

Independent Review of the Round 16 National Hospital Cost Data Collection

Independent Hospital Pricing Authority

Final report

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Acronyms and abbreviations

ABF	Activity Based Funding
AHPCS	Australian Hospital Patient Costing Standards
AHS	Area Health Service
CAL	Calvary Public Hospital (ACT)
CSSD	Central Sterile Supply Department
DRG	Diagnostic Related Group
ED	Emergency Department
EDW	Enterprise Data Warehouse
HHS	Hospital and Health Service
HIE	Health Information Exchange (NSW database for storing clinical data)
IHPA	Independent Hospital Pricing Authority
ISAAC	Integrated South Australian Activity Collection (SA database for storing clinical data)
LGH	Launceston General Hospital
LHD / LHN	Local Health District / Local Health Network
NHCDC	National Hospital Cost Data Collection
OP	Outpatients
PAS	Patient Administration System
PFRAC	Patient fraction
PPM2	PowerPerformance Management Version 2 (Hospital costing software)
PwC	PricewaterhouseCoopers
QA	Quality Assurance
RAH	Royal Adelaide Hospital (South Australia)
RCH	The Royal Children's Hospital (Queensland)
RGH	Repatriation General Hospital (South Australia)
RVU	Relative Value Unit
SCGH	Sir Charles Gairdner Hospital (Western Australia)
THO	Tasmanian Health Office
TTR	Teaching Training and Research
UQB	Unqualified babies
WIP	Work In Progress

Executive summary

The independent financial review

The Independent Financial Review of the Round 16 National Hospital Cost Data Collection (NHDC) was commissioned by the Independent Hospital Pricing Authority (IHPA) to assess the accuracy and completeness of the data provided by jurisdictions, with specific focus on the hospital financial reconciliations and consistency with version 2 of the Australian Hospital Patient Costing Standards (AHPCS).

Jurisdictions were asked to nominate hospitals or Local Health Networks (LHNs) to participate in the review, in line with a sampling framework provided by PwC. A total of 16 hospitals or LHNs were nominated across the eight jurisdictions.

A series of templates were prepared to collect data at both the hospital and the jurisdiction level, which aimed to reconcile the costs from the audited financial statements through to the final costing output. Jurisdictions were asked to return the completed templates in advance of the site visits.

A peer review process was designed, with jurisdictions nominating representatives to participate in the site visits with an aim of sharing information, processes, challenges and solutions.

Focusing on transparency, the review extended to the IHPA review process, which included reviewing the nominated hospitals data through to submission in the national database.

The review took place in June and July 2013, with each location (jurisdiction and nominated hospitals) being visited by the PwC team, an IHPA representative and where possible a peer review representative. A number of observations were made from the review of the submitted data, and the site visits.

IHPA review process

The scope of the review for Round 16 was extended to the IHPA process around the submitted data with a review over the data flow from the hospital submission through to finalisation in the national database. The purpose of this review was to provide transparency around the IHPA process that occurs after jurisdictions have completed their submissions. Our report summarises the process IHPA followed in extracting the data, the validation and quality assurance tests that were performed and the process of agreeing any amendments to the data.

Summary of findings

Participants commented that there was a noticeable improvement to their processes, software and resources compared to the costing processes that had been reviewed in previous rounds. A large driver of this change was due to the increasing importance and focus on the costing output as a result of the introduction of Activity Based Funding, with executive management beginning to review and utilise the data. This change was also evidenced by an increasing number of controls surrounding the process – for example most sites performing a higher number of quality assurance and validation checks before submitting the data and some jurisdictions establishing a formal sign off process on the submission files.

Acknowledging these continuous improvements, the review identified the following areas where efforts can be focused for future development:

- The **treatment of work in progress (WIP)** (patients whose stay extends beyond one financial year) is inconsistent with three jurisdictions (ACT, WA and NSW) utilising different cost allocation treatments for previous year's costs to WIP patient encounters compared to the remaining five jurisdictions. In addition, there is inconsistency around the

data that is submitted to IHPA for WIP patients, with six jurisdictions (all except ACT and Tasmania) submitting costs for patients who were discharged in the current year but admitted in a preceding year, and one jurisdiction (NSW) submitting costs for patients who have not yet been discharged. We have recommended that a consistent approach is agreed to by the NHCDC Advisory Committee around the treatment and submission of these costs.

- **Patient fractions (PFRACs)** continue to be used by participants to split costs within a cost centre between the multiple hospital products. For Round 16 six jurisdictions, NSW, NT, ACT, TAS, SA and WA, reported the use of PFRACS. While the use of PFRACs is an acceptable method of apportioning costs between hospital products, not every jurisdiction undertakes a regular and robust review process around ensuring the PFRAC is up to date and accurate. We have recommended that jurisdictions consider a review process around PFRACs and share this information with IHPA in a submission checklist.
- Progress has been made in developing the use of feeder systems in the costing process, however some jurisdictions continue to have a number of **unlinked services** whose costs are either removed from the submitted file because they could not be linked to reported encounters or whose costs are spread across other patients. We have recommended that jurisdictions report the quantum of unlinked services through a submission checklist to build transparency and help move towards consistency in the process.
- Two jurisdictions (TAS and NT) were unable to provide a **reconciliation** between the costing data and the audited annual report as the report is produced at a network or central department level. We have recommended that the jurisdictions work towards providing reconciliations in future years as a control over the process.
- Whilst there was largely consistent treatment around **the inclusion or exclusion of costs** within the costing process, one jurisdiction (Victoria) excluded depreciation and amortisation from their costed results for Round 16. We have recommended that jurisdictions report on the inclusion and exclusion of certain costs in the submission checklist to build transparency and consistency across the collection.

Structure of this report

The report that follows provides details by jurisdiction and includes a number of recommendations for IHPA and the jurisdictions to consider in future rounds to improve the consistency and transparency of the process.

Report section	Details
Introduction	This section outlines the purpose, scope and methodology of this financial review.
Findings of this review	This section provides the summary of findings from this review along with recommendations for improvements in future rounds.
Hospital Chapters	These chapters explore the costing process of participating hospitals and the jurisdictions.
IHPA Process	This section discusses the process the IHPA performed when receiving, reviewing and storing the costed dataset into the national database.
Peer Review	This section outlines the peer review process, it's purpose and the learnings that were derived.
Appendix A	This appendix contains the list of attendees at the hospital site visits.

The chapters for each hospital are structured to explain how costs in the general ledger move through the costing process, setting out all included and excluded amounts and the allocation of overheads. Activity information and the allocation of costs to intermediate products are discussed, along with the quality assurance procedures performed to review the costing. The chapters also include a reconciliation of sample encounters between IHPA's national database and the hospital costing software.

1. Introduction

1.1 Overview and scope

PwC was commissioned by the Independent Hospital Pricing Authority (IHPA) to conduct an Independent Financial Review ('financial review' or 'review') of the Public Sector Round 16 National Hospital Cost Data Collection (NHCDC) for the 2011/12 year.

The scope of the financial review was:

- to assess the accuracy and completeness of the hospital financial reconciliations provided and compare the data from the financial system through to the costing system;
- to assess consistency with Version 2 of the Australian Hospital Patient Costing Standards (AHPCS) in the following areas:
 - SCP1.003 - Scope of hospital activity
 - SCP2.002 - Expenditure in scope
 - SCP2A.002 - Teaching costs
 - SCP2B.001 - Research costs; and
- to review the data flow, for participating hospitals, from the time data is uploaded in to the Data Submission Portal through to finalisation in the IHPA national database.

Some key reconciliations and tests were developed to reconcile costs as they move through the costing process, and to agree the data sets in the national database to the records of the jurisdictions and hospitals. These key tests are:

- Test 1: Agree the costing general ledger to the audited financial statements;
- Test 2: Agree and understand how the costing general ledger is allocated to hospital products and agree to the total costed hospital products;
- Test 3: Agree the total costed hospital products submitted by the jurisdiction to the dataset in the national database; and
- Test 4: Agree five sample patients provided by IHPA from the national database and agree total costs to the hospital's costing system.

As this is a financial review and not an audit, no assurance on the completeness and accuracy of the costing has been provided. The outcomes and results are heavily reliant on the representations made by hospital costing teams and jurisdiction representatives.

Procedures performed were limited to reviewing supporting schedules, agreeing to financial statements, discussions with costing teams and obtaining extracts from costing systems.

1.2 Participating hospitals

Each of the 8 jurisdictions was asked to participate and nominate hospitals or local health networks (LHNs) according to the following sampling frame:

- Queensland (QLD), New South Wales (NSW) and Victoria (VIC) were asked to nominate three hospitals based on the following criteria:
 - One large or medium metropolitan hospital with a teaching capacity
 - One rural hospital; and
 - One specialist hospital OR one hospital which has demonstrated improvements since the Round 15 NHCDC Financial Review
- South Australia (SA) and Western Australia (WA) were asked to nominate two hospitals with the following criteria:
 - One large or medium metropolitan hospital; and
 - One rural or specialist hospital OR one hospital which has demonstrated improvements since the Round 15 NHCDC Financial Review
- Australian Capital Territory (ACT), Northern Territory (NT) and Tasmania (TAS) were asked to nominate one hospital meeting any of the criteria listed above.

In total, a sample of 16 hospitals was selected to participate in the financial review. Table 1 below sets out the nominated hospitals within each jurisdiction and where these addressed the sampling frame.

Table 1 Participating hospitals

Jurisdiction	Participating hospitals	Criteria within sampling framework
Australian Capital Territory	Calvary Hospital	<ul style="list-style-type: none"> • Hospital which has not participated in an NHCDC financial review • Major urban hospital • Costing system –PowerPerformance Management2 (PPM2)
Northern Territory	Alice Springs Hospital	<ul style="list-style-type: none"> • Hospital which has not participated in an NHCDC financial review • Non Major Urban hospital • Costing system –Combo CC
New South Wales	Westmead Hospital	<ul style="list-style-type: none"> • Hospital which has not participated in an NHCDC financial review • Major Urban hospital • Costing system –PPM2
	Orange Hospital	<ul style="list-style-type: none"> • Hospital which has not participated in an NHCDC financial review • Non Major urban hospital • Costing system –PPM2
	Nepean Hospital	<ul style="list-style-type: none"> • Hospital which has not participated in an NHCDC financial review • Major urban hospital • Costing system –PPM2
Queensland	Cairns Base Hospital	<ul style="list-style-type: none"> • Hospital which has not participated in an NHCDC financial review • Non major urban hospital • Costing system - Transition II

	Mt Isa Hospital	<ul style="list-style-type: none"> • Hospital which has not participated in an NHCDC financial review • Rural hospital • Costing system - Transition II
	Royal Children's Hospital	<ul style="list-style-type: none"> • Hospital which has not participated in an NHCDC financial review • Major urban • Costing system - Transition II
South Australia	Repatriation General Hospital	<ul style="list-style-type: none"> • Hospital which has not participated in an NHCDC financial review • Major urban hospital • Costing system – PPM1
	Royal Adelaide Hospital	<ul style="list-style-type: none"> • Previously reviewed hospital(demonstrated improvements since the R14 review) • Major urban hospital • Costing system – Trendstar
Tasmania	Launceston General Hospital	<ul style="list-style-type: none"> • Previously reviewed hospital(demonstrated improvements since the R14 review) • Major urban hospital • Costing system –Combo CC
Victoria	Frankston Hospital	<ul style="list-style-type: none"> • Hospital which has not participated in an NHCDC financial review • Major urban hospital • Costing system – User Cost
	Goulburn Valley	<ul style="list-style-type: none"> • Hospital which has not participated in an NHCDC financial review • Non major urban hospital • Costing system - Adaptive Costing (SyRis Consulting)
	Northern Hospital	<ul style="list-style-type: none"> • Hospital which has not participated in an NHCDC financial review • Major urban hospital • Costing system – PPM2
Western Australia	Armadale Hospital	<ul style="list-style-type: none"> • Hospital which has not participated in an NHCDC financial review • Major urban hospital • Costing system - Trendstar
	Sir Charles Gairdner Hospital	<ul style="list-style-type: none"> • Previously reviewed hospital(demonstrated improvements since the R14 review) • Major urban hospital • Costing system - Trendstar

1.3 Methodology

Information required for the financial review was gathered through the following three methods:

1. Data collection templates for both hospitals and jurisdictions;
2. Face to face meetings with the hospital costing team and jurisdiction representatives; and
3. Follow up discussions to address outstanding issues.

Data collection templates were distributed and collected in advance of the face to face meetings and participants were given the opportunity to provide additional information following these meetings. Each jurisdiction has reviewed their relevant chapter prior to its inclusion in this report.

1.3.1 Data collection templates

Seven data collection templates were prepared, six which requested information on the costing process performed at the hospital or LHD level and one which requested information at the jurisdiction level.

Hospitals and jurisdictions were asked to complete and return these templates in advance of the face to face meetings conducted for this review. These templates aimed to reconcile the costs within the publically available financial statements to the costed dataset that was submitted to IHPA and reconcile the activity levels that were submitted to IHPA. Table 2 provides more information on the templates and their purpose.

Table 2: Data collection templates provided to hospitals

Template name	Contents and purpose
H1 – Reconciling the hospital general ledger to the annual report	<p>This template requests the total cost recorded in the general ledger and the costs reported in the annual report for the hospital or LHD.</p> <p>Many hospitals belong to a network or area health service and as such the total costs are reported in aggregate. Where the annual report is at a network level, the template requests the breakdown of the network or area health service aggregate costs to the hospital level with an explanation of any reconciling items.</p>
H2 – Reconcile expenditure loaded into the costing system to the general ledger and split between direct and overhead.	<p>This template captures the total costs loaded into the costing system and reconciles this figure to the total cost in the general ledger. It also requests the total cost split between patient care areas (direct costs) and overhead cost centres (overhead costs).</p> <p>A reconciliation was performed within this template between the total costs and the breakdown between direct and overhead costs.</p>
H3 – Cost and activity submission across all products	<p>This template captures the total costs and number of separations for each hospital product with reconciliation to the total expenses prior to costing and the allocation to hospital products.</p> <p>The template requested any adjustments made to the costed dataset before it is submitted to the jurisdiction, such as work in progress patients, removing encounters that do not meet the validation checks.</p>
H4 – Sample costed ‘patient level’ records	<p>This templates requested hospitals to provide information from their costing system for five patient episodes which were randomly selected by IHPA. The template allows for a reconciliation between the two data sets with an explanation why there is a difference.</p>
H5 – Sampling selected	<p>This template selects three intermediate products (such as operating</p>

Template name	Contents and purpose
feeders (Activity)	theatre or pathology) and requests the activity within the feeder systems. Hospitals were asked to break down the activity by summarised hospital products.
H6 – Sampling selected feeders (Activity and expenditure)	This template builds on the data requested in H5, asking for the costs allocated to the activity listed in H5 and breaking these costs down into final hospital products.
J1 – Jurisdictional processing and submission to IHPA	This template was sent to the jurisdictions to complete with the total costs and activity by product that was submitted by the participating hospitals. It also requested any exclusions or inclusions made to the dataset before it was submitted to IHPA.

Participants were provided flexibility in completing the templates, to accommodate variable jurisdiction costing processes. For example, the adjustments made for work in progress are variably processed at the hospital or LHN or jurisdiction level. This would mean work in progress adjustments could be documented in the H2 or J1 templates.

We note that these templates were not used by Queensland in providing their Round 16 data, and that the Round 15 templates were provided instead.

1.3.2 Face to face meetings

Face to face meetings were scheduled in each jurisdiction at both the jurisdiction level and the hospital or LHD level. A list of all attendees at each meeting has been provided in appendix A.

Each participating hospital or LHD was visited by a review team made up of representatives from PwC, IHPA and a peer (see Section 12 Peer review) to discuss the overall costing process and work through the data collection templates. During this meeting, the participants were able to explain exclusions or inclusions and provide additional materials relevant to the financial review.

The jurisdiction meeting focussed on the jurisdictional process and controls over and adjustments made to the dataset before submission to IHPA. Jurisdictions were also able to discuss the jurisdiction policies and improvements for the future.

1.3.3 Follow up discussions to address outstanding issues

Where there were discrepancies in the data or not all information was collected during the meetings, jurisdictions were sent additional questions or data requests to respond to.

2 Findings of the review

This section summarises our findings from the NHCDC Round 16 (2011-12) Financial Review – both overall observations based on our onsite meetings with jurisdictions and hospitals and specific findings related to the review methodology. Where possible, we have identified the improvements in the costing process since previous NHCDC rounds (from years preceding 2011-12) and the variability in current practice between the jurisdictions. Acknowledging that most of the jurisdictions have improvement plans in place for future rounds, we have provided recommendations that together will enhance the value of the cost data collection.

The key recommendation we have made is the creation of a submission checklist that jurisdictions complete to accompany their submission and that would provide transparency on the costing process carried out. The summary of findings and recommendations below include suggestions for the data that could be included in this submission checklist.

2.1 Summary of findings

2.1.1 Improvements from previous rounds

Based on face to face meetings and discussions with participating sites regarding their costing methodologies it was evident that substantial steps forward have been made from previous rounds of the NHCDC submission. Many jurisdictions commented on fewer constraints during Round 16 such as availability of data and access to skilled costing staff and there were a number of planned improvement processes cited for future rounds.

Process improvement was a consistent focus across the jurisdictions – largely driven by an increased focus on the costing outputs as a result of the introduction of Activity Based Funding (ABF) under the National Health Reform Agreement. The frequency of performing the costing, software upgrades, increased quantity and quality of feeder data, and improved allocation methods are some examples of where the sites have increased the accuracy and quality of their costing.

One other implication of the implementation of ABF was the level of involvement of management or executive teams in the costing process, with a higher level of review and sign off compared to prior years. A number of sites explained that the costed outputs are now being used internally by the management team in making decision, compared to prior years when the NHCDC was considered a compliance function.

Many participants commented on the short timeframes that were available for completing and submitting Round 16 data. As such, this impacted their ability to perform quality assurance checks and rectify issues to the extent to which they would have liked, however the planned timelines for Round 17 will address this issue.

2.1.2 Work in progress

The treatment of work in progress (WIP) patients remains inconsistent amongst the jurisdictions, both in the allocation of costs to these patients and in the reporting of these episodes. Work in progress patients refer to patients whose stay extends beyond one financial year. This is patient costing challenge as costs need to be allocated across more than one financial year.

The two tables below demonstrate the cost allocation treatment for WIP patients (figure 1) and the data submitted for Round 16 (figure 2) across all jurisdictions.

Figure 1 shows how each jurisdiction is allocating costs to WIP patients where the patient stay extends over multiple financial years. For example where a patient was admitted during the preceding year (2010-11) and discharged during the current year (2011-12). The four methods for allocating costs to these patients are:

- Method 1: Costs incurred during the 2011-12 year were only allocated to the episode days that occurred during the 2011-12 year. In this situation, no costs from previous years were brought forward and no costs were allocated to the days the patient was admitted in a previous year;
- Method 2: 2011-12 costs were allocated to the episode days that occurred during the 2011-12 year as well as the episode days that occurred in previous years. In this situation, no costs from previous years were brought forward and allocated to the previous year episode days but the 2011-12 costs were allocated against the previous year episode days;
- Method 3: The separation that spans multiple years is split into multiple encounters with the costs from the 2011-12 year allocated to the episode days in the 2011-12 year and the costs from the previous year (2010-11) allocated to the episode days in the 2010-11 year. This data is submitted as more than one encounter in the relevant financial year.
- Method 4: Costs incurred during the 2011-12 year were allocated to the episode days that occurred during the 2011-12 year and costs from previous years (2010-11) were brought forward and allocated to the days the patient was admitted in the previous year;

Figure 1 WIP Costing – Cost allocation for Round 16

Treatment of 11/12 costs in round 16 for WIP patients whose stay spanned multiple periods	ACT	NT	NSW	QLD	SA	TAS	VIC	WA
Method 1	✓							
Method 2								✓
Method 3			✓					
Method 4		✓		✓	✓	✓	✓	

Figure 2 below outlines the data that was submitted by each jurisdiction to for the Round 16 collection. Four scenarios have been used to indicate the patient’s stay and what was submission for each jurisdiction. The scenarios are as follows:

- Scenario 1: The patient was admitted and discharged within the financial year. The entire separation was within the 2011/12 financial year.
- Scenario 2: The patient was admitted in a previous financial year and is discharged during the 2011/12 financial year. A portion of the separation was within the 2011/12 financial year.
- Scenario 3: The patient was admitted in the 2011/12 financial year but was not discharged by the end of the year. A portion of the separation was within the 2011/12 financial year.
- Scenario 4: The patient was admitted in a previous financial year and was not discharged by the end of the 2011/12 financial year. A portion of the separation was within the 2011/12 financial year.

Figure 2 WiP Costing – Data submission to IHPA for Round 16

Data submitted to IHPA for Round 16	ACT	NT	NSW	QLD	SA	TAS	VIC	WA
Scenario 1	✓	✓	✓	✓	✓	✓	✓	✓
Scenario 2	✗	✓	✓	✓	✓	✗	✓	✓
Scenario 3	✗	✗	✓	✗	✗	✗	✗	✗
Scenario 4	✗	✗	✓	✗	✗	✗	✗	✗

Only newer, more sophisticated costing software can handle WIP separations and many jurisdictions are only now upgrading to software with this capability. Some jurisdictions are combining costs from multiple financial years and manually performing this calculation outside of their costing software, managing lists of patient costs from previous years within their own databases.

Our review identified the following variances in treatment of WIP:

- **No adjustment:** Some jurisdictions made no adjustments to address work in progress patients. This resulted in patients having an inferred separation date of 30 June 2012. The costs allocated to them were only for the financial year 2011/12. For example, if the patient was admitted during 2009 and was not discharged until 2013, the patient was only allocated costs for the 366 days that occurred during the 2011/12 financial year.

Patients whose stay extended over the financial year and are costed with this methodology will be costed multiple times and the activity count will be submitted multiple times to IHPA. As IHPA makes no adjustment to combine encounters across the financial years, these encounters will be counted in the national database more than once. This will affect the average cost for this DRG as the total cost for the patient's encounter will be divided into two or more encounters.

- **Adjustment to the activity but using current year costs only:** Some jurisdictions cost only the patients who were discharged in the financial year, and allocate the costs from the financial year to the entire encounter. For example, if a patient was admitted for 12 days in 2010/11 and 8 days in 2011/12 then the patient would receive 20 days worth of costs, all from the general ledger of 2011/12. This means that additional activity is brought into costing from patients that were admitted prior to the beginning of the financial year, and some activity is excluded from patients who were not discharged by the year end.

While this method maintains the record as one single encounter, it assumes the additional activity brought in will offset the activity from patients who were still admitted by year end and therefore not included in this round of costing. Without examining details by hospital, it's not possible to quantify the impact of this approach.

- **Adjustment to the activity using the relevant year's costs:** Some jurisdictions cost the patient who was discharged during the financial year applying the costs from the relevant year to the days they stayed in that period. These costs are added together and submitted in the year the patient was discharged.

Work in progress patients are likely to have a greater effect on DRGs which have a higher average length of stay, as those encounters are more likely to extend over the financial year. While the impact at a hospital level may be small, the impact on particular DRGs may be more significant.

