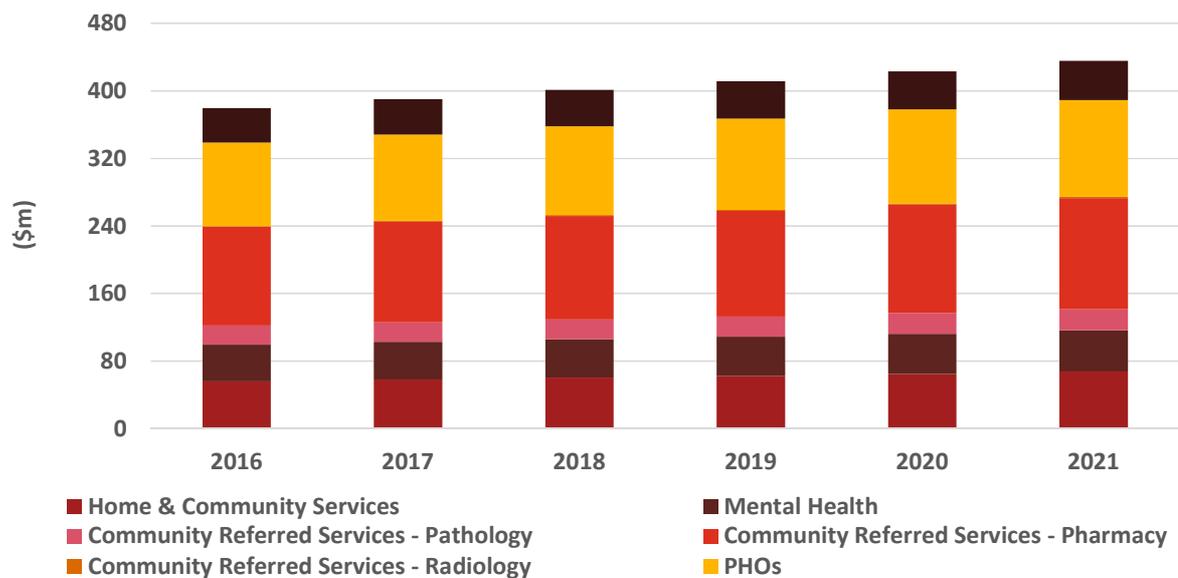
Table 9 Demographic factors

<i>Categories</i>	<i>Age bands</i>
Home & Community Services	75+
Mental Health	65+
Community Referred Services - Pathology	None
Community Referred Services - Pharmacy	0-75+
Community Referred Services - Radiology	0-75+
PHO's	0-14 & 65+

The approach taken to model outsourcing, strategic and IDF costs in the DBC and UBC is the same, while the approach for the other community-based services is different. The DBC projections did not assume a fixed and variable cost structure.

Figure 20 presents costs by community-based services type.

Figure 20 Breakdown of community-based services expenditure forecast



The projected increase in total community-based services costs is being driven primarily by pharmacy and PHO expenditure. Pharmacy costs are related to the overall movement in Canterbury's population. PHO costs are assumed to vary with movements in the younger (under 13's) and older population groups. This is an important consideration given the high growth in the elderly population relative to the younger population.

Projected radiology costs are a subset of CDHB's total expenditure on radiology. The outsourcing and strategic costs also include radiology costs.

4. Capital related expenditure

4.1. Introduction

This section provides an overview of CDHB's capital expenditure programme and the impact it has on the financial projections, specifically through the impact depreciation and capital charge have on the projected surplus/deficit and the impact capital expenditure has on the projected cash position.

4.2. Capital plan

For every \$10 million of capital expenditure requiring additional equity, CDHB will incur an additional \$600,000 (from FY18 onward) in capital charge and between \$260,000 and \$1 million in depreciation (depending on the asset type). CDHB's capital plan is summarised in Appendix C.2 and Appendix C.3. The plan encompasses four capital expenditure categories.

4.2.1. Business as Usual (BAU)

BAU capital expenditure incorporates IT equipment, motor vehicles, office and equipment and plant and equipment. A useful life of 10 years is assumed for each BAU asset class. Projected BAU capital expenditure in FY16 and FY17 is \$28 million and \$46 million (incl. Burwood boiler) respectively. It is assumed to be flat at \$25 million after FY17.

BAU capital expenditure is normally expected to be 'depreciation funded' (i.e. cash surpluses from operating activities). Equity will be provided to fund the shortfall for the business-as-usual capital expenditure requirements arising from any deficits.

4.2.2. Programme of Works (PoW)

PoW capital expenditure is remediation to address damage to CDHB's assets as a result of the Canterbury earthquakes. A breakdown of the PoW is provided in Appendix C.2.

PoW capital expenditure, including opening work in progress, totals \$308 million over the ten year projection period. It is assumed to be funded from insurance proceeds (assumed to be \$216 million – a capital injection from the Crown) and CDHB operating cash flows.

The PoW is comprised largely of building-related projects. The depreciation rate for this expenditure is assumed to be 2.6% per annum (38.5 year useful life). This is a blended rate that reflects a mixture of buildings and fit-out.

4.2.3. Strategic approved

Strategic approved capital expenditure comprises the Burwood and ASB projects.

Burwood is assumed to be completed and available for use in FY17. ASB is assumed to be completed and available for use in FY19. The same blended rate of depreciation of 2.6% has been applied to these facilities (38.5 year useful life).

These projects are being financed through equity injections. They were originally to be financed through debt and equity, but the funding mix was changed to 100% equity to be consistent with the Ministry's capital financing policy. The projections assume CDHB will receive a funding top-up of \$4m p.a. for Burwood from FY18 and \$8.4m p.a. for ASB from FY20. These assumptions have been provided by the Ministry.

4.2.4. Strategic unapproved

Strategic unapproved capital expenditure has not been included in the forecasts. It includes capital expenditure for a range of asset categories including IT equipment, buildings and linear accelerators. The operating cost implications of this capital expenditure category has not been quantified.

4.3. Modelling approach

Key modelling parameters for the capital expenditure categories are summarised in Table 10. The projects contained within the PoW and the strategic approved projects were modelled using pre-determined start and end dates, while the BAU capital expenditure has been modelled assuming mid-point additions.

Table 10 Capital expenditure modelling treatment

Categories	Included in model	Funding type	Funding committed	Depreciation rates	Capital charge
BAU	Yes	Baseline/Equity	No	10.0%	Baseline
PoW	Yes	Equity	Partial	2.6 – 10.0%	Baseline
Strategic approved	Yes	Equity	Fully	2.6%	Baseline/Additional Funding
Strategic unapproved	No	N/A	N/A	N/A	N/A

Estimated revaluations on existing assets were used for modelling purposes. The actual revaluations were disclosed to us very recently and accordingly are not incorporated into the forecasts. The actual revaluations were \$98 million higher than forecast. CDHB has indicated that this will result in higher depreciation, reflecting in part CDHB's intent to apply an accelerated depreciation rate to some of the revalued buildings.

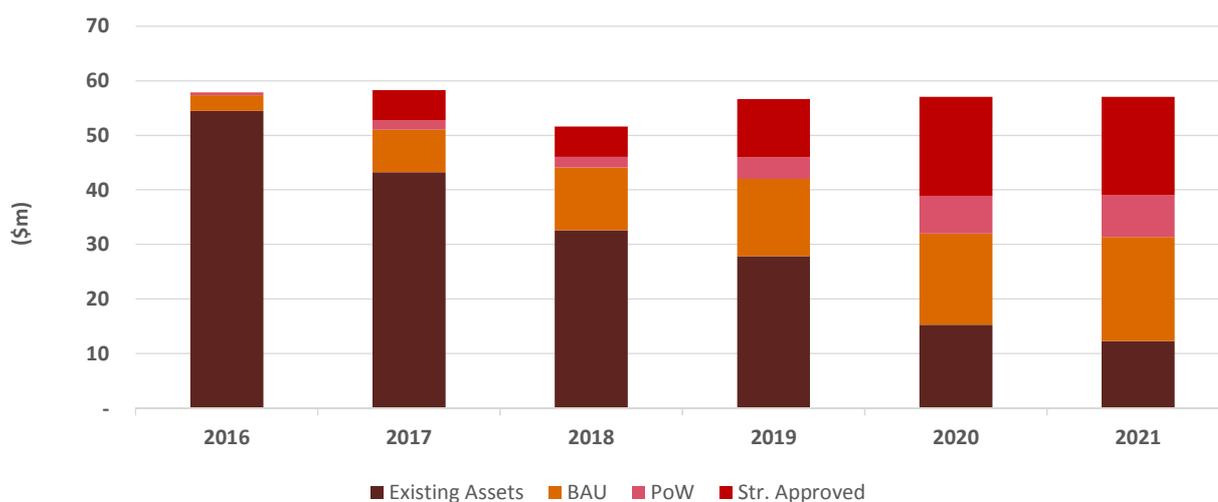
4.4. Depreciation profile

The following figure shows the depreciation profile for the capital expenditure programme and the existing asset base.

Total depreciation is relatively constant through to June 2021 but this is somewhat coincidental as there is considerable change in the composition of the depreciation profile over the period. Depreciation on existing assets declines as assets are fully depreciated but this is replaced by depreciation on new assets resulting from the capital expenditure programme.

The decline in the depreciation on existing assets is exacerbated by accelerated depreciation on major building assets with capacity that is being replaced through the PoW or strategic approved capital expenditure programme (see comments after the figure).

Table 11 Depreciation forecast



- Depreciation on the existing asset base and the forecast business-as-usual capital expenditure drops largely due to the Parkside and Riverside buildings including fit-out, as well as other key

items of fit-out across the Christchurch Hospital site reaching the end of their lives. This includes an element of accelerated depreciation, reflecting replacement capacity included in the PoW and or strategic approved capital expenditure programme.

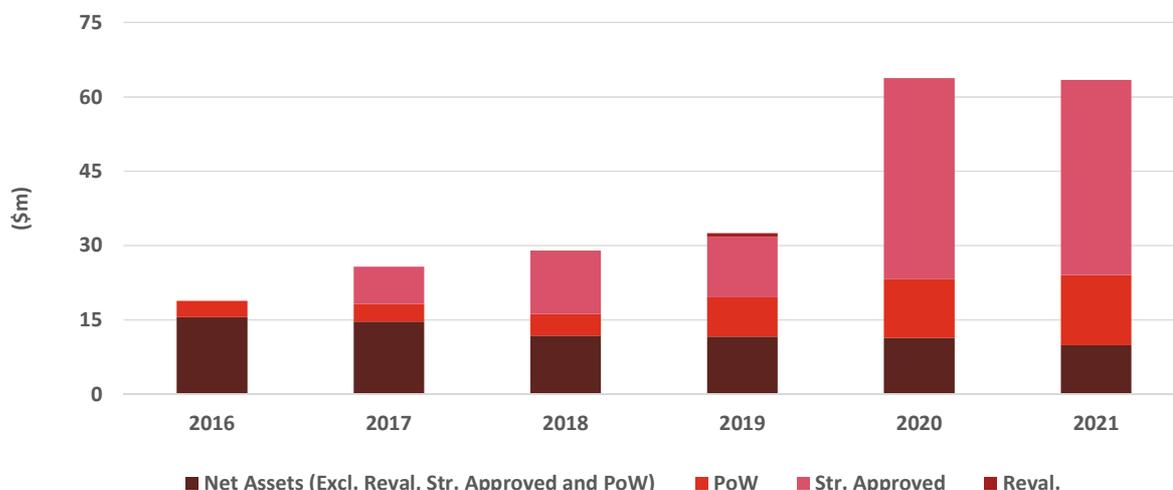
- Depreciation on business as usual capital expenditure partially offsets the decrease in depreciation on existing assets.
- The depreciation on the PoW increases over the period from FY16 to FY21 as the programme of spend is capitalised.
- Burwood and ASB are capitalised in FY17 and FY19 respectively with the full impact on the depreciation profile taking effect from FY20.

4.5. Capital charge

Capital charge has been separately calculated for different components of the asset base. Capital charge is calculated on the book value of the PoW, the revaluations and the strategic approved assets, and is then calculated on the residual net assets of CDHB, i.e. accumulated retained earnings. The modelled capital charge is calculated annually use opening book value. Actual capital charge is calculated twice a year. Due to the materiality of the strategic approved assets and the PoW, this is taken into account and additional capital charge is calculated over six months for the additions in each period. For the other asset categories, this is a modelling limitation and creates a minor lag between the date of asset capitalisation (i.e. BAU capital expenditure) and the date of the first capital charge for the asset.

Net deficits reduce the net assets of CDHB. This results in a diminishing annual capital charge on net assets excluding revaluations, strategic approved assets and the PoW. Excluding these components of the asset base, in the event that CDHB reaches a negative net asset position, the model calculations are designed to ensure that capital charge never becomes a revenue item.

Figure 21 Capital charge forecast



4.6. Strategic unapproved expenditure

Strategic unapproved capital expenditure has not been included in the projections as it is not certain what components of this the expenditure will be incurred and to what level. However, the exclusion of this expenditure does not mean that it will not be required in the future.

If the expenditure is incurred it will put additional pressure CDHB’s financial performance through an increase in capital charge and depreciation, as illustrated in Table 12. There will be wider operating expenditure implications of this capital expenditure that are not reflected in Table 12. These wider operating implications have not been quantified by CDHB. Total depreciation and capital charge excluding and including the strategic unapproved expenditure is outlined in Table 12 below. Note that for the purpose of the figures in Table 12 the capital charge including strategic unapproved capital expenditure is calculated

as the capital charge excluding strategic unapproved and 7% in FY17 and then 6% from FY18 onward of the accumulated capital expenditure on strategic unapproved assets.

Table 12 Total depreciation and capital charge expenditure including strategic unapproved

Scenario	FY17 (\$m)	FY18 (\$m)	FY19 (\$m)	FY20 (\$m)	FY21 (\$m)
Depreciation					
Excl. strategic unapproved	58.3	51.6	56.7	57.0	57.1
Incl. strategic unapproved	58.3	52.1	58.1	59.3	60.3
Capital charge					
Excl. strategic unapproved	(20.8)	(21.2)	(24.2)	(47.8)	(47.3)
Incl. strategic unapproved	(20.7)	(22.5)	(27.2)	(52.4)	(54.1)

5. Deficit management

5.1. Introduction

This section presents the high level estimates for the reductions needed in operating expenditure to achieve breakeven by 2021 and 2025.

This section further presents scenarios for reducing costs and so reducing the projected net deficit. It highlights the impact of achieving savings based upon changes in key assumptions/drivers. The impact of these scenarios are aggregated as the intervention case and CDHB's financial performance and cash position is compared against the established projections. The scenarios do not focus on particular service delivery options that may need to change to achieve them. In addition, any management intervention to reduce costs may require additional spending in other areas. This has not been considered within this analysis.

CDHB have identified indicative operational efficiency savings for FY17 for personnel and treatment and non-treatment related expenditures. These savings targets are assumed to be constant from FY17 onwards. In FY17 these savings targets reconcile to the scenarios that have been modelled as part of the deficit management presented in this section. Beyond FY17, the assumed savings in the scenarios exceed the savings targets identified by CDHB.

The savings that are presented in the subsequent sections for each cost category are calculated relative to the forecast without the assumed \$13.4m indicative efficiency savings identified by CDHB.

The impact of demographic changes, especially the growth in the number of elderly people, is an important driver of future cost increases but for the purposes of this analysis we have assumed that there is little ability to control this pressure directly and have not focused on this as a scenario.

5.2. Breakeven by 2021 or 2025

The projections have been tested to quantify reductions needed in operating and capital related costs to achieve breakeven by 2021 and 2025. Assuming capital expenditure is incurred as planned, achieving breakeven:

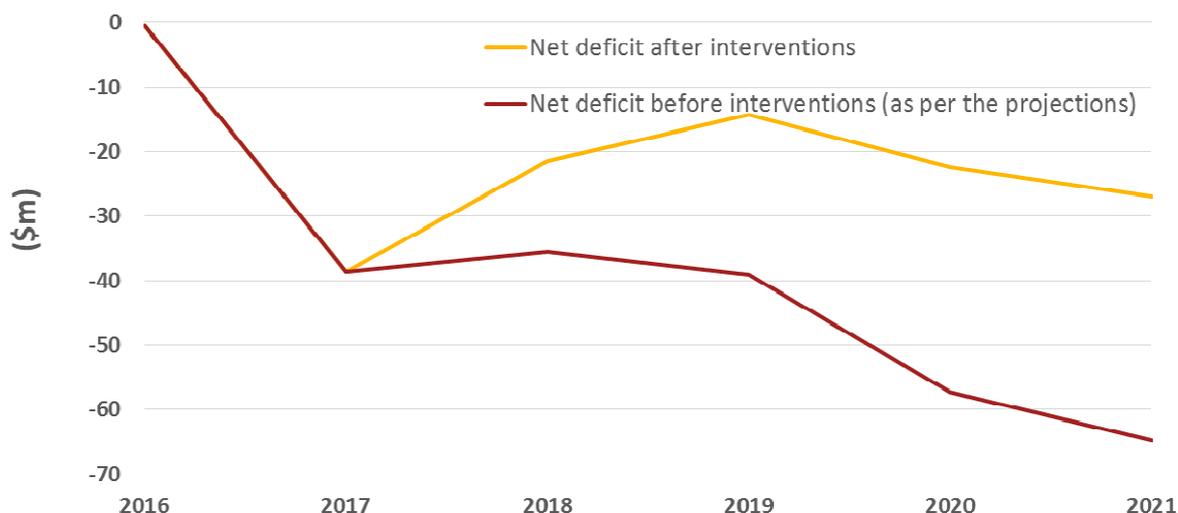
- By 2021, would require a reduction in operating costs on the order of an average cumulative saving of around 0.8% of operational expenditure every year (i.e. \$13 million saving in the first year, \$26 million in the second year and so on).
- By 2025, would require a reduction in operating costs on the order of an average additional saving of around 0.4% of operational expenditure every year (i.e. \$6 million saving in the first year, \$12 million in the second year and so on). This is a lower than the 2021 breakeven requirement because the net deficit plateaus after 2021.

