Round 19 Independent Financial Review of the National Hospital Cost Data Collection

Independent Hospital Pricing Authority

Final Report – February 2017

ADVISORY

This report has been prepared as outlined in the Overview and scope Section. The services provided in connection with this engagement comprise an advisory engagement which is not subject to Australian Auditing Standards or Australian Standards on Review or Assurance Engagements, and consequently no opinions or conclusions intended to convey assurance have been expressed.

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KPMG have indicated within this report the sources of the information provided. We have not sought to independently verify those sources unless otherwise noted within the report.

The findings in this report have been formed on the above basis.

This report has been prepared at the request of Independent Hospital Pricing Authority in accordance with the terms of KPMG's contract dated 1 July 2015. Other than our responsibility to Independent Hospital Pricing Authority, neither KPMG nor any member or employee of KPMG undertakes responsibility arising in any way from reliance placed by a third party on this report. Any reliance placed is that party's sole responsibility.

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Executive summary

The National Hospital Cost Data Collection

The National Hospital Cost Data Collection (NHCDC) is the primary data collection that the Independent Hospital Pricing Authority (IHPA) relies on to calculate the National Efficient Price used for the funding of public hospital services. To ensure that the quality of NHCDC data is robust and fit-for-purpose, IHPA commissions an independent financial review to assess whether all participating hospitals have included appropriate costs and patient activity.

KPMG was engaged to undertake the Round 19 independent financial review (IFR). KPMG also undertook the Round 18 IFR. The Round 19 IFR included a review of the reconciliation of costs and activity data from hospital/Local Hospital Network (LHN) through to IHPA and covered all feeder activity for the sampled hospitals/LHNs. This was done to provide IHPA and its stakeholders with a greater level of confidence over the accuracy of the NHCDC data.

The cost data submitted to the NHCDC is at the patient level. That is, each admitted acute, emergency presentation, non-admitted service event and other patient group is submitted with a cost identifying the resources consumed over their stay, appointment or transaction with a hospital or health service.

Where possible, hospitals apply a cost methodology according to the Australian Hospital Patient Costing Standards (AHPCS). These standards provide a guide to costing for NHCDC purposes, as well as providing consistency in interpreting results. For example, they prescribe: the products in scope for costing; how to define and select a preferred methodology for deriving overhead and direct care costs; how to research costs; and how to reconcile to source data.

Observations from the Round 19 IFR

A number of key observations were made during the Round 19 IFR. Specifically:

- A number of key initiatives were implemented by jurisdictions that contributed to a more robust costing process for Round 19 submissions to the NHCDC, including: improved governance over the costing output in Victoria, South Australia (SA) and New South Wales (NSW) (NSW also improved linking of activity and feeder data and the costing of organ transplant and retrieval); improved reconciliation processes in Victoria and Queensland; SA submitted non-admitted cost data; Tasmania improved the costing methodology for ward segments; and Queensland and Northern Territory (NT) both improved costing methodologies for overheads
- The review of the reconciliation between the expenditure reported in the audited financial statements and the general ledger (GL) extracted for costing identified minor variances for seven of the 18 hospitals/LHNs sampled. All variances were considered insignificant to the NHCDC submission.
- The review of the data flow from the hospital/LHN to jurisdiction identified variances for 12 of the 18 hospitals/LHNs sampled. All identified variances were considered insignificant to the NHCDC submission.

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- The review of the data flow from the jurisdiction to IHPA, identified variances for ten of the 18 hospitals/LHNs sampled. All identified variances were considered insignificant to the NHCDC submission. Of particular note were the variances identified in SA's sampled hospitals which related to SA's new submission method containing more decimal places than permitted by IHPA's automated collection portal. IHPA reviewed the impact of this on the jurisdiction-level collection and considered it immaterial.
- Hospitals/LHNs and jurisdictions made a number of adjustments to the financial data both pre and post allocation of costs to patients. KPMG relied upon the assertions made by hospital/LHN staff and jurisdictional representatives (and the information presented in the templates) in forming a view as to the reasonableness of the basis of the adjustments. The basis of most adjustments appears reasonable, with common exceptions noted for Teaching, Training and Research, depreciation, amortisation and other capital related expenditure, and blood products.
- Despite the variances and adjustments, nothing was identified to suggest that the financial data was not fit for NHCDC submission.
- Feeder system information provided for all sampled hospitals/LHNs highlighted that the number of records linked from source to product was significant. The majority of feeder systems in all hospitals had at least a 90 percent link or match. The average linking ratio across all sampled hospitals/LHNs and their feeders was 99.04 percent.
- Common variances were noted in pharmacy systems, for reasons such as repeat prescriptions being filled up to 12 months from the original encounter and where the activity related to services provided to external clients. Other feeder systems such as radiology and allied health experienced variances due to the client not being in attendance or the provision of services to external clients. Other issues for other feeder systems related to data quality at source.

Findings and recommendations

The following findings and associated recommendations have been identified during the Round 19 IFR:

Unmatched/unlinked and out-of-scope activity

The review found that financial reconciliation processes are robust for all jurisdictions and occur at the hospital/LHN level and also at the jurisdictional level. Hospitals/LHNs and jurisdictions made a number of adjustments to the financial data, including for unlinked/unmatched and out-of-scope activity. While the basis of these exclusions appears reasonable, it is important that the reasons for this unlinked/unmatched and out-of-scope activity are continually investigated and addressed if necessary.