Recommendation 1: NHCDC Advisory Committee and stakeholders should collaborate to agree a consistent approach to the treatment of Work in Progress (WIP) patient costs and activity.

Recommendation 2: It would be useful to include WIP methodology on an NHCDC data submission checklist in order to better assess the accuracy/impact on costs.

2.1.3 Patient fractions (PFRACS)

Patient fractions (PFRACs) are developed to split costs contained within a general ledger cost centre between the multiple hospital products or services provided by that cost centre.

Six states reported using PFRACs during their costing process for all their participating hospitals, which were ACT, NT, NSW, SA, TAS and WA. Some of those participants reported a review process whereby business managers of cost centres determine the appropriate cost split between hospital products, and provide justification when variances were large from the prior year. Other participants reported relying on PFRACs that were used historically and only modifying these 'by exception.'

It is important to note, however, that PRACs are only developed where cost centres service more than one hospital product (eg if medical salaries for both outpatients and acute sit within one cost centre) and therefore impact only a small portion of cost centres in the hospital.

Recommendation 3: Jurisdictions should consider a review process around the PFRACs in use, which involves clinical staff who have visibility over the service delivery in the relevant cost centres.

Recommendation 4: IHPA may wish to request information on the use of PFRAC's and the PFRAC review process on the NHCDC submission checklist or as part of future financial reviews.

2.1.4 Unlinked services

Unlinked services are intermediate products that are not associated with a patient encounter, resulting in the costs allocated to these services not being captured in the reported dataset. In product costing, an intermediate product refers to services or products that can be delivered to or consumed by patients such as laboratory services, nursing services, radiology services etc.

All participating hospitals have some level of unlinked services, however the extent of this varies. Some hospitals have advanced feeder systems which are able to link the majority of services to the intermediate products within a hospital, whereas other hospitals are not able to link all services.. Such results decrease the transparency of the costing process and results in certain intermediate products not being allocated to a patient encounter and thereby not being reported.

Recommendation 5: It would be useful to include the extent of unlinked services for major intermediate products on an NHCDC data submission checklist in order to build transparency and help move towards consistency in the process.

2.1.5 Reconciliation to audited financial statements

The review was designed to reconcile the submitted data back to the starting point being the audited financial statements. The benefits of this are that the audited financial statements undergo a well understood, evidence based process to substantiate and justify costs within the general ledger.

While the majority of participants were able to reconcile their costing data to the audited financial statements, two jurisdictions were not. There is also some variability in how jurisdictions prepare their financial statements – either at a network or a central department level. A reconciliation to the audited financial statements is a strong control over the accuracy of the data used at the start of the costing process and provides a level of reliability over the financial data used.

Recommendation 7: Jurisdictions are encouraged to ensure reconciliations are performed from the general ledger to the audited financial statements prior to submission.

2.1.6 Costs included in the costing process

Whilst almost all jurisdictions are consistently including certain cost in their process, there is one jurisdiction (VIC) who excluded depreciation and amortisation costs in their Round 16 submission, although plan to include this for future submissions.

Recommendation 8: It would be of assistance to jurisdictions to have a submission checklist to submit together with their data submission which reports on which costs were included or excluded.

2.2 Other general comments

2.2.1 Timely confirmation of reported data

Participants suggested that confirmation of the total cost value and the number of separations submitted into the drop box would be useful to receive at the submission point.

2.2.2 Reported data

Participants noted the absence of the 'jurisdiction commentary sections' within the published reports that were not part of the published round 15 report.

2.2.3 Service weight / RVU consistency

Five states reported using weights for at least one part of the costing process, being either service weights sourced from IHPA or internally developed RVU's. This may have been for a particular intermediate product (such as pharmacy) or for an entire hospital product (such as ED). In some circumstances, participants were uncertain about the source of or currency of the weights used.

3 Australian Capital Territory

3.1 Australian Capital Territory Overview

Calvary Hospital was nominated for the Round 16 NHCDC Independent Financial review for ACT. The Calvary Hospital is a hospital in the Australian Capital Territory and is part of the ACT Local Hospital Network (LHN) Directorate.

The review team met with representatives from ACT Health and costing representative from the hospital to discuss the NHCDC process for Calvary Hospital. Information was provided using the PwC templates along with additional reconciliation files and supporting documentation. These templates were completed by the jurisdictional representatives from ACT Health with support from the hospital costing officer. Additional data and clarification were provided after the meeting with the costing team.

3.1.1 Costing overview

The costing team at ACT LHN and Calvary Hospital used PowerPerformance Management costing system (PPM2) software to perform their costing for Round 16. Costing is performed once a year for the purpose of the NHCDC submission.

Within the ACT Government Health Directorate, there is only one financial General ledger that covers the Directorate, Canberra Hospital, Calvary Hospital and other health care facilities under the ACT LHN. Before the financial data are loaded in the costing software, ACT Health performs a high level cost allocation function to re-allocate the corporate and shared services costs to individual hospitals. This process is undertaken outside of the costing software to ensure a clear audit trail and reconciliation between the cost reports and the original financial data. This method is also used to reallocate costs that incurred in one health facility but related to the services provided in another facility.

ACT Health maintains a shared Patient Administration System (PAS) for the territory. The costing team at ACT LHN and Calvary Hospital extracts activity information from the shared PAS and other feeder systems for costing purposes. Checks and validations are performed on the data before it is entered to check for completeness.

After the review procedures and costing are completed, ACT Health runs the IPACost tool to prepare the data for submission to IHPA. This is an excel based tool provided by IHPA which runs validation and quality assurance checks over the data and creates the submission files.

3.2 Calvary Public Hospital

3.2.1 Overview

Calvary Hospital (CAL) is part of the ACT Local Hospital Network (LHN) Directorate and was costed by the costing team in ACT Health.

Below is a table which summarises the costs included in the costing, starting from the total general ledger amount through to the total hospital costs submitted to the jurisdiction. The various adjustments are discussed further throughout this chapter.

Item	Amount	Item	Amount
A. General Ledger	\$184,365,452	D. Allocation of costs to patients	
B. Adjustments to the General Ledger		Acute	\$110,489,434
Exclusions		Outpatients	\$11,771,122
Inclusions	\$2,431,759	Emergency	\$35,804,468
Total hospital expenses	\$186,797,211	Sub-acute	\$21,654,996
C. Allocation of costs		Mental Health	\$213,502
Patient care areas (Direct costs)	\$124,309,379	Boarder	
Overhead areas (Indirect costs)	\$62,529,880	Other	\$5,190,504
Total patient care areas (post allocation)	\$186,839,259	Research	\$166,884
Variance	\$42,047	Teaching	\$1,548,350
		Total costed products	\$186,839,259
		Variance	-
		E. Final adjustments	
		WIP - Carried forward from prior years	-
		WIP - Patients not discharged by year end	(\$461,848)
		Other	(\$2,540,481)
		Total costs submitted by jurisdiction	\$183,836,929
		Variance	-

The reconciliation difference Of \$0.042m (0.02% of the hospital's total cost), relates to records that failed to load correctly in the costing system due to a technical issue. These costs were not allocated to patients and excluded from the final submission to IHPA.

3.2.2 Financial Data

A. General Ledger

The financial statements and general ledger for Calvary Hospital are prepared at the ACT LHN level, which includes Canberra Hospital, Calvary Hospital and other health care facilities under the governance of the ACT LHN Directorate. For the 2011/12 financial year, a breakdown of the purchased services from the Calvary Hospitals was included in the annual report amounting to \$151.9m. The total general ledger amount was \$184.4m and the \$32.5m adjustments were agreed to supporting information. Notable inclusions were:

- \$13.3m for costs relating to total patient fees and services to other hospitals (The Canberra Hospital); and
- \$13.1m for other Government Grants.

B. Inclusions and Exclusions

Certain costs are expected to be included in the costed dataset as guided by the scope of the Australian Hospital Patient Costing Standards (AHPCS), and due to the varied structure and process within each State or Territory, these costs may already form part of the general ledger or may need to be included by the hospital or jurisdiction as part of the costing process. For example, some hospitals may include insurance costs in their general ledger while in other scenarios; these costs may be borne by the jurisdiction and allocated to the hospital as part of the jurisdiction adjustments.

Costs already included in the general ledger included:

- Superannuation, long service leave and worker's compensation;
- Depreciation;
- \$2.2m for salary costs for junior medical officers (JMOs). Calvary Hospital pays for any salary in excess of their ordinary wages and ACT Health incurs the expense for their ordinary salaries;
- \$1m for visiting medical officers (VMO) medical indemnity insurance;
- \$0.950m for the proportion of medical imaging tests for Calvary;
- \$0.970m for expenditure from the blood products;
- \$2.9m for visiting medical officers; and
- \$0.190m for post graduate nurses who are initially paid from a central ACT Health cost centre.

Costs that were already removed from the general ledger included:

- \$0.190m for the proportion of the work done for The Canberra Hospital by the Palliative care doctors employed by Calvary Hospital; and
- \$0.790m for private hospital building rent- public building utilised by private hospital.

Costs from the ACT LHN totalling \$2.4m were allocated down to Calvary Hospital by the costing team. This amount represented Calvary's share of the ACT Hospital Directorate overhead costs and other shared services.

No other costs were excluded from the general ledger of Calvary before it was uploaded to the costing system.

C. Allocation of overheads

For Calvary Hospital, the total overhead allocated was \$62.5 m which represents 33% of total costs identified at this stage of the process. A variety of allocation statistics were used to distribute overhead costs to the patient care areas. The costing team worked closely with the hospital to determine the most appropriate statistic on a case-by-case basis based on the availability of actual usage data, services provided by area and the preferred hierarchy of allocation statistics in the AHPCS.

D. Costs by hospital products

Cost centres were mapped to Areas/Departments which were then mapped to NHDC cost buckets. Account mapping was done in accordance with the AHPCS requirements. Where a cost centre provided two or more product/services (such as acute admitted care and

outpatients), patient fractions (PFRAC) were used to allocate the cost of services. For the 2011/12 year, PFRACs were developed and reviewed in consultation with the hospital cost centre managers.

3.2.3 Activity information

All admitted patient activity information was extracted from the patient administration system (IBA) and other feeder systems such as operating theatre, allied health, emergency department (EDIS), MET calls (RiskMan), imaging, pharmacy and pathology services in Calvary Hospital.

Unqualified baby (UQB) activity was excluded from the final submission to IHPA as the UQB costs were allocated to the mothers DRGs during the costing process.

No adjustments to the costing process were made for private patients at Calvary Hospital. Activity related to private patient theatre usage was entered into the Calvary Hospital patient administration system but the private utilisation were excluded in the activity files submitted to ACT Health and no adjustments were made in the general ledger for patients which were covered through other funding sources.

3.2.4 Costed dataset

A total of \$186.8m was allocated to the hospital products. These values were agreed to supporting schedules provided by the costing team.

The costing team performed a number of internal quality assurance checks over the data, including:

- DRG level analysis - average costs for cost buckets by DRG, comparing average DRG costs with previous years studies;
- Reasonableness checks – high cost and negative value episodes;
- Validation and reasonableness checks using the IPACost tool.

E. Final adjustments

After performing the quality assurance checks in IPACost, ACT Health removed 190 encounters from their submission, totalling \$3.0m. Teaching and research costs accounted for \$1.7 m of costs which were held from the final submission. Work in progress and other non admitted patient costs totalling \$1.3 m were also removed at this step before the final submission to IHPA.

Work in progress

Prior to 2011/12, Calvary Hospital did not account for work-in-progress in terms of patient activity. For Round 16, Calvary Hospital adjusted their NHCDC submission to account for patients whose stay extends across different financial years and to account for work-in-progress patients.

The diagram below illustrates the overall methodology used:

	<-- 2010/11	2011/12	2012/13 -->	Allocated 10/11 costs	Allocated 11/12 costs	Submitted to IHPA in 11/12
Scenario 1		↔		✗	✓	✓
Scenario 2	↔			✗	✓	✗
Scenario 3			↔	✗	✓	✗
Scenario 4	↔		↔	✗	✓	✗

For patients that were admitted and discharged during the year (Scenario 1), 2011/12 costs were allocated to the patients, and the encounters were submitted to IHPA.

For patients that were admitted during the previous year and discharged during 2011/12 (Scenario 2), the current year's costs were allocated for 2011/12 activity. No work-in-progress was added back for the 4 days in 2010/11. However, these encounters were not submitted to IHPA in Round 16 as they were excluded during the IPACost validation process.

For Scenarios 3 and 4 where patients had not been discharged by year end, 2011/12 costs were allocated to the patient and these encounters were not submitted to IHPA. These encounters will be submitted in the year they are discharged.

A total of \$0.461m was allocated to patients that were not discharged by 30 June 2012 (ie, scenarios 3 and 4) and will be submitted in future collections.

3.2.5 Sample Encounter reconciliation with IHPA

A sample of six Calvary Hospital patients were taken from the national database and were agreed to the information included in the hospital costing system for Calvary Hospital. The table below displays the result of the reconciliation:

Patient	Product type	Total cost (provided by IHPA)	Total cost in costing system	Variance
Sample patient 1	Outpatient	\$204.69	\$204.69	\$0.00
Sample patient 2	Non admit ED	\$1,849.05	\$1,849.05	\$0.00
Sample patient 3	Admit ED	\$3,601.80	\$3,601.80	\$0.00
Sample patient 4	Acute	\$45,672.47	\$45,675.90	(\$3.43)
Sample patient 5	Acute	\$124,946.93	\$124,960.58	(\$13.65)
Sample patient 6	Acute	\$177,949.66	\$177,981.87	(\$32.22)

Sample patients 4, 5 and 6 had a rounding difference totalling \$49.29. This was found to be created by the difference in how IPACost and the ACT costing system rounds differently for each "Service" created by its costing system and then reported in the NHCDC "B2" file.

3.3 Jurisdiction overview - ACT

3.3.1 Overview of process

ACT Health has a large and involved role in producing and implementing costing specifications, guidelines and processes for the hospitals in the territory. Each year the hospitals in ACT submit their cost files to ACT Health for costing, review and submission. The costing team also performs a number of internal quality assurance checks over the data, mainly at a DRG level to test the validity and reasonableness of the data. ACT Health also performs the bundling process to spread unqualified baby costs across the mother DRGs.

After the review procedures were performed, ACT Health ran the IPACost tool to prepare the data for submission and submitted the costed encounters to IHPA. Where data failed the IPACost validation checks, critical errors were either corrected or removed prior to submission.

3.3.2 Adjustments to costs – Calvary Hospital

Prior to submission, ACT Health removed \$3.0m from the costing data set for Calvary Hospital. The main exclusions included:

- \$1.5m of direct teaching costs and “dummy” activity used to build these costs in the PPM2 costing system;
- \$0.460m costs removed relating to patients who had not been discharged as at 30 June 2012. These patient costs will be submitted in the year the patient is discharged and were not included in the 2011/12 submission;
- \$0.160m to remove research costs; and
- \$0.820m costs related to unmatched prosthesis costs were removed from the costing data set prior to submission.

3.3.3 Reconciliation with IHPA - Calvary Hospital

The table below displays the total costs and total separations that were provided by both ACT Health and IHPA as part of their submission processes.

Item	Provided by ACT Health (J1 template)	Provided by IHPA in national dataset	Variance
Total costs	\$183,836,929	\$183,836,929	\$0.2
Total separations	168,523	168,523	-

The total separations agreed between IHPA and ACT Health, totalled 168,523 for 2011/12. The total cost for Calvary Hospital provided by IHPA contains a rounding difference of \$0.20 compared to what was reported by ACT Health.

4 Northern Territory

4.1 Northern Territory Overview

The Alice Springs hospital was chosen to participate in this review. Hospitals in the Northern Territory are costed by the Northern Territory Department of Health (NT Health) Activity Based Funding team with support from Visasys, a private contractor. This recently established team has mainly focused on improving the quality of the costing in the territory by increasing the review and scrutiny on items such as cost centre mappings and area allocation methodologies.

For Round 16, all hospitals fall within one 'network' of hospitals; however future rounds will see submissions for two hospital networks as NT Health goes through an internal restructure.

4.1.1 Costing Overview

The Round 16 NHCDC was the second submission the NT Costing team had provided. The team addressed a number of the findings and recommendations from the Round 15, through streamlining their processes and reducing the number of financial and activity adjustments required.

The territory performs costing once a year however there are plans to increase the frequency to performing quarterly or biannual costing, to be used for internal management purposes.

The financial statements are structured in the NT to display costs at either the consolidated NT Health level or for specific products (for example costs for acute services, public health and health & wellbeing), rather than the cost of networks. This means that both the total costs of a hospital along with all the non-hospital costs and non-hospital programs are included in the publically released results.

All hospitals in the NT use the same general ledger structure and all activity data is stored centrally, and was used as the source of data for costing.

4.2 Alice Springs Hospital

4.2.1 Overview

The Alice Springs Hospital (ASH) participated in this review. The hospital was costed by the NT Costing team with support from the external contractor Visasys. The software used to perform the costing is Combo CC.

Below is a table which summarises the costs included in the process, starting from the total general ledger amount through to the total hospital costs submitted to the jurisdiction. The various adjustments are explained further in this chapter.

Item	Amount	Item	Amount
A. General Ledger	\$178,344,095	<i>D. Allocation of costs to products</i>	
<i>B. Adjustments to the General Ledger</i>		Acute	\$117,295,051
Exclusions	-	Outpatients	\$14,520,470
Inclusions	\$2,572,411	Emergency	\$20,982,923
Total hospital expenses	\$180,916,506	Sub-acute	\$3,745,636
<i>C. Allocation of overheads</i>		Mental Health	\$3,713,842
Patient care areas (Direct costs)	\$140,519,567	Boarder	\$765,971
Overhead areas (Indirect costs)	\$40,396,937	Other	\$18,572,116
Total patient care areas (post allocation)	\$180,916,504	Teaching	\$1,320,488
Variance	(\$2)	Total costed products	\$180,916,497
		Variance	(\$7)
		Total costs submitted to jurisdiction	\$180,916,497
		<i>Jurisdiction adjustments (see NT section)</i>	
		Admitted ED with no Inpatient Episode	(\$151,009)
		Patient Transport	(\$5,664,877)
		Unlinked Episodes	(\$439,774)
		Admitted WIP	(\$5,594,870)
		Others	(\$5,876,316)
		Total costs submitted by jurisdiction	\$163,189,651
		Variance	-

4.2.2 Financial Data

A. General Ledger

The Northern Territory does not publicly release financial statements on a health network level, but rather at a consolidated NT Health level. The costing team was able to demonstrate how the costs were broken down to a hospitals and hospital service level, and the review team agreed the total cost for the hospital back to the ledger uploaded to the costing system.

B. Inclusions and Exclusions

Certain costs are expected to be included in the costed dataset as guided by the scope of the AHPCS, and due to the varied structure and process within each state these costs may already form part of the general ledger or may need to be included by the hospital or jurisdiction as part of the costing process. For example, some hospitals may include insurance costs in their general ledger while in other scenarios; these costs may be borne by the jurisdiction and allocated to the hospital as part of the jurisdiction adjustments.

Total expenditure for Alice Springs Hospital was \$180.9m for the 2011/2012 financial year.

Notable inclusions:

- Long service leave, which is held at the Department of Treasury and Finance. This was \$9.8m for all hospitals in the state.
- Cross border medical charges
- Patient transport (non-emergency evacuation costs). These are later excluded by NT Health.

Costs that are not included in the costing include:

- Emergency Aerial Retrieval or Royal Flight Doctor Service costs.

C. Allocation of overhead

NT Health costs are allocated to sites based on their acute activity only. Indigenous programs are allocated to sites based on the number of Indigenous patients they had during the year. For the Alice Springs Hospital, the total overhead allocated for 2011/12 was \$40.4m, which represents 22% of total costs identified at this stage of the costing process.

D. Costs by hospital products

Cost centres are mapped directly to one NHCDC area (as set out in the AHPCS) and accounts map directly to one NHCDC line item (as set out in the AHPCS), which determine which hospital service that cost centre is providing. Where a cost centre provides two or more product/services (such as acute medical care and research), a patient fraction (PFRAC) is developed. A formal review of these allocations was made throughout the year.

For the 2011/12 year, this was developed with business managers of the cost centre. Medical salaries are held in one cost centre in ASH and are split out based on time spent in each product.

Direct teaching costs were allocated directly to a 'teaching' dummy patient, while indirect teaching costs were allocated to patients.

4.2.3 Activity information

All activity data is sent to NT Health and is stored in a central database. This data is used for costing purposes and no adjustments to the data were made before it was uploaded to the costing system.

Feeder systems were used to distribute costs based on consumption for imaging, pathology and pharmacy costs. Operating theatre salaries and wages were allocated based on theatre minutes, and operating theatre consumables were based off RVUs developed in Tasmania. No adjustments were made to the feeder data.

Ward Nursing costs were allocated based on length of stay multiplied by a clinical loading that was developed locally. Ward Medical costs were allocated using modelling based on the length of stay. Patients were allocated a minimum of 30 notional minutes per stay, escalating to 60 minutes for a full day's stay. These notional minutes were used to allocate medical costs.

Emergency Department patients were cost modelled using weights that were developed during a study performed in Round 15. Weights were assigned to encounters using the average minutes by triage.

No adjustment to the costing process was made for private patients at ASH.

4.2.4 Costed dataset

A total of \$180.9m was allocated to the hospital products. These values were agreed to support schedules provided by the costing team.

The costing team then ran the IPACost tool to perform validation and reasonableness checks over the costed data. Variances from prior rounds were noted due to the change in methodology in Round 16 to increase the accuracy of the costing.

Work in progress

ASH adjust their submission to account for patients whose stay extends across different financial years. The diagram below illustrates the methodology used:

	<-- 2010/11	2011/12	2012/13 -->	Allocated 10/11 costs	Allocated 11/12 costs	Submitted to IHPA in 11/12
Scenario 1		←→		✗	✓	✓
Scenario 2	←→			✓	✓	✓
Scenario 3			←→	✗	✓	✗
Scenario 4	←→			✓	✓	✗

For patients that were admitted and discharged during the year (Scenario 1), 2011/12 costs were allocated to the patient, and the encounter was submitted to IHPA. Similarly with patients that were admitted during the previous year and discharged during 2011/12 (Scenario 2), costs were allocated from both years and the encounter was submitted to IHPA during 2011/12.

For Scenarios 3 and 4 where patients were not discharged by year end, costs were allocated to the encounters for the relevant year they were admitted for, however no data was submitted to IHPA. These encounters will be submitted in the year they are discharged.

A total of \$5.6m was allocated to patients that were not discharged by 30 June 2012 (ie, scenarios 3 and 4) and will be submitted in future collections.

4.2.5 Sample Encounter reconciliation with IHPA

A sample of five Alice Springs Hospital patient encounters were taken from the national dataset and were agreed to the information in costing system at NT Health. The table below displays the result of the reconciliation:

Patient	Product type	Total cost (provided by IHPA)	Total cost in costing system	Variance
Sample patient 1	Em. Dept	\$1,485.84	\$1,485.84	-
Sample patient 2	Acute inpatient	\$303,848.23	\$303,848.23	-
Sample patient 3	Acute inpatient	\$292,269.39	\$292,269.39	-
Sample patient 4	Em. Dept	\$271.01	\$271.01	-
Sample patient 5	Outpatient	\$109.60	\$109.60	-

No variances were noted between what was submitted by the hospital and IHPA's dataset.