These savings would be in addition to the indicative operation efficiency savings for FY17 of \$13.4m.

5.3. The intervention case

The impact of the scenarios considered as part of this analysis are aggregated and presented as the after intervention case. Figure 22 presents the after intervention case and demonstrates that these opportunities will moderate the net deficit in the medium term but will not be sufficient to deliver a breakeven result at any time during the projection period.

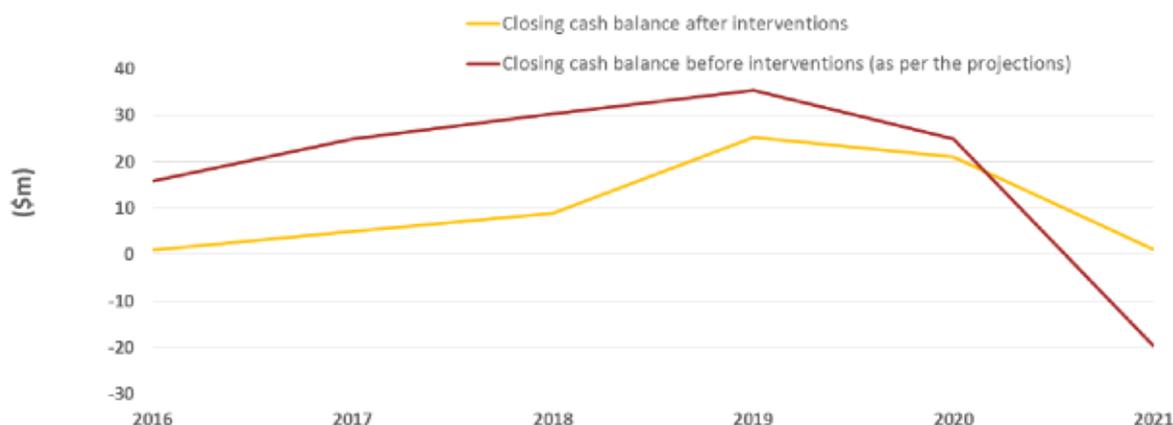
Figure 22 Net Surplus/(Deficit)



Changes could also be made to capital expenditure to reduce the impact of depreciation and capital charge. However, as the Burwood and ASB capital related costs are unavoidable, substantial changes in the remaining components of the capital expenditure plan would be needed to deliver meaningful savings. Illustrated in Figure 23 the scenarios will not enable CDHB to achieve a net (accounting) surplus but will help it to maintain a positive cash position through to 2021.

The closing cash balance under the scenarios modelled as interventions does not track exactly with the closing cash balance with only CDHB's savings targets. This is a modelling limitation due to the assumption that BAU capital expenditure is funded through equity injections when there is a shortfall between cash from operations and business-as-usual capital expenditure. In reality, the closing cash balances would be similar until FY19, after which both forecast tracks would decline as illustrated but the interventions will moderate the decline in the cash balance.

Figure 23 Closing Cash Balance



5.4. Funding options

The stage one review recommended, given CDHB's levels of revenue and expenditure, the net deficits in the short term are marginal and ordinarily, in the first instance, can be managed through regular and expected financial management of key costs rather than through additional funding being made available to balance the deficits.

5.5. Personnel

Personnel costs are projected to grow by around 4% per annum in the short to medium term, before aligning with the growth in the PBF. This initial increase is driven by:

- Expected wage growth.
- Demand drivers, including case weights, bed days, discharges and theatre hours.

Wage growth is the primary driver of growth in personnel costs. The cost of additional staff required to meet demand and changes in the mix of staff has a lesser impact on total personnel costs.

Constraining/slowing the growth in personnel costs by between 0.5%-1% p.a. across all staffing categories, including management, administration and support staff, would result in an accumulated saving of \$98.6 million over the next five years.

Table 13 Net impact on personnel expenditure (FY17 – FY21)

<i>Scenario</i>	<i>FY17 (\$m)</i>	<i>FY18 (\$m)</i>	<i>FY19 (\$m)</i>	<i>FY20 (\$m)</i>	<i>FY21 (\$m)</i>
Projected costs	694.3	722.7	750.9	781.2	814.6
0.5%-1.0% saving	685.3	709.3	732.7	758.2	779.6
Net impact	9.0	13.4	18.2	23.0	35.0

5.6. Aged residential care

There were three main drivers for ARC expenditure:

- Price growth.
- Client contribution.
- Attenuation expectations for bed day growth.

In recent years, CDHB has managed to restrict the growth in ARC expenditure with an ageing population. If CDHB can further utilise community service provision to reduce the number of bed days required by an additional 10% compared to the population-driven demand expectations it will result in an accumulated saving of \$4.8 million over the next five years.

Table 14 Net impact on ARC expenditure (FY17 – FY21)

<i>Scenario</i>	<i>FY17 (\$m)</i>	<i>FY18 (\$m)</i>	<i>FY19 (\$m)</i>	<i>FY20 (\$m)</i>	<i>FY21 (\$m)</i>
Projected costs	131.3	134.4	137.1	140.1	143.9
Additional 10% attenuation	131.0	133.7	136.1	138.8	142.2
Net impact	0.3	0.6	0.9	1.3	1.7

5.7. Clinical supplies

There are two drivers which may be managed to reduce the costs for clinical supplies:

- Cost controls and inventory management.
- Demand driven efficiency savings.

CDHB has identified a potential for an initial 1.5% reduction in clinical supplies expenditure over the coming year. This saving will be delivered through:

- Improved inventory management – by moving supply decisions more centrally and reducing decision-making at the ward level. This is likely to result in initial one-off savings through stock reductions, and longer term savings through lower inventory write-offs.
- Price savings – driven by the impact of Pharmac involvement in procurement and opportunities for saving through CDHB procurement.

We have quantified potential savings in the short term of 1.5%, but with diminishing potential in the out-years. Table 15 outlines the savings potential and the impact this will have relative to the UBC.

Table 15 Net impact on clinical supplies costs (FY17 – FY21)

<i>Scenario</i>	<i>FY17 (\$m)</i>	<i>FY18 (\$m)</i>	<i>FY19 (\$m)</i>	<i>FY20 (\$m)</i>	<i>FY21 (\$m)</i>
<i>Savings potential</i>	<i>1.5%</i>	<i>1.25%</i>	<i>1.0%</i>	<i>0.75%</i>	<i>0.5%</i>
Projected costs	139.6	145.0	150.2	156.7	161.1
Inventory/procurement management	137.6	141.1	144.7	149.8	154.1
Net impact	2.1	3.9	5.5	6.8	7.0

5.8. Community services

Community service expenditure is largely driven by population projections. For modelling purposes, we have not identified significant savings potential within this category, with the exception of managing the impacts of additional demand. CDHB's operating model uses community service provision to manage these impacts, and are unlikely to provide a major saving opportunity.

5.9. Other expenditure

CDHB has identified a number of specific savings targets within the other expenditure category. These are:

- Hotel services, laundry and cleaning – 1.5%
- ITS&T – 2.5%
- Facilities – 1.5%
- Other facilities and rental – 2.5%
- Repairs and maintenance (excluding earthquake based expenditure) – 1.5%

We have quantified the short term savings targets highlighted above. We have assumed the savings will be achieved in the short term but will diminish over time.

Facilities costs are forecast based on the site area and electricity usage, while repairs and maintenance is forecast based upon the site area. For the purpose of the analysis presented below, the forecast area was not adjusted and only the impacts of managing forecast price escalation was considered.

Hotel services, ICT and other facilities costs are modelled on a fixed and variable basis, with price escalation set to CPI. For the purpose of the analysis presented below, management of the forecast price escalation was considered.

Table 16 Net impact on other expenditure (FY17 – FY21)

<i>Scenario</i>	<i>FY17 (\$m)</i>	<i>FY18 (\$m)</i>	<i>FY19 (\$m)</i>	<i>FY20 (\$m)</i>	<i>FY21 (\$m)</i>
Hotel services, laundry, cleaning	0.4	0.7	1.0	1.2	1.3
ITS&T	0.4	0.8	1.2	1.5	1.8

Facilities, R&M and rental	1.2	2.3	3.4	4.2	4.9
Net impact	2.0	3.8	5.6	6.9	8.1

5.10. Capital related costs

We have combined the depreciation and capital charge related activities for the purposes of this analysis. As the stage one report identified, there is an interrelationship between:

- The capital spend, timing of the spend, and how it's accounted for.
- Equity and revenue injections from the Crown.
- Debt drawdowns (although debt is no longer used as a source of financing).
- Interest and capital charge.
- Depreciation.

Capital related savings scenarios include:

- *Depreciation rates* – reducing the depreciation rates for new buildings (primarily Burwood and ASB) from 2.6% to 2.0%, noting that this is an accounting adjustment and that it will have a negative capital charge impact.
- *Reduce capital spend* – reduce the capital expenditure levels by either rescoping, delaying, or dropping projects on the capital plan

5.10.1. Reducing capital spend

The impact of the capital expenditure programme on the financial performance will be reduced if the size of the capital programme, subject to meeting service needs, is changed through:

- Rescoping – reducing the size/scale of the projects (reducing total costs).
- Delaying – delivering the projects at a later date (incurring costs, but later than forecast).
- Dropping – no longer undertaking some projects (removing the costs).

Changes in the capital programme a likely to raise other risks to CDHB which would need to be considered.

In the short term, the impact of rescoping is similar to delay, as both limit the total capital spend in a given year. However, in the long term rescoping will result in a permanent cost saving; delay changes the timing of costs but does not provide a permanent cost reduction (and will result in an increase in costs due to escalation).

The strategic approved projects are currently underway, with Burwood coming online in FY17, and so there is little scope to scale back these capital expenditures. The projects that make up the PoW are wide ranging and in order to reduce capital expenditure this would require very targeted reductions for specific projects, each with their own asset class allocation and set of useful lives.

The BAU capital expenditures after 2017 is an envelope of \$25m that is capitalised across CDHB's asset base (excluding buildings). Note that in FY16 and FY17 there are one-off projects that mean this balance exceeds the \$25m envelope.

Rescoping/delay scenarios have been modelled for both business as usual (BAU) and the PoW capital expenditure. A 10% reduction in BAU and certain PoW projects has been assumed, which provides both depreciation and capital charge savings (see Table 17).

Table 17 Net impact of a 10% reduction in PoW and BAU (FY17 – FY21)

Scenario	FY17 (\$m)	FY18 (\$m)	FY19 (\$m)	FY20 (\$m)	FY21 (\$m)
Depreciation	-	0.1	0.5	0.9	1.2
Capital charge	-	0.1	0.5	0.9	1.2

Net impact	-	0.2	1.0	1.8	2.4
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5.10.2. Depreciation rates

The depreciation rate on buildings was assumed to be 2.6% and represents a blended rate between the buildings and fit-out asset classes. If the depreciation rate was 2.0% for the new buildings contained within the strategic approved capital expenditure classification (i.e. Burwood and ASB), then this would result in an overall reduction in depreciation of \$13.4m over the next five years (see Table 18). A 50 year useful life would be within the depreciation policy and in line with many other organisations.

Table 18 Net impact on depreciation and capital charge (FY17 – FY21)

Scenario	FY17 (\$m)	FY18 (\$m)	FY19 (\$m)	FY20 (\$m)	FY21 (\$m)
Net impact on depreciation (2% rate)	-	1.3	2.5	4.2	4.2
Net impact on capital charge (2.0% rate)	-	-	(0.1)	(0.2)	(0.5)

Appendix A. - Important notice

This Report has been prepared solely for the purposes stated herein and should not be relied upon for any other purpose.

This Report is strictly confidential and (save to the extent required by applicable law and/or regulation) must not be released to any third party without our express written consent which is at our sole discretion.

To the fullest extent permitted by law, PwC accepts no duty of care to any third party in connection with the provision of this Report and/or any related information or explanation (together, the "Information"). Accordingly, regardless of the form of action, whether in contract, tort (including without limitation, negligence) or otherwise, and to the extent permitted by applicable law, PwC accepts no liability of any kind to any third party and disclaims all responsibility for the consequences of any third party acting or refraining to act in reliance on the Information.

We have not independently verified the accuracy of information provided to us, and have not conducted any form of audit of CDHB. Accordingly, we express no opinion on the reliability, accuracy, or completeness of the information provided to us and upon which we have relied.

The statements and opinions expressed herein have been made in good faith, and on the basis that all information relied upon is true and accurate in all material respects, and not misleading by reason of omission or otherwise.

The statements and opinions expressed in this report are based on information available as at the date of the report.

We reserve the right, but will be under no obligation, to review or amend our Report, if any additional information, which was in existence on the date of this report was not brought to our attention, or subsequently comes to light.

We have relied on forecasts and assumptions prepared by CDHB about future events which, by their nature, are not able to be independently verified. Inevitably, some assumptions may not materialise and unanticipated events and circumstances are likely to occur. Therefore, actual results in the future will vary from the forecasts upon which we have relied. These variations may be material.

This report is issued pursuant to the terms and conditions set out in our engagement letter dated 14 March 2016 and the Terms of Business attached thereto.

Appendix B. - The wider CDHB context

B.1. Introduction

This section provides context for the analysis contained in the following sections of the report. It builds on the analysis provided in the stage one report.

The information presented in this section is in the form of a series of figures with accompanying commentary. The figures present historical growth rates for key revenue and expenditure line items for CDHB, the national DHB average and a cohort of DHBs with some level of comparability to CDHB – Auckland, Waitemata, Counties Manukau, Capital & Coast.

This section does not contain an overview of the historical financial performance for CDHB compared to the DBC. The stage one review provided a comparison and reconciliation between the actual results and forecast deficit profile.

B.2. Key financial performance considerations

To develop our forecast we have broken CDHB's statement of comprehensive income into a number of broad areas and considered the main drivers for each of these. Table 2.1 below provides a breakdown of these classifications.

Table 19 Financial performance classifications

Revenue	
PBF & sub-contracts	<ul style="list-style-type: none"> • PBF funding • Elective funding
Other revenue	<ul style="list-style-type: none"> • Inter-District Flows (IDF) • Non-Government and crown agency sourced funding • Other Government funding • Non-Devolved contracts
One-off	<ul style="list-style-type: none"> • One-Off revenue • Earthquake related draw down
Expenditure	
Personnel	<ul style="list-style-type: none"> • Direct personnel costs • Out-sourced personnel costs
Aged residential care	<ul style="list-style-type: none"> • Dementia • Hospital • Psychogeriatric • Rest home
Clinical supplies	<ul style="list-style-type: none"> • Direct clinical supplies costs • Outsourced non-personnel costs
Community-based services	<ul style="list-style-type: none"> • Outsourcing • Strategic • IDF's • Other community-based services
Other expenditure	<ul style="list-style-type: none"> • IT systems and telecommunications (ITS&T) • Repairs and maintenance • Facilities • Hotel services, laundry and cleaning • Other facilities and rentals • Earthquake related operating costs
Capital related costs	<ul style="list-style-type: none"> • Depreciation • Capital Charge

The following points should be noted regarding the classifications:

- There are corresponding revenues for the one-off earthquake related operating costs.
- The presentation of personnel costs in the subsequent sections is restricted to direct personnel costs. The outsourced personnel costs are presented in the consolidated financial statements.
- The presentation of clinical supplies in the subsequent sections is restricted to direct clinical supplies costs. The outsourced non-personnel costs that are made up of treatment related expenditure are presented in the consolidated financial statements.
- Under the category of community-based services, the sub-category of other community-based services captures mental health, PHO's etc.

The underlying drivers and the ability to influence and control them are different for each revenue and expenditure line item. This in part reflects that the governance and operational structures underpinning the national health system include a decentralised operating model managed by individual DHBs, but with centralised control over a number of key drivers within the system being managed by MoH.

When considering potential changes to improve financial performance, there is a need to understand each of these drivers and their impact across multiple revenue and expenditure items.