Recommendation

Hospitals and jurisdictions should continue to investigate reasons for unlinked/unmatched and out-of-scope activity to ensure appropriate treatment in future rounds.

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The Independent Financial Review

As jurisdictions and hospitals are continuously improving their reconciliation processes, linking of feeders and the utilisation of cost data for decision-making purposes, it is important the Independent Financial Review also continues to evolve.

Recommendation

IHPA may wish to consider revisiting the scope of the IFR to include focus areas for each round. Examples of focus areas are summarised below:

- Specific testing of expenditure and exclusion items.
- Further testing of source activity used for costing purposes.
- Analysis of improvements between NHCDC rounds.
- Understanding costing methodologies for specific expenditure items.
- Reviewing the use of cost data as a management/decision-making tool.

It is important that the IFR still includes a review of the reconciliation of financial data and compliance with the AHPCS, however, to streamline the review process the following recommendations are made for incorporation into each hospital/LHN's submission to the NHCDC. The following recommendations are carried over from the Round 18 IFR.

Recommendation

Reconciliation templates should be included as part of the NHCDC submission from jurisdictions. The templates, covering both financial and activity data, should present the end-to-end reconciliation. That is, data should flow from the hospital to the jurisdiction and to IHPA for transformation and storage in the NHCDC national dataset. Detail should be provided for all adjustments at each step of the process.

Recommendation

A signed jurisdiction declaration in relation to the application of the AHPCS should be included in the NHCDC submission (similar to the directors' declaration required for financial statements[1]). The consistency of application of the AHPCS is important for ensuring the NHCDC is comparable across a range of factors such as jurisdictions, DRGs, and hospital settings etc. A signed declaration should require jurisdictions to confirm that they have applied the AHPCS, or identify where the standards were not applied and reasons therefore.

[1] A directors declaration is required in accordance with s.295(4) of the *Corporations Act 2001* and includes a statement whether in the directors' opinion, the financial statements and notes are in accordance with Accounting standards.

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The IHPA NHCDC Process

The NHCDC is an important cost data collection used as the main data set to inform the National Efficient Price (NEP). It also provides valuable cost data information to enable benchmarking across the sector, such as the newly developed cost-benchmarking portal. IHPA undertakes a number of processes on the submitted NHCDC data before it is considered fit-for-purpose as the NHCDC dataset. The processes are conducted by discrete functions and each of these functions has flow charts and documents describing the separate processes. However, there is no documentation detailing the end-to-end IHPA process from NHCDC submission by hospitals/jurisdictions to the finalisation of the NHCDC dataset. It is noted that IHPA is re-developing the collection portal to increase transparency, which will include the development of end-to-end NHCDC process documentation.

Recommendation

It is recommended that end-to-end NHCDC process documentation be developed to enhance transparency of the IHPA process, maintain efficiency of process during staff absence and to ensure organisational knowledge is not lost when key staff members depart the organisation. The end-to-end process documentation will provide each stakeholder (including IHPA employees) with an understanding of IHPA's NHCDC processes.

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Acronyms/Abbreviations

Acronym / Abbreviation	Description
ABF	Activity Based Funding
ACT	Australian Capital Territory
AHPCS	Australian Hospital Patient Costing Standards
AHS	Area Health Service
APC	Admitted Patient Care
BI	Business Intelligence
CAG	Cost Accounting Guidelines
CCU	Coronary Care Unit
DNR	District and Network Return
DRG	Diagnosis Related Group
DRS	Data Request Specifications
DSS	Decision Support System
ED	Emergency department
EDW	Enterprise Data Warehouse
ETL	Extract, Transform and Load
FMS	Financial Management System
GL	General ledger
HDU	High Dependency Unit
HHS	Hospital and Health Service
HIE	Health Information Exchange
ICT	Information and Communications Technology
ICU	Intensive Care Unit
IFR	Independent Financial Review

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Acronym / Abbreviation	Description
IHPA	Independent Hospital Pricing Authority
LHD	Local Health District
LHN	Local Health Network
MBS	Medical Benefits Scheme
NAC	NHCDC Advisory Committee
NALHN	Northern Adelaide Local Health Network
NAP	Non Admitted Patient
NEP	National Efficient Price
NHCDC	National Hospital Cost Data Collection
NHR	National Health Reform
NICU	Neonatal Intensive Care Unit
NSW	New South Wales
NSW Health	NSW Ministry of Health
NT	Northern Territory
PAS	Patient Administration System
PFRAC	Product fractions
PPM2	Power Performance Manager 2
QA	Quality assurance
QLD	Queensland
RVU	Relative Value Unit
SA	South Australia
SA Health	South Australian Department of Health and Ageing
TAS-DHHS	Tasmanian Department of Health and Human Services
TTR	Teaching, Training and Research
UDG	Urgency Diagnosis Group

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Acronym / Abbreviation	Description
UQB	Unqualified baby
URG	Urgency Related Group
VAED	Victorian Admitted Episodes Data
VCCUG	Victorian Clinical Costing User Group
VCDC	Victorian Cost Data Collection
VEMD	Victorian Emergency Episodes Data
VIC Health	Victorian Department of Health and Human Services
VINAH	Victorian Integrated Non-Admitted Data Set
VMO	Visiting Medical Officer
VPG	Virtual Patient Group
WA	Western Australia
WA Health	WA Department of Health
WACHS	Western Australia Country Health Service
WIP	Work-In-Progress

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1. Introduction

1.1 Overview and scope

The National Hospital Cost Data Collection (NHCDC) is the primary data collection that the Independent Hospital Pricing Authority (IHPA) relies on to calculate the National Efficient Price used for the funding of public hospital services. To ensure that the quality of NHCDC data is robust and fit-for-purpose, IHPA commissions an annual validation process to verify that all participating hospitals have included appropriate costs and patient activity.