4.3 Jurisdiction overview - Northern Territory

4.3.1 Overview of process

As the costing is completed at NT Health, the jurisdiction completes and oversees the entire process, from data sourcing and costing through to quality assurance procedures and submission.

After costing, NT Health performs review procedures over the costed data including running the IHPA Cost tool and investigating variances. Some adjustments are made in order to meet the validation and reasonableness checks of the tool.

4.3.2 Adjustments to costs – Alice Springs Hospital

The following adjustments were made post costing before the data was submitted:

- Removal of out of scope services (\$5.88m). This includes:
 - \$2.3m for Hospital Care Medical services
 - \$0.939m for Child and Adolescent Mental Health Services Management
 - \$0.809m for ASH Kiosk
- Removal of patient transport (\$5.7m)
- Removal of unlinked services and admitted ED patients with no episode number (\$0.590m in total).
- Removal of costs attributed to work in progress patients who were still admitted at the end of the financial year – (\$5.6m)

A total of \$164.9m was submitted for Alice Springs Hospital for 2011/12.

4.3.3 Reconciliation with IHPA – Alice Springs Hospital

The table below displays the total costs and total separations that were provided by both NT Health and IHPA as part of the submission processes.

The IPACost tool is used by the jurisdiction to prepare the files for submission, and the data is uploaded into the IHPA Data Submission Portal Drop Box. The IPACost tool is also used to perform the Unqualified Babies (UQB) cost allocation. This relates to the costs for newborn babies with zero qualified days being allocated to the mother separations at the relevant hospital. When this process was performed using IPACost, the output included a duplication of costs and separations for the mother and baby DRGs.

As demonstrated in the table below, an adjustment to remove these duplicated costs was performed by IHPA. The net result has been described in the table below as the net costs submitted by the jurisdiction.

Following IHPA's validation and quality assurance checks, the final output is included in the national dataset as shown in the table below.

Item	Total amount recorded in the IHPA data submission portal	Unqualified baby adjustment	Net total cost submitted to IHPA	Provided by IHPA in national dataset	Variance
Total costs	\$164,989,692	\$1,800,043	\$163,189,649	\$163,189,649	(\$0.35)
Total separations	151,017	726	150,291	150,291	-

No material variances were noted.

5 New South Wales

5.1 New South Wales Overview

Three Local Health Districts (LHDs) participated in this financial review; Western Sydney Local Health District (WSLHD), Western NSW Local Health District (WNSWLHD), and Nepean and Blue Mountains Local Health District (NBMLHD).

The review team met with the costing representatives from all three LHDs, accompanied by a representative from the NSW ABF Taskforce. The ABF Taskforce provide support to LHDs both in terms of training and providing a process for completing the costing. Patient level costing is used internally in NSW and as such there is a well documented process that all LHDs comply with.

The templates were provided by the ABF Taskforce team along with a reconciliation performed by all LHDs, called the 'District and Network Return Reconciliation and Audit Schedule.' (DNR). This reconciliation provided both the summary and detail of how costs from the financial statements flowed through to the submitted costed dataset. Details of inclusions and exclusions were detailed in worksheets within the files. As this reconciliation provided all the requested information the LHDs did not provide templates H1 to H3.

5.1.1 Costing overview

The participating LHDs all performed their costing using the PowerPerformance Management costing system (PPM2) for Round 16. Costing is performed twice a year in NSW, with year-to-date costing performed at the six month point and the end of the year. All NSW sites, except St Vincent's Health Network use the same general ledger structure. The financial information is extracted after the financial statements have been audited and all costed data must reconcile back to the financial statements.

The state also maintains a central data warehouse for all morbidity information. The Health Information Exchange (HIE) stores all activity relating to inpatients and ED patients, while the WebNAP system captures non admitted patient activity. Each LHD maintains a 'local HIE' which stores activity information at the local level. Local HIE copies records to the State HIE each week. Activity for costing was obtained from the local HIEs.

5.2 Westmead Hospital

5.2.1 Overview

Westmead Hospital belongs to the Western Sydney Local Health District (WSLHD) in New South Wales and was costed by a WSLHD costing team.

Below is a table which summarises the costs included in the process, starting from the total general ledger amount through to the total hospital costs submitted to the jurisdiction. The various adjustments are discussed further throughout this chapter.

Item	Amount	Item	Amount
A. General Ledger	\$704,696,274	D. Allocation of costs to products	
B. Adjustments to the General Ledger		Acute	\$444,817,433
Exclusions		Emergency	\$49,844,099
Inclusions	\$60,010,655	Sub-acute	\$24,091,469
Total hospital expenses	\$764,706,929	Other*	\$245,953,927
C. Allocation of costs		Total costed products	\$764,706,928
Patient care areas (Direct costs)	\$617,122,250	Variance	-
Overhead areas (Indirect costs)	\$147,584,679	Total costs submitted to jurisdiction	\$764,706,928
Total patient care areas (post allocation)	\$764,706,929	Jurisdiction adjustments (see NSW section)	
Variance	(\$0)	Costs not submitted	(\$245,953,927)
		Total costs submitted by jurisdiction	\$518,753,002

*Other includes non admitted patients, teaching, training and research, and other non-hospital products such as commercial services and capital works

5.2.2 Financial Data

A. General Ledger

The financial statements for the WSLHD are publically released which includes the costs and activities of Westmead. For the 2011/12 financial year the total cost of services for WSLHD was \$1.4bn. A breakdown of the WSLHD costs included in the annual report, split into the hospitals, was provided which reconciled to the general ledger costs for Westmead of \$704.7m.

B. Inclusions and Exclusions

Certain costs are expected to be included in the costed dataset as guided by the scope of the AHPCS, and due to the varied structure and process within each state these costs may already form part of the general ledger or may need to be included by the hospital or jurisdiction as part of the costing process. For example, some hospitals may include insurance costs in their general ledger while in other scenarios; these costs may be borne by the jurisdiction and allocated to the hospital as part of the jurisdiction adjustments.

Costs already included in the general ledger include:

- Superannuation, long service leave and worker's compensation; and
- Depreciation.

Costs from the WSLHD were allocated down to hospitals by the costing team. A total of \$60.0m of inclusions were allocated to Westmead. Notable inclusions were:

- \$31.4m for costs relating to activity for Westmead patients but provided/reported at other sites; and
- \$28.6m for WSLHD overhead costs;

LHD overhead costs were allocated to hospitals within the LHD based on the preferred statistics set out in the AHPCS. For 2011/12, this was mainly FTEs or share of total expenses.

No costs were excluded from the general ledger of Westmead before it was uploaded to the costing system.

C. Allocation of overhead

For the financial year 2011/12, overhead cost centre costs totalled \$147.6m representing 19.3% of total costs at this point in the process. These costs were allocated to patient care areas based on a variety of allocation statistics, such as FTEs and floor space, prioritised based on the AHPCS.

D. Costs by hospital products

Cost centres were mapped directly to one NHCDC area and accounts map to one NHCDC line item, which was driven by the hospital service that cost centre provided. Where a cost centre provides two or more product/services (such as acute medical care and research), a patient fractions (PFRAC) was developed.

For the 2011/12 year, business managers responsible for a cost centre were asked to review the historical PFRACs

5.2.3 Activity information

All activity data is sent to the LHD's HIE database, which was used as the source of activity data for costing purposes. All inpatient and ED data was included in the costing and no adjustments were made to this data before or after costing. This is to ensure that activity information used in costing purposes, both for NHCDC and NSW Health purposes, always reconciles with the HIE database.

Feeder data was used to allocate costs for pathology, imaging and pharmacy costs based on consumption. No adjustments were made to feeder data used in the costing process. Ward Medical and Ward Nursing costs were allocated based on the length of stay. Some service weights were used at Westmead which were sourced from NSW Health.

No adjustments to the costing process were made for private patients at Westmead.

5.2.4 Costed dataset

A total of \$764.7m was allocated to the hospital products listed above. These values were agreed to supporting schedules provided by the costing team.

WSLHD has replicated many of the IPACost validation and reasonableness checks into their costing system. Once costing is complete, the LHD performs these checks so it can identify and rectify any issues before data is sent to the jurisdiction.

Work in progress

Westmead do not make any adjustments for patients whose stay extends over the financial year. The diagram below illustrates the overall methodology used:

	<-- 2010/11	2011/12	2012/13 -->	Allocated 10/11 costs	Allocated 11/12 costs	Submitted to IHPA in 11/12
Scenario 1		←→		✗	✓	✓
Scenario 2	←→			✓	✓	✓
Scenario 3			←→	✗	✓	✓
Scenario 4	←→		←→	✓	✓	✓

For patients that were admitted and discharged during the year (Scenario 1), 2011/12 costs were allocated to the patient, and the encounter was submitted to IHPA.

For patients that were admitted during the previous year and discharged during 2011/12 (Scenario 2), 2011/12 costs were allocated for activity that occurred during that period. For example, if a patient was admitted for 4 days in 2010/11 and for 6 days in 2011/12, the patient would be allocated 6 days worth of 2011/12 costs. This encounter was then submitted to IHPA with only the costs from 2011/12.

For Scenarios 3 and 4 where patients were not discharged by year end, costs were allocated to the patient and these and were also submitted to IHPA, similar to Scenario 2. These will be submitted again in future years with the costs related to activity in those financial years.

5.2.5 Reconciliation with IHPA – Sample patients

A sample of five Westmead patient encounters were taken from the national database and were agreed to the information included in the costing system for Westmead. The table below displays the result of the reconciliation:

Patient	Product type	Total cost (provided by IHPA)	Total cost in costing system	Variance
Sample patient 1	Non admit ED	\$26,688.16	\$26,688.16	-
Sample patient 2	Acute	\$283,277.80	\$283,277.80	-
Sample patient 3	Acute	\$372,338.97	\$372,338.97	-
Sample patient 4	Acute	\$618,402.36	\$618,402.36	-
Sample patient 5	Acute	\$36,234.44	\$36,234.44	-

No material variances were noted between what was submitted by the LHD and IHPA's dataset.

5.3 Orange Health Service

5.3.1 Overview

Orange Health Service belongs to the Western NSW Local Health District (WNSWLHD) in New South Wales and was costed by a WNSWLHD costing team.

Below is a table which summarises the costs included in the costing, starting from the total general ledger amount through to the total hospital costs submitted to the jurisdiction. The various adjustments are discussed further throughout this chapter.

Item	Amount	Item	Amount
A. General Ledger	\$196,625,019	D. Allocation of costs to products	
B. Adjustments to the General Ledger		Acute	\$117,046,893
Exclusions	-	Emergency	\$19,866,317
Inclusions	\$24,700,931	Sub-acute	\$30,187,233
Total hospital expenses	\$221,325,950	Other*	\$54,225,501
C. Allocation of overheads		Total costed products	\$221,325,944
Patient care areas (Direct costs)	\$139,919,070	Variance	-
Overhead areas (Indirect costs)	\$81,406,880	Total costs submitted to jurisdiction	\$221,325,944
Total patient care areas (post allocation)	\$221,325,950	Jurisdiction adjustments (see NSW section)	
Variance	-	Costs not submitted	(\$54,225,501)
		Total costs submitted by jurisdiction	\$167,100,443
		Variance	-

*Other includes non admitted, teaching, training and research, and other non-hospital products such as commercial services and capital works

5.3.2 Financial Data

A. General Ledger

The financial statements for the WNSWLHD are publically released which includes the costs and activities of Orange. For the 2011/12 financial year, the total cost of services for WNSWLHD was \$748.6m. A breakdown of the WNSWLHD costs included in the annual report split into the hospitals was provided, which reconciled to the general ledger costs for Orange of \$196.8m.

B. Inclusions and Exclusions

Certain costs are expected to be included in the costed dataset as guided by the scope of the AHPCS, and due to the varied structure and process within each state these costs may already form part of the general ledger or may need to be included by the hospital or jurisdiction as part of the costing process. For example, some hospitals may include insurance costs in their general ledger while in other scenarios; these costs may be borne by the jurisdiction and allocated to the hospital as part of the jurisdiction adjustments.

Costs already included in the general ledger include:

- Superannuation, long service leave and worker's compensation; and

-
- Depreciation.

Costs from the WNSWLHD were allocated down to hospitals by the costing team. A total of \$24.7m of inclusions were allocated to Orange. Notable inclusions were:

- \$20.3m for WNSWLHD over head costs
- \$2.9m for medical indemnity insurance; and
- \$1.4m for internal transfers within the WNSWLHD to match costs held in other cost centres for activity that occurred at Orange.

LHD overhead costs were allocated to hospitals within the LHD based on the available preferred statistics set out in the AHPCS. For 2011/12, this was mainly FTEs or share of total expenses.

No costs were excluded from the general ledger of Orange before it was uploaded to the costing system.

C. Allocation of overhead

For the financial year 2011/12, overhead cost centre costs totalled \$81.4m which represents 36.8% of total costs at this point in the costing process. These costs were allocated to patient care areas based on a variety of allocation statistics, such as FTEs , prioritised based on the AHPCS.

The percentage of overhead costs at Orange is higher than other hospitals due to the expense associated with the Public Private Partnership interest payments.

D. Costs by hospital products

Cost centres were mapped directly to one NHCDC area and accounts to one NHCDC line item, which was driven by the hospital service that cost centre was providing. Where a cost centre provides two or more product/services (such as acute medical care and research), a patient fractions (PFRAC) was developed by the business managers of the cost centre. The costing team reviewed all PFRACs along with the justification for any movements.

5.3.3 Activity information

All activity data is sent to the LHD's HIE database, which was used as the source of activity data for costing purposes. All inpatient and ED data was included in the costing and no adjustments were made to this data before or after costing. This is to ensure that activity information used in costing purposes, both for NHCDC and NSW Health purposes, always reconciles with the HIE database.

Feeder data was used to allocate costs for pathology, imaging and some prosthetics costs based on consumption. No adjustments were made to feeder data used in the costing process. Ward Medical and Ward Nursing costs were allocated based on the length of stay. Some service weights were used at Orange which were sourced from NSW Health.

No adjustments to the costing process were made for private patients at Orange.

5.3.4 Costed dataset

A total of \$221.3m was allocated to the hospital products listed above. These values were agreed to supporting schedules provided by the costing team.

WNSWLHD has replicated many of the IPACost validation and reasonableness checks into their costing system. Once costing is complete, the LHD performs these checks so it can identify and rectify any issues before data is sent to the jurisdiction.

Work in progress

Orange does not make any adjustments for patients whose stay extends over the financial year. The diagram below illustrates the overall methodology used:

	<-- 2010/11	2011/12	2012/13 -->	Allocated 10/11 costs	Allocated 11/12 costs	Submitted to IHPA in 11/12
Scenario 1		↔		✗	✓	✓
Scenario 2	↔			✓	✓	✓
Scenario 3		↔		✗	✓	✓
Scenario 4	↔			✓	✓	✓

For patients that were admitted and discharged during the year (Scenario 1), 2011/12 costs were allocated to the patient, and the encounter was submitted to IHPA.

For patients that were admitted during the previous year and discharged during 2011/12 (Scenario 2), 2011/12 costs were allocated for activity that occurred during that period. For example, if a patient was admitted for 4 days in 2010/11 and for 6 days in 2011/12, the patient would be allocated 6 days worth of 2011/12 costs. This encounter was then submitted to IHPA with only the costs from 2011/12.

For Scenarios 3 and 4 where patients were not discharged by year end, costs were allocated to the patient and these were also submitted to IHPA, similar to Scenario 2. These will be submitted again in future years with the costs related to activity in those financial years.

5.3.5 Reconciliation with IHPA – Sample Patients

A sample of five Orange patient encounters were taken from the national database and were agreed to the information included in the costing system for Orange. The table below displays the result of the reconciliation:

Patient	Product type	Total cost (provided by IHPA)	Total cost in costing system	Variance
Sample patient 1	Non admit ED	\$922.08	\$922.08	-
Sample patient 2	Admitted ED	\$956.35	\$956.35	-
Sample patient 3	Acute	\$300,334.96	\$300,334.96	-
Sample patient 4	Acute	\$304,439.97	\$304,439.97	-
Sample patient 5	Acute	\$840,290.01	\$840,290.01	-

No material variances were noted between what was submitted by the LHD and IHPA's dataset.

5.4 Nepean Hospital

5.4.1 Overview

Nepean Hospital belongs to the Nepean Blue Mountains Local Health District (NBMLHD) in New South Wales and was costed by a NBMLHD costing team.

Below is a table which summarises the costs included in the costing, starting from the total general ledger amount through to the total hospital costs submitted to the jurisdiction. The various adjustments are discussed further throughout this chapter.

Item	Amount	Item	Amount
A. General Ledger	\$367,096,455	D. Allocation of costs to products	
B. Adjustments to the General Ledger		Acute	\$249,773,212
Exclusions	(\$27,401)	Emergency	\$50,022,454
Inclusions	\$62,045,394	Sub-acute	\$16,113,928
Total hospital expenses	\$429,114,448	Mental Health	\$242,407
C. Allocation of overheads		Other*	\$112,963,898
Patient care areas (Direct costs)	\$314,298,958	Total costed products	\$429,115,898
Overhead areas (Indirect costs)	\$114,816,940	Variance	-
Total patient care areas (post allocation)	\$429,115,898	Total costs submitted to jurisdiction	\$429,115,898
Variance	\$1,450	Jurisdiction adjustments (see NSW section)	
		Costs not submitted	(\$112,963,898)
		Total costs submitted by jurisdiction	\$316,152,000
		Variance	-

5.4.2 Financial Data

A. General Ledger

The financial statements for the NBMLHD are publically released which includes the costs and activities of Nepean. For the 2011/12 financial year, the total cost of services for NBMLHD was \$578.4m. A breakdown of the NBMLHD costs included in the annual report split into the hospitals was provided, which reconciled to the general ledger costs for Nepean Hospital of \$367.1m.

B. Inclusions and Exclusions

Certain costs are expected to be included in the costed dataset as guided by the scope of the AHPCS, and due to the varied structure and process within each state these costs may already form part of the general ledger or may need to be included by the hospital or jurisdiction as part of the costing process. For example, some hospitals may include insurance costs in their general ledger while in other scenarios; these costs may be borne by the jurisdiction and allocated to the hospital as part of the jurisdiction adjustments.

Costs already included in the general ledger include:

- Superannuation, long service leave and worker's compensation; and
- Depreciation.

Costs from the NBMLHD are allocated down to hospitals by the costing team. A total of \$62.0.0m of inclusions were allocated to Nepean. Notable inclusions were:

-
- \$54.2m for NBMLHD overhead costs; and
 - \$7.9m for costs held at other sites that relate to Nepean Hospital patient activity.

LHD overhead costs were allocated to hospitals within the LHD based on the available preferred statistics set out in the AHPCS. For 2011/12, this was mainly FTEs or share of total expenses.

A total of \$27,401 was removed from a Nepean Hospital cost centre for shared hosted services with Western Sydney LHD.

C. Allocation of overhead

For the financial year 2011/12, overhead cost centre costs totalled \$114.8.0m which represents 26.8% of total costs at this point in the costing process. These costs were allocated to patient care areas based on a variety of allocation statistics, such as FTEs and beddays, prioritised based on the AHPCS.

D. Costs by hospital products

Cost centres were mapped directly to one NHCDC area and accounts to one NHCDC line item, which was drive by the hospital service that cost centre was providing. Where a cost centre provides two or more product/services (such as acute medical care and research), patient fractions (PFRAC) were developed.

For the 2011/12 year, business managers responsible for a cost centre were asked to review the historical PFRACs

5.4.3 Activity information

All activity data is sent to the LHD's HIE database, which was used as the source of activity data for costing purposes. All inpatient and ED data was included in the costing and no adjustments were made to this data before or after costing. This is to ensure that activity information used in costing purposes, both for NHCDC and NSW Health purposes, always reconciles with the HIE database.

Feeder data was used to allocate costs for pathology, pharmacy and imaging costs based on consumption. Ward Medical and Ward Nursing costs were allocated based on the length of stay. Some service weights were used at Nepean which were sourced from NSW Health.

No adjustments to the costing process were made for private patients at Nepean.

5.4.4 Costed dataset

A total of \$429.1m was allocated to the hospital products listed above. These values were agreed to supporting schedules provided by the costing team.

NBMLHD has replicated many of the IPACost validation and reasonableness checks into their costing system. Once costing is complete, the LHD performs these checks so it can identify and rectify any issues before data is sent to the jurisdiction.

Work in progress

Nepean Hospital does not make any adjustments for patients whose stay extends over the financial year. The diagram below illustrates the overall methodology used:

	<-- 2010/11	2011/12	2012/13 -->	Allocated 10/11 costs	Allocated 11/12 costs	Submitted to IHPA in 11/12
Scenario 1		←→		✗	✓	✓
Scenario 2	←→			✓	✓	✓
Scenario 3			←→	✗	✓	✓
Scenario 4	←→			✓	✓	✓

For patients that were admitted and discharged during the year (Scenario 1), 2011/12 costs were allocated to the patient, and the encounter was submitted to IHPA.

For patients that were admitted during the previous year and discharged during 2011/12 (Scenario 2), 2011/12 costs were allocated for activity that occurred during that period. For example, if a patient was admitted for 4 days in 2010/11 and for 6 days in 2011/12, the patient would be allocated 6 days worth of 2011/12 costs. This encounter was then submitted to IHPA with only the costs from 2011/12.

For Scenarios 3 and 4 where patients were not discharged by year end, costs were allocated to the patient and these and were also submitted to IHPA, similar to Scenario 2. These will be submitted again in future years with the costs related to activity in those financial years.

5.4.5 Reconciliation with IHPA – Sample Patients

A sample of five Nepean patient encounters were taken from the national database and were agreed to the information included in the costing system for Nepean. The table below displays the result of the reconciliation:

Patient	Product type	Total cost (provided by IHPA)	Total cost in costing system	Variance
Sample patient 1	Admitted ED	\$339.60	\$339.60	-
Sample patient 2	Non admitted ED	\$199.20	\$199.20	-
Sample patient 3	Acute	\$753,039.62	\$753,039.62	-
Sample patient 4	Acute	\$405,483.28	\$405,483.28	-
Sample patient 5	Acute	\$12,621.57	\$12,621.57	-

No material variances were noted between what was submitted by the LHD and IHPA's dataset.

5.5 Jurisdiction overview – New South Wales

5.5.1 Overview of process

The ABF Taskforce that sits at the jurisdiction level of New South Wales provides ongoing support and costing coordination for the state. The team produce costing guidelines, implements costing processes and assists with all ad-hoc queries from the LHDs.

The processes established by the taskforce means that no adjustments are required at the jurisdiction level. All decisions relating hospital costs and activity are made by the costing teams within the LHDs who are closer to the data and understand the activities of the sites. This is believed to increase the accuracy of the costing.

Once LHDs had performed their own costing, they then performed their own checks before submitting to the jurisdiction. The jurisdiction then re-performed checks using the IPACost tools. Any issues that arise from these checks are sent back to the LHD to resolve. The LHD then updated their costing to correct the issue and re-submit to the jurisdiction.

Before submitting to IHPA, the ABF Taskforce removed costs relating to the following products:

- Non admitted patients;
- Teaching, training and research (TTR); and
- Other non-hospital products (such as commercial services, café, car parks etc).