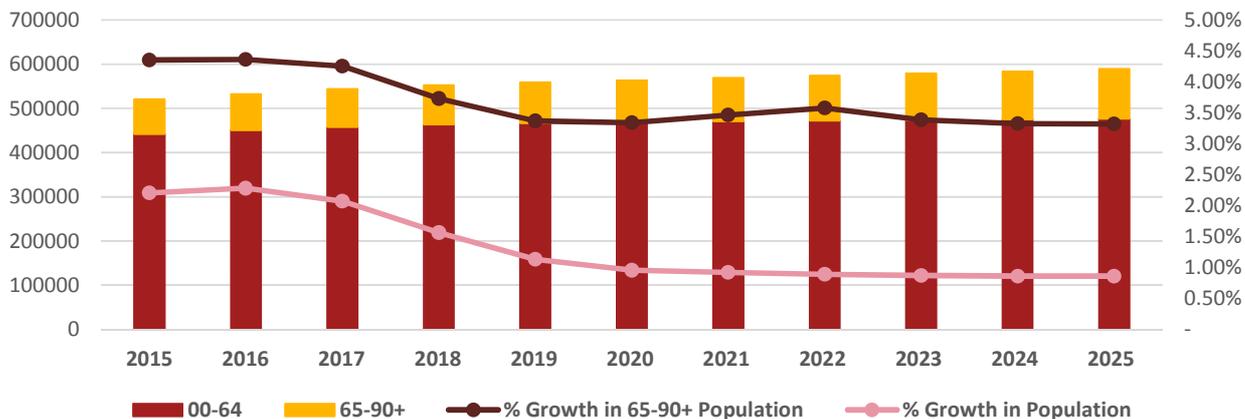
B.2.1. The impact of population changes

New Zealand, like many other nations, is facing a significant shift in its demographic profile, which will have ramifications for health spending over the coming decades.

A large proportion of the national health budget is spent on the needs of the elderly, who make up a relatively small proportion of the national population but are high users of health care services. Forecast population projections highlight that people aged 65 years and over will be the fastest growing age category. This will exacerbate the problem facing all DHBs of allocating and prioritising their limited revenue among the various demands for their services.

Figure 24 presents the population projections for the CDHB region. This demonstrates that the total population is expected to grow by 11% over the next 10 years but the over 65 category will grow by 37%. The extra demands that this will place on CDHB are self-evident.

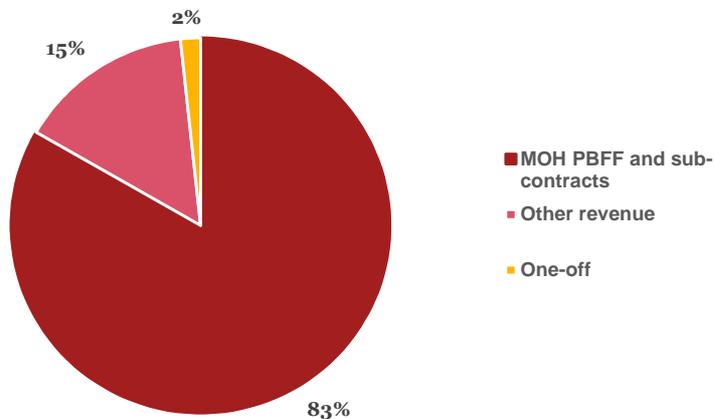
Figure 24 CDHB population change – FY15-FY25



B.3. Revenue

A majority of CDHB revenue is PBF and subcontracts for services such as additional elective procedures (see Figure 25 for the funding profile for CDHB) provided via the Ministry. Other revenue is primarily IDF revenue.

Figure 25 CDHB funding (FY16)



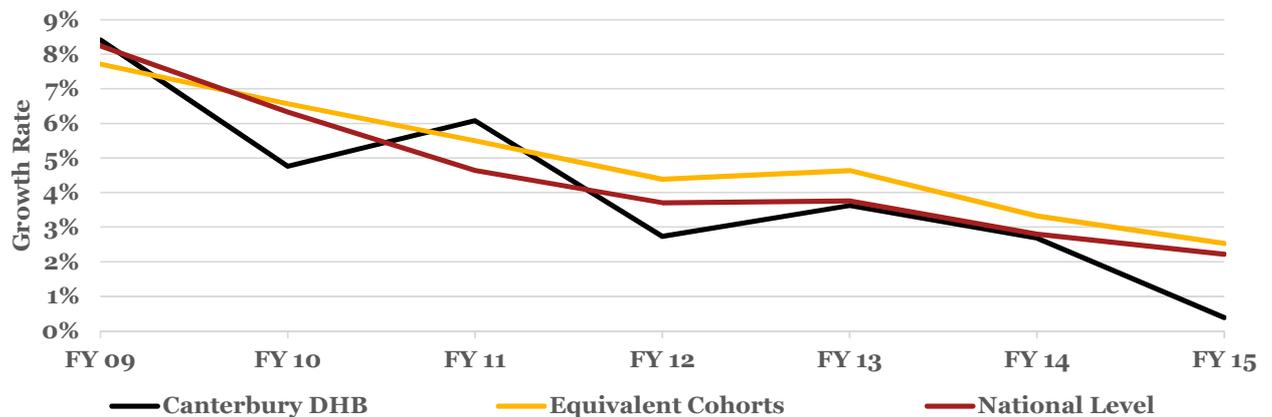
B.3.1. PBF & sub-contracts

PBF & subcontracts currently constitutes around 84% of CDHB’s total operational revenue. The demographic profile within each DHB region is the primary basis for allocating PBF among DHBs. The age profile of the population is the key component of the demographic profile but factors such as sex, nationality and levels of deprivation is also taken into account.

DHBs receive revenue for specific subcontracts. The largest contributor to revenue of these subcontracts is, typically, for elective surgeries. DHBs are expected to meet a certain number of elective procedures from within their PBF funding but also receive revenue for additional electives. Elective procedures are assessed and funded based upon a determined number of caseweights for each type of procedure.

Figure 26 highlights that CDHB PBF and subcontracts revenue has grown largely in line with the national average but is slightly below its comparative cohort over the past six years.

Figure 26 Historical change in funding – PBF & sub-contracts



B.3.2. Other revenue

CDHB’s other revenue includes IDF funding, Non-Government and Crown Agency Sourced Funding, Other Government Funding and Non-Devolved Contracts. IDF revenue is a substantial proportion of total other revenue.

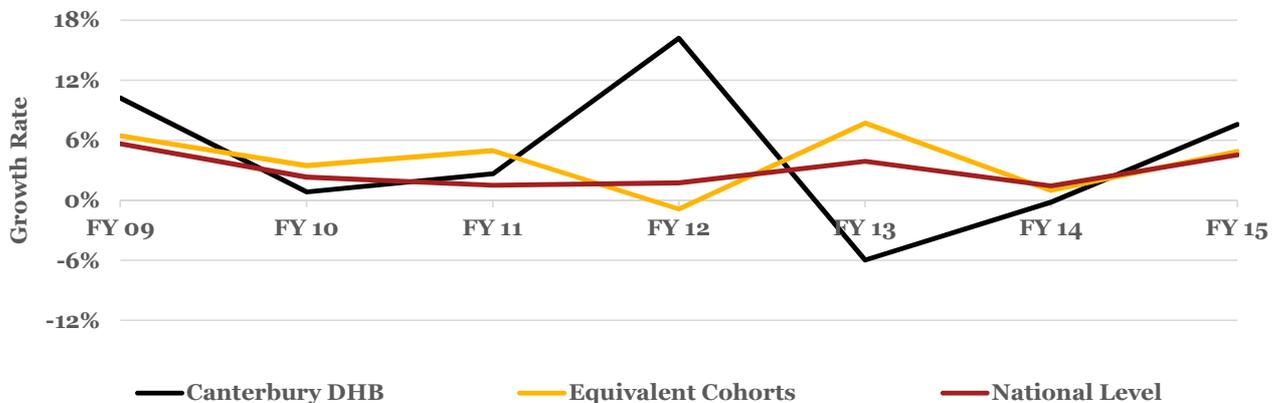
CDHB receives IDF revenue for procedures it undertakes for and on behalf of other DHBs. IDF revenue for CDHB will be a cost for another DHB. The level of IDF revenue is determined by the volume of IDF cases and the centrally-determined price per case. The price is determined annually by the MoH.

While a CDHB has some control over the number of IDFs that it takes on, and has the ability to work across the system to manage demand were required, there can be a significant level of variability in demand within a year.

IDF revenue currently constitutes around 7% of CDHB’s total operational revenue. The general trend in growth in IDF revenues over the past six years for CDHB has been broadly similar to that of its comparative cohort (which largely drive the national average), there have been greater swings in this period.

Figure 27 highlights that other revenue has been quite volatile. This reflects the nature of this category which includes IDFs, driven by demand in other DHBs, and any specific initiatives that may be funded in a year. Figure 27 does not include \$289 million that CDHB received in a one off payment from the Government in 2013 and which was included in other revenue in that year for financial reporting purposes. The movement in FY12 highlights a one-off shift in the Non-Government & Crown Agency Revenue which has been historically quite volatile and impacts on total other revenue.

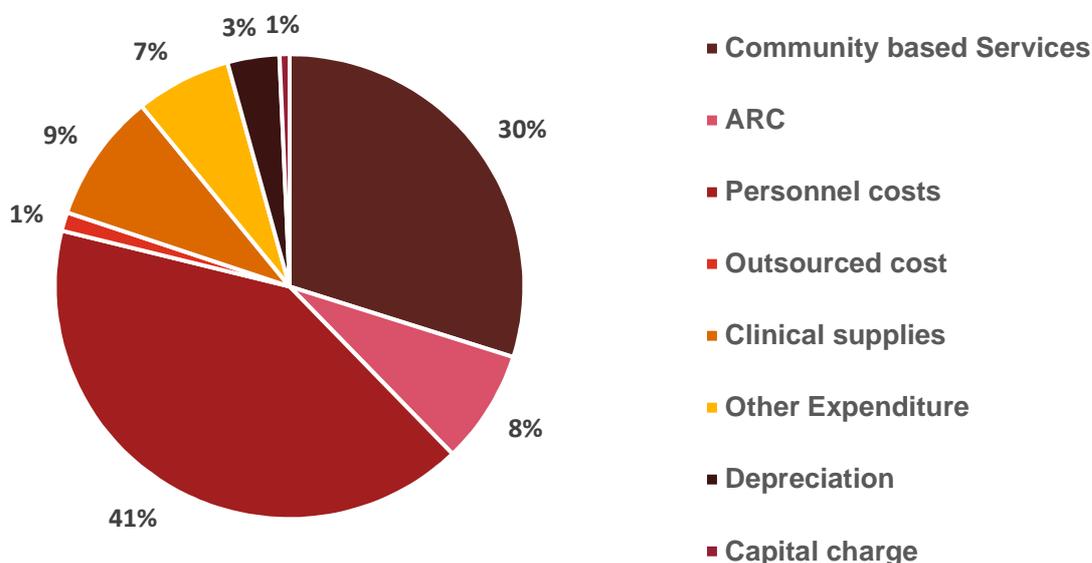
Figure 27 Historical change in funding – Other revenue (excl. one-offs)



B.4. Expenditure

Personnel and community-based services are by far the largest expenditure items for CDHB. Together they make up 74% of total expenditure.

Figure 28 Total CDHB expenditure

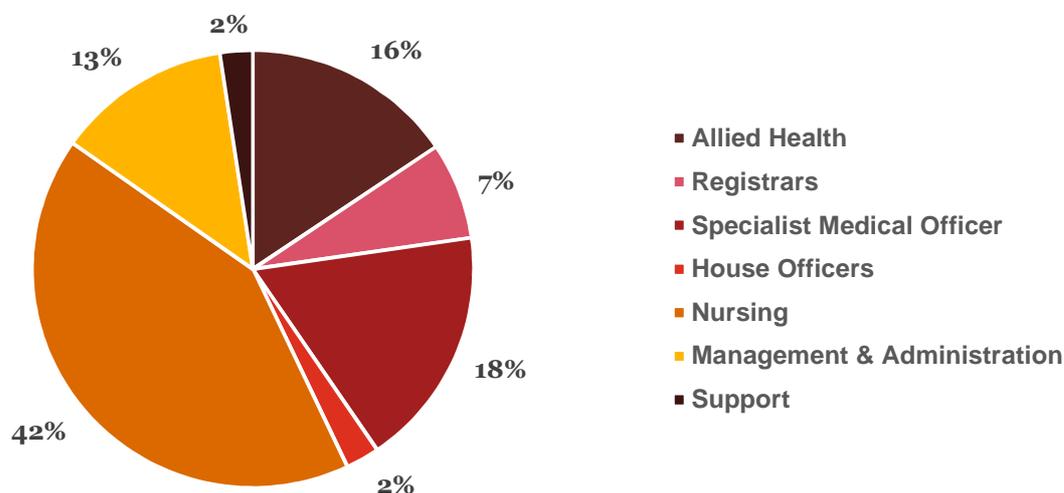


B.4.1. Personnel costs

Personnel costs is the single largest cost category in the national health system – it is 43% of CDHB’s total operating expenditure.

CDHB has seven employee categories. Figure 29 presents a breakdown of CDHB’s personnel costs by employee category.

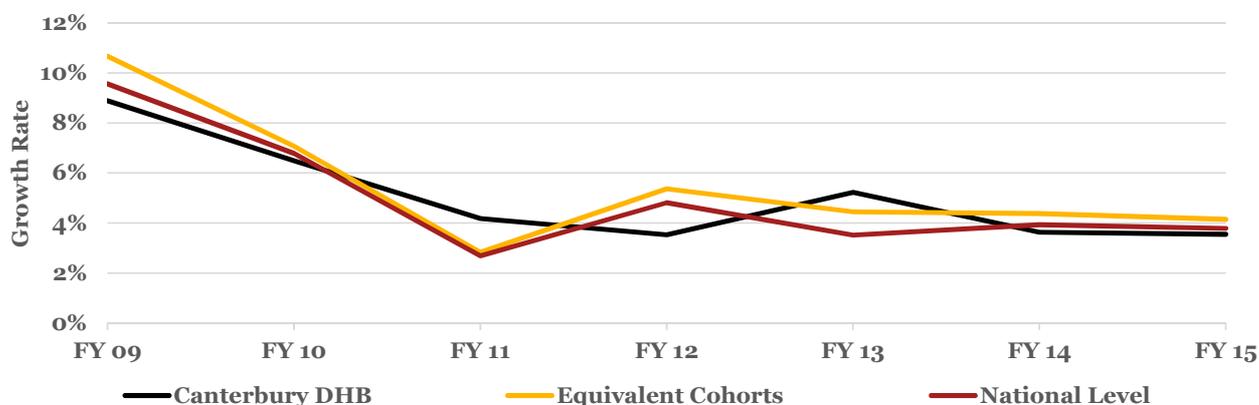
Figure 29 CDHB employee categories



The costs of each employee category are subject to different drivers, and individual DHBs have varying levels of controls over them. A number of employee categories (allied health, specialist medical officers, registrars, house officers and nursing) have centrally-negotiated collective contracts. These contain specific wage increases and working requirements/ratios that will be affected by demand for services. Individual DHBs negotiate the terms of employment for the other employee categories.

Figure 2.7 highlights that there is little variation in the growth in personnel costs across the sector, and CDHB has tracked at a similar rate to its comparative cohort and the national average. The level of control over the contractual relationships will have a significant influence on the ability for a DHB to manage its personnel costs and the impact that changes in demand will have on its services.

Figure 30 Historical change in expenditure - Personnel Costs



B.4.1.1. Wage rate increases

Wage rate increases are driven by a number of contributing factors. CDHB cannot control all of these factors.

Key terms of centrally negotiated contracts include:

- **MECA rates:** These are the major driver of wage growth. These set standardised rates for a majority of the labour force in the national health system.
- **Allowances:** These are largely determined by requirements outlined within the centrally-negotiated contracts, but can be influenced by the type of work performed and the scheduling requirements within a DHB.
- **Job sizing:** Some senior medical/surgical personnel receive salaries in excess of their centrally agreed rates, reflecting the commitment required to perform their specific roles (i.e. their role requires more than the equivalent of 1.0 FTE).

CDHB has greater control over wage growth for support, management and administration employees and, to some extent, can manage their contracts independent of the wider sector trends.

B.4.1.2. FTE numbers

DHBs can manage employee number of employees, subject to recognising that demand for health services – either by volume or service type – is a strong driver of the required number of employees. The volume of “back-office” staff is less sensitive to demand and there is more flexibility for a DHB to manage this volume.

Table 20 provides a breakdown of the FTE numbers over the past three years for the CDHB by employee type

Table 20 Historical workforce

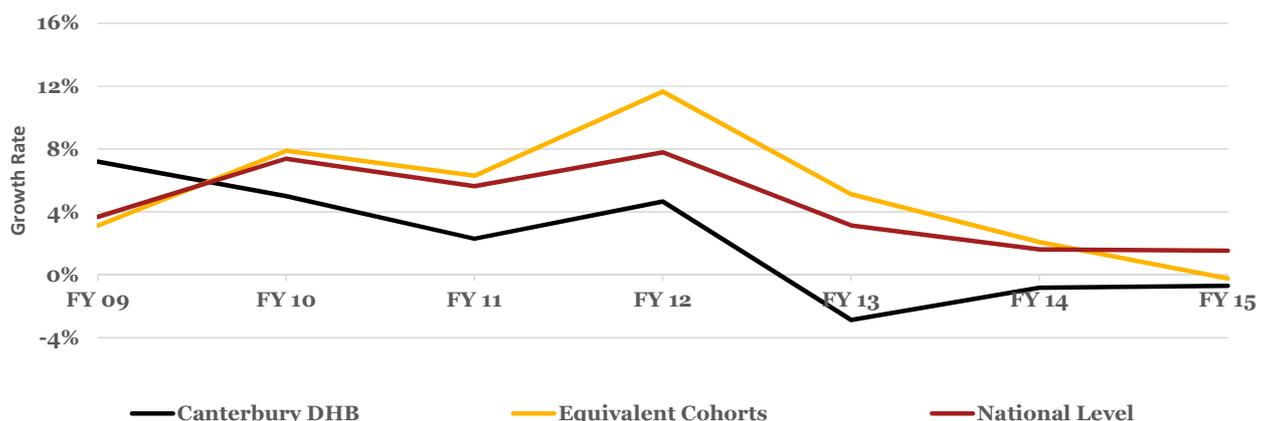
<i>Categories</i>	<i>FY14</i>	<i>FY15</i>	<i>FY16</i>
Specialist Medical Officers	430	443	446
Registrars	327	318	325
House Officers	179	152	157
Nursing	3,526	3,630	3,712
Allied Health	1,426	1,460	1,466
Support	363	269	353
Management/Administration	1,226	1,220	1,242
Total	7,477	7,492	7,701

B.4.2. Aged residential care

The provision of aged residential care services is expected to face challenges given the forecast of an aging population. However, Figure 31 shows that in recent years CDHB and other DHBs have been managing down the rate of increase in ARC costs, despite a growing population.