IHPA engaged KPMG to undertake the Round 19 independent financial review (IFR) of a sample of state and territory hospitals who supplied data to the Round 19 NHCDC (2014-15). KPMG were also engaged to undertake the Round 18 IFR. The Round 19 IFR includes:

- Assessment of the accuracy and completeness of the NHCDC participating hospitals reconciliations provided for Round 19.
- Assessment of the consistency between jurisdictions sampled of the application of Version 3.1 of the Australian Hospital Patient Costing Standards (AHPCS) in selected standards, as highlighted in Appendix B.
- Review of the data flow from the health service to the jurisdictional upload of hospital information, to the data submission portal, through to the storing of data in IHPA's national database.

As this review is not an audit, no assurance on the completeness or accuracy of the costing has been provided. The outcomes and results rely heavily on the representations, assertions and data submissions made by the hospital or local hospital network (LHN) costing teams and jurisdiction representatives. Procedures performed were limited to the review of supporting schedules, agreeing to source documentation (where possible), discussions with costing teams and obtaining extracts from costing systems.

1.2 Participating hospitals

Each of the eight jurisdictions agreed to participate in the IFR for Round 19. Jurisdictions were requested to nominate hospitals or LHNs based on the following sampling framework:

- *Historical participation* - provides an opportunity to review new sites, or review a hospital or LHN that has previously participated in the IFR to enable progress to be tracked over time.
- *Size* - as assessed by volume and the scope of work undertaken.
- *Materiality* - the total cost submitted to the NHCDC by the hospital.
- *Systems* - the types of costing systems utilised in preparing the submission, and potentially extending to the types of feeder systems available.
- *Other factors* - where sites had previously participated and identified focus areas such as Emergency Department costing or overhead allocations, or other potential areas such as previously identified governance, control or capability issues.

In total, a sample of 18 sites, including 15 hospitals and three LHNs were selected by jurisdictions to participate in the IFR.

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Table 1 – Round 19 IFR participating hospitals/LHNs

Jurisdiction	Hospital	Characteristics
Australian Capital Territory	The Canberra Hospital	• Participated in Round 17 NHCDC IFR • Major urban hospital • Costing system – PPM2
New South Wales	Central Coast Local Health District (LHD)	• LHD has previously not participated in an NHCDC IFR • Includes major regional hospitals • Costing system – PPM2
	Far West Local Health District	• LHD has previously not participated in an NHCDC IFR • Includes major rural hospitals • Costing system – PPM2
	Sydney Local Health District	• Participated in Round 17 NHCDC IFR • Includes major urban teaching hospitals • Costing system – PPM2
Northern Territory	Alice Springs Hospital	• Participated in Round 16 NHCDC IFR • Major regional hospital • Costing system – PPM2
Queensland	Gold Coast University Hospital	• Participated in Round 15 NHCDC IFR • Major urban, teaching and research hospital • Costing system – PPM2
	Toowoomba Base Hospital	• Hospital has previously not participated in an IFR • Major regional hospital • Costing system – Transition II
	Logan Hospital	• Hospital has previously not participated in an IFR • Major urban hospital and teaching hospital • Costing system – Transition II
South Australia	Queen Elizabeth Hospital	• Participated in Round 14 NHCDC IFR • Major urban and teaching hospital • Costing system – PPM2
	Royal Adelaide Hospital	• Participated in Round 16 NHCDC IFR • Major urban and teaching hospital • Costing system – PPM2
Tasmania	North West Regional Hospital	• Hospital has previously not participated in an IFR • Large regional hospital • Costing system – User Cost

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Jurisdiction	Hospital	Characteristics
	Mersey Community Hospital	• Hospital has previously not participated in an IFR • Regional hospital • Costing system – User Cost
Victoria	Ballarat Health Service	• Hospital has previously not participated in an IFR • Major regional hospital • Costing system – Visasys
	Eastern Health	• Hospital has previously not participated in an IFR • Major urban, teaching and research hospital • Costing system – PPM2
	Latrobe Regional Hospital	• Hospital has previously not participated in an IFR • Major regional hospital • Costing system – Adaptive costing
Western Australia	Armadale Kelmscott Memorial Hospital	• Participated in Round 16 NHCDC IFR • Large urban hospital • Costing system – PPM2
	Kununurra Hospital	• Hospital has previously not participated in an IFR • Small regional hospital • Costing system – PPM2
	Sir Charles Gairdner Hospital	• Participated in Round 14 and Round 16 NHCDC IFR • Major urban teaching hospital • Costing system – PPM2

Source: KPMG

1.3 Review Methodology

The review team gathered information required for the IFR through the following methods:

- *A financial and activity data collection template* distributed to hospitals and jurisdictions and tailored to provide the required information to assess the application of selected standards from AHPCS Version 3.1;
- *Site visits* with the hospital costing team and jurisdictional representatives and follow-up discussions to address feedback and outstanding issues;
- *Sample testing* of five patients at each hospital to test the transfer of patient cost data from the hospital to IHPA; and
- *Review of IHPA processes* to understand the processes in place for the collection, amendments and collation of financial and activity data received from the jurisdictions.