As Non admitted patients were not costed at a patient level, these service events were not submitted to the NHCDC. The Taskforce identified that the costing of non admitted patients will be an area of focus for future rounds.

5.5.2 Adjustments to costs – Westmead

The costs relating to outpatients, TTR and non-hospital products totalled \$245.0.4m and were removed from the data submission. After removing these costs, the data was submitted to IHPA.

5.5.3 Reconciliation with IHPA - Westmead

The table below displays the total costs and total separations that were provided by both NSW Health and IHPA as part of the submission processes.

The IPACost tool is used by the jurisdiction to prepare the files for submission, and the data is uploaded into the IHPA Data Submission Portal Drop Box. The IPACost tool is also used to perform the Unqualified Babies (UQB) cost allocation. This relates to the costs for newborn babies with zero qualified days being allocated to the mother separations at the relevant hospital. When this process was performed using IPACost, the output included a duplication of costs and separations for the mother and baby DRGs.

As demonstrated in the table below, an adjustment to remove these duplicated costs was performed by IHPA. The net result has been described in the table below as the net costs submitted by the jurisdiction.

Following IHPAs validation and quality assurance checks, the final output is included in the national dataset as shown in the table below.

Item	Total amount recorded in the IHPA data submission portal	Unqualified baby adjustment	Net total cost submitted to IHPA	Provided by IHPA in national dataset	Variance
Total costs	\$527,337,754	\$8,584,714	\$518,753,040	\$517,965,372	\$787,667.97
Total separations	145,675	4,122	141,553	141,546	7

There was an adjustment between what was submitted by NSW Health and what was included in the national dataset. This is because of the following reason:

- \$0.787m (7 separations) relating to activity that failed the modified business rules in the IHPA validation and reasonableness tests. The removal of these costs and separations has been agreed to communication between IHPA and NSW Health.

5.5.4 Adjustments to costs – Orange

The costs relating to outpatients, TTR and non-hospital products totalled \$54.2m and were removed from the data submission. After removing these costs, the data was submitted to IHPA.

5.5.5 Reconciliation with IHPA - Orange

The table below displays the total costs and total separations that were provided by both NSW Health and IHPA as part of the submission processes.

The IPACost tool is used by the jurisdiction to prepare the files for submission, and the data is uploaded into the IHPA Data Submission Portal Drop Box. The IPACost tool is also used to perform the Unqualified Babies (UQB) cost allocation. This relates to the costs for newborn babies with zero qualified days being allocated to the mother separations at the relevant hospital. When this process was performed using IPACost, the output included a duplication of costs and separations for the mother and baby DRGs.

As demonstrated in the table below, an adjustment to remove these duplicated costs was performed by IHPA. The net result has been described in the table below as the net costs submitted by the jurisdiction.

Following IHPAs validation and quality assurance checks, the final output is included in the national dataset as shown in the table below.

Item	Total amount recorded in the IHPA data submission portal	Unqualified baby adjustment	Net total cost submitted to IHPA	Provided by IHPA in national dataset	Variance
Total costs	\$168,869,374	\$1,768,925	\$167,100,449	\$155,238,518	\$11,861,930.39
Total separations	47,938	810	47,128	47,087	41

There was a discrepancy between what was submitted by NSW Health and what was in the national dataset. This is because of the following reason:

- \$11.9m (41 separations) relating to activity that failed the modified business rules in the IHPA validation and reasonableness tests. The removal of these costs and separations has been agreed to communication between IHPA and NSW Health.

5.5.6 Adjustments to costs – Nepean

The costs relating to outpatients, TTR and non-hospital products totalled \$111.5m and were removed from the data submission. After removing these costs, the data was submitted to IHPA.

5.5.7 Reconciliation with IHPA - Nepean

The table below displays the total costs and total separations that were provided by both NSW Health and IHPA as part of the submission processes.

The IPACost tool is used by the jurisdiction to prepare the files for submission, and the data is uploaded into the IHPA Data Submission Portal Drop Box. The IPACost tool is also used to perform the Unqualified Babies (UQB) cost allocation. This relates to the costs for newborn babies with zero qualified days being allocated to the mother separations at the relevant hospital. When this process was performed using IPACost, the output included a duplication of costs and separations for the mother and baby DRGs.

As demonstrated in the table below, an adjustment to remove these duplicated costs was performed by IHPA. The net result has been described in the table below as the net costs submitted by the jurisdiction.

Following IHPAs validation and quality assurance checks, the final output is included in the national dataset as shown in the table below.

Item	Total amount recorded in the IHPA data submission portal	Unqualified baby adjustment	Net total cost submitted to IHPA	Provided by IHPA in national dataset	Variance
Total costs	\$317,589,786	\$1,437,788	\$316,151,998	\$316,108,267	\$43,730.86
Total separations	106,224	2,951	103,273	103,270	3

There was a discrepancy between what was submitted by NSW Health and what was in the national dataset. This is because of \$0.043m (3 separations) relating to activity that failed the modified business rules in the IHPA validation and reasonableness tests. The removal of these costs and separations has been agreed to communication between IHPA and NSW Health.

6 Queensland

6.1 Queensland Overview

Queensland made 3 nominations to the financial review - Cairns and Hinterland Health Service which is at a Hospital and Health Service level ('HSS' or 'Health Service'), the Royal Children's Hospital and Mt Isa Hospital.

The review team met with costing representatives from all three locations and discussed their costing process.

Data was provided using the NHCDC independent financial review Round 15 templates, rather than the Round 16 templates provided by PwC. Where possible the data provided was mapped to the Round 16 templates.

6.1.1 Overview of the costing process

The health services within Queensland undertake the costing function using the Transition 2 costing software. The costing process is performed monthly on a rolling year to date basis with the final year end costing completed in September once the coding and general ledger close off are completed. Once the costing process is completed the costed output is stored in the state database which is accessible by Queensland Health.

The jurisdiction team perform a series of 'structural audits' over the costing output and review the data for reasonableness. At this stage, they will also add allocated costs incurred by Queensland Health, such as medical indemnity and corporate costs. From the point where the data is extracted from the costing database, all exclusions are either costs specifically excluded by the AHPCS or relate to records that do not pass the validation checks. The final dataset is passed through a series of audit and validation checks using IPACost, and then submitted to IHPA.

6.2 Cairns and Hinterland

6.2.1 Overview

There are 19 facilities within the Cairns and Hinterland HHS.

The following table summarises the costing process carried out in Cairns and Hinterland which are discussed further in this chapter.

Item	Amount	Item	Amount
Total expenses reported in the Financial Management Information System (FMIS)	\$563,665,349	<i>Allocation of costs to products</i>	
<i>Adjustments to the general ledger</i>		Acute	\$227,069,844
Exclusions	(\$93,405,699)	Outpatients	-
Inclusions	\$20,376,304	Emergency	\$66,708,886
Total adjusted expenses	\$490,635,955	Sub-acute	\$30,635,870
Total costs to be allocated to products	\$490,635,955	Mental Health	\$146,966,629
Variance	-	Boarder	\$1,256,720
		Other	\$526,881
		Teaching	-
		Total costs reported to final products	\$473,164,830
		Inclusions	\$17,471,125
		Total costs submitted to IHPA	\$490,635,955
		Variance	-

6.2.2 Financial Data

The Annual Report

For NHCDC Round 16, the Queensland Health annual report is reported at a state level so reconciliation by individual hospital or HHS was not available.

General Ledger and Inclusions and Exclusions

Total expenditure for Cairns and hinterland Health Services as reported in the general ledger were \$563.65m for the 2011/2012 financial year.

Notable exclusions were:

- 'Dead ending' costs which are either non patient or out of scope items which accounted for \$11.180m
- \$78.735m is removed for costs that are attributed to patients without reliable attendance data and other non NHCDC items, such as non ABF activity
- \$3.489m for cost records which did not contain a patient demographic record

Notable inclusions were:

- Shared services from the Area Health Service and the Queensland Health \$12.347m
- Insurances paid by Queensland Health \$4.56m and
- Blood products \$3.432m

Once these adjustments are made the costs in the costing system allocated to products totalled \$490.636m.

6.2.3 Activity information

All activity data is extracted from internal hospital systems with limited reliance placed on inpatient fractions. The activity used to cost each NHCDC area was:

- Allied Health – modelled on ward beddays
- Wards/Nursing – In order of preference – Trendcare (a nursing management system), Talons shift products (which links activity) or beddays
- Medical and surgical unit costs are driven by bed days and theatre minutes respectively.
- Theatre – normal and after hours products are developed with the Central Sterile Supply Department (CSSD) costs are spread over those products developed in theatre and other departments which utilise this service.
- Pathology – allocated using an annual price list. Private tests are not allocated any costs.
- Medical Imaging – internal weights are used for the allocation of labour costs, whilst the MBS price is used for the tests themselves.
- Pharmacy – for dispensed items, the annual price list is applied as the relative value unit (RVU), whilst for other drugs, the costs sit on the wards and are spread using beddays.
- Prosthetics - Where possible the purchase price is applied as the RVU driver.

No adjustments to the costing process were made for private patients except for prosthesis where a different weighting is applied based on the purchase cost of the prosthesis.

Boarders are costed and included in the submission as this is a substantial issue for Far North Queensland.

The cost of unqualified babies rolled up into the same DRG as the mother.

6.2.4 Costed dataset

\$490.636m of costs were allocated to products. This cost includes a work in progress component from costs held over from prior years for patients discharged in the current study period.

This represents the amount submitted to IHPA.

Work in progress

The data submitted for Cairns and Hinterland included costs to account for patients whose stay extends across different financial years. The diagram below illustrates the methodology used:

	<-- 2010/11	2011/12	2012/13 -->	Allocated 10/11 costs	Allocated 11/12 costs	Submitted to IHPA in 11/12
Scenario 1		←→		✗	✓	✓
Scenario 2	←→			✓	✓	✓
Scenario 3			←→	✗	✓	✗
Scenario 4	←→		←→	✓	✓	✗

For patients that were admitted and discharged during the year (Scenario 1), 2011/12 costs were allocated to the patient, and the encounter was submitted to IHPA. Similarly with patients that were admitted during the previous year and discharged during 2011/12 (Scenario 2), costs were allocated from both years and the encounter was submitted to IHPA during 2011/12.

For Scenarios 3 and 4 where patients were had not discharged by year end, costs were allocated to the encounters however they were not submitted to IHPA. These encounters will be submitted in the year they are discharged.

6.2.5 Sample Encounter reconciliation with IHPA

A sample of six patient encounters from Cairns and Hinterland Health Service were taken from IHPA's dataset and were agreed to the information included in the hospital costing system. The table below displays the result of the reconciliation:

Patient	Product type	Total cost (provided by IHPA)	Total cost in costing system	Variance
Sample patient 1	Outpatient	\$47.35	\$47.35	-
Sample patient 2	Emergency Dept	\$354.33	\$354.33	-
Sample patient 3	Emergency Dept	\$268.61	\$268.61	-
Sample patient 4	Acute	\$23,842.47	\$23,842.47	-
Sample patient 5	Acute	\$398,695.84	\$398,695.84	-
Sample patient 6	Acute	\$460,216.62	\$460,216.62	-

No variances were noted between what was submitted by the jurisdiction and IHPA's dataset.

6.3 The Royal Children's Hospital

6.3.1 Overview

The Royal Children's Hospital (RCH) is a major teaching paediatric hospital located in Brisbane.

The following table summarises the costing process carried out at RCH which is discussed further in this chapter.

Item	Amount	Item	Amount
Total expenses reported in the Financial Management Information System (FMIS)	\$302,139,555	<i>Allocation of costs to products</i>	
<i>Adjustments to the general ledger</i>		Acute	\$107,751,920
Exclusions	(\$46,181,580)	Outpatients	\$131,373,070
Inclusions	\$7,873,482	Emergency	\$16,084,681
Total adjusted expenses	\$263,831,457	Sub-acute	\$1,970,701
Total costs to be allocated to products	\$263,831,457	Mental Health	-
Variance	-	Boarder	\$500,444
		Other	\$33,926
		Teaching	-
		Total costs reported to final products	\$257,714,742
		Inclusions	\$6,116,714
		Total costs submitted to IHPA	\$263,831,457
		Variance	-

6.3.2 Financial Data

The Annual Report

The RCH reported \$302.139m of expenditure in their annual report for 2011/12.

General Ledger Inclusions and Exclusions

Total expenditure for RCH as reported in the general ledger was \$302.139m for the 2011/2012 financial year.

Notable exclusions included:

- 'Dead ending' costs which are either non patient or out of scope items which accounted for \$40.457m
- \$3.888m was removed for costs that are attributed to patients without reliable attendance data and other non NHCDC items, such as non ABF activity
- \$1.8m for cost records which did not contain a patient demographic record

Notable inclusions were:

- Shared services from the Area Health Service and the Queensland Health \$4.771m
- Insurances paid by Queensland Health \$1.776m
- Blood products \$1.326m
- Unexplained variance of \$0.034m

Once these adjustments are made the total cost entered into the costing system was \$263.831m.

6.3.3 Activity information

All activity data is extracted from internal hospital systems with limited reliance on inpatient fractions. The activity used to cost each NHCDC area was:

- Allied Health – Minutes extracted from Allied Health feeder
- Anaesthetics – Anaesthetic minutes are extracted from the Theatre feeder.
- Feeders are utilised for Capital works, Community outpatients, Mental Health, Patient Transport, Private Practices, Research, Trusts
- CSSD – product based on theatre session type
- Education – products are created and based on ward beddays, outpatient clinic duration and Emergency minutes
- ICU – bed days are used
- Medical Units – bed days are used and where possible time in minutes applied
- Outpatients – clinic visit data is extracted from the Outpatient booking system
- Pathology – products derived from the Pathology feeder
- Patient Food Services – created based on each ward bedday
- Pharmacy – products derived from Pharmacy feeder
- Radiology – products derived from the radiology system with internally produced prices applied as relative Value Units
- Theatre – Minutes are derived from the Theatre system for pre-op, the operation and recovery.
- Wards – Nursing costs are allocated via bed days.

6.3.4 Costed dataset

\$263.831m of costs were allocated to products through the costing software.

This cost includes a work in progress component from costs held over from prior years for patients discharged in the current study period.

Work in progress

The data submitted for RCH included costs to account for patients whose stay extends across different financial years. The diagram below illustrates the methodology used:

	<-- 2010/11	2011/12	2012/13 -->	Allocated 10/11 costs	Allocated 11/12 costs	Submitted to IHPA in 11/12
Scenario 1		←→		✗	✓	✓
Scenario 2	←→			✓	✓	✓
Scenario 3			←→	✗	✓	✗
Scenario 4	←→			✓	✓	✗

For patients that were admitted and discharged during the year (Scenario 1), 2011/12 costs were allocated to the patient, and the encounter was submitted to IHPA. Similarly with

patients that were admitted during the previous year and discharged during 2011/12 (Scenario 2), costs were allocated from both years and the encounter was submitted to IHPA during 2011/12. In this scenario, should the patient stay extend beyond 365 days in the prior year the costs for these days are not submitted for these long stay patients.

For Scenarios 3 and 4 where patients had not been discharged by year end, costs were allocated to the encounters however they were not submitted to IHPA. These encounters will be submitted in the year they are discharged.

6.3.5 Sample Encounter reconciliation with IHPA

A sample of six patient separations were taken from IHPA's dataset and the data for these then taken from the RCH patient costing system. The table below displays the result of the reconciliation:

Patient	Product type	Total cost (provided by IHPA)	Total cost in costing system	Variance
Sample patient 1	Emergency Dept	\$284.01	\$284.01	-
Sample patient 2	Emergency Dept	\$837.29	\$837.29	-
Sample patient 3	Acute	\$476,559.90	\$476,559.90	-
Sample patient 4	Outpatient	\$38.00	\$38.00	-
Sample patient 5	Acute	\$17,116.53	\$17,116.53	-
Sample patient 6	Acute	\$623,051.18	\$623,051.18	-

No variances were noted between what was submitted by the jurisdiction and IHPA's dataset.

6.4 The Mount Isa Hospital

6.4.1 Overview

The Mount Isa Hospital is a major referral hospital located in the North West of Queensland.

The following table summarises the costing process carried out at Mount Isa Hospital.

Item	Amount	Item	Amount
Total expenses reported in the Financial Management Information System (FMIS)	\$126,070,997	<i>Allocation of costs to products</i>	
<i>Adjustments to the general ledger</i>		Acute	\$46,162,890
Exclusions	(\$22,055,157)	Outpatients	\$40,602,837
Inclusions	\$4,880,717	Emergency	\$18,133,213
Total adjusted expenses	\$108,896,557	Sub-acute	\$1,626,921
Total costs to be allocated to products	\$108,896,557	Mental Health	-
Variance	-	Boarder	\$1,429,420
		Other	\$80,824
		Teaching	-
		Total costs reported to final products	\$108,036,105
		Inclusions	\$860,452
		Total costs submitted to IHPA	\$108,896,557
		Variance	-

6.4.2 Financial Data

The Annual Report

The Mount Isa Hospital reported \$126.070m of expenditure in their annual report for 2011/12.

General Ledger Inclusions and Exclusions

Total expenditure for MIH as reported in the general ledger was \$126.070m for the 2011/2012 financial year.

Notable exclusions were made up of:

- Out of scope items which accounted for \$5.813m
- \$15.920m for costed records that do not have the relevant demographic data or community costs which were excluded
- \$1.181m is removed for costs that are attributed to patients without reliable attendance data and other non NHCDC items, such as non ABF activity

Some notable inclusions were:

- Shared services from the Area Health Service and the Queensland Health \$2.957m
- Insurances paid by Queensland Health \$1.1m
- Blood products \$0.822m

Once these adjustments are made the total cost entered into the costing system were \$108.896m.

6.4.3 Activity information

All activity data is extracted from internal hospital systems with limited reliance of inpatient fractions. The activity used to cost each NHCDC area was:

- Anaesthetics – Anaesthetic minutes from Theatre system
- Feeders are available for Allied Health, Community Outpatients, Patient transit and Radiology
- CSSD – products are created based on theatre session type
- Emergency – time based upon encounter type
- Hotel Services – Created product based on each Ward bedday
- ICU – costs allocated by bed days
- Medical Units – costs are allocated based on time and bed bays according to the unit.
- Outpatients – clinic visit data is extracted and costed from Outpatient (booking) feeder
- Pathology – products built from Pathology feeder
- Patient food services – Created product based on each ward bedday
- Pharmacy – costs from Pharmacy feeder
- Theatre – Operation minutes including pre and post operation
- Wards – costed using bed days and minutes with a transfer file demonstrating data and time of movements.

6.4.4 Costed dataset

\$108.896m of costs were allocated to products through the costing software.

This cost includes a work in progress component from costs held over from prior years for patients discharged in the current study period.

Work in progress

The data submitted for MIH included costs to account for patients whose stay extends across different financial years. The diagram below illustrates the methodology used:

	<-- 2010/11	2011/12	2012/13 -->	Allocated 10/11 costs	Allocated 11/12 costs	Submitted to IHPA in 11/12
Scenario 1		←→		✗	✓	✓
Scenario 2	←→			✓	✓	✓
Scenario 3			←→	✗	✓	✗
Scenario 4	←→		←→	✓	✓	✗

For patients that were admitted and discharged during the year (Scenario 1), 2011/12 costs were allocated to the patient, and the encounter was submitted to IHPA. Similarly with patients that were admitted during the previous year and discharged during 2011/12 (Scenario 2), costs were allocated from both years and the encounter was submitted to IHPA during 2011/12. In this scenario, should the patient stay go beyond 365 days in the prior year the costs for these days are not submitted for these long stay patients.

For Scenarios 3 and 4 where patients were had not discharged by year end, costs were allocated to the encounters however they were not submitted to IHPA. These encounters will be submitted in the year they are discharged.

6.4.5 Sample Encounter reconciliation with IHPA

A sample of six patient separations were taken from IHPA's dataset and the data for these then taken from the RCH patient costing system. The table below displays the result of the reconciliation:

Patient	Product type	Total cost (provided by IHPA)	Total cost in costing system	Variance
Sample patient 1	Emergency Dept	\$456.84	\$456.84	-
Sample patient 2	Emergency Dept	\$1,047.18	\$1,047.18	-
Sample patient 3	Acute	\$13,017.15	\$13,017.15	-
Sample patient 4	Outpatient	\$174.65	\$174.65	-
Sample patient 5	Acute	\$79,822.58	\$79,822.58	-
Sample patient 6	Acute	\$23,500.33	\$23,500.33	-

No variances were noted between what was submitted by the jurisdiction and IHPA's dataset.

6.5 Jurisdiction overview - Queensland

6.5.1 Overview of the process

The costing process undertaken in Queensland is summarised below:

- The health services within Queensland undertake the costing function. There are 17 different costing teams across the state who utilise the Transition 2 costing system. These teams populate the costing system with internal or external feeders and general ledger data from the financial management database. Once the costing process is completed, the costed output will be stored within the state database.
- The Queensland costing standards (guidelines) mirror the AHPCS
- Hospitals cost monthly on a rolling year to date basis and integrated the output into an executive suite of reporting. The yearend costing commences following the coding end date and general ledger close off in September.
- Based on cost types (e.g. Fixed, Variable, Direct, Indirect) and cost categories (e.g. Admin, Nursing, Medical), costs are mapped to their final categories.
- Cost centres are mapped to Departments/Areas which then are mapped to NHCDC cost buckets. Accounts are in the cost centres. Products are then shown for each Department/Area for costing. Mapping is done in accordance with state and national requirements. Costs are pushed down from the Department to patients on the basis of products consumption. Once the costing process is completed data is stored on the jurisdictional database. The Jurisdiction will email and consult with the hospitals to ensure the data is ready for extraction.
- Once confirmed that the data is ready for extraction, a set of structural audit reporting will occur. A raw score and a weighting is applied to the costed output to test for reasonableness. For example a new cost centre may have been set up with no relative value unit. The jurisdictional costing representative will then review the costed output and review the reasonableness, which is defined by a level of confidence interval of 80%. If the data fails this, the health service may need to be recost. However if the hospital doesn't change their data, and the result is less than the 80% cut off, the jurisdiction may remove it from any other further processing.
- As Queensland Health incurs costs such as corporate overheads on behalf of the health services, these are added to the costing data set. Corporate cost categories include medical indemnity, shared services .and corporate IT systems. These items of expenditure are split into inpatient, outpatient and ED. Each site is given their share of corporate overheads, which is allocated on activity volume. The process is run by a series of stored procedures. The actual cost of the patient is used to allocate these corporate overheads to patients (Blood products are not allocated to outpatients).
- Once all the identified corporate costs have been allocated, each health service database is rebuilt and the NHCDC requirements mapped. This is undertaken by a using a number of SQL queries that will meet the IHPA cost DSS data element requirements.
- This database is then passed through the audit and validation processes of the IPACost software. Following this process a final flat text file that is produced for submission to IHPA.

- The Executive of the Performance Branch of Queensland Health will then sign off the data for submission. At this stage there is no formal sign off by the hospital. The protocols surrounding this are currently being discussed.

6.5.2 Reconciliation with IHPA - Cairns and Hinterland

The table below displays the total costs and total separations that were provided by both QLD Health and IHPA as part of the submission processes.