CDHB’s ARC cost growth has been tracking below the national average and its comparative cohort and has been on a downward trend. ARC expenditure currently constitutes around 8% of CDHBs total operational expenditure.

Figure 31 Historical change in expenditure – ARC



The primary drivers of ARC expenditure is the number of elderly people requiring care and their general health status. The rate of growth of the elderly is increasing, but their general state of health is improving which helps offset the ARC needs. While a DHB cannot control population change, it can have some influence over the health and well-being through community-based programmes.

The main drivers of ARC costs is the price of resource, such as rest homes, and the level of client contribution that is used to offset the costs to a DHB. Both of these elements are managed largely at a central level, and a DHB has limited ability to adjust the price drivers.

B.4.3. Clinical Supplies

Clinical supplies expenditure is a function of demand for DHB services. It is primarily driven by medical and surgical case weights.

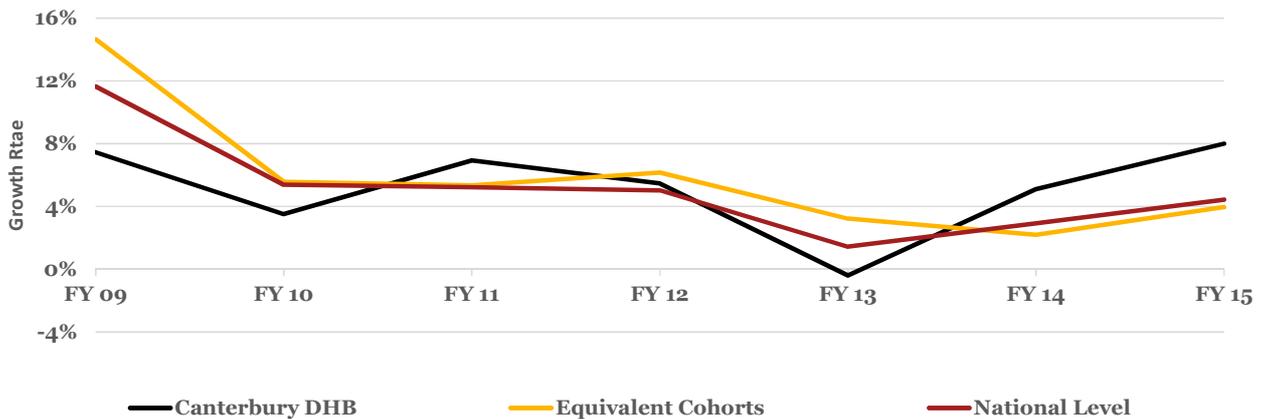
DHBs have varying levels of influence over the pricing for clinical supplies, which is highly dependent on the sourcing approach. The three procurement options for these supplies are:

- healthAlliance
- Pharmac
- DHB sourced

healthAlliance and Pharmac set prices nationally for specific clinical supplies. Individual DHBs have little control over these prices. The third option is dependent on the capability within a DHB to procure effectively.

Figure 32 shows that the annual expenditure growth for clinical supplies for CDHB is broadly in line with that of the comparative cohort and the national average. Clinical supplies was approximately 9% of CDHBs total operating expenditure on FY 15.

Figure 32 Historical change in expenditure – clinical supplies



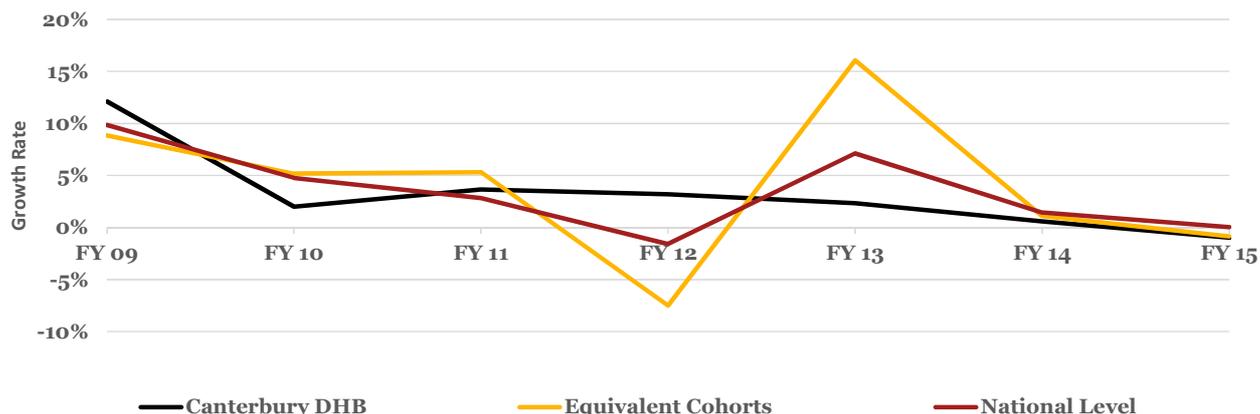
B.4.4. Community-based services

Other community-based services are services not provided for in hospitals but are funded directly by CDHB. The types of services are wide-ranging and include:

- Outsourcing
- Strategic
- IDF's
- Other community-based services (mental health, PHO's etc).

CDHB's community-based services expenditure has been growing at or slightly below that of the comparative cohort over the past six years (see Figure 33). It was approximately 31% of CDHB's total operating expenditure in FY16.

The rate of cost growth has been reducing year on year for CDHB, in line with the national average and there were marginal cost changes in FY15.

Figure 33 Historical change in expenditure – other community-based services

Community-based services are wide ranging and so are the groups using the services. Consequently, there are various factors that influence the level and growth in community-based services. However, for the purposes of this review they can be more broadly classified as being driven by population changes for specific age groups that use the services, as well as general price changes. A DHB has little control over the former, but can influence the latter through effective contract management.

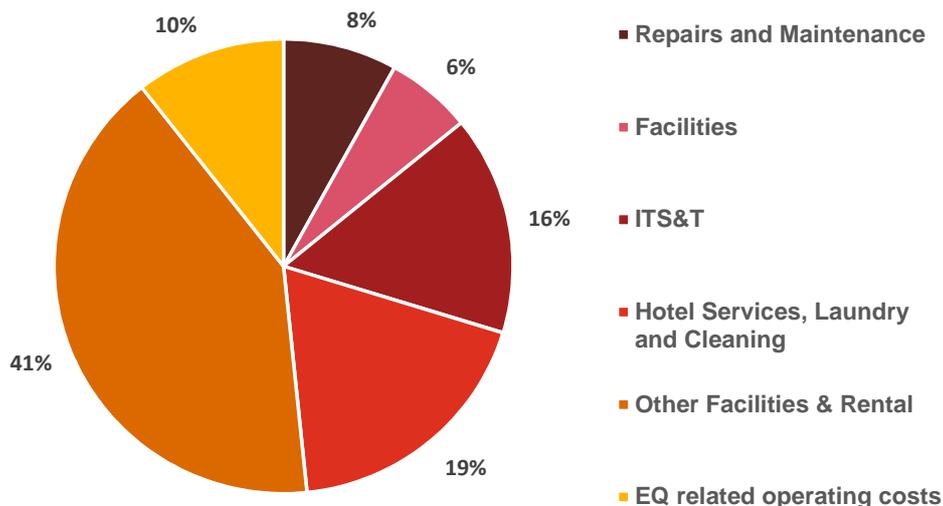
B.4.5. Other expenditure

Other expenditure includes all cost categories not identified above, including:

- IT systems and telecommunications.
- Repairs and maintenance.
- Facilities.
- Hotel services, laundry and cleaning.
- Other facilities and rentals.

Figure 34 outlines the relative proportions of this expenditure for the CDHB. Note, that this category also includes any specific operating expenditure relating to earthquake recovery activities, which has been excluded in the table below.

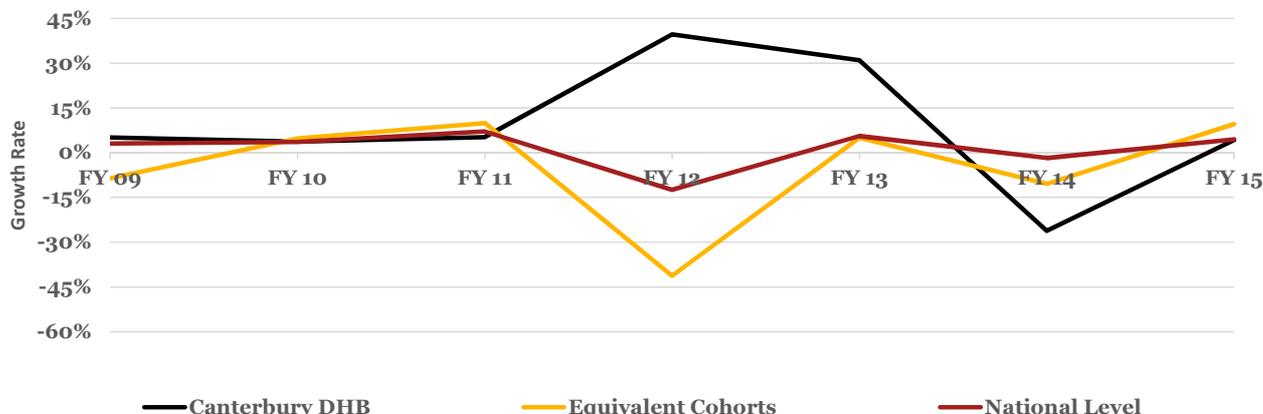
Figure 34 Other expenditure – CDHB



B.4.5.1. IT Systems and Telecommunications expenditure (ITS&T)

ITS&T is approximately 1% of CDHB’s operating expenditure. Figure 35 highlights that the growth in CDHB’s ICT related expenditure was broadly consistent with other DHBs from FY09-FY11. The significant increase in CDHB’s ITS&T expenditure in FY12 and FY13 reflects the implementation of the Health 1 and SFN systems. During the same period the comparative cohort recorded reduction in expenditure growth. CDHB expenditure decreased in FY14 and has since converged to the national average.

Figure 35 Historical change in expenditure – ITS&T expenditure

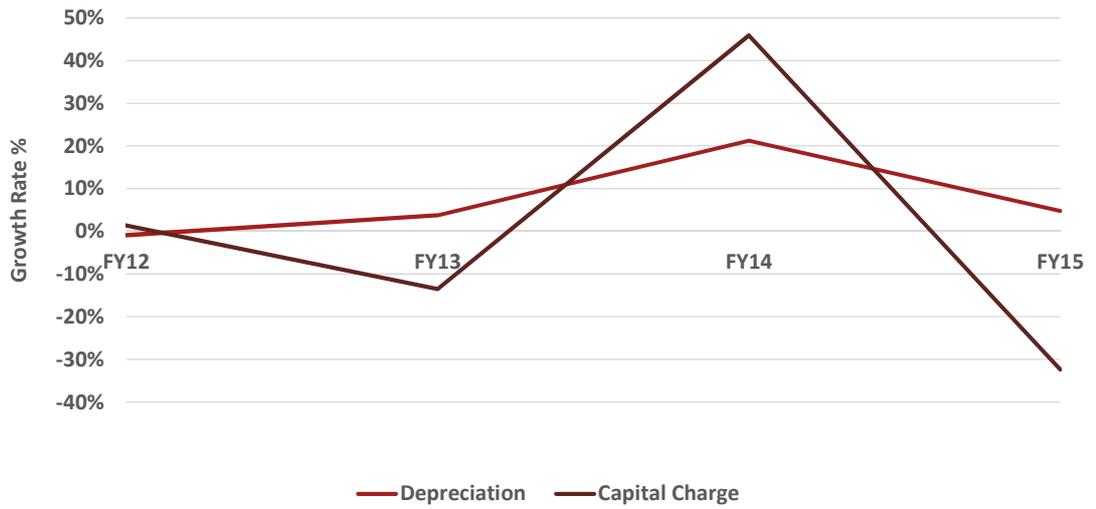


B.4.6. Capital-related costs

Capital-related costs is comprised of depreciation and capital charge. Movements in these costs are DHB specific and are dependent on the capital programme, revaluations and the age of the asset portfolio.

Figure 36 illustrates the movement in CDHB’s depreciation and capital charge costs. These cost items are included in “other expenditure” for the other DHBs and cannot be readily identified for comparative purposes.

Figure 36 Historical change in depreciation and capital charge – CDHB



Appendix C. - Modelling assumptions & data

C.1. Workforce model assumptions

Listed below are the DAP categories used in the workforce model:

- Specialist Medical Officers
- Registrars
- House Officers
- Nursing
- Allied Health
- Support
- Management/Administration

Listed below are the underlying service levels used in the workforce model:

- Admin and other support units
- Allied Health – Burwood
- Allied Health - Medical/Surgical
- AT&R
- Gynaecology
- Maternity
- Medical
- Mental Health
- Other business units
- Paediatric
- Surgical
- Brackenridge
- Laundry

Presented below are the effort weightings used in the workforce model. These weightings are not dynamic with time, but were tested with CDHB and reflect steady state operations.

Service Levels	Discharges	Case weights	Bed Days	Theatre Hours
Admin and other support units	-	-	-	-
Allied Health - Burwood	100.00%	-	-	-
Allied Health - Medical/Surgical	100.00%	-	-	-
AT&R	10.00%	-	90.00%	-
Maternity	75.00%	-	25.00%	-
Medical	60.00%	10.00%	30.00%	-
Mental Health	10.00%	-	90.00%	-
Other business units	100.00%	-	-	-
Paediatric	60.00%	30.00%	10.00%	-
Surgical	40.00%	30.00%	10.00%	20.00%
Brackenridge	-	-	-	-
Laundry	-	-	-	-
Source: CDHB				

Listed below in Table 21 are the churn factors across the District Annual Plan (DAP) categories. These factors modelled a proportion of the workforce for each DAP category as exiting the top pay-scale and entering at the bottom pay-scale at the rate incorporating the base change for that period.

Note that the nursing DAP category was broken down into the underlying pay-scale brackets with varied churn factors. Also note that churn factors were only applied to the DAP categories where there was a breakdown of the FTE's by pay-scale. Where this breakdown was not available a churn factor was not applied and the growth rates for salaries were derived using an alternative approach.

Table 21 Churn factors for each DAP category

<i>DAP Category</i>	<i>Churn factor (% per annum)</i>
Specialist Medical Officers	3.50%
Registrars	N/A
House Officers	7.50%
Nursing – RN	7.50%
Nursing – EN	7.50%
Nursing – HCA	7.50%
Nursing – Senior Nursing	10.00%
Nursing – Community & Midwife	12.50%
Allied Health	N/A
Support	N/A
Management/Administration	N/A

Listed below in Table 22 are the weighted average growth rates for salaries across the DAP categories with and without the churn factors applied (where applicable). These were assumed to remain constant and did not vary in the out-years.

Table 22 Weighted average wage rates with and without churn for each DAP category

<i>DAP Category</i>	<i>Weighted average growth rate without churn factor (%)</i>	<i>Weighted average growth rate with churn factor (%)</i>
Specialist Medical Officers	3.05%	2.70%
Registrars	N/A	2.68%
House Officers	3.25%	2.45%
Nursing	4.57%	3.32%
Allied Health	N/A	2.77%
Support	N/A	2.00%
Management/Administration	N/A	2.00%

C.2. Detailed breakdown of PoW capital projects

For the purpose of showing this breakdown, we have combined the capital projects which have multiple capitalisation dates. The projects denoted with an asterisk have multiple capitalisation dates.