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1.3.1 Financial and activity data collection template

The Round 19 templates were a modified version of the Round 18 IFR financial and activity data collection templates. Jurisdictional representatives were given the opportunity to review these templates, with their feedback incorporated prior to finalisation. The finalised templates for Round 19 were distributed for completion prior to the scheduled site visits.

The templates were structured to reconcile and follow the flow of both financial and activity data from the hospital/LHN, to the jurisdiction and finally onto IHPA. Detail of the information requested in the templates is discussed in Table 2.

Table 2 – Financial and activity data collection template – Tab details

Tab	Details
LHN expenditure reconciliation	This tab requested financial information from the hospital/LHN and included: • A breakdown of LHN costs reported in the audited financial statements, and how they are linked with the general ledger (GL) used for costing. • Inclusions or exclusions made to the GL prior to costing. • A list of reclass, transfers and offsets of expenditure that occurred to establish the direct cost centres and overheads for allocation to patients. • A breakdown of expenditure between direct and overhead. • Adjustments made post the allocation to patients performed by the hospital/LHN, e.g. work-in-progress (WIP) patients. • Final costed products submitted to the jurisdiction.
LHN Activity	This tab requested activity and feeder data information from the hospital/LHN and included: • A description of the reconciliation or process for loading, linking and costing activity. • A summary of activity and feeder data systems, source records and how this data linked to products. • A summary of adjustments made to hospital/LHN activity data by product and product type. • Final activity data and costs submitted to the jurisdiction by product and product type.

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Tab	Details
LHN Other Standards	This tab requested information in relation to the application of AHPCS Version 3.1 *SCP 3G.001 - Matching Production and Cost - Reconciliation to Source Data*. It required hospitals/LHNs to detail the mapping of account codes to the specified line items.
LHN Critical Care (Round 19 specific)	This tab requested information in relation to the application of AHPCS Version 3.1 *GL 4A.002 – Critical Care Definition*. It required hospitals/LHNs to detail critical care areas, the GL amount and the pre and post allocation expenditure by cost centre.
LHN Private Patients (Round 19 specific)	This tab requested information in relation to the application of AHPCS Version 3.1 *COST 3A.002 – Allocation of Medical Costs for Private and Public Patients*. It required hospitals/LHNs to detail adjustments made to areas or cost centres where private patient adjustments had been made.
Jurisdiction	This tab requested the jurisdiction to complete the reconciliation of costs and activity submitted by the hospital/LHN to the jurisdiction's NHCDC submission to IHPA. It included: • A summary of costs and activity received by the jurisdiction by product and product type. • A summary of activity and cost adjustments made to the hospital/LHN data (by product and product type) including the treatment of WIP patients. • A summary of the activity and costs submitted to IHPA by product and product type including a summary from hospital, to jurisdiction and the final data submitted to IHPA.
IHPA	This tab included the final IHPA adjustments in the NHCDC process. Hospitals and jurisdictions were not required to complete this tab.

Source: KPMG

Where possible, the templates were provided by the jurisdictions to the review team prior to the site visit. This provided the review team with sufficient time to prepare for the site visits. The review team then summarised the information in the templates into the tables generated for the report. These tables were presented during the site visits to demonstrate how each hospital's financial and activity information would be presented in the report.

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1.3.2 Site visits

KPMG scheduled site visits with each of the eight jurisdictions participating in the IFR. All jurisdictional site visits were attended by the jurisdictional representatives, hospital/LHN representatives, a KPMG review team, an IHPA representative and a peer review where possible. Some jurisdictions elected to host the site visit at the jurisdiction's department office, and in other jurisdictions the site visit was conducted at the participating hospitals. A list of attendees for all site visits is included at Appendix C.

During these site visits the review team discussed the overall costing process and worked through the templates. Participating sites explained any exclusions or inclusions in their data and provided additional materials relevant to the financial review. Jurisdiction meetings focused on the jurisdiction's processes and controls, and any adjustments to the dataset the jurisdiction made before submitting it to IHPA. Participants were given the opportunity to provide additional information following these visits.

Follow-up discussions were held with the jurisdictions to address any outstanding issues and the NHCDC representative from each jurisdiction reviewed their chapter prior to it being included in this report.

1.3.3 The peer review process

The Round 19 IFR involved a peer review process so that costing representatives could participate in site visits at other jurisdictions. The peer review allowed NHCDC peers to share information, processes, challenges and solutions, and provided a valuable opportunity to have costing staff and costing representatives visit other jurisdictions.

Jurisdictions were asked to nominate relevant personnel to participate in the peer review, and to identify participants either at the hospital costing level or the jurisdiction level. Jurisdictions in Australian Capital Territory, New South Wales, Queensland, South Australia and Tasmania nominated peers (all peers were jurisdiction representatives). The remaining jurisdictions were unable to send representatives due to capacity, funding or timing constraints.

The peer review nominees selected their preferred locations and the host site was informed of the peer review selection. The nominees attended the meetings together with the KPMG review team and IHPA representatives, and were encouraged to ask questions and actively participate during the site visits. Appendix C contains a list of the peer review participants.