Item	Provided by QLD Health (J1 template)	Provided by IHPA in national dataset	Variance
Total costs	\$490,635,955	\$490,635,955	-
Total separations	435,321	435,321	-

There were no variances between what was provided by QLD Health and what is in the national database.

6.5.3 Reconciliation with IHPA – The Royal Children’s Hospital

The table below displays the total costs and total separations that were provided by both QLD Health and IHPA as part of the submission processes.

Item	Provided by QLD Health (J1 template)	Provided by IHPA in national dataset	Variance
Total costs	\$263,831,457	\$263,831,457	-
Total separations	176,551	176,551	-

There were no variances between what was provided by QLD Health and what is in the national database.

6.5.4 Reconciliation with IHPA – The Mount Isa Hospital

The table below displays the total costs and total separations that were provided by both QLD Health and IHPA as part of the submission processes.

Item	Provided by QLD Health (J1 template)	Provided by IHPA in national dataset	Variance
Total costs	\$110,910,557	\$108,896,557	2,014,000
Total separations	110,791	110,307	484

There is a variance of 484 encounters and \$2m between what was provided by QLD Health and what is in the national database. The adjustment relates to the Unqualified Baby Adjustment (UQB) where the output of the IHPA Cost process resulted in the cost of UQB encounters being duplicated and included with the mother DRGs as well as the UQB DRG. An adjustment was made to remove the additional encounters and costs.

7 South Australia

7.1 South Australia Overview

Two Local Health Networks (LHNs) participated in this financial review; Central Adelaide Local Health Network (CALHN) and Southern Adelaide Local Health Network (SALHN).

The review team met with the costing representatives from both hospitals, accompanied by a representative from SA Health. Information was provided using the PwC templates along with some additional reconciliation files that were prepared as part of their internal management processes. The costing representatives completed the templates with support from the jurisdiction. Additional data and clarification was provided after the meeting with the costing team.

7.1.1 Costing overview

The participating hospitals performed costing at the hospital using Trendstar in the Royal Adelaide Hospital (RAH) and PPM1 in Repatriation General Hospital (RGH). SA Health is moving towards costing at the jurisdiction level in future rounds, using PPM2 as the costing software.

Financial information is stored in Oracle, using a state-wide general ledger structure. SA Health extracted the financial information for each hospital and allocated overheads for both SA Health and the local health network each hospital belongs to. The costing process commences for each hospital when they receive the adjusted general ledger from SA Health which includes overheads.

All activity in the state is stored in the ISAAC (Integrated South Australian Activity Collection) database. This database is closed at the end of the financial year and is used for state-wide internal reporting. Hospitals may use more recent data for their costing however all data must reconcile back to the ISAAC system before it is submitted by SA Health.

The hospitals submit the costed patient encounters to SA Health, who then made adjustments to account for work in progress patients. Patients whose stay extended over the financial year were stored in a database maintained by SA Health. Costs from prior years were added to the encounters and patients who were not discharged by the end of the year were removed from the IHPA submission and stored in the database.

7.2 Royal Adelaide Hospital

7.2.1 Overview

Royal Adelaide Hospital belongs to the Central Adelaide Local Health Network (CALHN) in South Australia and was costed by a Royal Adelaide costing team.

Below is a table which summarises the costs included in the process, starting from the total general ledger amount through to the total hospital costs submitted to the jurisdiction. The various adjustments are discussed further throughout this chapter

Item	Amount	Item	Amount
A. General Ledger	\$744,820,780	D. Allocation of costs to products	
B. Adjustments to the General Ledger		Acute	\$493,641,209
Exclusions	(\$23,891,866)	Outpatients	-
Inclusions	\$23,561,720	Emergency	-
Total hospital expenses	\$744,490,634	Sub-acute	\$8,951,359
C. Allocation of overheads		Mental Health	-
Patient care areas (Direct costs)	\$569,743,631	Boarder	-
Overhead areas (Indirect costs)	\$174,779,479	Other	\$619,249
Total patient care areas (post allocation)	\$744,523,110	Teaching	\$53,436,216
Variance	\$32,476	Total costed products	\$556,648,033
Costs excluded from costing process		Variance	(\$109,405)
Outpatients	(\$185,450,672)	Total costs submitted to jurisdiction	\$556,648,033
Non-case mix	(\$2,315,000)	Jurisdiction adjustments (see SA section)	
Total costs uploaded to costing system	\$556,757,438	WIP - Carried forward from prior years	\$12,920,538
		WIP - Patients not discharged by year end	(\$13,080,973)
		Direct Teaching	(\$26,718,108)
		Non-admitted ED costs	\$46,969,927
		Other	(\$2,239,376)
		Total costs submitted by jurisdiction	\$574,500,040
		Variance	(\$1)

7.2.2 Financial Data

A. General Ledger

The financial statements for the CALHN are publically released which includes the costs and activities of RAH. For the 2011/12 financial year, the total cost of services for CALHN was \$1.84bn. A breakdown of the CALHN costs included in the annual report, split into the hospitals, was provided which reconciled to the general ledger costs of RAH of \$744.8m.

B. Inclusions and Exclusions

Certain costs are expected to be included in the costed dataset as guided by the scope of the AHPCS, and due to the varied structure and process within each state these costs may already form part of the general ledger or may need to be included by the hospital or jurisdiction as part of the costing process. For example, some hospitals may include insurance costs in their general ledger while in other scenarios; these costs may be borne by the jurisdiction and allocated to the hospital as part of the jurisdiction adjustments.

Costs already included in the general ledger include:

-
- Superannuation, long service leave and worker's compensation; and
 - Depreciation.

Costs from the CALHN and SA Health are allocated down to hospitals by the department. A total of \$23.5m of inclusions were allocated to RAH. Notable inclusions were:

- \$14.3m for CALHN regional office costs;
- \$6.7m for ICT services incurred by SA Health and distributed to hospitals; and
- \$2.1m for procurement services incurred by SA Health and distributed to hospitals.

Allocation of regional office costs and SA Health costs to hospitals are based on the hospitals share of total expenses.

Costs that were removed from the general ledger before costing totalled \$23.8m, and included:

- \$20.0m relating to costs incurred by RAH for activity conducted at other hospitals. These costs were recharged to other sites; and
- \$3.4m for bad debts expenses.

C. Allocation of overhead

For the financial year 2011/12, overhead cost centre costs totalled \$174.8m representing 23% of total costs. These costs were allocated to patient care areas based on a variety of allocation statistics, such as FTEs and floor space, prioritised based on the AHPCS.

Outpatients and non-admitted ED patients were not costed at the hospital; these costs were excluded and not uploaded to the costing system.

Together with the exclusions and inclusions, the total cost used for hospital costing for the 2011/12 financial year was \$556.6m. Non-admitted ED costs were submitted to SA Health where they were costed based on weights or length of stay, then submitted to IHPA.

D. Costs by hospital products

Cost centres were mapped directly to one NHCDC area and accounts to one NHCDC line item, which was driven by the hospital service that cost centre was providing. Where a cost centre provides two or more product/services (such as acute medical care and research), a patient fraction (PFRAC) was developed.

For the 2011/12 year, business managers responsible for a cost centre were asked to review the historical PFRACs

7.2.3 Activity information

All activity data is sent to SA Health where it was stored and maintained in the ISAAC system. This database was closed soon after year end as the data is used for APC (Admitted Patient Care) Submissions in the state. Hospitals were allowed to use their own extracts from the PASs (Patient Administrations System) for costing purposes as there is a reconciliation process back to ISAAC before submission to IHPA.

RAH made extensive use of feeder systems, allocating costs based on consumption for pathology, imaging, pharmacy and prosthetics. Allied health and operating theatre costs were allocated using minutes recorded in the feeders, with operating theatre time weighted

for the number of staff in surgery. Nursing costs were allocated using time recorded in the nursing dependency system, while medical costs were allocated using fractional bed days.

These feeders were only used for costing inpatients at the hospital. No adjustments to the costing process were made for private patients at RAH.

7.2.4 Costed dataset

A total of \$556.6m was allocated to the hospital products listed above. These values were agreed to supporting schedules provided by the costing team.

RAH also performed reasonableness checks over the costed data before submission to SA Health. Examples include looking at average costs for cost buckets by DRG, and comparing average DRG costs with the prior year. Large variances were investigated and rectified.

Work in progress

RAH did allocated cost patients that had not been discharged by 30 June 2012, however all WiP adjustments made before submission were made by SA Health. The diagram below illustrates the overall methodology used:

	<-- 2010/11	2011/12	2012/13 -->	Allocated 10/11 costs	Allocated 11/12 costs	Submitted to IHPA in 11/12
Scenario 1		←→		✗	✓	✓
Scenario 2	←→			✓	✓	✓
Scenario 3			←→	✗	✓	✗
Scenario 4	←→		←→	✓	✓	✗

For patients that were admitted and discharged during the year (Scenario 1), 2011/12 costs were allocated to the patient, and the encounter was submitted to IHPA.

For patients that were admitted during the previous year and discharged during 2011/12 (Scenario 2), 2011/12 costs were allocated for activity that occurred during that period. These costs were combined with costs that were allocated in the previous year to obtain a total patient cost. These costs were then submitted to IHPA.

For Scenarios 3 and 4 where patients were not discharged by year end, costs were allocated to the patient and these encounters were not submitted to IHPA. These encounters will be submitted in the year they are discharged.

7.2.5 Reconciliation with IHPA – Sample Patients

A sample of five RAH patient encounters were taken from the national dataset and was agreed to the information in the costing system at RAH. The table below displays the result of the reconciliation:

Patient	Product type	Total cost (provided by IHPA)	Total cost in costing system	Variance
Sample patient 1	Acute	\$723,575.30	\$723,575.30	-
Sample patient 2	Acute	\$26,738.57	\$26,738.57	-
Sample patient 3	Acute	\$485,240.01	\$485,240.01	-
Sample patient 4	Admitted ED	\$138.48	\$138.48	-
Sample patient 5	Non Admit ED	\$1,444.99	\$1,444.99	-

No material variances were noted between what was submitted by the hospital and IHPA's dataset.

7.3 Repatriation General Hospital

7.3.1 Overview

Repatriation General Hospital (RGH) belongs to the Southern Adelaide Local Health Network (SALHN) in South Australia and was costed by costing team in RGN supported by an external contractor, Powerhealth Solutions.

Below is a table which summarises the costs included in the costing, starting from the total general ledger amount through to the total hospital costs submitted to the jurisdiction. The various adjustments are discussed further throughout this chapter.

Item	Amount	Item	Amount
A. General Ledger	\$155,096,808	D. Allocation of costs to products	
B. Adjustments to the General Ledger		Acute	\$85,381,870
Exclusions	(\$5,392,314)	Outpatients	-
Inclusions	\$21,772,357	Emergency	-
Total hospital expenses	\$171,476,851	Sub-acute	\$53,349,849
C. Allocation of overheads		Mental Health	-
Patient care areas (Direct costs)	\$127,181,358	Other	\$174,565
Overhead areas (Indirect costs)	\$44,295,492	Teaching	\$1,327,091
Total patient care areas (post allocation)	\$171,476,851	Research	\$475,606
Variance	-	Total costed products	\$140,708,980
Costs excluded from costing process		Variance	(\$19,484)
Outpatients	(\$26,922,603)	Total costs submitted to jurisdiction	\$140,708,980
Non-admitted ED costs	(\$1,052,335)	Jurisdiction adjustments (see SA section)	
Non-casemix	(\$2,773,449)	WIP - Carried forward from prior years	\$3,595,697
Total costs uploaded to costing system	\$140,728,464	WIP - Patients not discharged by year end	(\$3,866,960)
		Non-admitted ED costs	\$1,041,463
		Other	(\$387,581)
		Total costs submitted by jurisdiction	\$141,091,589
		Variance	\$10

7.3.2 Financial Data

A. General Ledger

The financial statements for the SALHN are publically released as part of SA Health's financial statement, which includes costs for all local health networks. For the 2011/12 financial year, the total cost of services for SALHN was \$953.7m. A breakdown of the SALHN costs included in the annual report, split into the hospitals, was provided which reconciled to the general ledger costs of RGH of \$155.1m.

B. Inclusions and Exclusions

Certain costs are expected to be included in the costed dataset as guided by the scope of the AHPCS, and due to the varied structure and process within each state these costs may already form part of the general ledger or may need to be included by the hospital or jurisdiction as part of the costing process. For example, some hospitals may include insurance costs in their general ledger while in other scenarios; these costs may be borne by the jurisdiction and allocated to the hospital as part of the jurisdiction adjustments.

Costs already included in the general ledger include:

- Superannuation, long service leave and worker's compensation; and
- Depreciation.

Costs from the SALHN and SA Health were allocated down to hospitals by the department. A total of \$21.8m of inclusions were allocated to RAH. Notable inclusions were:

- \$10.2m for CALHN regional office costs;
- \$5.8m for visiting anaesthesia officers
- \$2.9m for visiting medical officers
- \$2.3m for ICT services incurred by SA Health but distributed to hospitals; and
- \$339,403 for procurement services incurred by SA Health but distributed to hospitals.

Allocation of regional office costs and SA Health costs to hospitals were based on the hospitals share of total expenses.

Costs that were removed from the general ledger before costing totalled \$5.4m, and included:

- \$3.0m relating to costs incurred by RGH for activity conducted at other hospitals. These costs were recharged to other sites; and
- \$1.9m for revenue recharges;

Together with the exclusions and inclusions, the total cost used for hospital costing for the 2011/12 financial year was \$171.5m.

C. Allocation of overhead

For the financial year 2011/12, overhead cost centre costs totalled \$44.3m representing 25.9% of total costs. These costs were allocated to patient care areas based on a variety of allocation statistics, such as FTEs and floor space, prioritised based on the AHPCS.

Outpatients and non-admitted ED patients were not costed at the hospital with these costs being excluded and not uploaded to the costing system. A further \$2.8m was removed for non-casemix costs, referring to community programs and other non-hospital products which were excluded from costing.

Together with the exclusions and inclusions, the total cost used for hospital costing for the 2011/12 financial year was \$140.7m. Non-admitted ED and outpatient costs were submitted to SA Health where they were costed based on weights or length of stay, then submitted to IHPA.

D. Costs by hospital products

Cost centres were mapped directly to one NHCDC area and accounts to one NHCDC line item, which was driven by the hospital service that cost centre was providing. Where a cost centre provides two or more product/services (such as acute medical care and research), a patient fraction (PFRAC) was developed.

The costing team utilised the PFRACs from the previous year and made adjustments where changes in cost centre activity were known.

7.3.3 Activity information

All activity data was sent to SA Health where it was stored and maintained in the ISAC system. This database was closed soon after year end as the data was used for ABC Submissions in the state. Hospitals were allowed to use their own extracts from the PASs for costing purposes as there was a reconciliation process back to ISAC before submission to IHPA.

Consumption data was used to allocate costs for pathology, imaging, high-cost drugs and prosthesis, while minutes were used for allied health, ward nursing, and operating theatre costs. Ward medical costs and impressed drugs were allocated based on the length of stay of the patient.

No adjustments to the costing process were made for private patients at RGH.

7.3.4 Costed dataset

A total of \$140.7m was allocated to the hospital products listed above. These values were agreed to supporting schedules provided by the costing team.

RGH performed reasonableness checks over the costed data before submission to SA Health. Examples include looking at average costs for cost buckets by DRG, and comparing average DRG costs with the prior year. Large variances are investigated and rectified.

Work in progress

RGH allocated cost to patients that had not been discharged by 30 June 2012, however all WiP adjustments made before submission were made by SA Health. The diagram below illustrates the overall methodology used.

	<-- 2010/11	2011/12	2012/13 -->	Allocated 10/11 costs	Allocated 11/12 costs	Submitted to IHPA in 11/12
Scenario 1		←→		✗	✓	✓
Scenario 2	←→			✓	✓	✓
Scenario 3			←→	✗	✓	✗
Scenario 4	←→		←→	✓	✓	✗

For patients that were admitted and discharged during the year (Scenario 1), 2011/12 costs were allocated to the patient, and the encounter was submitted to IHPA.

For patients that were admitted during the previous year and discharged during 2011/12 (Scenario 2), 2011/12 costs were allocated for activity that occurred during that period. These costs were combined with costs that were allocated in the previous year to obtain a total patient cost. This cost was then submitted to IHPA.

For Scenarios 3 and 4 where patients were not discharged by year end, costs were allocated to patients and these encounters were not submitted to IHPA. They will be submitted in the year they are discharged.

7.3.5 Reconciliation with IHPA - Sample Patients

A sample of five RGH patient encounters was taken from the national dataset and was agreed to the information in the costing system at RGH. The table below displays the result of the reconciliation:

Patient	Product type	Total cost (provided by IHPA)	Total cost in costing system	Variance
Sample patient 1	Acute	\$338,758.02	\$338,758.02	-
Sample patient 2	Acute	\$137,618.65	\$137,618.65	-
Sample patient 3	Non admit ED	\$318.82	\$318.82	-
Sample patient 4	Admit ED	\$2,373.52	\$2,373.52	-
Sample patient 5	Acute	\$10,219.74	\$10,219.74	-

No material variances were noted between what was submitted by the hospital and IHPA's dataset.

7.4 Jurisdiction overview – South Australia

7.4.1 Overview of process

SA Health has a large and involved role in assisting the LHNs by providing guidance and performing some parts of the costing process.

Financial data was first extracted by SA Health, who then adjusted the general ledger for each hospital to include overhead costs from both the LHN and SA Health. These were then provided to each hospital in so the costing process could begin.

Hospitals submitted costed patient encounters to SA Health after initial validation and reasonableness tests were performed.

SA Health performed some adjustments to the hospital data by:

Adding back and removing costs and activity related to work in progress patients. SA Health maintained a database which contained all costs and activity information for patients whose stay extends over the financial year.

Adding back non-admitted ED costs which were allocated at a patient level. Non-admitted ED was not costed at the patient level at the hospital but was costed as a 'desktop exercise' at SA Health.

Removing encounters that fail the validation and reasonableness checks that SA Health performed.

A bundling process was also performed to link and combine any activity that should be combined during the costing process. For example, unqualified babies are allocated costs during the costing process however these costs are spread back to the mother DRGs during the bundling process.

7.4.2 Adjustments to costs – RAH

SA Health performed a cleansing process to ensure duplicate records are removed. A bundling process was also performed for patients who completed their stay at home.

After review procedures were performed, SA Health ran the IPACost tool to prepare the data for submission and made the following adjustments:

- \$26.7m to remove direct teaching costs. This equates to 50% of the total teaching and research cost incurred by the hospital;
- \$13.1m allocated to patients who had not been discharged as at 30 June 2012. These patient costs will be submitted in the year the patient is discharged and were not included in the 2011/12 submission;
- \$12.9m included from patients who were discharged in 2011/12 but had costs allocated from previous financial years;
- \$50.0m included costs for non-admitted ED activity. Non-admitted ED activity is costed at SA Health in conjunction with the admitted ED costs already allocated to patients; and
- \$2.2m costs across 34 separations were removed during the SA review process. This included encounters that did not reconcile with the ISAAC database, along with removing costs for records that did not match to bundled records.

A total of \$574.5m was then submitted to IHPA by SA Health for RAH.

7.4.3 Reconciliation with IHPA – RAH

The table below displays the total costs and total separations that were provided by both SA Health and IHPA as part of their submission processes.

Item	Provided by SA Health (J1 template)	Provided by IHPA in national dataset	Variance
Total costs	\$574,500,040	\$574,500,040	-
Total separations	152,626	152,626	-

No material variances were noted.

7.4.4 Adjustments to costs – RGH

After review procedures were performed, SA Health ran the IPACost tool to prepare the data for submission and made the following adjustments:

- \$3.9m costs removed relating to patients who had not been discharged as at 30 June 2012. These patient costs will be submitted in the year the patient is discharged and were not included in the 2011/12 submission;
- \$12.9m costs included from patients who were discharged in 2011/12 but had cost allocated from previous financial years; and
- \$1.0m costs included costs for non-admitted ED activity. Non-admitted ED activity was costed at SA Health in conjunction with the admitted ED costs already allocated to patients.

After adjusting costs for WIP and ED, SA Health removed another \$387,581 and 27 encounters from the submission. These records failed either the reconciliation with ISAAC or the IPACost checks.

A total of \$141.1m was then submitted to IHPA by SA Health for RGH.

7.4.5 Reconciliation with IHPA – RGH

The table below displays the total costs and total separations that were provided by both SA Health and IHPA as part of their submission processes.

Item	Provided by SA Health (J1 template)	Provided by IHPA in national dataset	Variance
Total costs	\$141,091,589	\$141,091,589	-
Total separations	25,035	25,035	-

No material variances were noted.

8 Tasmania

8.1 Tasmania Overview

The Launceston General Hospital (LGH) is a major teaching hospital in the north of Tasmania. For the year under review (2011-12), the LGH formed part of the Northern Area Health Service which in turn formed part of the inner-budget agency, Department of Health and Human Services (DHHS). The Tasmanian local health networks (known as Tasmanian Health Organisations) did not come into existence until 1 July 2012. As the major public hospitals in the state were not managed under separate legal entities, the audited financial statements of the DHHS were publically released as a consolidated inner budget agency.

The review team met with the Clinical Costing team in the System Purchasing and Performance Unit at DHHS to discuss the NHCDC process for the LGH. Information was provided using the PwC templates along with additional reconciliation files and supporting documentation. These templates were completed by the costing team at DHHS. Additional data and clarification was provided after the meeting with the costing team.

8.1.1 Costing overview

Hospitals in Tasmania are costed centrally at the DHHS, by the Clinical Costing team at System Purchasing and Performance Unit. This process is to support DHHS as the state health system manager and provide costed data to hospitals to assist with internal management. Costing is performed once a year; the software used to perform the costing for 2011/12 was Combo CC.

In 2011/12, financial data was recorded stored centrally on the DHHS single general ledger on FinanceOne. This information was extracted from the Finance One system and exported into a Costing Finance Database, which was used as the source of financial information for costing purposes.

All inpatient, outpatient and emergency department patient activity data in Tasmania was maintained in the state-wide iPAS/Homer Patient Information System and exported to a central SQL Data Warehouse, which was used as the source of activity for costing purposes.

After the review procedures and costing were completed, the costing team ran the IPACost tool to prepare the data for submission to IHPA.

8.2 Launceston General Hospital

8.2.1 Overview

For round 16, the LGH was managed by the Northern Area health Service (NAHS) and was costed by the Clinical Costing team in the System Purchasing and Performance Unit at the DHHS in consultation with NAHS finance staff.

Below is a table which summarises the costs included in the costing, starting from the total amount of LGH expense directly attributable from the DHHS general ledger through to the total hospital costs submitted by the jurisdiction. The various adjustments are discussed further throughout this chapter.