Capital projects	Opening WIP	Total Project Cost	Remaining Cost
CHOC Interim (including Physio relocate)	6,579	6,959	380
ICU Interim expansion (Parkside)	1,892	2,995	1,103
DHB wide EQ repairs (Note: For all campuses ie inel Bwd, Hillmorton & TPMH - additional)*	-	984	984
41 st Asaph: TEMP CSSD to CLS	-	29	29
41 st Asaph: TEMP TSU to Women's	667	685	18
33 St Asaph St vacating - M&E, mobility, IS Technicians, Fire & Security to LGF Parkside	58	413	355
33 St Asaph St vacating - Lab Admin	31	44	13
33 St Asaph st vacating Sexual Health Service Relocation to Riccarton Road lease property	63	885	822
New Outpatient (aggregated POW \$)	-	57,000	57,000
New ChCh Boiler House / Energy Centre	86	51,936	51,849
Avon Generator building	-	3,000	3,000
New St Asaph street substation	498	7,870	7,372
Food Services Floor bracing & upgrades	-	731	731
Oncology Upgrade	-	2,400	2,400
Canterbury Health Lab - Stairs & associated wall panels EQR*	-	544	544
Parkside - upgrade & remaining EQ*	-	61,888	61,888
Parkside/Clinical Services Block Links upgrade*	-	400	400
Clinical Services Block - Upgrade*	-	2,188	2,188
Parkside - Emergency Dept Extension Upgrade*	-	1,200	1,200
Critical Structural weakness CDHB wide -repair*	-	1,036	1,036
Interim Paediatric Outpatient relocation (Interim for up to 5 years)* New Item	-	2,000	2,000
BWD Boiler House - new boilers & equipment	-	5,750	5,750
Beacon House Vacating Paed Therapy to Montreal House (ex Lyndhurst)	112	1,856	1,744
Admin (main entrance remaining) EQ repairs & upgrade	-	2,837	2,837
Campus food service café kitchen fitout	-	540	540
Old Surgical Block Office Refurb (to house Dental from ChCh campus, to enable ASB and co-locate dental lab with main service)*	-	57	57
Food services Building (upgrade)	-	394	394
Laundry Building (new)	-	10,000	10,000
Laundry Boiler & Boiler House (new)	-	7,500	7,500
Supply Building (new)	-	4,000	4,000
Other MH Repairs & upgrades*	-	152	152
Aroha Pai upgrade	-	296	296
Te Waimokihī upgrade	-	284	284
Te Whare Mauri Ora upgrade	-	243	243
Tapuna Village upgrade	-	251	251
Relocate Mental Health Services	-	43,300	43,300
Corporate Services Relocation	-	3,000	3,000
Ashburton Theatres, Wards AAU	177	7,038	6,861
Rangiora Health Hub*	3,985	9,390	5,405
Oxford Repairs Upgrade	-	1,375	1,375
Waikari Repairs Upgrade	-	1,085	1,085
Darfield Repairs Upgrade	-	1,150	1,150
Lincoln/Ellesmere Repairs upgrade	-	1,946	1,946
SIAPO to 586 Wairakei Road*	157	288	131
1 Durham St refit*	208	240	32

Source: CDHB

C.3. CDHB capital plan

	FY15	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25
	(\$m)	(\$m)	(\$m)	(\$m)	(\$m)	(\$m)	(\$m)	(\$m)	(\$m)	(\$m)	(\$m)
POW											
Opening WIP Balance	-	14.5	25.6	11.4	35.3	62.2	10.0	40.8	-	-	-
Additions to WIP	-	26.5	20.5	28.3	92.1	49.2	40.8	36.4	-	-	-
Capitalised Cost	-	(15.4)	(34.7)	(4.4)	(65.2)	(101)	(9.9)	(77.1)	-	-	-
Closing WIP Balance	14.5	25.6	11.4	35.3	62.2	10.0	40.8	-	-	-	-
BAU											
Opening WIP Balance		16.2	3.8	5.6	-	-	-	-	-	-	-
Additions to WIP		52.4	32.8	32.1	29.0	28.1	25.1	25.0	25.0	25.0	25.0
Cap. Cost – IT		(5.5)	(9.5)	(6.0)	(6.0)	(6.0)	(6.0)	(6.0)	(6.0)	(6.0)	(6.0)
Cap. Cost – Motor Vehicles		(0.3)	(0.3)	(0.3)	(0.3)	(0.3)	(0.3)	(0.3)	(0.3)	(0.3)	(0.3)
Cap. Cost – Plant and equipment		(35.1)	(15.6)	(17.2)	(17.2)	(17.2)	(17.2)	(17.2)	(17.2)	(17.2)	(17.2)
Cap. Cost – Linen		(1.5)	(1.5)	(1.5)	(1.5)	(1.5)	(1.5)	(1.5)	(1.5)	(1.5)	(1.5)
Cap. Cost – Kaikoura and Burwood development		(3.4)	-	-	-	-	-	-	-	-	-
Cap. Cost – PICS ¹¹		(5.1)	(4.1)	(7.1)	(1.2)	(3.1)	(0.1)	-	-	-	-
Cap. Cost – EMM ¹²		-	-	(5.6)	(2.8)	-	-	-	-	-	-
Cap. Cost – Burwood boiler		(13.9)	-	-	-	-	-	-	-	-	-
Total Capitalised Cost		(50.4)	(31.0)	(37.7)	(29.0)	(28.1)	(25.1)	(25.0)	(25.0)	(25.0)	(25.0)
Closing WIP Balance	16.2	3.8	5.6	-	-	-	-	-	-	-	-
Strategic Approved Capitalised Cost											
Burwood		-	215.0	-	-	-	-	-	-	-	-
ASB		-	-	-	481.0	-	-	-	-	-	-
Subtotal	-	-	215.0	-	481.0	-	-	-	-	-	-
Strategic Unapproved Capitalised Cost											
IT		-	-	1.6	5.1	0.7	0.7	0.2	1.4	0.4	2.4
Buildings		-	4.3	21.2	22.7	27.0	30.0	25.0	25.0	30.0	30.0
Linear accelerators		-	-	-	-	-	-	4.0	8.0	4.0	4.0
Dental vans		-	-	-	-	-	2.6	3.9	0.7	-	-
Subtotal	-	-	4.3	22.8	27.8	27.7	33.3	33.1	35.0	34.4	36.4

Source: CDHB

¹¹ Patient Information Care System (PICS)

¹² Electronic Medication Management (EMM)

Appendix D. - Scenario three (FY16 – FY25)

Scenario three reflects the personnel costing assumptions used for the analysis within this report

D.1. Income statement

Consolidated Income Statement	Jun 2016 \$m	Jun 2017 \$m	Jun 2018 \$m	Jun 2019 \$m	Jun 2020 \$m	Jun 2021 \$m	Jun 2022 \$m	Jun 2023 \$m	Jun 2024 \$m	Jun 2025 \$m
MOH PBFF	1,287	1,307	1,346	1,383	1,420	1,460	1,500	1,542	1,584	1,628
Sub-Contracts	63	59	60	62	64	65	67	69	71	73
MOH - Non-Devolved Contracts	46	51	53	54	55	57	59	60	62	64
Other Govt (not MOH or other DHBs)	29	33	33	34	34	35	36	37	37	38
Non-Govt & Crown Agency Sourced Revenue	58	57	58	59	60	61	63	64	65	66
IDF Revenue	111	110	112	113	115	117	118	120	122	124
EQ Draw Down - Revenue Appropriation	10	13	8	1	1	3	3	(0)	(0)	(0)
Additional Funding (Post FY16 Budget)	-	17	16	16	9	9	9	9	9	9
Total Revenue	1,604	1,646	1,686	1,722	1,759	1,808	1,856	1,901	1,950	2,002
ARC	128	132	135	137	140	144	148	151	154	158
Outsourcing	34	35	34	24	21	18	18	17	17	17
Strategic	28	28	27	23	22	22	20	20	20	21
IDF Outflow Expenditure	37	35	35	36	36	37	37	38	38	39
Home & Community Services	57	59	61	63	65	68	72	76	80	84
Mental Health	44	45	46	47	48	49	50	51	52	54
Community Referred Services - Pathology	23	23	23	24	24	25	25	26	26	27
Community Referred Services - Pharmacy	116	119	123	125	129	132	135	139	142	146
Community Referred Services - Radiology	1	1	1	1	1	1	1	1	1	1
PHOs	99	102	105	108	112	115	119	122	126	130
Additional Contribution to DHB Demographic and Cost Pressures	-	1	1	1	1	1	1	1	1	1
Pharmaceutical Investment Funding	-	4	3	3	3	3	3	3	3	3
Supporting Health Services in Canterbury	-	5	5	5	-	-	-	-	-	-
Other Community Based Services	40	41	42	43	44	45	46	47	49	50
Personnel Costs	670	690	718	747	777	799	822	844	868	892
Outsourced Personnel	21	22	22	23	23	24	24	25	25	26
Outsourced Non-Personnel	6	6	6	6	6	6	7	7	7	7
Clinical Supplies	134	136	142	147	153	158	162	167	171	176
Repairs and Maintenance	11	10	10	13	11	12	12	12	12	13
Facilities	6	7	7	9	8	8	8	9	9	9
ITS&T	18	18	18	19	19	20	20	20	21	21
Hotel Services, Laundry and Cleaning	26	26	26	26	27	27	28	29	29	30
Other Facilities & Rental	41	42	43	43	44	45	46	47	48	49
EQ related operating costs	10	13	8	1	1	3	3	(0)	(0)	(0)
Transition Costs - Princes Margaret	-	3	3	3	3	-	-	-	-	-
Conferences/Training	6	6	6	6	6	6	6	6	6	7
Sub Total Expenses	1,554	1,606	1,650	1,682	1,726	1,768	1,813	1,858	1,907	1,959
Loss/(Gain) on Disposal of Fixed Assets	0	-	-	-	(13)	-	-	-	-	-
Total Expenses	1,554	1,606	1,650	1,682	1,713	1,768	1,813	1,858	1,907	1,959
Surplus/(Deficit) before Depreciation, Net Interest and Capital Charge	50	40	36	40	46	40	42	43	43	43

This report is solely for the use and benefit of the Ministry of Health and should not be relied upon by any other party.
Ministry of Health - Canterbury District Health Board Stage Two Financial Review

Appendix F. Scenario three (FY16 – FY25)

Consolidated Income Statement	Jun 2016 \$m	Jun 2017 \$m	Jun 2018 \$m	Jun 2019 \$m	Jun 2020 \$m	Jun 2021 \$m	Jun 2022 \$m	Jun 2023 \$m	Jun 2024 \$m	Jun 2025 \$m
Interest Income/(Interest Expense)	2	1	1	2	1	0	(2)	(3)	(2)	(2)
Net Interest	2	1	1	2	1	0	(2)	(3)	(2)	(2)
Surplus/(Deficit) before Capital Charge	52	41	37	42	48	40	41	40	41	41
Equity/Crown Debt Capital Charge Revenue	6	5	4	4	4	4	4	4	4	4
Capital Charge - Net Assets (excl. Reval, Str. App. and PoW)	(15)	(15)	(12)	(12)	(12)	(10)	(7)	(4)	(3)	(3)
Capital Charge - PoW	(3)	(4)	(4)	(8)	(12)	(14)	(16)	(17)	(16)	(15)
Capital Charge Revenue - Reval.	-	-	0	1	0	-	-	-	-	-
Capital Charge - Reval.	-	-	(0)	(1)	(0)	-	-	-	-	-
Net Capital Charge (Reval.)	-									
Capital Charge Revenue - Str. Approved	-	-	4	4	12	12	12	12	12	12
Capital Charge - Str. Approved	-	(8)	(13)	(12)	(40)	(39)	(38)	(37)	(36)	(35)
Net Capital Charge (Str. Approved)	-	(8)	(9)	(8)	(28)	(27)	(26)	(25)	(24)	(23)
Net Capital Charge	(11)	(21)	(21)	(24)	(48)	(47)	(45)	(41)	(39)	(37)
Surplus/(Deficit) before Depreciation	41	20	16	18	0	(8)	(4)	(1)	2	4
Deficit Funding	16	-	-	-	-	-	-	-	-	-
Surplus/(Deficit) before Depreciation and after Deficit Funding	57	20	16	18	0	(8)	(4)	(1)	2	4
Depreciation - Existing Assets & BAU	(57)	(44)	(33)	(31)	(31)	(31)	(29)	(30)	(32)	(34)
Depreciation - PoW	(1)	(2)	(2)	(4)	(7)	(8)	(10)	(10)	(10)	(10)
Depreciation - Reval.	-	(7)	(11)	(11)	(1)	-	-	-	-	-
Depreciation - Str. Approved	-	(6)	(6)	(11)	(18)	(18)	(18)	(18)	(18)	(18)
Net Depreciation	(58)	(58)	(52)	(57)	(57)	(57)	(57)	(58)	(60)	(62)
Net Surplus/(Deficit) - Transfer to General Funds	(0.5)	(38.5)	(35)	(39)	(57)	(65)	(61)	(59)	(59)	(58)

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Ministry of Health - Canterbury District Health Board Stage Two Financial Review

D.2. Balance sheet

Consolidated Balance Sheet	Jun 2015 \$m	Jun 2016 \$m	Jun 2017 \$m	Jun 2018 \$m	Jun 2019 \$m	Jun 2020 \$m	Jun 2021 \$m	Jun 2022 \$m	Jun 2023 \$m	Jun 2024 \$m	Jun 2025 \$m
Assets											
Current Assets											
Cash and Cash Equivalents	1	16	25	30	35	25	(19)	(56)	(53)	(48)	(43)
Trade and Other Receivables	53	65	54	56	57	58	60	61	63	64	66
Current Inventories	9	9	9	9	9	9	9	9	9	9	9
Current Investments	0	2	-	-	-	-	-	-	-	-	-
Current Prepayments	4	5	5	5	5	5	5	5	5	5	5
Current Restricted Funds (Assets)	8	8	13	13	13	13	13	13	13	13	13
Total Current Assets	74	104	106	113	119	110	68	33	37	43	50
Non-Current Assets											
Fixed Assets	377	379	619	629	1,148	1,213	1,191	1,237	1,204	1,168	1,132
Work in progress	31	36	17	35	62	10	41	-	-	-	-
Non-Current Investments	6	6	6	6	6	6	6	6	6	6	6
Non Current Restricted Funds (Assets)	0	6	1	1	1	1	1	1	1	1	1
Total Non-Current Assets	414	428	643	672	1,217	1,230	1,239	1,244	1,210	1,175	1,139
Total Assets	488	532	750	785	1,336	1,340	1,307	1,276	1,248	1,219	1,189
Liabilities											
Current Liabilities											
Trade and Other Payables	75	26	78	80	82	83	86	88	90	92	95
Current Employee Benefits	161	154	167	174	180	187	193	198	203	209	215
Other Current Liabilities	9	90	23	23	23	23	23	23	23	23	23
Total Current Liabilities	244	270	268	276	284	294	301	309	316	324	333
Non Current Liabilities											
Non-Current Employee Benefits	6	6	7	7	7	7	7	7	7	7	7
Restricted Funds - Non-Current (Liabilities)	14	-	-	-	-	-	-	-	-	-	-
Total Non-Current Liabilities	21	6	7								
Total Liabilities	265	276	275	283	291	301	308	316	323	331	340
Net Assets	223	256	475	501	1,045	1,040	998	961	925	887	849
Equity											
General Funds	192	191	153	117	79	22	(43)	(104)	(163)	(222)	(279)
Crown Equity	(314)	(282)	(49)	(22)	549	576	574	572	570	569	567
Revaluation Reserves	199	199	209	229	229	229	229	229	229	229	229
Assumed Injections - BAU Capex.	-	2	15	31	42	67	92	117	142	166	186
Non-Current Borrowings	146	146	146	146	146	146	146	146	146	146	146
Total Equity	223	256	475	501	1,045	1,040	998	961	925	887	849

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D.3. Cash flow statement

Consolidated Cash Flow Statement	Jun 2016 \$m	Jun 2017 \$m	Jun 2018 \$m	Jun 2019 \$m	Jun 2020 \$m	Jun 2021 \$m	Jun 2022 \$m	Jun 2023 \$m	Jun 2024 \$m	Jun 2025 \$m
Operating Cash Flows										
Cash provided from:										
Receipts from Customers	1,579	1,640	1,677	1,720	1,757	1,803	1,851	1,899	1,949	2,000
Earthquake Repair Revenue Redrawn from MoH	10	13	8	1	1	3	3	(0)	(0)	(0)
Deficit Funding	16	-	-	-	-	-	-	-	-	-
Total Cash Inflow	1,605	1,653	1,685	1,721	1,758	1,806	1,854	1,899	1,949	2,000
Cash applied to:										
Payments to Suppliers	(1,529)	(1,608)	(1,641)	(1,674)	(1,716)	(1,761)	(1,806)	(1,850)	(1,899)	(1,950)
Total Cash Outflow	(1,529)	(1,608)	(1,641)	(1,674)	(1,716)	(1,761)	(1,806)	(1,850)	(1,899)	(1,950)
Net Cash Flow from Operating Activities	76	45	44	47	41	45	48	49	49	50
Investment Cash Flows										
Cash provided from:										
Sale of Fixed Assets	20	-	-	-	20	-	-	-	-	-
Total Cash Inflow	20	-	-	-	20	-	-	-	-	-
Cash applied to:										
Purchase of Fixed Assets	(86)	(268)	(60)	(602)	(77)	(66)	(61)	(25)	(25)	(25)
Other Investing Activities	(6)	5	-	-	-	-	-	-	-	-
Total Cash Outflow	(92)	(263)	(60)	(602)	(77)	(66)	(61)	(25)	(25)	(25)
Net Cash Flow from Investing Activities	(72)	(263)	(60)	(602)	(57)	(66)	(61)	(25)	(25)	(25)
Financing Cash Flows										
Cash provided from:										
Assumed Capital Injections - BAU Capex.	2	13	16	11	25	25	25	25	23	21
Capital Injections - PoW	34	20	28	92	49	-	-	-	-	-
Capital Injections - Burwood	-	215	-	-	-	-	-	-	-	-
Capital Injections - ASB	-	-	-	481	-	-	-	-	-	-
Interest Received	2	1	1	2	1	0	(2)	(3)	(2)	(2)
Other Financing	(14)	1	-	-	-	-	-	-	-	-
Total Cash Inflow	24	250	45	586	75	25	23	22	21	19
Cash applied to:										
Capital Repayments	(2)	(2)	(2)	(2)	(22)	(2)	(2)	(2)	(2)	(2)
Capital Charge	(11)	(21)	(21)	(24)	(48)	(47)	(45)	(41)	(39)	(37)
Total Cash Outflow	(13)	(23)	(23)	(26)	(70)	(49)	(47)	(43)	(41)	(39)
Net Cash Flow from Financing Activities	11	227	22	560	6	(24)	(23)	(21)	(20)	(20)
Net Increase in Cash Held	15	9	5	5	(10)	(44)	(36)	3	4	5
Opening Cash Balance	1	16	25	30	35	25	(19)	(56)	(53)	(48)
Closing Cash Balance	16	25	30	35	25	(19)	(56)	(53)	(48)	(43)

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Appendix E. - Revenue and cost projections (FY16-FY25)

E.1. Surplus/deficit position

To reiterate, three personnel cost scenarios have been modelled, reflecting uncertainty about future average salary increases and that there are demand based efficiencies impacting on the forecast number of FTE's. The following graphs present the financial performance and cash flow for CDHB over the ten-year forecast period (FY16 – FY25).