Completion of a survey by peer review nominees was requested. The feedback is summarised in Section 11.

1.3.4 Application of AHPCS

The objectives of the IFR for Round 19 included the assessment of the consistency between participating jurisdictions in their application of a selection of AHPCS Version 3.1. KPMG collected information from the templates and held discussions conducted with jurisdiction and hospital/LHN representatives to assist in meeting this objective. The jurisdiction chapters include a summary of the application of the selected standards by the hospitals/LHNs and the jurisdiction. The requirements of the selected standards are provided in Appendix B.

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1.4 Structure of the report

This report provides an overall summary and findings by jurisdiction and for each participating site. The report includes recommendations for IHPA and the jurisdictions to consider in future rounds of the IFR, with the aim of improving the consistency and transparency of NHCDC submissions. The remainder of the report is structured as follows:

Section	Description
Findings of the review	Provides a summary of the findings from the Round 19 IFR and improvements for future NHCDC rounds.
Hospital chapters	Presents the costing and reconciliation process for each of the eight participating jurisdictions and their nominated hospitals.
Peer review	Presents a summary of the peer review process and feedback collected from the peer review nominees.
IHPA review	Presents the findings of IHPA's processes for receiving and reviewing data, through to the storing of data in IHPA's national database.
Appendix A	Provides an overview of patient level costing and how it applies in the NHCDC context.
Appendix B	Provides a summary of the requirements of the AHPCS Version 3.1 selected for the Round 19 IFR.
Appendix C	Contains a list of all attendees at the site visits.

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2. Findings of the review

This section summarises the findings of the National Hospital Cost Data Collection (NHCDC) Round 19 Independent Financial Review (IFR), including overall observations based on the information collected in the financial review templates and through engagement with jurisdictions and costing staff during the site visits with the participating hospitals or local hospital networks (LHNs). Financial and activity data was submitted for both hospitals and LHNs depending on the jurisdiction.

2.1 Summary of findings

In Round 19, jurisdictions continued to improve the processes and controls associated with the clinical costing process that underpins the NHCDC submission, demonstrating the recognised value of a collection such as the NHCDC to be a well-informed evidence base, and the need for it to be fit-for-purpose. An increased number of costed separations in Round 19 and a number of improvements across jurisdictions demonstrated this. This shows the growing emphasis placed on data quality, as costing data is increasingly used to inform the management and funding of public health services nationally.

In recognition of the ongoing development of Activity Based Funding (ABF) and the move to greater Activity Based Management practices within the health services, recommendations are made in areas where opportunities for improvement were identified by the review team. The recommendations are discussed to facilitate improvements of future IFRs, NHCDC submission processes and IHPA processes in future rounds.

2.2 Developments in Round 19

Jurisdictions continue to improve their costing methodologies and reconciliation processes on an ongoing basis to improve the cost information available to hospitals and the jurisdictions.

The following key initiatives were implemented in Round 19:

- ***Improved governance over the costing output*** – Victoria is in the process of formalising a sign-off process for health services submitting data to the Victorian Cost Data Collection (VCDC). South Australia (SA) is reviewing the sign-off process at the jurisdictional level for the final NHCDC submission. New South Wales (NSW) has implemented costing conferences with Chief Executive Officers of the Local Health Districts (LHD) to discuss final cost outputs and the LHDs Internal Audit team reviewed the LHDs submission process for the first time in Round 19. The Australian Capital Territory (ACT) also developed a costing framework and established a costing working group. ACT also increased its engagement with hospitals and facilities in relation to the use of the costing data.
- ***Improved linking of activity and feeder data*** – NSW reviewed linking rules with each LHD during 2015 to seek greater precision in linking of encounter and feeder data.
- ***Improved reconciliation processes*** – Victoria formalised the internal reconciliation process from health service submission to VCDC and NHCDC data sets in Round 19. Likewise, Queensland undertook an end-to-end reconciliation process from the General ledger to the final NHCDC submission.

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- ***Submission of non-admitted cost data*** – SA submitted non-admitted patient level data (including both activity and costs) for the first time in Round 19.
- ***Improved costing methodologies*** – Jurisdictions made a number of improvements to their costing methodologies as summarised below:
    - Tasmania improved allocation of ward segments to patients. Previously, costs were allocated based on minutes on the ward. For Round 19, a weighted minute was allocated based on the number and level of nurses rostered on the ward in which the patient was located.
    - Queensland improved the allocation of overheads. In prior years, where costs were excluded for Transition II sites, all relevant overhead costs were mapped to goods and services. The revised process for Round 19 sees the total cost of these overheads allocated to cost records based on an allocation statistic relevant for each overhead cost area.
    - Northern Territory (NT) improved its overhead allocation statistics to be in line with the preferences listed in the Australian Hospital Patient Costing Standards (AHPCS) Version 3.1. NT also increased its education to hospitals in relation to the available feeders for costing. This improved the allocation of blood products and ambulance costs.
    - NSW reported that the cost allocation for organ donor episodes was considerably refined and improved. Costs that are held in up to four separate general ledgers, were consolidated and appropriately eliminated to ensure the full cost of organ retrievals were reported.
    - Western Australia Country Health Service sites moved away from cost modelling and increased the use of feeder and clinical costing systems.

2.3 Observations from the Round 19 IFR

2.3.1 Reconciliation of financial data

Financial data was gathered through the data collection templates completed for each participating site. Based on discussions during the site visits and a review of the templates, all jurisdictions demonstrated that accurate and complete financial reconciliation processes are in place at the hospital/LHN level, and jurisdictional level.