Item	Amount	Item	Amount
A. LGH expenses from the DHHS General ledger	\$258,411,813	<i>D. Allocation of costs to patients</i>	
<i>B. Adjustments to the General Ledger</i>		Acute	\$149,761,925
Exclusions		Outpatients	\$45,920,490
Inclusions	\$14,777,661	Emergency	\$23,847,276
Total hospital expenses	\$273,189,474	Sub-acute	\$7,034,065
<i>C. Allocation of costs</i>		Mental Health	
Patient care areas (Direct costs)	\$220,372,552	Boarder	\$17,584
Overhead areas (Indirect costs)	\$52,816,982	Other	\$33,512,606
Total patient care areas (post allocation)	\$273,189,534	Teaching	\$12,590,967
Variance	\$60	Total costed products	\$272,684,913
		Variance (WIP)	-\$504,621
		<i>E. Final adjustments</i>	
		WIP - Carried forward from prior years	(\$323,046)
		WIP - Patients not discharged by year end	(\$181,120)
		Out of scope, community and rural hospitals	(\$33,499,291)
		Other	(\$15,481,681)
		Total costs submitted by jurisdiction	\$223,704,396
		Variance	-

8.2.2 Financial Data

A. General Ledger

The publically available audited financial statements for DHHS Tasmania included all three Area Health Services (AHS) and other non-health related services, such as Housing and Human Services. As a result, for the 2011/12 financial year, it was not possible for the costing team to provide a breakdown of the AHS and individual hospital level costs included in the audited financial statements or reconcile this data to the DHHS general ledger. This is consistent with the concept of an inner-budget agency containing hospital, non-hospital and human services.

The general ledger was extracted from the Finance One system and the data exported into a Costing Finance Database. The Combo costing software extracted the financial information for the LGH from this database on the basis of LGH specific cost centres.

The general ledger recorded \$258.4m of expenditure for the LGH for the 2011/2012 financial year.

B. Inclusions and Exclusions

Certain costs are expected to be included in the costed dataset as guided by the scope of the AHPCS, and due to the varied structure and process within each state these costs may already form part of the general ledger or may need to be included by the hospital or jurisdiction as part of the costing process. For example, some hospitals may include insurance costs in their general ledger while in other scenarios; these costs may be borne by the jurisdiction and allocated to the hospital as part of the jurisdiction adjustments.

Costs already included in the LGH part of the DHHS general ledger included:

- Superannuation, long service leave and worker's compensation;
- Depreciation;

A total of \$14.7m of costs were added to the extracted general ledger expenditure before uploading the total hospital costs into the costing system. These are made up of:

- \$4.9m for admitted mental health costs which re recorded in a separate area of the DHHS general ledger. Activity for the psychiatric ward was recorded in the LGH patient administration system.
- \$6.9m for the proportion of corporate overheads (IT, HR etc) allocated by the jurisdiction;
- \$1.09m for medical indemnity insurance allocated by the jurisdiction.

No Palliative Care costs were included in the submission, as Palliative Care services were managed outside the LGH in the Northern AHS. Also, all Palliative Care services in the North of the state are outsourced to a non-government provider of which no activity was available. No other exclusions were made from the general ledger before costing.

In accordance with the AHPCS, no offsetting of revenue received was made for the allocation of high cost \$100 drugs.

Together with the exclusions and inclusions; the total level of expenditure used for hospital costing was \$273.2 m.

C. Allocation of overheads

For the financial year 2011/12, overhead costs totalled \$52.8 m which represents 19.3% of total costs for LGH. These costs were allocated to the patient care areas based on a variety of allocation statistics, such as FTEs, goods and services expenses etc.

The allocation statistics were determined based on the preferred hierarchy of allocation statistics in the AHPCS.

D. Costs by hospital products

The LGH FinanceOne cost centres were imported into Combo CC and manually mapped to the standard list of NHCDC cost centres noted in the AHPCS. Where a cost centre provided two or more product streams/services (such as acute inpatient care and outpatients), a product type fraction (PFRAC) was developed. These mapping and fractions are developed and reviewed each year in consultation with NAHS finance staff.

8.2.3 Activity information

All inpatient, outpatient and emergency department patient activity data was extracted from the state-wide iPAS/Homer Patient Information System into a central SQL Data Warehouse, which was used as the source of activity for costing purposes.

In Round 16, service weights were used for allocating Pathology and Imaging costs. Other feeder systems data such as Allied Health, Radiology and blood products were extracted from third party information systems and imported in the Costing Systems Database.

No adjustments were made to feeder data used in the costing process. No adjustments were made in the general ledger for patients who were covered through other funding sources.

8.2.4 Costed dataset

A total of \$272.7m was allocated to the hospital products. These values were agreed to supporting schedules provided by the costing team.

A number of validation checks were performed by the jurisdiction costing team on the costed data before submission, including

- Pre and post cost study general ledger reconciliation;
- Reasonableness checks – comparison to previous years studies (with randomly selected DRGs);
- high cost and negative value episodes;
- Validation and reasonableness checks using the IPACost tool.

The costing team also undertook extensive consultation with the NAHS finance staff on the allocation and mapping of costs to activity areas.

Due to time and staffing constraints during the Round 16 collection, only a limited number of reasonableness checks were performed on the submitted dataset but this is expected to be expanded for future rounds.

E. Final adjustments

After performing the quality assurance checks in IPACost, the costing team in consultation with the LGH finance staff removed 594 encounters from their submission, totalling \$48.9m. Direct teaching costs accounted for \$12.6 m of costs which were held from the final submission. \$33.5m of costs for out of scope activity, community and rural hospital cost were also excluded from the final submission. Work in progress (WIP) and other non admitted patient costs totalling \$0.50 m were also removed at this step before the final submission to IHPA.

Work in progress

Following the costing process, the DHHS adjusted it's NHCDC submission to account for patients whose stay extends across different financial years and to account for work-in-progress patients in accordance with the AHPCS.

The diagram below illustrates the overall methodology used:

	<-- 2010/11	2011/12	2012/13 -->	Allocated 10/11 costs	Allocated 11/12 costs	Submitted to IHPA in 11/12
Scenario 1		↔		✗	✓	✓
Scenario 2	↔			✓	✓	✗
Scenario 3			↔	✗	✓	✗
Scenario 4	↔			✓	✓	✗

For patients that were admitted and discharged during the year (Scenario 1), 2011/12 costs were allocated to the patient, and the encounter was submitted to IHPA.

For patients that were admitted during the previous year and discharged during 2011/12 (Scenario 2), costs were allocated for activity across both periods. For example, if a patient was admitted for 4 days in 2010/11 and for 6 days in 2011/12, the patient would be allocated 4 days worth of 2010/11 costs and 6 days worth of 2011/12 costs. These encounters were not submitted to IHPA in Round 16.

For Scenarios 3 and 4 where patients were not discharged by year end, costs were allocated to the patient from the relevant years they were admitted and these encounters were not submitted to IHPA in Round 16 as they will be submitted in the year they are discharged.

A total of \$181.1k of costs incurred in the 2011/12 year was allocated to patients that were not discharged by 30 June 2012 (ie. scenarios 3 and 4) and will be submitted in future collections.

8.2.5 Sample Encounter reconciliation with IHPA

A sample of five Launceston General Hospital patients encounters were taken from the national database and were agreed to the information included in the hospital costing system. The table below displays the result of the reconciliation:

Item	Product type	Total cost (provided by IHPA)	Total cost in costing system	Variance
Sample patient 1	Outpatient	\$224.51	\$224.51	-
Sample patient 2	Non admit ED	\$164.09	\$164.09	-
Sample patient 3	Admit ED	\$1,738.87	\$1,738.87	-
Sample patient 4	Acute	\$309,620.03	\$309,620.03	-
Sample patient 5	Acute	\$231,585.06	\$231,585.06	-

No material variances were noted between the data submitted by the hospital and IHPA.

8.3 Jurisdiction overview - Tasmania

8.3.1 Overview of process

As the hospitals in Tasmania are costed centrally at DHHS, the jurisdiction oversee the entire collection, from data extraction and costing through to final submission to IHPA. The costing team also performs a number of internal quality assurance checks over the data, mainly at a DRG level to test the validity and reasonableness of the data and undertake consultation with management of the relevant hospital to confirm allocations and reasonableness of costings.

After the internal review procedures are completed, validation and quality assurance (reasonableness) checks are performed using the IPACost tool. Where encounters failed the validation check critical errors were either corrected or removed prior to submission to the IHPA Data Submission Portal.

8.3.2 Adjustments to costs – Launceston General Hospital

The following adjustments were made to the costed dataset before the data was submitted to the NHDCDC:

- \$33.5m of out of scope activity, community and rural hospital costs were removed;
- \$12.6m of direct teaching costs were removed;
- \$2.89m was removed representing records that failed quality assurance checks due to insufficient data elements, reclassification and coding issues;
- \$0.32m of costs were excluded as a result of work in progress patients who were discharged in 2011/12 but had been admitted in previous financial years;
- \$0.18m of costs were excluded from patients who had not been discharged as at 30 June 2012. These patient costs will be submitted in the year the patient is discharged.

Following these adjustments, a total of 205,547 episodes and \$226.9m of costs were submitted by the jurisdiction for the Launceston General Hospital for 2011/12.

8.3.3 Reconciliation with IHPA – Launceston General Hospital

The table below displays the total costs and total separations that were provided by both DHHS and IHPA as part of the submission processes.

The IPACost tool is used by the jurisdiction to prepare the files for submission, and the data is uploaded into the IHPA Data Submission Portal Drop Box. The IPACost tool is also used to perform the Unqualified Babies (UQB) cost allocation. This relates to the costs for newborn babies with zero qualified days being allocated to the mother separations at the relevant hospital. When this process was performed using IPACost, the output included a duplication of costs and separations for the mother and baby DRGs.

As demonstrated in the table below, an adjustment to remove these duplicated costs was performed by IHPA. The net result has been described in the table below as the net costs submitted by the jurisdiction.

Following IHPAs validation and quality assurance checks, the final output is included in the national dataset as shown in the table below.

The table below displays the total costs and total separations that were provided by both DHHS Tasmania and IHPA as part of their submission processes.

Item	Total amount recorded in the IHPA data submission portal	Unqualified baby adjustment	Net total cost submitted to IHPA	Provided by IHPA in national dataset	Variance
Total costs	\$226,922,822	\$3,202,196	\$223,720,626	\$223,720,686	(\$59.62)
Total separations	206,927	1,380	205,547	205,547	-

No material variances were noted.

9 Western Australia

9.1 Western Australia Overview

Two Area Health Services (AHS') were included as part of the financial review; South Metro Health Service (SMHS) and North Metro Health Service (NMHS).

The review team met with costing representatives from both health services and discussed the costing process for their location. Information was provided using the PwC templates along with some additional reconciliation files that were prepared as part of their internal management. The costing representatives completed the templates with support from the jurisdiction representatives. Additional clarifications were provided after the meeting with the costing team for any large reconciling items.

9.1.1 Costing overview

The two health services participating in this review used Trendstar to perform their costing for Round 16. Both health services are implementing PPM2 for their Round 17 submissions. Costing is performed once a year for the purpose of NHCDC submission. Other costings may be performed throughout the year; however they use different costing standards and are unrelated to the NHCDC.

Financial data is stored in Oracle across the state and all sites use the same general ledger structure. This information was extracted for costing prior to the final audit adjustments were entered and a reconciliation was performed by the Department to identify any discrepancies between the costings and final audited statements.

The state maintains a central database that stores morbidity data for all sites. Checks and validations are performed on the data before it is entered to check for completeness. This is the source of the activity information used for costing. After sites performed their costing the Department performed validation checks to ensure the costed activity data matches with the central database.

9.2 Sir Charles Gairdner Hospital

9.2.1 Overview

Sir Charles Gairdner Hospital (SCGH) belongs to the NMHS in WA, and was costed by the North Metro costing team.

The table below summarises the costs included in the costing, starting from the total general ledger amount through to the total hospital costs submitted by the jurisdiction. These amounts and the exclusions are explored in B - Inclusions and Exclusions.

Item	Amount	Item	Amount
A. General Ledger	\$733,348,373	D. Allocation of costs to patients	
B. Adjustments to the General Ledger		Acute	\$507,588,534
Exclusions	(\$73,766,022)	Outpatients	\$108,397,125
Inclusions	-	Emergency	\$13,643,542
Total hospital expenses	\$659,582,351	Sub-acute	\$29,754,242
C. Allocation of costs		Mental Health	-
Patient care areas (Direct costs)	\$498,206,072	Boarder	-
Overhead areas (Indirect costs)	\$160,738,229	Other	\$199,014
Total patient care areas (post allocation)	\$658,944,301	Teaching	-
Variance	(\$638,050)	Total costed products	\$659,582,456
		Variance	\$638,155
		Total costs submitted to jurisdiction	\$659,582,456
		Jurisdiction adjustments (see WA section)	
		Other	(\$22,189,765)
		Total costs submitted by jurisdiction	\$637,392,692
		Variance	-

The variance of \$638,050 above relates to diagnostic costs for outpatient events that are not captured in the core outpatient patient administration system, TOPAS. These costs are not allocated to patients and are reported at the cost centre level.

9.2.2 Financial Data

A. General Ledger

The financial statements for the NMHS are publically released as part of the Metropolitan Area Health Service (MAHS), which includes both the north and south metro regions. For the 2011/12 financial year, the total cost of services for the MAHS in the annual report was \$4.10bn. A breakdown of the MAHS costs included in the annual report, split between north and south metro AHS, and then further split into the hospitals within NMHS was provided, which reconciled to the general ledger costs for SCGH of \$733.3m.

B. Inclusions and Exclusions

Certain costs are expected to be included in the costed dataset as guided by the scope of the AHPCS, and due to the varied structure and process within each state these costs may already form part of the general ledger or may need to be included by the hospital or jurisdiction as part of the costing process. For example, some hospitals may include insurance costs in their general ledger while in other scenarios; these costs may be borne by the jurisdiction and allocated to the hospital as part of the jurisdiction adjustments.

In calculating the total cost for SCGH, the following costs were already included in the general ledger:

- Superannuation, long service leave and worker's compensation;
- \$18.1 for Health Information Network, software licences (Microsoft Office), and Health Corporate Network costs;
- Depreciation; and
- AHS overhead costs.

As these costs already sit within the general ledger, no adjustments were made to include them.

Expenditure totalling \$73.8m associated with non-hospital products were excluded from the costing. The largest exclusions noted were:

- Direct teaching and training - \$32.08m;
- Services to other organisations - \$12.88m;
- Out of scope - \$9.5m. This relates to capital expenditure for the AHS, but is captured under SCGH for management purposes. \$7.8m of this item consists of the construction of a multistorey car park at the Queen Elizabeth site.
- Research - \$8.25m; and
- Continuing care programs - \$4.0m.

C. Allocation of overheads

A collection of allocation statistics are used to allocated overhead costs to patient care areas, such as FTE headcount, total expenses, medical FTE, nursing FTE etc. The costing team has worked closely with the business managers of each cost centre to determine the most appropriate statistic given the data available, services provided and the preferred statistics of the AHPCS. For Sir Charles Gairdner Hospital, the total overhead allocated was \$160.7m for the 2011/12 year.

D. Costs by hospital products

Cost centres were mapped directly to one NHCDC area and accounts to one NHCDC line item, which was driven by the hospital service that cost centre was providing. Where a cost centre provided two or more product/services (such as acute medical care and research), inpatient fractions (iFRACs) were developed. A formal review of these allocations was made throughout the year.

For the 2011/12 year, iFRACs were developed and set by the various business managers of each cost centre. Variances to prior year were investigated by the costing team and confirmed with business managers.

9.2.3 Activity information

All inpatient activity information is extracted from the patient administration system, TOPAS, and uploaded into the costing system. Around 70% of outpatient activity is recorded in the system and is therefore costed at the patient level; the rest is reported in aggregate.

Activity relating to boarders and cancelled elective surgeries are not costed. These are therefore not entered into the costing system and no adjustments are made in the general ledger.

Feeder systems exist for pathology, prosthetics and imaging services. No adjustments were made to feeder data used in the costing process. Allied Health and Operating Theatre costs are allocated based on minutes, and Ward Nursing and Ward medical costs are allocated based on hours.

Pharmacy costs were allocated based off service weights sourced from the Department of Health and Ageing website. S100 drugs were allocated to wards, which were then allocated to patients using ward hours.

No adjustments to the costing process were made for private elective patients at SCGH.

9.2.4 Costed dataset

A total of \$659.6m was allocated to hospital products. These values were agreed to supporting schedules provided by the costing team. The team perform a series of quality assurance checks over the data, including:

- High level reconciliations with inpatient / outpatient / ED costs;
- Cost per unit analysis – for example, \$x per day for Ward A, \$y per minutes in theatre;
- Cost per procedures – for example, \$x per MRI, \$y per blood count test;
- Reasonableness checks – for example, theatre costs have an anaesthetic cost, all surgical DRGs have operating theatre costs.

After these checks, the data is sent to WA Health for review.

Work in progress

SCGH does not adjust their submission to account for patients whose stay extends across different financial years. The diagram below illustrates the methodology used:

	<-- 2010/11	2011/12	2012/13 -->	Allocated 10/11 costs	Allocated 11/12 costs	Submitted to IHPA in 11/12
Scenario 1		↔		✗	✓	✓
Scenario 2	←	↔		✗	✓	✓
Scenario 3			↔	✗	✗	✗
Scenario 4	←	↔	→	✗	✗	✗

For patients that were admitted and discharged during the year (Scenario 1), 2011/12 costs were allocated to the patient, and the encounter was submitted to IHPA.

For patients that were admitted during the previous year and discharged during 2011/12 (Scenario 2), the current year's costs were allocated for the total activity regardless of whether the activity occurred in the current or previous financial years. For example, if a patient was admitted for 4 days in 2010/11 and for 6 days in 2011/12, the patient would be allocated 10 days worth of 2011/12 costs.

For Scenarios 3 and 4 where patients were had not discharged by year end, no 2011/12 costs were allocated to the patient and these encounters were not submitted to IHPA. These encounters will be submitted in the year they are discharged.

In accordance with the methodology listed above, no costs were allocated to patients that were not submitted to IHPA and therefore there is no adjustment to the submission for WiP.

9.2.5 Reconciliation with IHPA – Sample patients

A sample of five SCGH patient encounters were taken from the national database and were agreed to the information included in the costing system for SCGH. The table below displays the result of the reconciliation:

Patient	Product type	Total cost (provided by IHPA)	Total cost in costing system	Variance
Sample patient 1	Outpatient	\$487.56	\$487.62	(\$0.06)
Sample patient 2	Acute	\$514,425.62	\$512,545.49	\$1,880.13
Sample patient 3	Non-Adm ED	\$191.67	\$191.68	(\$0.01)
Sample patient 4	Acute	\$428,561.54	\$427,169.33	\$1,392.21
Sample patient 5	Acute	\$22,292.98	\$22,294.02	(\$1.04)

Sample patients 1, 3 and 5 had a rounding difference totalling \$1.11.

Sample patient 2 had a variance of \$1,880.13, and sample patient 4 had a variance of \$1,392.21. These variances are caused by a negative amount being allocated to these patients for GenSurg, which is an allocation general surgery. These negative costs were removed after running through IPACost and before submission it IHPA.

9.3 Armadale Hospital

9.3.1 Overview

Armadale Hospital belongs to the South Metro Area Health Service (SMHS) in WA and was costed by the South Metro costing team.

Below is a table which summarises the costs included in the costing, starting from the total general ledger amount through to the total hospital costs submitted by the jurisdiction to IHPA.

Item	Amount	Item	Amount
A. General Ledger	\$162,464,808	<i>Allocation of costs to patients</i>	
B. Adjustments to the General Ledger		Acute	\$87,853,092
Exclusions	(\$22,847,624)	Outpatients	\$5,178,443
Inclusions	\$4,381,432	Emergency	\$32,810,356
Total hospital expenses	\$143,998,616	Sub-acute	\$13,886,569
C. Allocation of overheads		Mental Health	-
Patient care areas (Direct costs)	\$116,017,413	Boarder	\$2,972,140
Overhead areas (Indirect costs)	\$27,981,203	Other	\$1,298,010
Total patient care areas (post allocation)	\$143,998,616	Teaching	-
Variance	-	Total costed products	\$143,998,610
		Variance	(\$6)
		Total costs submitted to jurisdiction	\$143,998,610
		<i>Jurisdiction adjustments (see WA section)</i>	
		Other	(\$524,929)
		Total costs submitted to jurisdiction	\$143,473,648
		Variance	(\$33)

9.3.2 Financial Data

A. General Ledger

The financial statements for the SMHS are publically released as part of the Metropolitan Area Health Service, which includes both the north and south metro regions. For the 2011/12 financial year, the total cost of services for the MAHS in the annual report was \$4.10bn. A breakdown of the MAHS costs included in the annual report, split between north and south metro AHS, and then further split into the hospitals within SMHS was provided, which reconciled to the general ledger costs for SCGH of \$162.5m

B. Inclusions and Exclusions

Certain costs are expected to be included in the costed dataset as guided by the scope of the AHPCS and due to the varied structure and process within each state, these costs may already form part of the general ledger or may need to be included by the hospital or jurisdiction as part of the costing process. For example, some hospitals may include insurance costs in their general ledger while in other scenarios; these costs may be borne by the jurisdiction and allocated to the hospital as part of the jurisdiction adjustments.

Costs already incorporated in the general ledger include:

Superannuation, long service leave and worker's compensation;

Depreciation; and

AHS overhead costs.

Overhead costs from the SMHS are allocated down to hospitals. A total of \$4.4m of overhead costs were allocated to Armadale. Notable inclusions were:

- \$2.4m for Health Corporate Network costs (eg finance, human resources etc);
- \$964,072 for Health Information Network costs (ie ICT costs); and
- \$680,422 for software licensing (Microsoft Office) costs.

Costs that were removed from the general ledger before costing totalled \$22.8m, and included:

- \$8.1m for direct teaching and research costs;
- \$10.8m for Community Mental Health programs,
- \$3.3m for Community Programs, such as community aged care, extended care and Indigenous Australians programs; and
- \$670,905 for other non-hospital products.

Together with the exclusions and inclusions, the total cost used for hospital costing for the 2011/12 financial year was \$144.0m.

C. Allocation of overhead

For the financial year 2011/12, overhead cost centre costs totalled \$28.0m. These costs were allocated to patient care areas based on each patient care area's contribution of total expenses.

D. Costs by hospital products

Cost centres are mapped directly to one NHCDC area and accounts map directly to one NHCDC line item, which determine which hospital product that cost centre is providing. Where a cost centre provides two or more products (such as acute medical care and research) inpatient fractions (iPFRAC) were developed.

For the 2011/12 year, business managers responsible for a cost centre were asked to review the allocation of costs amongst the hospital products provided by their cost centres.

9.3.3 Activity information

All inpatient activity information is extracted from the patient administration system, TOPAS, and uploaded into the costing system. Outpatient and ED patients are also extracted where activity has been entered into TOPAS, however some costs are reported in aggregate due to lack of activity data. Boarders are costed at Armadale, as are unqualified babies.

Feeder systems exist for pathology, imaging and VMOs. No adjustments were made to feeder data used in the costing process.

Operating Theatre costs are allocated based on minutes, Ward Medical and Ward Nursing costs are allocated based on hours. Allied Health costs are distributed to patient care areas based on ward hours. Pharmacy costs were added to the wards and allocated to patients based on the ward allocation of ward hours.

No adjustments to the costing process were made for private elective patients at SCGH.

9.3.4 Costed dataset

A total of \$144.0m was allocated to the hospital products listed in the table above. These values were agreed to supporting schedules provided by the costing team. Some validation and reasonableness checks are run at the hospital, however reliance is placed on the review procedures done at WA Health, both the internal checks and the use of the IPACost tool.