Figure 37 Surplus/deficit before depreciation, net interest and capital charge

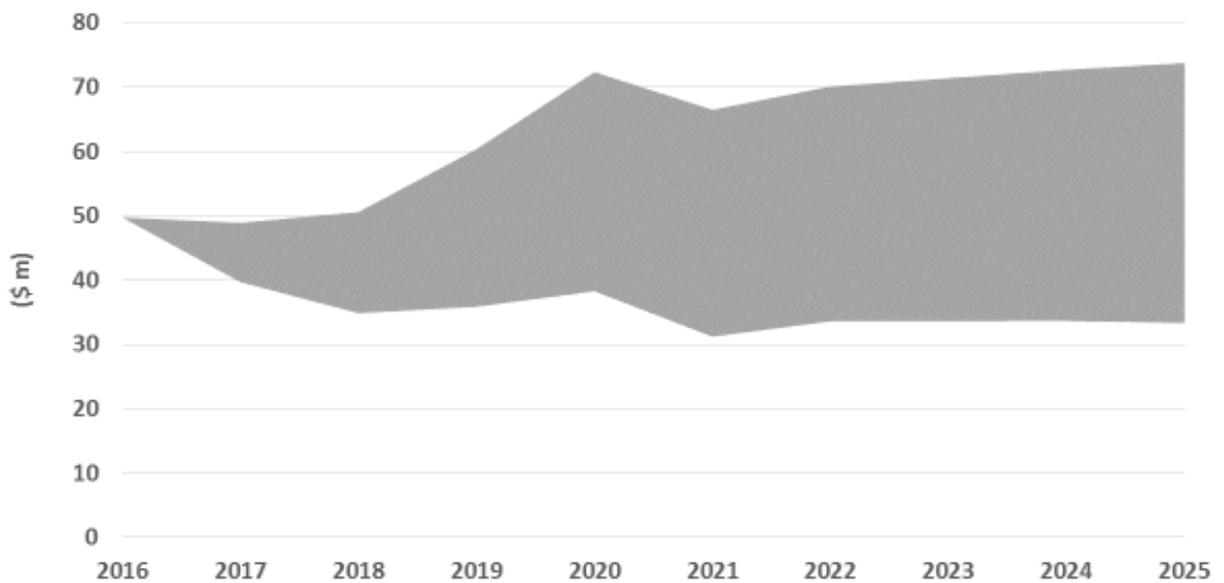


Figure 38 Surplus/deficit before depreciation

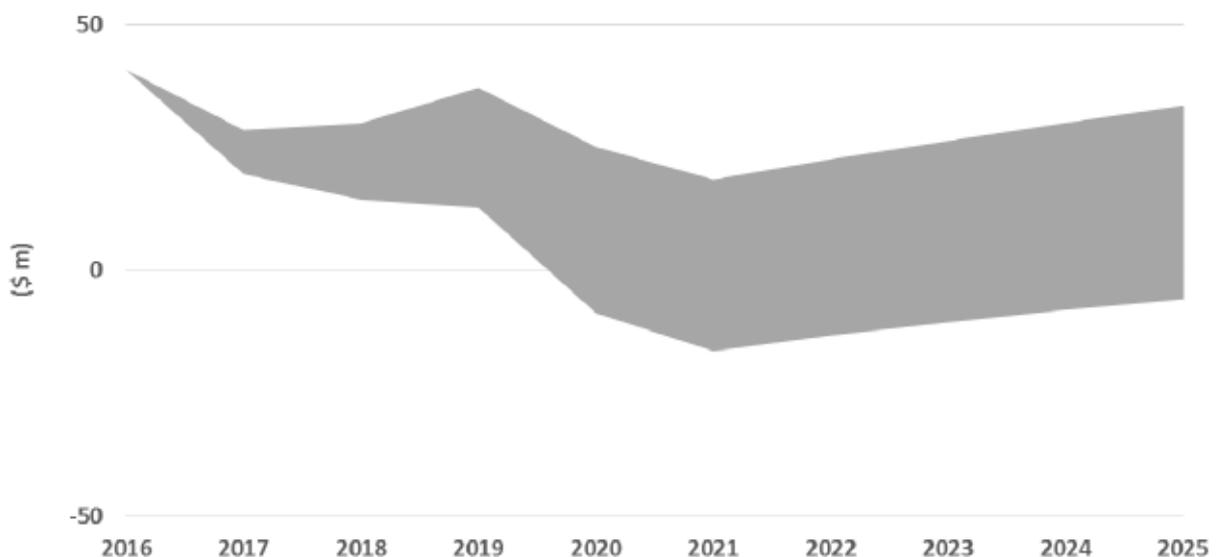


Figure 39 Surplus/deficit

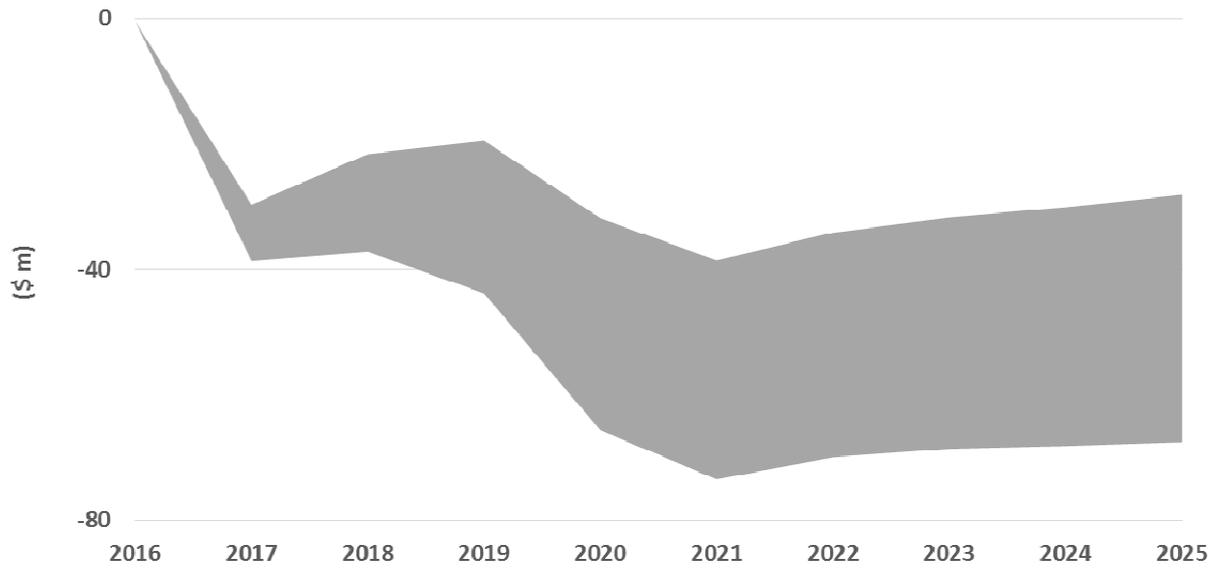


Figure 40 Net movement in cash flow

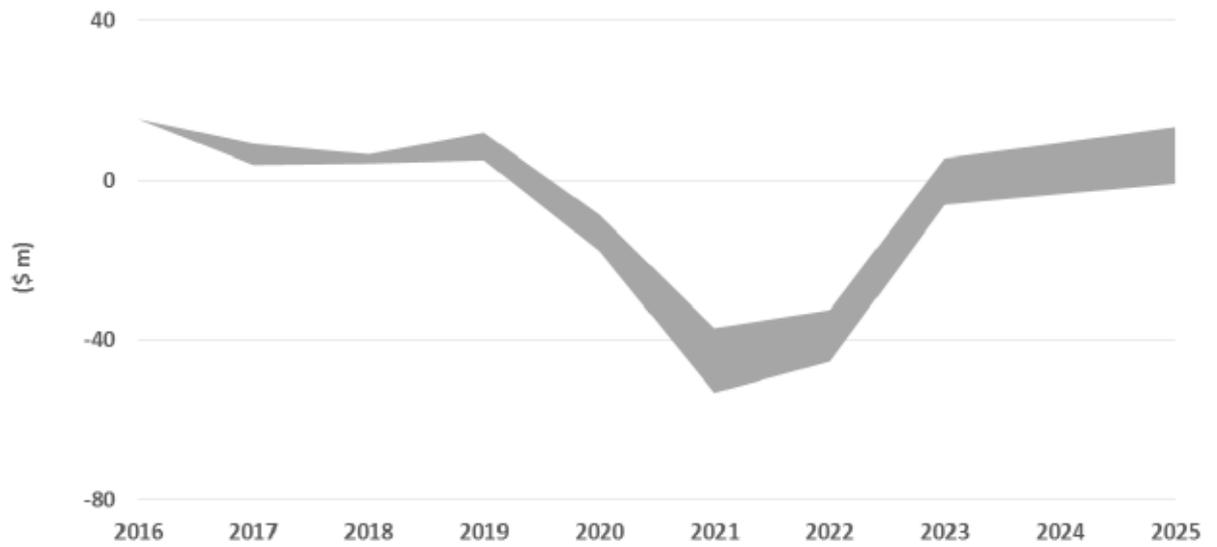
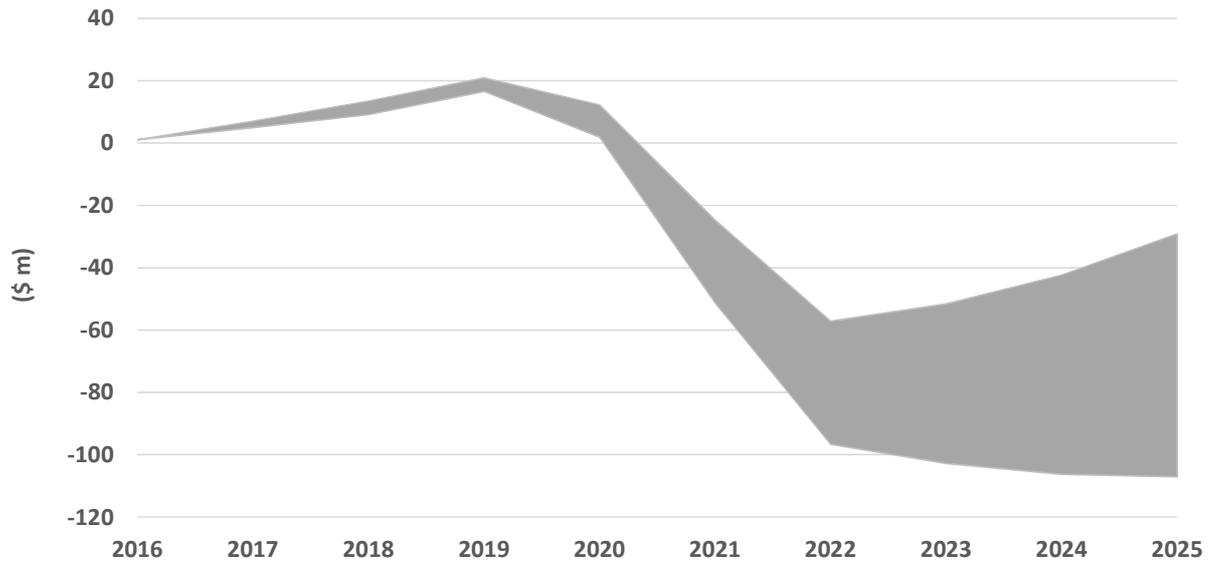


Figure 41 Closing cash balance



E.2. Revenue forecasts

Table 23 below presents the conservative and aggressive funding tracks (FY17 – FY27).

Table 23 Funding growth breakdown (FY17 – FY27)

Scenario (%)	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26	FY27
Conservative	N/A	3.04	2.75	2.64	2.81	2.78	2.75	2.74	2.78	2.83	2.87
Aggressive	N/A	3.04	2.75	2.64	3.56	3.53	3.50	3.49	3.53	3.58	3.62

This section presents the following revenue projections over the period FY16 – FY 25:

- PBF and sub-contracts (refer to Figure 42) – the range reflects variation in growth in the out-years between the conservative and aggressive funding tracks.
- IDF revenue (refer to Figure 43).

Figure 42 PBF and sub-contracts

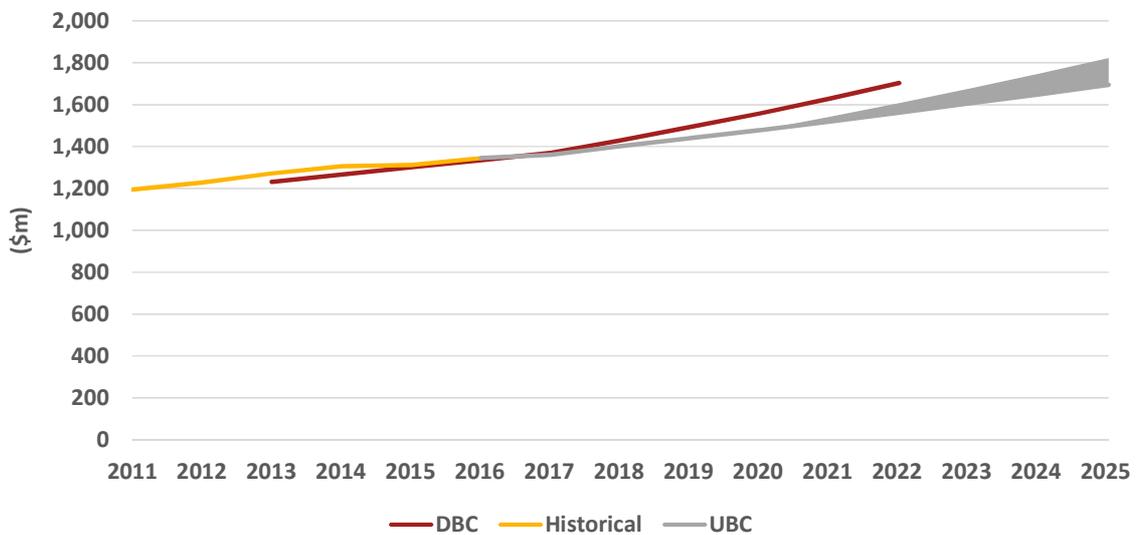
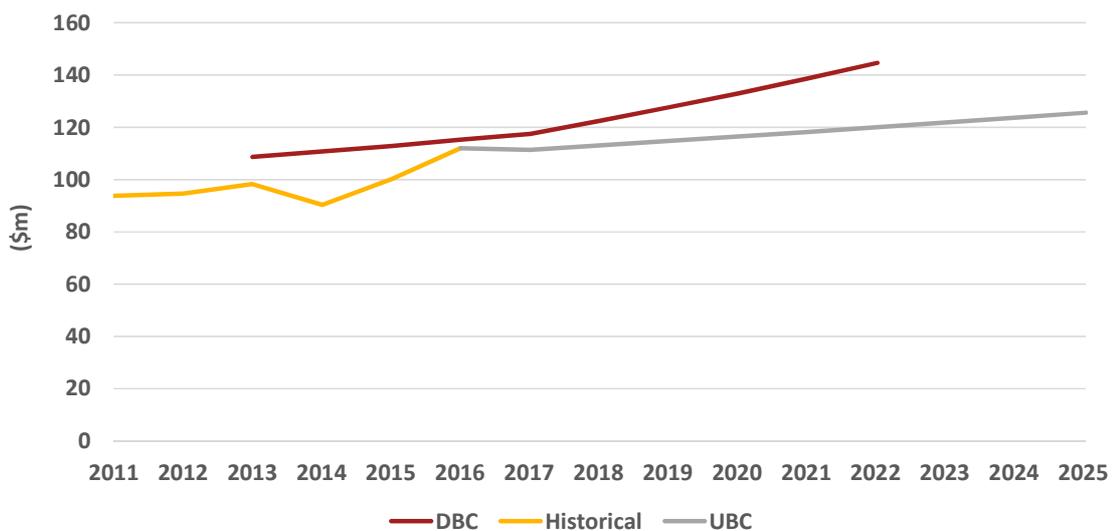


Figure 43 IDF revenue



E.3. Expenditure forecasts

This section presents the following cost projections over the period FY16 – FY 25:

- Personnel expenditure forecast (refer to Figure 44) – the range reflects the three scenarios that were modelled for personnel expenditure.
- Personnel expenditure (Scenarios 1-3) (refer to Figure 45)
- Personnel costs – annual percentage change (refer to Figure 46)
- ARC expenditure forecast (refer to Figure 47)
- Clinical supplies costs (refer to Figure 48)
- Breakdown of community-based services expenditure forecast (refer to Figure 49).