Reconciliation to audited financial statements

The review of the reconciliation between the expenditure in the audited financial statements and the general ledger (GL) extracted for costing identified minor variances for seven of the 18 hospitals/LHNs sampled. All variances were less than 0.6 percent of the expenditure in the audited financial statements. Variances existed due to audit adjustments, items that would have been excluded from the GL for costing, rounding errors and differences between revenue and expenditure classifications in the GL.

Reconciliation from GL to jurisdiction

The review of the data flow from the hospital/LHN to jurisdiction identified variances of less than $1,500 for 10 of the 18 hospitals/LHNs sampled. These variances were not investigated further as they were considered minor. Variances of greater than $1,500 were noted for two of the 18 hospital/LHNs sampled. Where these variances were identified, the review team sought to

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identify the causes of the variance with the relevant sites (jurisdictions focused on explaining significant variances).

A summary of the variances identified is provided below:

- In Victoria, a variance of $15,768 between the costs submitted to the jurisdiction and the costs received by the jurisdiction was noted for Ballarat Health Service. This amount related to activity for Stawell Hospital, which was included in the hospital submission but was not included in the cost data that VIC Health collected from its systems.
- In Queensland, a variance of $12,286 (0.001 percent of hospital expenditure) between the total hospital expenditure and the costs allocated to patients was noted for Gold Coast University Hospital. A variance of $4,886 (0.0007 percent of allocated costs) between the costs allocated to patients and the costed products submitted to the jurisdiction was also noted for Gold Coast University Hospital. A variance of $3,066 (0.0004 percent of the total cost submitted to IHPA) was noted between the final costs for submission and the costed products submitted to IHPA.

Reconciliation from jurisdiction to IHPA

The review of the data flow from the jurisdiction to IHPA identified variances of less than $50 for six of the 18 hospitals/LHNs sampled. These variances were considered minor and not investigated further. Variances of greater than $50 were noted for four of the 18 hospital/LHNs sampled. Where these variances were identified, the review team sought to identify the causes of the variance with the relevant sites (jurisdictions focused on explaining significant variances). A summary of the variances identified is provided below:

- In SA, a variance of $119,567 (0.014 percent of costs submitted to IHPA) was noted at Royal Adelaide Hospital and $60,172 (0.016 percent of costs submitted to IHPA) was noted at The Queen Elizabeth Hospital. The variances related to SA's new submission method containing more decimal places than permitted by IHPA's automated collection portal. IHPA reviewed the impact of this on the jurisdiction-level collection and considered it immaterial as it was less than 0.02 percent of total jurisdiction expenditure.
- In Tasmania, a variance of ($759) was noted for Mersey Community Hospital and $763 was noted for North West Regional Hospital. Tasmania costed these hospitals together in one costing study and the IFR process requested that a reconciliation be undertaken for each hospital separately. As such, when the costing data of both hospitals is combined, the variances offset each other resulting in a minor $4 variance between the costs submitted to IHPA and the costs received by IHPA.

Adjustments to financial data

Hospitals/LHNs and jurisdictions made a number of adjustments to the financial data both pre and post allocation of costs to patients. KPMG relied upon the assertions made by hospital/LHN staff and jurisdictional representatives (and the information presented in the templates) in forming a view as to the reasonableness of the basis of the adjustments.

The basis of these adjustments appears reasonable for the sampled hospitals/LHNs, with the exception of:

- Teaching, Training and Research (TTR) is excluded for most jurisdictions (ACT submitted costs to the NHCDC and VIC costed but did not separately report TTR). The exclusion of these costs may impact on the completeness of the NHCDC. Common feedback across

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jurisdictions suggested they are awaiting the outcome of the TTR project undertaken by IHPA to provide sufficient guidance on how to cost TTR.

- Victorian hospitals exclude depreciation, amortisation and other capital related expenditure as part of the VCDC Business Rules. The exclusion of this expenditure may impact on the completeness of the NHCDC.
- Royal Adelaide Hospital excluded other capital related expenditure from the GL for costing. This expenditure should be costed in accordance with the AHPCS Version 3.1.
- WA, Victoria and the ACT excluded Blood products. The exclusion of these costs may impact on the completeness of the NHCDC.
- Interest on treasury loan was excluded at Kununurra Hospital. The exclusion of this expenditure may impact on the completeness of the NHCDC.
- Toowoomba Hospital and the Canberra Hospital excluded Organ donation and retrieval services. The exclusion of these costs may impact on the completeness of the NHCDC.
- Kununurra Hospital removed 1,134 records related to inpatients treated in an outpatient setting from the costing system in error. This exclusion will need to be corrected in future rounds of the NHCDC.

In addition to the exceptions above, the following items are noted:

- Bad and doubtful debts expenditure was excluded by Gold Coast University Hospital, Royal Adelaide Hospital and The Queen Elizabeth Hospital. The AHPCS is silent on the specific inclusion or exclusion of bad and doubtful debts. Bad and doubtful debts expenditure relates to the provision for debts that are unrecoverable from patients/clients. It does not have an impact on the cost of patient services provided by the hospital.
- The reasons for unlinked and unmatched activity to the patient administration systems and NHCDC should be investigated by hospitals/jurisdictions to ensure appropriate treatment in future rounds.