Work in progress

Armadale does not adjust their submission to account for patients whose stay extends across different financial years. The diagram below illustrates the methodology used:

	<-- 2010/11	2011/12	2012/13 -->	Allocated 10/11 costs	Allocated 11/12 costs	Submitted to IHPA in 11/12
Scenario 1		←→		✗	✓	✓
Scenario 2	←→			✗	✓	✓
Scenario 3			←→	✗	✗	✗
Scenario 4	←→			✗	✗	✗

For patients that were admitted and discharged during the year (Scenario 1), 2011/12 costs were allocated to the patient, and the encounter was submitted to IHPA.

For patients that were admitted during the previous year and discharged during 2011/12 (Scenario 2), the current year's costs were allocated for the total activity regardless of whether the activity occurred in the current or previous financial years. For example, if a patient was admitted for 4 days in 2010/11 and for 6 days in 2011/12, the patient would be allocated 10 days worth of 2011/12 costs.

For Scenarios 3 and 4 where patients were had not discharged by year end, no 2011/12 costs were allocated to the patient and these encounters were not submitted to IHPA. These encounters will be submitted in the year they are discharged, including the 2011/12 activity.

In accordance with the methodology listed above, no costs were allocated to patients that were not submitted to IHPA and therefore there is no adjustment to the submission for WiP.

9.3.5 Reconciliation with IHPA – Sample encounters

A sample of five Armadale patient encounters were taken from the national database and were agreed to the information included in the costing system for Armadale. The table below displays the result of the reconciliation:

Patient	Product type	Total cost (provided by IHPA)	Total cost in costing system	Variance
Sample patient 1	Outpatient	\$46.43	\$46.43	(\$0.00)
Sample patient 2	Acute	\$201,156.37	\$201,156.53	(\$0.16)
Sample patient 3	Acute	\$172,048.49	\$172,048.64	(\$0.15)
Sample patient 4	Non-admit ED	\$672.21	\$672.21	(\$0.00)
Sample patient 5	Acute	\$13,449.46	\$13,449.50	(\$0.04)

No material variances were noted between what was submitted by the hospital and IHPA's dataset.

9.4 Jurisdiction overview – Western Australia

9.4.1 Overview of process

AHS' provided costed data to the department once completed. The department then performed some high level review procedures over the dataset, including:

- Reconciliation of total costs back to the general ledger;
- Review of the split between inpatient, outpatient and non- hospital products; and
- Coding checks back to the state morbidity system.

After these review procedures were performed, WA Health ran the IPACost tool to prepare the data for submission. Some adjustments were made based on the results of the checks in IPACost. After these adjustments, the data was submitted to IHPA.

9.4.2 Adjustment to costs – SCGH

WA Health receive data from costing teams and perform validation and reasonableness checks using the IPACost tool. After performing the quality assurance checks in IPACost, WA Health removed 7,255 encounters from their submission, totalling \$22.1m. Outpatients with no Tier 2 classification account for \$16.5m worth of this exclusion, along with \$3.1m for acute patients across 395 separations.

A total of \$637.4m was submitted to IHPA, containing 362,930 encounters.

9.4.3 Reconciliation with IHPA - SCGH

The table below displays the total costs and total separations that were provided by both WA Health and IHPA as part of the submission processes.

Item	Provided by WA Health (J1 template)	Provided by IHPA in national dataset	Variance
Total costs	\$637,392,692	\$637,392,691	\$0.5
Total separations	362,930	362,930	-

The total separations agreed between IHPA and WA Health, totalling 363,930 for 2011/12. The total cost for SCGH provided by IHPA contains a rounding difference of \$0.50 compared to what WA Health reported.

9.4.4 Adjustment to costs – Armadale

WA Health received data from costing teams and performed validation and reasonableness checks using the IPACost tool. After performing reasonableness tests the quality assurance checks in IPACost, WA Health removed 976 encounters from their submission, totalling \$524,929. Non-admitted ED costs accounts to roughly half this amount, which fell from \$25.5m to \$25.2m after the review procedures. Non-hospital products totalling \$207,319 were also removed at this step before being submitted to IHPA.

A total of \$143.5m was submitted to IHPA, containing 123,007 encounters.

9.4.5 Reconciliation with IHPA – Armadale

The table below displays the total costs and total separations that were provided by both WA Health and IHPA as part of their submission processes.

Item	Provided by WA Health (J1 template)	Provided by IHPA in national dataset	Variance
Total costs	\$143,473,648	\$143,473,648	-
Total separations	123,007	121,015	1,992

IHPA identified 1,992 unqualified babies that were submitted as part of the Armadale submission. IHPA has adjusted these costs so that they are distributed back to the mother DRGs, and the unqualified baby separations are removed.

10 Victoria

10.1 Victoria overview

Three health services were included as part of the financial review for Victoria; Northern Health, Peninsula Health and Goulburn Valley Health.

The review team met with costing representatives from all three locations and the Department of Health Victoria (DH) team and discussed the costing process for their location.

All templates were completed by the respective health service or jurisdiction representative and provided to the PwC review team.

10.1.1 Costing overview

Victoria's costing model is established so that the hospital or health service performs the costing onsite and submits the data to DH.

Once the data is received by DH, jurisdictional staff within the Information and Funding Systems Branch performs a number of internal reviews and checks on the data. Where necessary, DH will send the data back to the hospital/health service costing staff for further validation and sign off. The finalised data is then applied to the IPAcost software and then submitted to the NHCDC.

10.2 Northern Health

10.2.1 Overview

Northern Health is a local health network in Victoria, comprises of four hospitals; The Northern Hospital, Bundoora Extended Care Centre, Broadmeadows Health Service and Craigieburn Health Service.

Northern Health uses the PowerHealth Costing System – Power Performance Management (PPM) to undertake its patient level costing on an annual basis. The costing process takes approximately 1 month and is undertaken by the Finance Department at Northern Health. The cost data supplied to IHPA comprises all 4 campuses.

Northern Health performs the costing function on an annual basis and it has historically been undertaken as a compliance function to meet the requirements of the Victorian Cost Weight Study. Since the introduction of Activity Based Funding and the requirements to supply data to the NHDC, Northern Health have reconfigured their costing methodology (which includes mapping and adherence to the Australian Hospital Patient Costing Standards) to support the ABF requirements.

Below is a table which summarises the amounts included in the costing starting from the general ledger amount through to the total hospital costs submitted by the jurisdiction. These amounts and the various exclusions or inclusions are explored further in this chapter.

Item	Amount	Item	Amount
A. Total expenses in the Annual Report	\$350,855,000	E. Allocation of costs to products	
<i>Reconciling items</i>		Acute	\$176,829,943
Exclusions	(\$1,194,000)	Outpatients	\$44,166,590
Inclusions	-	Emergency	\$35,109,520
B. General Ledger	\$349,660,812	Sub-acute	\$47,191,146
Variance	\$188	Mental Health	\$2,722,210
C. Adjustments to the General Ledger		Boarder	-
Exclusions	(\$22,470,825)	Other	\$21,170,476
Inclusions	-	Teaching	-
Total hospital expenses	\$327,190,175	Total costed products	\$327,189,887
D. Allocation of overheads		Variance	(\$101)
Patient care areas (Direct costs)	\$255,069,433	F. Adjustments for WiP	
Overhead areas (Indirect costs)	\$72,120,555	WiP - Carried forward from prior years	(\$4,949,806)
Total patient care areas (post allocation)	\$327,189,988	WiP - Patients not discharged by year end	\$4,638,219
Variance	(\$187)	Other	-
		Total costs submitted to jurisdiction	\$327,500,738
		Variance	(\$736)
		<i>Jurisdiction adjustments (see Vic section)</i>	
		Removals after QA process	(\$51,225,000)
		Total costs submitted by jurisdiction	\$276,274,000
		Variance	\$1,738

10.2.2 Financial Data

A. The Annual Report

Northern Health prepares their annual report at an entity level, not a campus level, and the report includes a total amount for expenditure of \$350.855m.

B. General Ledger

The general ledger was provided at an individual campus level and reconciled to the aggregated annual report. One reconciling amount was identified, being \$1.194m of revenue offsets against expenses in the general ledger.

Patient level costing is performed at the campus level as both activity and expenses are able to be produced at that level.

C. Inclusions and Exclusions

Certain costs are expected to be included in the costed dataset as guided by the scope of the AHPCS and due to the varied structure and process within each state, these costs may already form part of the general ledger or may need to be included by the hospital or jurisdiction as part of the costing process. For example, some hospitals may include insurance costs in their general ledger while in other scenarios; these costs may be borne by the jurisdiction and allocated to the hospital as part of the jurisdiction adjustments.

No inclusions were identified by Northern Health.

Expenditure totalling \$22.47m was excluded from the costing. Notable exclusions included:

- Depreciation and amortisation
- Special purpose funds not related to patient care
- Capital related expenses.

Following these adjustments, total expenditure for Northern Health was \$327.189m which was used for costing for the 2011/2012 financial year.

D. Allocation of overheads

Northern Health reported overhead costs of approximately \$72.1m for 2011/12 which represents 22% of total costs. The allocation statistics used to allocate these costs follow the 1st, 2nd or 3rd allocation guide according to the Australian Hospital Patient Costing Standards.

Transport costs and shared services such as payroll services and procurement services have no direct feeder systems and so were treated as overheads and distributed to all patients.

E. Costs by hospital product

Northern Health reported direct costs of approximately \$255.07m for 2011/12.

The costing team at Northern Health have implemented the Victorian Cost Data Business Rules for Reporting to ensure cost data could comply with the AHPCS for submission to the NHCDC. The Victorian Cost Data Business Rules for Reporting provide guidance on a number of costing issues such as the mapping of various cost centres for NHCDC and Victorian purposes to the format of the submission file to the jurisdiction.

Cost centres are mapped to Victorian specified cost area ranges, and accounts mapped to Victorian specified account types, these are then mapped by DH to NHCDC areas and line items for reporting to NHCDC. No direct inpatient fractioning (IFRAC) is undertaken. Feeder data was used to allocate costs within areas and therefore costs were only allocated to hospital products where activity data was available. For example, direct teaching costs

belonging to a medical area were allocated to all hospital product activity as part of the medical costs.

10.2.3 Activity information

All activity data is extracted from internal hospital systems such as the Patient Administration System (PAS) and departments such as theatres, pharmacy, emergency and outpatients.

Pathology and radiology services are outsourced to external providers who provide Northern Health with an actual usage charge at a patient level. The invoices for outsourced radiology and pathology are provided once a month, and the costing team remove private and compensable patients from the files and these costs are not allocated to patients.

The costing team perform an internal validation and data hygiene check before uploading the data into the costing system.

No adjustments to the costing process were made for private patients except for prosthesis where a different weighting is applied based on the purchase cost of the prosthesis.

10.2.4 Costed dataset

A total of \$327.189m was allocated to hospital products. The final costed dataset was reviewed by senior management prior to them being submitted to the jurisdiction.

Work in progress

Northern Health adjusts their submission to account for patients whose stay extends across different financial years. The diagram below illustrates the methodology used:

	<-- 2010/11	2011/12	2012/13 -->	Allocated 10/11 costs	Allocated 11/12 costs	Submitted to IHPA in 11/12
Scenario 1		←→		✗	✓	✓
Scenario 2	←→			✓	✓	✓
Scenario 3			←→	✗	✓	✗
Scenario 4	←→			✓	✓	✗

For patients that were admitted and discharged during the year (Scenario 1), 2011/12 costs were allocated to the patient, and the encounter was submitted to IHPA. Similarly with scenario 2 being patients who were admitted during the previous year and discharged during 2011/12, costs were allocated from both years and the encounter was submitted to IHPA during 2011/12.

For Scenarios 3 and 4 where patients were not discharged by year end, costs were allocated to the encounters however were not submitted to IHPA. These encounters will be submitted in the year they are discharged.

A total of \$4.6m was allocated to patients that were not discharged by 30 June 2012 (i.e., scenarios 3 and 4) and will be submitted in future collections.

10.2.5 Sample Encounter reconciliation with IHPA

A sample of five patient encounters from Northern health was taken from IHPA's dataset and was agreed to the information included in the hospital costing system. The table below displays the result of the reconciliation:

Patient	Product type	Total cost (provided by IHPA)	Total cost in costing system	Variance
Sample patient 1	Outpatient	\$22.94	\$22.94	-
Sample patient 2	Em. Dept	\$156.66	\$156.66	-
Sample patient 3	Em. Dept	\$1,027.53	\$1,027.53	-
Sample patient 4	Acute inpatient	\$287,761.78	\$287,761.78	-
Sample patient 5	Acute inpatient	\$277,711.20	\$277,711.20	-

No variances were noted between what was submitted by the hospital and IHPA's dataset.

10.3 Peninsula Health

10.3.1 Overview

Peninsula Health is a local health network in Victoria, comprising 5 campuses Frankston Hospital, Rosebud Hospital, Golf Links Road Campus, The Mornington Centre and Rosebud Rehab Unit.

Peninsula Health uses User Cost costing system to undertake its patient level costing. This is the first NHCDC Peninsula Health has submitted data to in over 5 years, as in prior years they were unable to extract robust feeder information from source systems. Peninsula Health has utilised the TALONS system of activity linking and feeder extraction for the costing process. The cost data supplied to IHPA comprises all 5 campuses.

The costing process for Peninsula Health is outsourced to Visasys and overseen by the Management Information Systems Manager who signs off the final costing data prior to it being submitted to the jurisdiction. The costing process occurs once a year and there is currently no plan to change this with the current resource commitment.

. Peninsula Health has configured their costing methodology (which includes mapping and adherence to the Australian Hospital Patient Costing Standards) to support NHCDC requirements.

Below is a table which summarises the amounts included in the costing starting from the general ledger amount through to the total hospital costs submitted by the jurisdiction. These amounts and the various exclusions or inclusions are explored further in this chapter.

Item	Amount	Item	Amount
A. Total expenses in the Annual Report	\$444,060,000	<i>E. Allocation of costs to products</i>	
<i>Reconciling items</i>		Acute	\$213,786,501
Exclusions	-	Outpatients	\$79,522,680
Inclusions	(\$900)	Emergency	\$41,913,921
		Sub-acute	-
B. General Ledger	\$444,059,100	Mental Health	\$14,148,432
<i>C. Adjustments to the General Ledger</i>		Boarder	\$443,227
Exclusions	\$20,556,691	Other	\$73,687,647
Inclusions (rounding)	-	Teaching	-
Total hospital expenses	\$423,502,409	Total costed products	\$423,502,408
<i>D. Allocation of overheads</i>		Variance	(\$1)
Patient care areas (Direct costs)	\$333,272,624	<i>F. Adjustments for WIP</i>	
Overhead areas (Indirect costs)	\$90,229,785	WIP - Carried forward from prior years	\$12,016,998
Total patient care areas (post allocation)	\$423,502,409	WIP - Patients not discharged by year end	\$17,825,845
		Other	\$4,231,304
		Total costs submitted to jurisdiction	\$389,428,261
		Variance	-
		<i>Jurisdiction adjustments (see Vic section)</i>	
		Removals after QA process	(\$99,771,000)
		Total costs submitted by jurisdiction	\$289,656,000
		Variance	\$1,261

10.3.2 Financial Data

A. The Annual Report

Peninsula Health prepares their annual report at an entity level, not a campus level, and the report includes a total amount for expenditure of \$444.06m.

B. General Ledger

The general ledger was provided at an entity level and reconciled to the aggregated annual report.

One reconciling item was a rounding variance between the annual report and the general ledger totalled \$.9m.

Patient level costing is performed at the campus level as both activity and expenses are able to be produced at that level.

C. Inclusions and Exclusions

Certain costs are expected to be included in the costed dataset as guided by the scope of the AHPCS and due to the varied structure and process within each state, these costs may already form part of the general ledger or may need to be included by the hospital or jurisdiction as part of the costing process. For example, some hospitals may include insurance costs in their general ledger while in other scenarios; these costs may be borne by the jurisdiction and allocated to the hospital as part of the jurisdiction adjustments.

For Peninsula Health, no inclusions were identified.

Expenditure totalling \$20.555m was excluded from the costing. Notable exclusions included:

- Depreciation and amortisation
- Impairment of financial and non financial assets
- Revaluation of assets
- Special purpose funds

Following these adjustments, total expenditure for Peninsula Health was \$423.502m which was used for costing for the 2011/2012 financial year.

D. Allocation of overhead

Peninsula Health reported overhead costs of approximately \$90.229m, which represents 21.3% of total costs. Where possible the costing methodology for overhead allocation adheres to the Australian Hospital Patient Costing Standards.

Training is allocated to patients, with dedicated teaching cost centres, which are included as a staff skill training cost centre that is classified as an overhead.

E. Costs by hospital products

Peninsula Health reported direct costs of approximately \$333.272m for 2011/12.

Peninsula Health Cost Data have implemented the Victorian Cost Data Business Rules for Reporting to ensure cost data could comply with the Australian Hospital Costing Standards for submission to the NHCDC. As the costing process utilises the cost centres, a mapping can then be made to the Victorian and NHCDC area and bucket mappings for reporting purposes. The approach undertaken by the hospital via User Cost is to cost at the cost centre level, and map the final costed product to the Victorian specified cost area ranges and account types. DH maps these to NHCDC areas and line items for reporting to the NHCDC.

10.3.3 Activity information

All activity data is extracted from internal hospital systems such as the Patient Administration System (PAS). The Peninsula Health data warehouse which is used to store data from other systems from which extracts are then obtained for costing purposes. The warehouse is updated on a daily basis.

Whilst the costing function is outsourced, Peninsula health did note that time is spent internally ensuring that quality controls are performed over the data throughout the year.

For private patient costing, pathology is outsourced. The health service receives a monthly extract of pathology activity and removes the private patient component so these costs are not attached to patients.

10.3.4 Costed dataset

A total of \$423.502m was allocated to hospital products.

Work in progress

Peninsula Health adjusted their submission to account for patients whose stay extends across different financial years. The diagram below illustrates the methodology used:

	<-- 2010/11	2011/12	2012/13 -->	Allocated 10/11 costs	Allocated 11/12 costs	Submitted to IHPA in 11/12
Scenario 1		←→		✗	✓	✓
Scenario 2	←→			✗	✓	✗
Scenario 3			←→	✗	✓	✗
Scenario 4	←→		←→	✗	✓	✗

Only patients that were admitted and discharged in the study period were submitted to the jurisdiction for NHCDC purposes.

Checks

Prior to its submission a number of checks are undertaken on the data including an internal cost data review. Such checks include comparison of the dataset to prior year's data and a benchmark costing product created by the jurisdiction. Activity level checks are also undertaken against data submitted to the jurisdiction.

10.3.5 Sample Encounter reconciliation with IHPA

A sample of four patient encounters from the Frankston campus in Peninsula health were taken from IHPA's dataset and were agreed to the information included in the hospital costing system. The table below displays the result of the reconciliation:

Patient	Product type	Total cost (provided by IHPA)	Total cost in costing system	Variance
Sample patient 1	Em. Dept	\$167.70	\$167.70	-
Sample patient 2	Em. Dept	\$3,237.01	\$3,237.01	-
Sample patient 3	Acute inpatient	\$244,894.27	\$244,894.33	(\$0.06)
Sample patient 4	Outpatient	\$204.82	\$204.82	-

No variances (other than rounding) were noted between what was submitted by the hospital and IHPA's dataset.

10.4 Goulburn Valley Health

10.4.1 Overview

Goulburn Valley Health is the major regional health provider for the Goulburn Valley in the north of Victoria. GV Health comprises a number of sites that deliver a range of services across the region, with the three main costed sites being the Shepparton Campus, The Tatura campus (Tatura Annexe), and the Rushworth campus (Waranga Annexe).

The costing process is outsourced to SyRis and overseen by the Chief Finance Officer and his team who sign off the final costing data prior to it being submitted to the jurisdiction. It uses the services of SyRis Consulting and the Adaptive Costing product to undertake its patient level costing on a quarterly basis, for 3 campuses Shepparton, Tatura and Rushworth.

Since the introduction of Activity Based Funding and the requirements to supply data to the NHDCDC, GV Health have configured their costing methodology to comply with both the requirements of the Victorian Cost Weight Study and to support NHDCDC requirements, (which includes mapping and adherence to the Australian Hospital Patient Costing Standards). Below is a table which summarises the amounts included in the costing starting from the general ledger amount through to the total hospital costs submitted by the jurisdiction. These amounts and the various exclusions or inclusions are explored further in this chapter.

Below is a table which summarises the amounts included in the costing starting from the general ledger amount through to the total hospital costs submitted by the jurisdiction. These amounts and the various exclusions or inclusions are explored further in this chapter.

Item	Amount	Item	Amount
A. Total expenses in the Annual Report	\$203,173,788	E. Allocation of costs to products	
<i>Reconciling items</i>		Acute	\$99,598,382
Exclusions	(\$11,675,202)	Outpatients	\$18,183,197
Inclusions	-	Emergency	\$18,764,711
		Sub-acute	-
B. General Ledger	\$191,498,585	Mental Health	\$17,538,273
<i>C. Adjustments to the General Ledger</i>		Boarder	-
Exclusions	(\$18,768,792)	Other	\$18,645,213
Inclusions	-	Teaching	-
Total hospital expenses	\$172,729,794	Total costed products	\$172,729,776
<i>D. Allocation of overheads</i>		Variance	(\$18)
Patient care areas (Direct costs)	\$141,450,713	<i>F. Adjustments for WIP</i>	
Overhead areas (Indirect costs)	\$31,279,081	WIP - Carried forward from prior years	\$3,723,914
Total patient care areas (post allocation)	\$172,729,794	WIP - Patients not discharged by year end	(\$3,723,914)
Variance	-	Other	-
		Total costs submitted to jurisdiction	\$172,729,776
		Variance	-
		<i>Jurisdiction adjustments (see Vic section)</i>	
		Removals after QA process	(\$55,780,000)
		Total costs submitted by jurisdiction	\$116,991,000
		Variance	(\$41,224)

10.4.2 Financial Data

A. The Annual Report

Goulburn Valley Health prepared their annual report at an entity level, not a campus level and the report includes \$203.173m of expenditure.

B. General Ledger

The general ledger was provided at an individual campus level and reconciled to the aggregated annual report with exclusions of approximately \$11.6m made up of depreciation and amortisation, salaries recoveries and bad debts expense.

Patient level costing is performed at the campus level as both activity and expenses are able to be produced at that level.

C. Inclusions and Exclusions

Certain costs are expected to be included in the costed dataset as guided by the scope of the AHPCS and due to the varied structure and process within each state, these costs may already form part of the general ledger or may need to be included by the hospital or jurisdiction as part of the costing process. For example, some hospitals may include insurance costs in their general ledger while in other scenarios; these costs may be borne by the jurisdiction and allocated to the hospital as part of the jurisdiction adjustments.

No costs were identified by Goulburn Valley Health for inclusion.

A further \$18.768m was removed as this expenditure related to special purpose fund activity and activity that was not patient related.

Following these adjustments, total expenditure for Goulburn Valley Health was \$172.729m which was used for costing for the 2011/2012 financial year.