Figure 44 Projected personnel expenditure

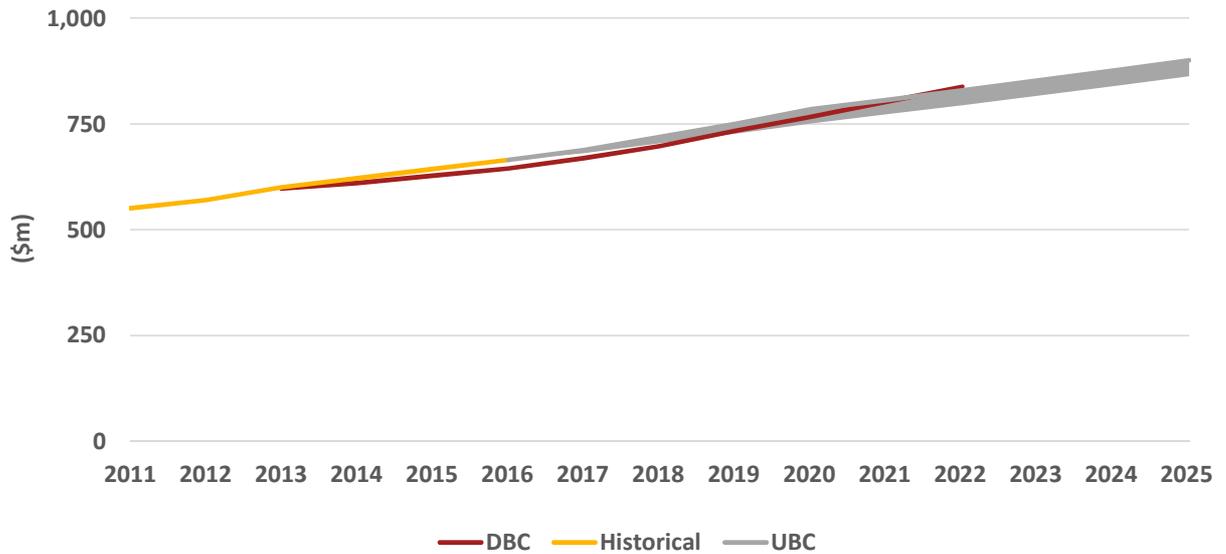


Figure 45 Personnel expenditure forecast (Scenarios 1-3)

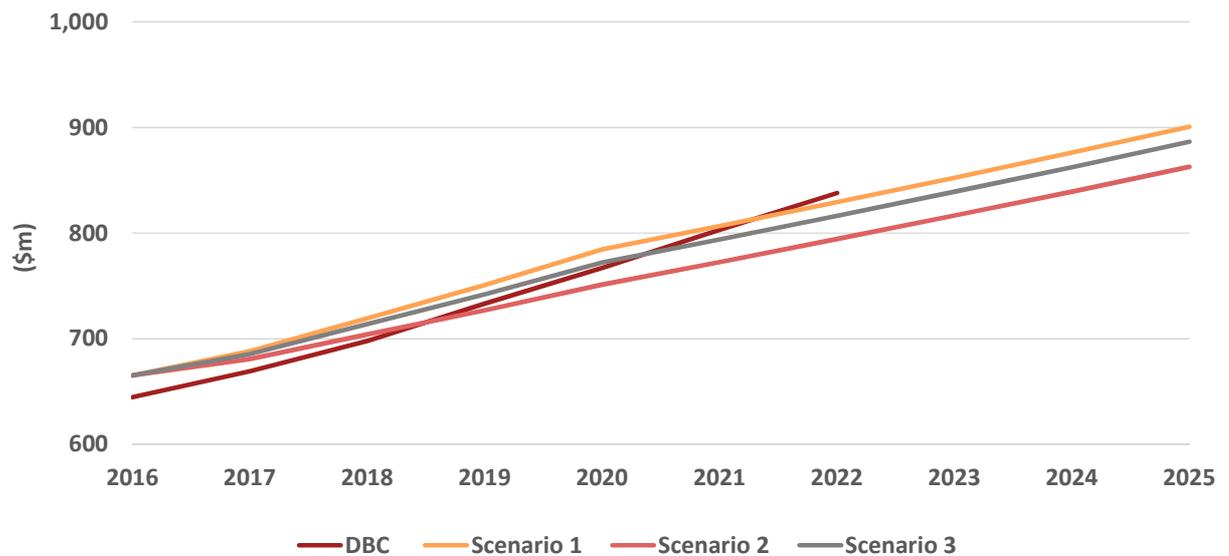


Figure 46 Personnel costs – annual percentage change

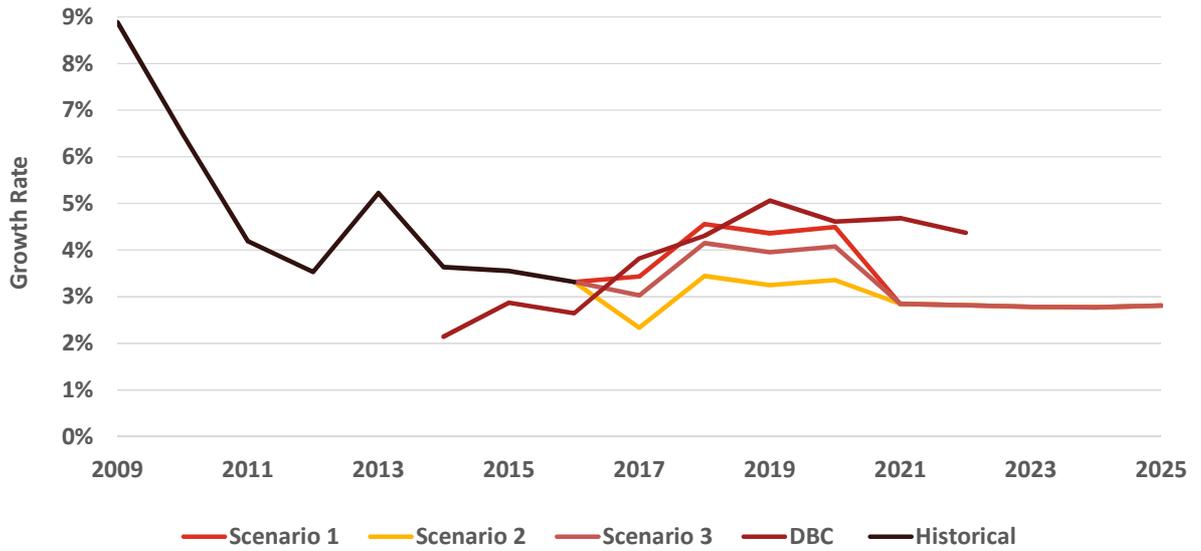


Figure 47 ARC expenditure forecast

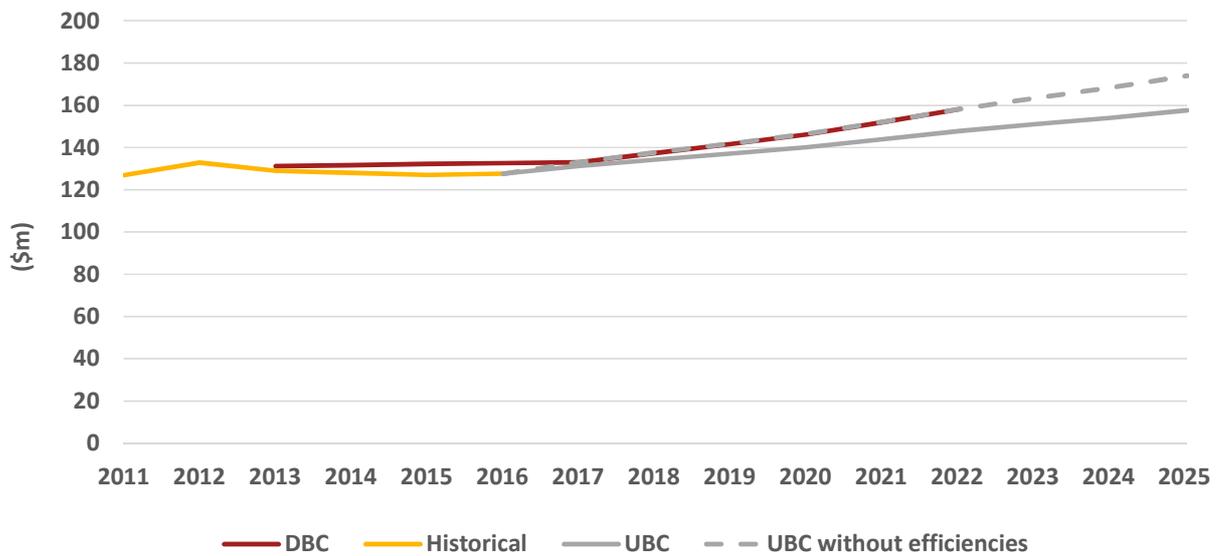


Figure 48 Clinical supplies costs

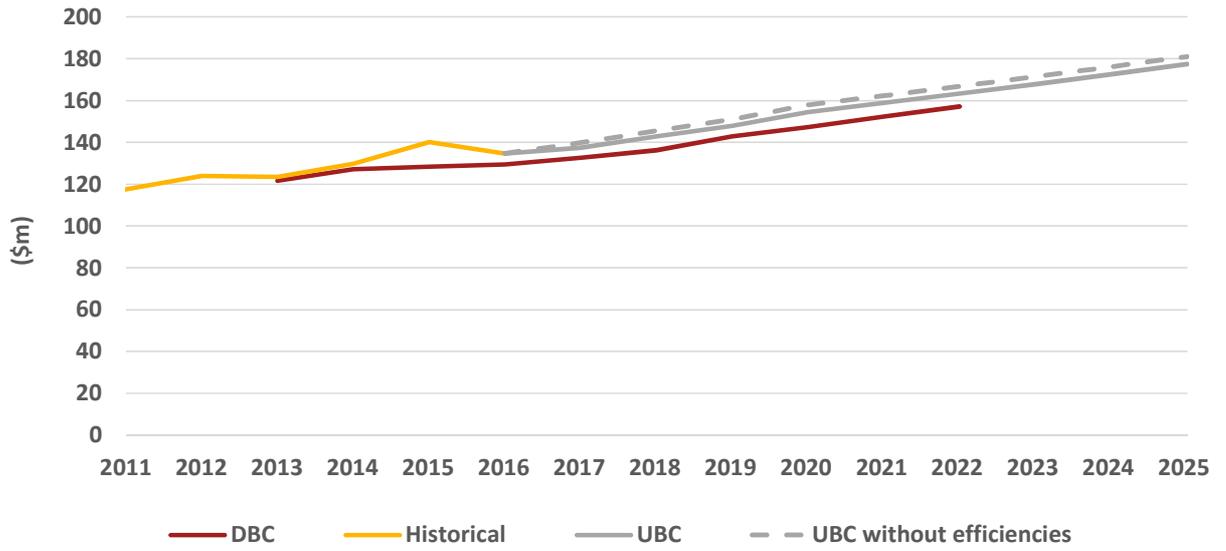
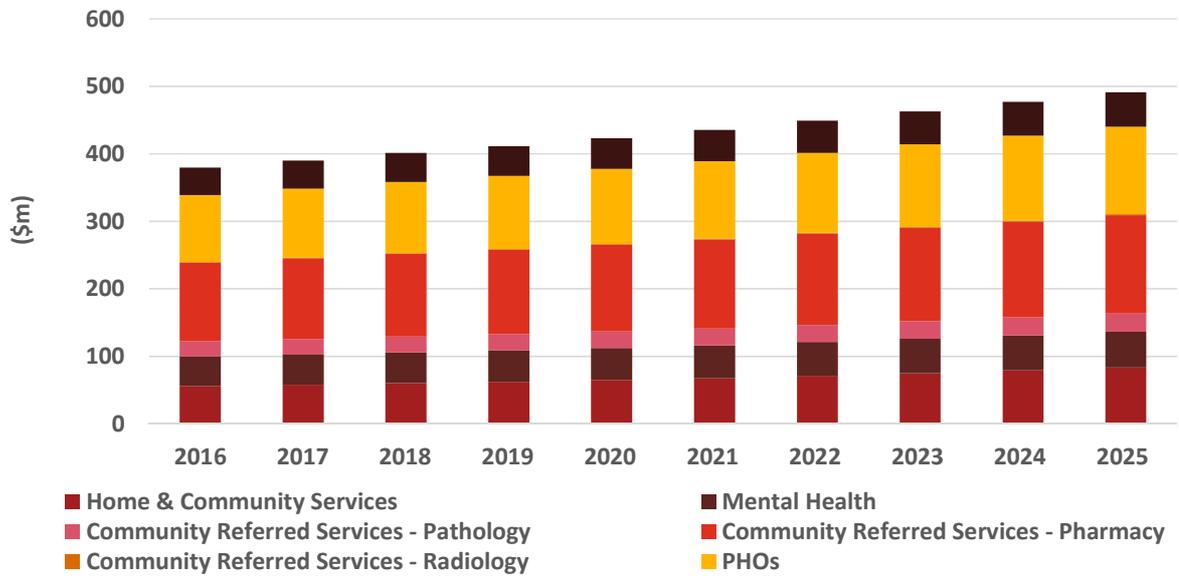


Figure 49 Breakdown of community-based services expenditure forecast



E.4. Capital

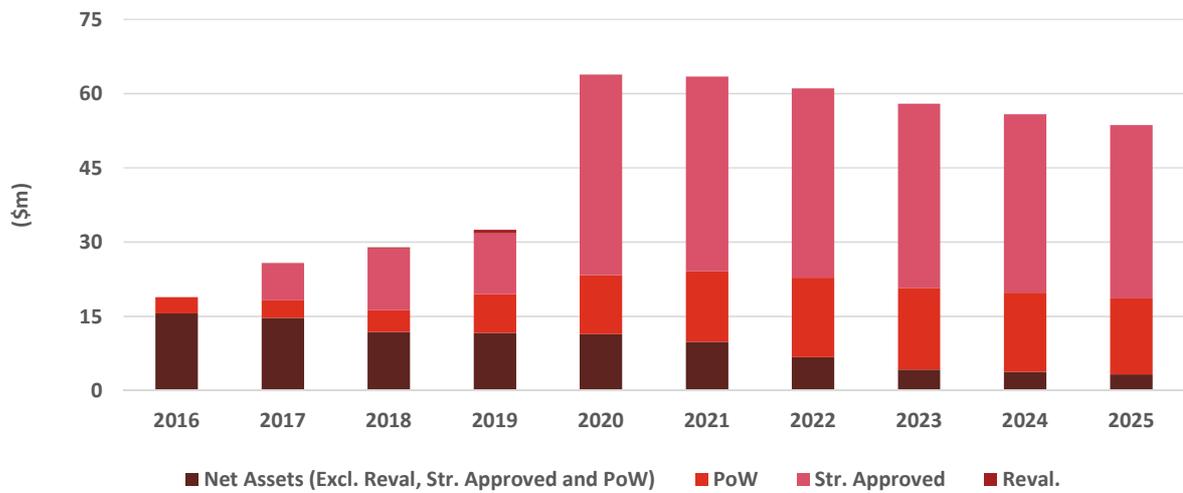
This section presents the following cost projections over the period FY16 – FY 25:

- Depreciation forecast (refer to Figure 50)
- Capital charge forecast (refer to Figure 51)

Figure 50 Depreciation forecast



Figure 51 Capital charge forecast



Appendix F. - PBF sensitivity analysis (FY16 – FY25)

F.1. PBF sensitivity analysis

The following analysis was completed following the completion of this report and represents a standalone sensitivity performed in light of additional information made available by Treasury regarding the proposed PBF funding track.

The analysis presented in this report assumes the conservative growth track for PBF funding. Table 24 presents the PBF growth track under the conservative scenario, and then introduces this conservative scenario overlaid with the proposed sensitivity. The variance in each year demonstrates that the sensitivity in growth only applies over the years 2018 to 2020.

The sensitivity has been applied to Scenario 3. This is the scenario for personnel expenditure upon which the analysis of this report is presented and which represents a financial projection for CDHB between the lower and upper bounds of the scenario analysis.

Table 24 Funding growth sensitivity (FY17 – FY25)

Scenario (%)	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25
Conservative	N/A	3.04	2.75	2.64	2.81	2.78	2.75	2.74	2.78
Conservative with sensitivity	N/A	3.52	3.20	3.07	2.81	2.78	2.75	2.74	2.78
Variance in growth rate	N/A	0.48	0.45	0.43	-	-	-	-	-

The net surplus/(deficit) and closing cash balance are presented in Figure 52 and Figure 53 respectively. The financial performance of CDHB is substantially improved under the proposed sensitivity. In 2020 the net deficit is improved by \$20m, which is then compounded over the remaining forecast period. The closing cash balance improves also, however not to the same extent given the modelling assumption that the improved cash flows become available to fund the BAU capital expenditure otherwise funded through assumed equity injections from MoH.