Despite these adjustments and the variances discussed above, nothing was identified during the IFR to suggest that the financial data was not fit for submission to the NHCDC for Round 19.

2.3.2 Activity Data and Feeder Data

Activity data is presented as admitted acute, emergency and non-admitted where an episode or encounter number can be found to link to feeder data. Feeder data is hospital dependant and the quality of linking data to activity is dependent upon the quality of information found in the feeder system[2].

Based on the feeder system information provided for all sampled hospitals/LHNs, the number of records linked from source to product was significant with a 90 percent link or match for the majority of feeder systems. The average linking ratio across all sampled hospitals/LHNs and their feeders was 99.04 percent. This percentage demonstrates that jurisdictions and hospitals continue to make significant improvements to ensure that the resources consumed can be

[2] The linking of activity data can also be impacted by the dataset used. For example, Victoria uses the activity from the patient administration system as a starting point, whereas, NSW uses reconciled ABF activity for each LHD.

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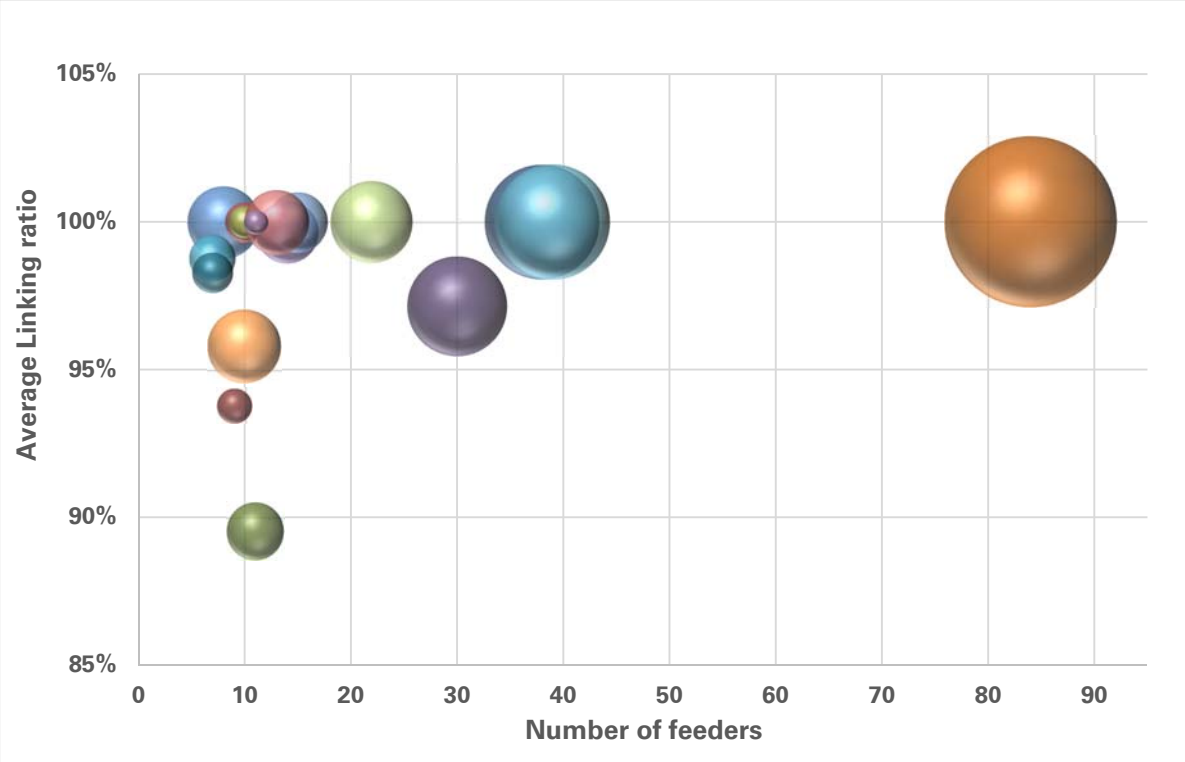
identified by patient, which ensures greater rigour to the composition of costed patient output. Figure 1 presents a high level comparison of the average linking ratio for all feeders and the number of feeders for each of the sampled hospitals/LHNs. Each hospital is represented by a bubble. The size of each bubble reflects the total number of records from the hospital's feeder systems.

Figure 1: Comparison of hospitals (bubbles) - average linking ratio and number of feeders



Source: KPMG, based on sampled hospital feeder system data

Figure 1 illustrates that the average linking ratio (across all feeders) is above 89 percent for all sampled hospitals/LHNs. Furthermore, the accuracy in feeder systems remains high as the number of records processed by the hospital increases.

Common variances were noted in pharmacy systems, for reasons such as repeat prescriptions being filled up to 12 months from the original encounter and where the activity related to services provided to external clients. Linking percentages of less than 89 percent were also noted for the following hospitals:

- Unlinked records in the allied health feeder (linking percentage of 54.65 percent) at Sir Charles Gairdner Hospital (WA) related to services provided where the patient was not in attendance (for example, the reviewing of test results). Despite not being linked to a patient, the costs of these services were spread across all allied health patients.
- Unlinked records in the Ballarat Health Service (VIC) radiology feeder (linking percentage of 64.84 percent) and allied health feeder (linking percentage of 72.97 percent) related to the provision of services to external clients. Unlinked records in the interpreting services feeder (linking percentage of 63.91 percent) related to records not matching an episode number.