D. Allocation of overhead

Goulburn Valley Health reported overhead costs of approximately \$31.279m which is 18.1% of total costs. Where possible the costing methodology for overhead allocation adheres to the Australian Hospital Patient Costing Standards with these statistics being constantly reviewed.

E. Costs by hospital products

Goulburn Valley Health reported direct costs of approximately \$141.450m for 2011/12.

The costing team at Goulburn Valley Health have implemented the Victorian Cost Data Business Rules to ensure cost data could comply with the Australian Hospital Costing Standards for submission to the NHCDC.

It was noted in the consultation that significant changes were undertaken within the Adaptive Costing Software to ensure the product met the NHCDC requirements following the introduction of ABF nationally.

10.4.3 Activity information

All activity data is extracted from internal hospital systems.

Whilst the costing function is outsourced, Goulburn Valley Health did note that time is spent internally ensuring that quality controls are placed on the data each. Reconciliations are undertaken on a quarterly basis for inpatient, subacute, emergency, rehabilitation, inpatient mental health, public outpatient and public allied outpatients for both activity and costing.

VMO Fee for Service costs for private inpatients are charged directly to the health insurer by the VMO and are not borne by Goulburn Valley Health. For salaried staff in the specialties of

paediatrics, orthopaedics, obstetrics and high dependency (such as intensivists) these costs are allocated to private patients. HMO costs are also allocated to private patients.

The costs of doctors servicing the MBS clinics are allocated to the relevant outpatient clinics, however these are currently not costed at Goulburn Valley Health.

The costs of prostheses for private patients are allocated to the patient and included in the cost data set.

Private patient costs for pathology, radiology and ambulance transport are charged externally and are not allocated to private patients and are not submitted as part of the cost data set.

10.4.4 Costed dataset

A total of \$172.729m was allocated to hospital products.

Work in progress

Goulburn Valley Health adjusts its costing submission to account for patients whose stay extends across different financial years. The diagram below illustrates the methodology used:

	<-- 2010/11	2011/12	2012/13 -->	Allocated 10/11 costs	Allocated 11/12 costs	Submitted to IHPA in 11/12
Scenario 1		←→		✗	✓	✓
Scenario 2	←→			✓	✓	✗
Scenario 3			←→	✗	✓	✗
Scenario 4	←→		←→	✓	✓	✗

Goulburn Valley's approach to work in progress is to include in the submission to the jurisdiction the costs of "finalised patients" that is those who have been discharged in the relevant study period. A process is in place to ensure that all costs relevant to the patients are attached upon discharge and this includes costs from prior years. In the diagram above scenario's 1 and 2 are included in the submission as they relate to discharged patients and the costs across the relevant financial years are allocated.

Scenario's 3 and 4 are not submitted as the patient is still a work in progress and not discharged.

Checks

Prior to its submission a number of checks are undertaken on the data including an internal cost data review. An important validation check is that costs are examined against revenues for reasonableness checks. Checks are also undertaken against prior costing period and prior year's data. Following completion of a full year's data, both activity and costs are reviewed within the health service and all reconciliations completed.

Goulburn Health have also engaged a number clinical staff across their clinical units to ensure the costing methodology is as robust as possible, but also to ensure there is clinical review of the costing.

10.4.5 Sample Encounter reconciliation with IHPA

A sample of three patient encounters from Goulburn Valley Health was selected from IHPA's dataset and was agreed to the information included in the hospital costing system.

Goulburn Valley Health provided data for 3 episodes.

The table below displays the result of the reconciliation:

Patient	Product type	Total cost (provided by IHPA)	Total cost in costing system	Variance
Sample patient 1	Em. Dept	\$156.79	\$156.79	-
Sample patient 2	Acute inpatient	\$120,031.65	\$120,031.65	-
Sample patient 3	Acute inpatient	\$114,643.67	\$114,643.67	-

Note: 1 sampled episode was removed as the incorrect episode was supplied.

No variances were noted between what was submitted by the hospital and IHPA's.

10.5 Jurisdiction overview - Victoria

10.5.1 Overview of process

Victoria has a costing model where the hospitals perform the costing on site and the data is then submitted to the Department of Health Victoria.

Once the data is received by the Department, jurisdictional staff within the Information and Funding Systems Branch perform a number of internal and validation checks on the data including episode matching from the cost data set to submitted activity. Following these checks, all output is sent back to costing staff for validation, resubmission where necessary and sign off.

Departmental staff convene an industry group comprising senior departmental staff, hospital executives, health information managers and costing staff to review the outputs of the validation checks and the costs across final products such as DRGs.

Once this is finalised, the IPAcost software is utilised for validation and quality assurance checks to enable submission to the NHCDC.

The jurisdiction advised that in most cases where data failed an IPAcost validation it would be removed from the submission, although this was rare due to the number of validation checks prepared in advance.

10.5.2 Adjustments to costs – Northern Health

The jurisdiction removed \$51.225 m from the costing data set submitted by Northern Health prior to submitting to IHPA. The main exclusions included:

- For admitted activity, the removal of duplicated records and records that failed the Departmental edit checks. This accounted for 650 records and \$0.281m of cost
- For outpatient activity 152,376 records were excluded by the Department as not within scope for IHPA submission, e.g. being unable to identify a valid Victorian outpatient clinic that matched an NHCDC clinic code, out of scope funding source. This accounted for \$41.8m of costs.
- Non ABF funded activity was also removed. This amounted to 30,529 of activity and \$9.095m of costs

A total of \$276.274m of cost was then submitted by the jurisdiction to IHPA for Northern Health for 2011/12.

10.5.3 Reconciliation with IHPA – Northern Health Submission

The table below displays the total costs and total separations that were provided by both the jurisdiction and IHPA as part of the submission processes.

Item	Provided by VIC Health (J1 template)	Provided by IHPA in national dataset	Variance
Total costs	\$276,274,890	\$276,274,890	-
Total separations	221,668	221,668	-

No variances are noted.

10.5.4 Adjustments to costs – Peninsula Health

The jurisdiction removed \$99.771 m from the costing data set submitted by Peninsula Health prior to submitting to IHPA. The main exclusions included:

- For admitted activity, the removal of duplicated records and records that failed the Departmental edit checks. This accounted for 10,428 records at \$3.361m of cost. It should be noted that of the 10,428 records, 10,158 were duplicates with \$0 costs.
- In emergency, a combination of either non matched activity or invalid costs saw 1,032 records removed which comprised \$1.027m of costs.
- For outpatient activity 154 records were excluded from the Department being unable to identify a valid Victorian outpatient clinic that matched an NHCDC clinic code. This accounted for \$0.076m of costs.
- For Boarders, 77 records were excluded as the jurisdiction was unable to identify the relevant activity to link to. This accounted for \$0.416m of costs.
- Non ABF funded activity was also removed. This amounted to 199,135 of activity and \$94.889m of costs.
- Additional adjustments for WIP carried forward due to the transition year for costing.

A total of \$289.656m of cost representing 214,553 separated activity was then submitted by the jurisdiction to IHPA for Peninsula Health for 2011/12.

10.5.5 Reconciliation with IHPA – Peninsula Health Submission

The table below displays the total costs and total separations that were provided by both the jurisdiction and IHPA as part of the submission processes.

Item	Provided by VIC Health (J1 template)	Provided by IHPA in national dataset	Variance
Total costs	\$289,655,993	\$289,646,673	\$9,320
Total separations	214,553	214,553	-

No material variances are noted.

10.5.6 Adjustments to costs – Goulburn Valley

The jurisdiction removed \$55.738 m from the costing data set submitted by Goulburn Valley Health prior to submitting to IHPA. The main exclusions included:

- For admitted activity, the removal of duplicated records and records that failed the Departmental edit checks. This accounted for 1768 records at \$0.003m of cost. It should be noted that of the 1768 records, 1747 were duplicates with \$0 costs.
- In emergency, a combination of either non matched activity or invalid costs saw 3,645 records removed which comprised \$1.368m of costs
- For outpatient activity, records were excluded by the Department as not within scope for IHPA submission, e.g. being unable to identify a valid Victorian outpatient clinic that matched an NHCDC clinic code, out of scope funding source. This accounted for \$17.175m of costs.

- Non ABF funded activity was also removed. This included non acute mental health and “other” costs. This amounted to \$37.191m of costs

A total of \$116.991m of cost representing 58,699 of separated activity was then submitted by the jurisdiction to IHPA for Goulburn Valley Health for 2011/12.

10.5.7 Reconciliation with IHPA – Goulburn Valley Submission

The table below displays the total costs and total separations that were provided by both the jurisdiction and IHPA as part of the submission processes.

Item	Provided by VIC Health (J1 template)	Provided by IHPA in national dataset	Variance
Total costs	\$116,991,011	\$116,986,201	\$4,810
Total separations	58,699	58,699	-

No material variances are noted.

11 IHPA Process

11.1 Overview and scope

PwC was requested to review the IHPA NHCDC data flow for the 16 Financial Review nominations, from the data submitted by hospitals through to finalisation in the national database.

The scope of the IHPA NHCDC data submission and review process was:

- to understand the process carried out by IHPA in extracting the submitted data from the data submission portal;
- to identify the IHPA validation processes and controls;
- to identify the IHPA quality assurance processes and controls; and
- to reconcile the data to the national database.

The PwC review team met with the Director -Hospital Costing, Director -Data Acquisition, Manager - Costing, Analysis & Reporting and other members of the IHPA Costing and the Data Acquisition team to discuss the data management, validation and quality assurance processes carried out by IHPA for the Round 16 NHCDC submissions.

Supporting documentation, validation and quality assurance outputs were collected in advance of the meetings. Additional clarification and reconciliations were discussed during and after the meeting with the relevant IHPA team members.

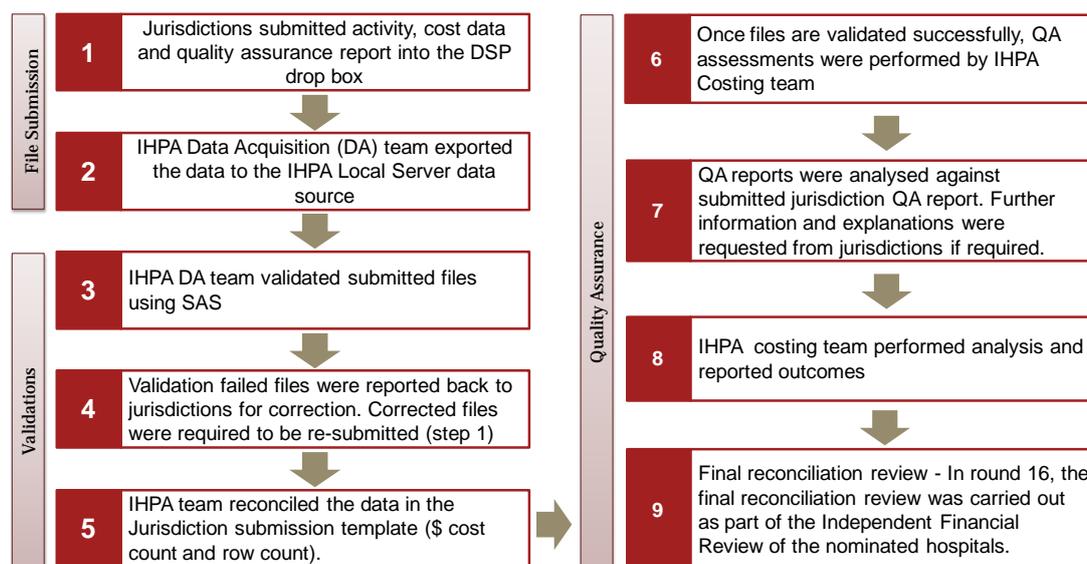
11.2 IHPA NHCDC data submission process

In Round 16, IHPA undertook the responsibility of the management of Jurisdiction file submissions into the data submission portal (DSP) Drop Box, data validations, quality assurance (QA) and communication back to the jurisdictions around these processes.

The illustration [Figure 1] below summarises the stages involved in the IHPA NHCDC process:

Figure 3 IHPA NHCDC data submission and review process

11.2.1



The above processes are described in details in the sections below.

11.2.2 File submission

In Round 16, jurisdictions were required to submit the activity and cost data (B1, B2, SNAP) files into the Enterprise Data Warehouse (EDW) DSP Drop Box. In addition, jurisdictions also submitted the following control documents in the DSP drop box:

- Jurisdiction file submission template (completed and submitted by 6 Jurisdictions in Round 16 as this was optional);
- IPACost Quality Assurance report (completed and submitted by 7 Jurisdictions).

The control documents were used by the IHPA Data Acquisition (DA) and costing team to ensure the files in the IHPA server correspond with the latest jurisdiction submissions. Once data was submitted in the DSP drop box, the IHPA DA team retrieved the submissions from the drop box and exported it to the IHPA Local Server data source, which was used by the IHPA SAS (Statistical Analysis System) program for validation and quality assurance processes. No adjustments were made to the submission data during this process. Any re-submission replaced the earlier version of data submitted by Jurisdictions.

11.2.3 Validations

The IHPA DA team utilises an internal SAS system to check and validate NHCDC data submissions by Jurisdictions. Validation checks performed for Round 16 submissions include:

- Checking for submission file uniqueness and format;
- Mandatory fields were complete and valid; and
- Non-mandatory fields had a relevant value if they were complete.

In Round 16, an error report (Data Validation Report) was generated for all submissions, categorising critical errors as 'mandatory' and non critical errors as 'optional' and files containing all successful records and non-critical errors progressed to the next stages of the IHPA validation process. The validation report was then sent to jurisdictions advising them of all errors and requesting correction for all critical errors in the submission files.

Jurisdictions corrected the failed files and re-submitted into the drop box. They were also required to send written notification of resubmission to IHPA. This process was repeated until the jurisdictional costing and episode data files passed the IHPA validation process. No adjustments were made to the submission data by the IHPA team other than resubmissions made by the jurisdiction as a result of the validation process carried out.

11.2.4 Quality Assurance

The IHPA DA team performed quality assurance reasonableness checks using a SAS report program which compared the results with the previous rounds data and national costing results. The outputs of the QA assessments were then provided to IHPA Costing Team for further QA checks. The QA checks performed by the IHPA Costing Team include:

- Diagnostic Related Group (DRG) flipping – to ensure the cost weight for DRGs without complications did not have a higher cost than their counterpart DRG with complications;
- Checking for DRGs where the cost is outside the specified range; and
- Checking for variation to the previous round at the product level, bucket level, average DRG costs, prosthesis costs, emergency department costs, non admitted data etc.

Where further information was required or any anomalies identified, written documents were sent to jurisdictions. Jurisdictions responded in writing, by providing confirmation and explanation of anomalies or re-submitting their data. This process was repeated until the QA process was complete and successful. All adjustments to the submission data were agreed to by the jurisdiction.

11.2.5 Final reconciliation to the national data base

Below is a table which summarises the total costs provided by the participating hospitals and their final submission to IHPA which includes any exclusions or inclusions made to the dataset prior to submission. This table also includes the final reconciliation to the national database and any post-submission adjustments made through the validation and quality assurance process for the Round 16 nominations.

The IPACost tool is used by the jurisdiction to prepare the files for submission, and the data is uploaded into the IHPA Data Submission Portal Drop Box. The IPACost tool is also used to perform the Unqualified Babies (UQB) cost allocation. This relates to the costs for newborn babies with zero qualified days being allocated to the mother separations at the relevant hospital. When this process was performed using IPACost, the output included a duplication of costs and separations for the mother and baby DRGs.

As demonstrated in the table below, an adjustment to remove these duplicated costs was performed by IHPA. The net result has been described in the table below as the net costs submitted by the jurisdiction.

Following IHPAs validation and quality assurance checks, the final output is included in the national dataset as shown in the table below.

Figure 4 NHCD data submission to national dataset reconciliation

Hospital/LHN Name	Total amount recorded in the IHPA data submission portal	Unqualified baby adjustment	Net total cost submitted to IHPA	Failed validation tests	Final data in national dataset
Calvary Hospital	\$183.8m	-	\$183.8m	-	\$183.8m
Nepean Hospital	\$317.6m	\$1.4m	\$316.2m	\$0.0m	\$316.1m
Westmead Hospital	\$527.3m	\$8.6m	\$518.8m	\$0.8m	\$518.0m
Orange Base Hospital	\$168.9m	\$1.8m	\$167.1m	\$11.9m	\$155.2m
Alice Springs	\$165.0m	\$1.8m	\$163.2m	-	\$163.2m
Cairns Base Hospital	\$490.6m	-	\$490.6m	-	\$490.6m
Royal Children's Hospital	\$263.8m	-	\$263.8m	-	\$263.8m
Mt Isa Hospital	\$110.9m	\$2.0m	\$108.9m	-	\$108.9m
The Royal Adelaide Hospital	\$574.5m	-	\$574.5m	-	\$574.5m
The Repatriation General Hospital	\$141.1m	-	\$141.1m	-	\$141.1m
Launceston General Hospital	\$226.9m	\$3.2m	\$223.7m	-	\$223.7m
Northern Health - Northern Hospital	\$276.3m	-	\$276.3m	-	\$276.3m
Peninsula Health -Frankston	\$289.6m	-	\$289.6m	\$0.0m	\$289.6m
Goulburn Valley	\$117.0m	-	\$117.0m	\$0.0m	\$117.0m
Armadale	\$143.5m	-	\$143.5m	-	\$143.5m
Sir Charles Gairdner	\$637.4m	-	\$637.4m	-	\$637.4m
Total	\$4,634.3m	\$18.8m	\$4615.5m	\$12.7m	\$4,602.8m
<i>% of Total National Dataset</i>		<i>-0.4%</i>		<i>-0.3%</i>	

11.2.5.1 Unqualified baby adjustments

As explained above, \$18.8m relating to unqualified babies were removed from the national dataset. For certain jurisdictions, the output of the IHPA Cost process resulted in the cost of UQB encounters being replicated and included with the mother DRGs as well as retaining the costs in the UQB DRG. An adjustment was made by IHPA to remove the original UQB encounters and costs and keep the UQB costs with the mother DRG.

11.2.5.2 Post submission validation tests

There was a variance between what was submitted by NSW Health and what was in the national dataset. \$12.7m relating to activity that failed the modified business rules in the IHPA validation and reasonableness tests were removed from the national dataset. Written correspondence between IHPA and NSW Health around the failed validation of these records was provided to the review team.

12 Peer review

12.1 Objective of the peer review

The objective of the peer review was to enable the NHCDC peer to share information, processes, challenges and solutions. It was designed to be conducted in three phases:

1. A pre review workshop to discuss the approach to the financial review and provide comments on the templates;
2. Participants nominated by each jurisdiction to participate in site visits; and
3. A post review workshop to discuss findings across the review

12.1.1 The pre review workshop

It was agreed that the NHCDC Technical Working Group meeting on 23rd May 2013 would be used for the pre review workshop. PwC attended this workshop and presented the approach to the financial review and the peer review and shared the templates which were used to collect information. The feedback received from the participants was incorporated into the approach.

12.1.2 Participation in site visits

Jurisdictions were asked to nominate people to participate in the peer review and were invited to identify participants either at the hospital costing level or the jurisdiction level. All states with the exception of WA and NT nominated participants. All nominations were at the jurisdiction level, with NSW including LHD costing staff as well as jurisdiction staff. A full list of the peer review participants has been included in appendix A.

The peer review nominees selected their preferred locations and the host site was informed of the peer reviews selection. The nominees attended the meetings together with the PwC review team and were asked to actively participate in the meeting and ask any questions they had.

12.1.3 Post review survey and workshop

Following the site visits, a survey was sent out to the peer review representatives to gather their feedback regarding the consultations. The following three questions were asked in the survey:

1. What were your expectations of the peer review before you participated in a site visit?
2. Please provide details and/or examples of key learnings (minimum of 3) that you have taken away from your recent site visit
3. Please provide any ideas or suggestions for improving the peer review process for future rounds:

After collating the feedback received, a post review workshop was held on the 6 August 2013 to discuss the feedback received and provide peers with an opportunity to share their site visit experience and discuss ideas for improving the process in the future.

12.2 The feedback

Overall, the peer group review was well received with many representatives saying that they would recommend the experience to others. A number of participants commented on having learnt about new processes, controls or reports that they would explore implementing in their jurisdiction. For the participants from the hospital level, it provided the opportunity to understand more about the whole NHCDC process from end to end.

The feedback received and discussed at the workshop identified the following key expectations from the peer review process:

- Build relationships with peer costing teams.
- Learn from other jurisdictions regarding their methodologies and processes.
- Understand the overall NHCDC process (end to end).
- Identifying areas for improvement.

The key learnings from the peer review process were reported as:

- Having a better understanding of how certain items are being treated across jurisdictions, such as work in progress patients, allocation methods, department costs, overheads, unlinked patients, etc.
- Seeing what software and information systems are being used by different jurisdictions and how they use their information.
- Seeing the types of reconciliations and checks that are being performed by different jurisdictions.

Areas for improvement and other suggestions regarding the review process included:

- Having a frequently asked questions file maintained by IHPA that addresses interpretations of the standards and guidance on top issues faced by jurisdictions;
- For the peer review process in future years, to provide the peers with more data and information regarding the site they are visiting beforehand; and
- For the peer review process in future years, having a single data collection template rather than a multiple template approach.

13 Appendix A

13.1 Site Visit Attendees

IHPA representative	Jurisdiction and hospital representatives	Peer representative	PwC representative
NSW			
Joanne Siviloglou	Suellen Fletcher		Stuart Shinfield
Sashi Nimmagadda	Harshal Naik		David Debono
	Susan Davies		Joe Portelli
	Jennifer Killen (Westmead)		Laila Qasem
	Karen Storey (Orange)		
	Steve Shea (Orange)		
ACT			
Joanne Siviloglou	Winston Piddington	Colin McCrow (QLD)	David Debono
	Patrick Henry		Laila Qasem
	Wayne Armistead		
	Thaya Ras		
	Catherine Shadbolt		
VIC			
Sashi Nimmagadda	Beverley Joyce	Sharon Mcfarlane (NSW)	Julia Smith
	Cathy Ma		David Debono
	Florence Tran		Abraam Gregiouro
	Lisa Rohde		
	Shaun Eldridge		
	Simon Rush		
	Kim Lim		
	Dean Athan		
	Tyrone Patterson		
TAS			
Sashi Nimmagadda	Kristian Murray	Cathy Ma (VIC)	Carrie Schulman
	Ian Jordan		David Debono
			Laila Qasem
QLD			
Joanne Siviloglou	Colin McCrow	Kristian Murray (TAS)	Julia Smith
	Steve Robinson	Winston Piddington (ACT)	David Debono
	Kate Heath		Blake Bentley
WA			
Julia Hume	Gerard Montague	Phillip Battista (SA)	Joe Portelli
	Kevin Frost		Ruan Jordaan
	Howard Andre		
	Paul Smith		

IHPA representative	Jurisdiction and hospital representatives	Peer representative	PwC representative
SA			
	Phillip Battista	Harshal Naik (NSW)	Joe Portelli
	Silvana Di Ciocco		Laila Qasem
	Emma Martin		
	Vanessa Rowley		
	Steve Jo		
	Rebecca Bergamin		
NT			
Julia Hume	Jo Wright	Clark Chambers (NSW)	Stuart Shinfield
	Amanda Lanagan		Joe Porteli
	Kim Lim		Ruan Jordaan
	Kirsty Annesley		