Figure 52 Net Surplus/(Deficit)

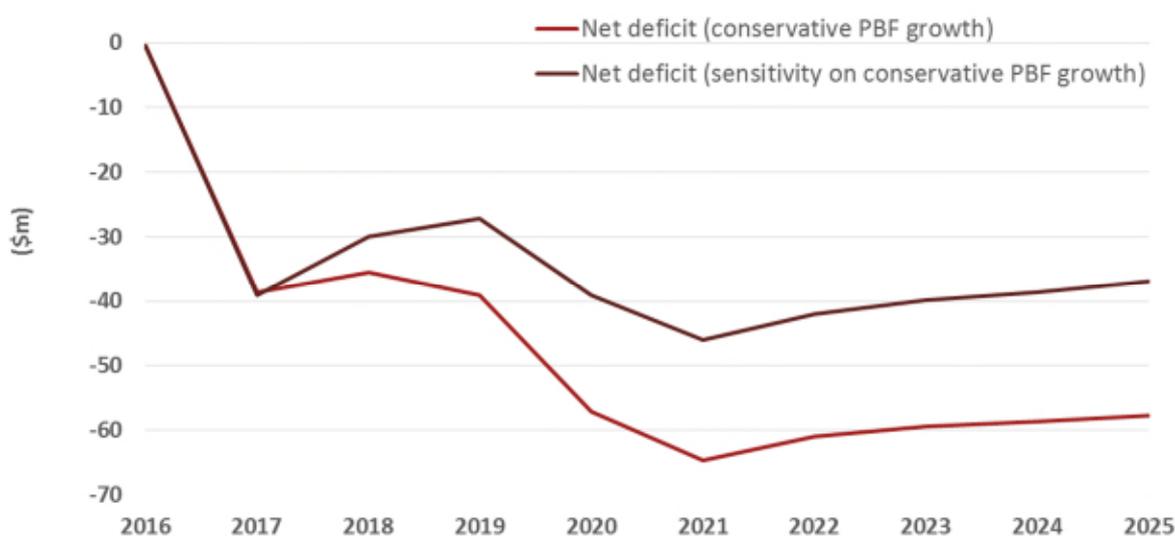
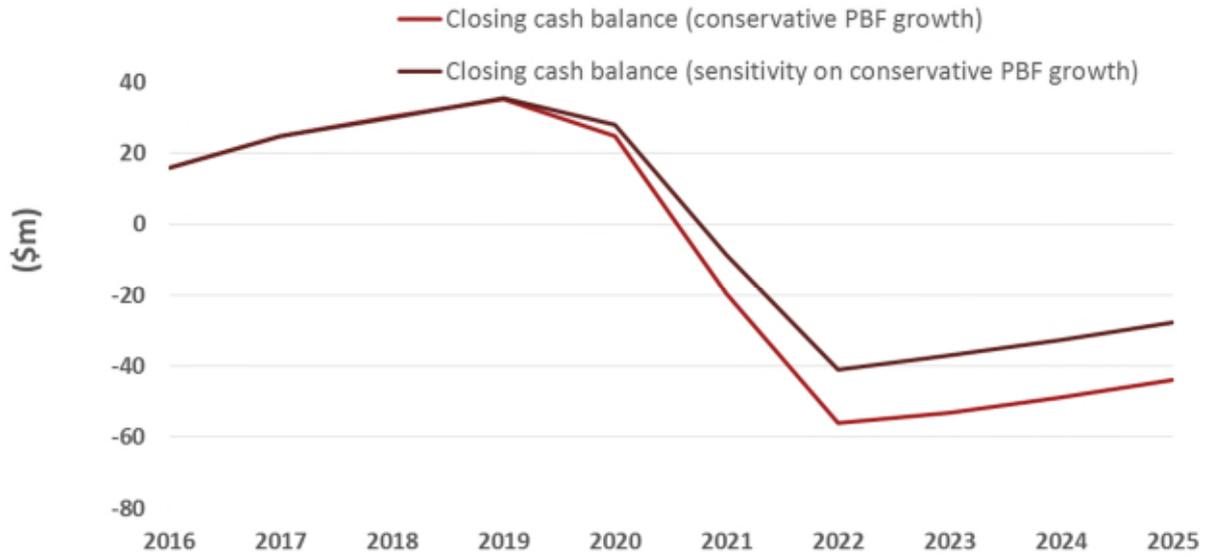


Figure 53 Closing Cash Balance



The full set of financial statements are presented in the subsequent sections for Scenario 3 and reflect the sensitivity in PBF funding growth.

F.2. Income statement

Consolidated Income Statement	Jun 2016 \$m	Jun 2017 \$m	Jun 2018 \$m	Jun 2019 \$m	Jun 2020 \$m	Jun 2021 \$m	Jun 2022 \$m	Jun 2023 \$m	Jun 2024 \$m	Jun 2025 \$m
MOH PBFF	1,287	1,307	1,353	1,396	1,439	1,479	1,520	1,562	1,605	1,650
Sub-Contracts	63	59	60	62	64	65	67	69	71	73
MOH - Non-Devolved Contracts	46	51	53	54	55	57	59	60	62	64
Other Govt (not MOH or other DHBs)	29	33	33	34	34	35	36	37	37	38
Non-Govt & Crown Agency Sourced Revenue	58	57	58	59	60	61	63	64	65	66
IDF Revenue	111	110	112	113	115	117	118	120	122	124
EQ Draw Down - Revenue Appropriation	10	13	8	1	1	3	3	-	-	-
Additional Funding (Post FY16 Budget)	-	17	16	16	9	9	9	9	9	9
Total Revenue	1,604	1,646	1,692	1,735	1,778	1,827	1,875	1,921	1,972	2,024
ARC	128	132	135	137	140	144	148	151	154	158
Outsourcing	34	35	34	24	21	18	18	17	17	17
Strategic	28	28	27	23	22	22	20	20	20	21
IDF Outflow Expenditure	37	35	35	36	36	37	37	38	38	39
Home & Community Services	57	59	61	63	65	68	72	76	80	84
Mental Health	44	45	46	47	48	49	50	51	52	54
Community Referred Services - Pathology	23	23	23	24	24	25	25	26	26	27
Community Referred Services - Pharmacy	116	119	123	125	129	132	135	139	142	146
Community Referred Services - Radiology	1	1	1	1	1	1	1	1	1	1
PHOs	99	102	105	108	112	115	119	122	126	130
Additional Contribution to DHB Demographic and Cost Pressures	-	1	1	1	1	1	1	1	1	1
Pharmaceutical Investment Funding	-	4	3	3	3	3	3	3	3	3
Supporting Health Services in Canterbury	-	5	5	5	-	-	-	-	-	-
Other Community Based Services	40	41	42	43	44	45	46	47	49	50
Personnel Costs	670	690	718	747	777	799	822	844	868	892
Outsourced Personnel	21	22	22	23	23	24	24	25	25	26
Outsourced Non-Personnel	6	6	6	6	6	6	7	7	7	7
Clinical Supplies	134	136	142	147	153	158	162	167	171	176
Repairs and Maintenance	11	10	10	13	11	12	12	12	12	13
Facilities	6	7	7	9	8	8	8	9	9	9
ITS&T	18	18	18	19	19	20	20	20	21	21
Hotel Services, Laundry and Cleaning	26	26	26	26	27	27	28	29	29	30
Other Facilities & Rental	41	42	43	43	44	45	46	47	48	49
EQ related operating costs	10	13	8	1	1	3	3	(0)	(0)	(0)
Transition Costs - Princes Margaret	-	3	3	3	3	-	-	-	-	-
Conferences/Training	6	6	6	6	6	6	6	6	6	7
Sub Total Expenses	1,554	1,606	1,650	1,682	1,726	1,768	1,813	1,858	1,907	1,959
Loss/(Gain) on Disposal of Fixed Assets	0	-	-	-	(13)	-	-	-	-	-
Total Expenses	1,554	1,606	1,650	1,682	1,713	1,768	1,813	1,858	1,907	1,959
Surplus/(Deficit) before Depreciation, Net Interest and Capital Charge	50	40	43	53	65	59	62	63	64	65

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Consolidated Income Statement	Jun 2016 \$m	Jun 2017 \$m	Jun 2018 \$m	Jun 2019 \$m	Jun 2020 \$m	Jun 2021 \$m	Jun 2022 \$m	Jun 2023 \$m	Jun 2024 \$m	Jun 2025 \$m
Interest Income/(Interest Expense)	2	0	0	1	1	(1)	(2)	(3)	(3)	(2)
Net Interest	2	0	0	1	1	(1)	(2)	(3)	(3)	(2)
Surplus/(Deficit) before Capital Charge	52	40	43	54	66	59	60	61	62	63
Equity/Crown Debt Capital Charge Revenue	6	5	4	4	4	4	4	4	4	4
Capital Charge - Net Assets (excl. Reval, Str. App. and PoW)	(15)	(15)	(12)	(12)	(12)	(10)	(7)	(5)	(4)	(4)
Capital Charge - PoW	(3)	(4)	(4)	(8)	(12)	(14)	(16)	(17)	(16)	(15)
Capital Charge Revenue - Reval.	-	-	0	1	0	-	-	-	-	-
Capital Charge - Reval.	-	-	(0)	(1)	(0)	-	-	-	-	-
Net Capital Charge (Reval.)	-									
Capital Charge Revenue - Str. Approved	-	-	4	4	12	12	12	12	12	12
Capital Charge - Str. Approved	-	(8)	(13)	(12)	(40)	(39)	(38)	(37)	(36)	(35)
Net Capital Charge (Str. Approved)	-	(8)	(9)	(8)	(28)	(27)	(26)	(25)	(24)	(23)
Net Capital Charge	(11)	(21)	(21)	(24)	(48)	(48)	(45)	(42)	(40)	(38)
Surplus/(Deficit) before Depreciation	41	19	22	29	18	11	15	18	22	25
Deficit Funding	16	-	-	-	-	-	-	-	-	-
Surplus/(Deficit) before Depreciation and after Deficit Funding	57	19	22	29	18	11	15	18	22	25
Depreciation - Existing Assets & BAU	(57)	(44)	(33)	(31)	(31)	(31)	(29)	(30)	(32)	(34)
Depreciation - PoW	(1)	(2)	(2)	(4)	(7)	(8)	(10)	(10)	(10)	(10)
Depreciation - Reval.	-	(7)	(11)	(11)	(1)	-	-	-	-	-
Depreciation - Str. Approved	-	(6)	(6)	(11)	(18)	(18)	(18)	(18)	(18)	(18)
Net Depreciation	(58)	(58)	(52)	(57)	(57)	(57)	(57)	(58)	(60)	(62)
Net Surplus/(Deficit) - Transfer to General Funds	(0.5)	(39)	(30)	(27)	(39)	(46)	(42)	(40)	(39)	(37)

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F.3. Balance Sheet

Consolidated Balance Sheet	Jun 2015 \$m	Jun 2016 \$m	Jun 2017 \$m	Jun 2018 \$m	Jun 2019 \$m	Jun 2020 \$m	Jun 2021 \$m	Jun 2022 \$m	Jun 2023 \$m	Jun 2024 \$m	Jun 2025 \$m
Assets											
Current Assets											
Cash and Cash Equivalents	1	16	25	30	35	28	(9)	(41)	(37)	(32)	(28)
Trade and Other Receivables	53	65	54	56	57	59	60	62	64	65	67
Current Inventories	9	9	9	9	9	9	9	9	9	9	9
Current Investments	0	2	-	-	-	-	-	-	-	-	-
Current Prepayments	4	5	5	5	5	5	5	5	5	5	5
Current Restricted Funds (Assets)	8	8	13	13	13	13	13	13	13	13	13
Total Current Assets	74	104	106	113	120	114	79	48	54	60	66
Non-Current Assets											
Fixed Assets	377	379	619	629	1,148	1,213	1,191	1,237	1,204	1,168	1,132
Work in progress	31	36	17	35	62	10	41	-	-	-	-
Non-Current Investments	6	6	6	6	6	6	6	6	6	6	6
Non Current Restricted Funds (Assets)	0	6	1	1	1	1	1	1	1	1	1
Total Non-Current Assets	414	428	643	672	1,217	1,230	1,239	1,244	1,210	1,175	1,139
Total Assets	488	532	750	785	1,337	1,344	1,318	1,292	1,264	1,235	1,205
Liabilities											
Current Liabilities											
Trade and Other Payables	75	26	78	80	82	83	86	88	90	92	95
Current Employee Benefits	161	154	167	174	180	187	193	198	203	209	215
Other Current Liabilities	9	90	23	23	23	23	23	23	23	23	23
Total Current Liabilities	244	270	268	276	284	294	301	309	316	324	333
Non Current Liabilities											
Non-Current Employee Benefits	6	6	7	7	7	7	7	7	7	7	7
Restricted Funds - Non-Current (Liabilities)	14	-	-	-	-	-	-	-	-	-	-
Total Non-Current Liabilities	21	6	7								
Total Liabilities	265	276	275	283	291	301	308	316	323	331	340
Net Assets	223	256	475	501	1,045	1,043	1,009	976	941	904	865
Equity											
General Funds	192	191	152	122	95	56	10	(32)	(72)	(110)	(147)
Crown Equity	(314)	(282)	(49)	(22)	549	576	574	572	570	569	567
Revaluation Reserves	199	199	209	229	229	229	229	229	229	229	229
Assumed Injections - BAU Capex.	-	2	16	26	26	36	50	61	67	71	71
Non-Current Borrowings	146	146	146	146	146	146	146	146	146	146	146
Total Equity	223	256	475	501	1,045	1,043	1,009	976	941	904	865

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 Ministry of Health - Canterbury District Health Board Stage Two Financial Review

F.4. Cash Flow Statement

Consolidated Cash Flow Statement	Jun 2016 \$m	Jun 2017 \$m	Jun 2018 \$m	Jun 2019 \$m	Jun 2020 \$m	Jun 2021 \$m	Jun 2022 \$m	Jun 2023 \$m	Jun 2024 \$m	Jun 2025 \$m
Operating Cash Flows										
Cash provided from:										
Receipts from Customers	1,579	1,640	1,683	1,733	1,776	1,822	1,871	1,920	1,970	2,022
Earthquake Repair Revenue Redrawn from MoH	10	13	8	1	1	3	3	-	-	-
Deficit Funding	16	-	-	-	-	-	-	-	-	-
Total Cash Inflow	1,605	1,653	1,691	1,734	1,777	1,826	1,874	1,920	1,970	2,022
Cash applied to:										
Payments to Suppliers	(1,529)	(1,608)	(1,641)	(1,674)	(1,716)	(1,761)	(1,806)	(1,850)	(1,899)	(1,950)
Total Cash Outflow	(1,529)	(1,608)	(1,641)	(1,674)	(1,716)	(1,761)	(1,806)	(1,850)	(1,899)	(1,950)
Net Cash Flow from Operating Activities	76	45	50	60	60	65	68	70	71	72
Investment Cash Flows										
Cash provided from:										
Sale of Fixed Assets	20	-	-	-	20	-	-	-	-	-
Total Cash Inflow	20	-	-	-	20	-	-	-	-	-
Cash applied to:										
Purchase of Fixed Assets	(86)	(268)	(60)	(602)	(77)	(66)	(61)	(25)	(25)	(25)
Other Investing Activities	(6)	5	-	-	-	-	-	-	-	-
Total Cash Outflow	(92)	(263)	(60)	(602)	(77)	(66)	(61)	(25)	(25)	(25)
Net Cash Flow from Investing Activities	(72)	(263)	(60)	(602)	(57)	(66)	(61)	(25)	(25)	(25)
Financing Cash Flows										
Cash provided from:										
Assumed Capital Injections - BAU Capex.	2	14	10	-	10	14	10	7	3	0
Capital Injections - PoW	34	20	28	92	49	-	-	-	-	-
Capital Injections - Burwood	-	215	-	-	-	-	-	-	-	-
Capital Injections - ASB	-	-	-	481	-	-	-	-	-	-
Interest Received	2	0	0	1	1	(1)	(2)	(3)	(3)	(2)
Other Financing	(14)	1	-	-	-	-	-	-	-	-
Total Cash Inflow	24	250	39	574	60	14	8	4	1	(2)
Cash applied to:										
Capital Repayments	(2)	(2)	(2)	(2)	(22)	(2)	(2)	(2)	(2)	(2)
Capital Charge	(11)	(21)	(21)	(24)	(48)	(48)	(45)	(42)	(40)	(38)
Total Cash Outflow	(13)	(23)	(23)	(26)	(70)	(49)	(47)	(44)	(42)	(40)
Net Cash Flow from Financing Activities	11	227	16	548	(10)	(36)	(39)	(40)	(41)	(42)
Net Increase in Cash Held	15	9	5	5	(7)	(37)	(32)	4	4	5
Opening Cash Balance	1	16	25	30	35	28	(9)	(41)	(37)	(32)
Closing Cash Balance	16	25	30	35	28	(9)	(41)	(37)	(32)	(28)

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Ministry of Health - Canterbury District Health Board Stage Two Financial Review