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- Unlinked records in the Latrobe Regional Hospital (VIC) Pharmacy – S100/PBS feeder (linking percentage of 67.50 percent) related to the provision of services to admitted and non-admitted psychiatric patients which are not costed at Latrobe Regional Hospital.
- Unlinked records in the Royal Adelaide Hospital (SA) Diagnostic feeder (linking percentage of 52.73 percent) related to the manual process of collecting outpatient encounter data at a low volume service. This is expected to improve in future rounds.

2.3.3 Critical care

Fourteen of the hospitals/LHNs sampled had dedicated ICU's in their facilities, with some having a range of observation units including High Dependency Units, Special Care Nurseries, Neonatal Intensive Care Units and Coronary Care Units. Four sampled hospitals/LHNs did not have critical care units.

The jurisdictions identified that expenditure could be isolated in critical care areas through either cost centre structures, patient fractioning within cost centres or relative value units. Activity could also be isolated to these units and costed appropriately. Victoria noted that for some health services, the activity could not be split between ICU and HDUs, due to patient administration systems. Where this occurred, total activity for both units was costed using total expenditure for both units. NSW and SA noted that in some hospitals/LHDs, critical care expenditure was reported in the same cost centre for both ICUs and observation units. Activity for each could be identified and relative value units were then used to report both an ICU and observation unit cost.

The information collected during the IFR indicated that critical care costs and activity were captured in accordance with the applicable standard.

2.3.4 Private Patients

The majority of hospitals indicated that public and private patients are costed in the same manner. That is, costing methodologies are not adjusted based on the financial classification of the patient. NSW indicated that a zero private weighting is attached to Visiting Medical Officer (VMO) activity for private patients to ensure that no VMO cost is allocated to private patients. The zero weighting is applied because the VMO expenditure in the GL related to public patients only.

In the majority of jurisdictions medical specialists in the sampled hospitals/LHNs are paid an allowance in lieu of private practice arrangements. These costs are included in the GL and allocated to public and private patients on the same basis. In jurisdictions where the medical specialists' salary includes payments made out of Special Purpose Funds or Private Practice Funds, this payment is not included in the costing process as these cost centres are considered out of scope. The ACT provided quantification of this expenditure during the review being $6.40 million or 6.57 percent of total medical costs.

The allocation of other non-operational account expenditure such as pathology, prosthetics and medical imaging varied across the hospitals and was dependent on service provision arrangements at the hospital. For example, the allocation of external service provider costs in WA hospitals was based on the MBS item number which is used as a relativity to drive the cost of the related activity area to the unique service utilised by the patient.

All hospitals indicated that private patient revenue is not offset against any related expenditure.

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2.3.5 Treatment of WIP

On review of the AHPCS Version 3.1 *COST 5.002: Treatment of Work-In-Progress Costs,* jurisdictions were found to apply similar approaches to costing work-in-progress (WIP) (where patient admission and discharge occur in different financial years) for each of the sampled hospitals/LHNs. The following was noted about the adjustments for reporting WIP to the NHCDC for Round 19:

- All jurisdictions submitted costs for hospitals for admitted and discharged patients in 2014-15.
- Costs for patients not discharged at 30 June 2015 were excluded by all jurisdictions.
- Costs for patients discharged in 2014-15 but incurred in prior years were submitted by all jurisdictions, with the exception of Logan Hospital in Queensland.
- Logan Hospital did not submit WIP from prior years due to a processing error. The estimated impact was approximately 574 patients and 800 days. The cost impact could not be quantified as the records were inadvertently deleted.
- NT adjusted WIP for the escalation factor (where applicable). The remaining jurisdictions did not adjust WIP for the escalation factor in accordance with the IHPA guidance distributed in February 2016.

2.3.6 Application of AHPCS Version 3.1

The application of the selected standards from AHPCS Version 3.1 across the jurisdictions was mostly consistent with the exception of the following:

- *SCP 2.003: Product Costs in Scope* – The following items are noted in relation to the application of this cost standard:
  - Depreciation, Amortisation and Blood products are excluded from the Victorian hospital submissions.
  - Blood products are not costed in WA and are excluded by the ACT.
  - Organ donation and retrieval services were excluded at Toowoomba Hospital and The Canberra Hospital.
  - NSW LHDs do not submit S100 drugs for non-admitted services.
- *SCP 2B.002: Research Costs* – Jurisdictions adopt varied approaches to research costs due to different cost centre structures at the hospital/LHN level, adherence to jurisdiction costing guidelines and the costing methodology adopted. Based on the sampled hospitals/LHNs, ACT was the only jurisdiction to submit research costs to the Round 19 NHCDC. ACT allocates research costs based on 10 percent of medical specialist salaries (the percentage detailed in the Enterprise Bargaining Agreement).
- *GL 2.004: Account Code Mapping to Line Items* - Victorian cost data is mapped to the NHCDC by the jurisdiction based on data submitted by hospitals to the VCDC rather than mapped directly by hospitals. This applies to the NSW and WA submissions also (where LHDs/health services map to products specified by the jurisdiction).
- *COST 5.002: Treatment of Work-In-Progress Costs* – Logan Hospital did not submit WIP from prior years due to a processing error.

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2.4 Recommendations

Noting the changes and developments implemented for Round 18 by jurisdictions and IHPA, the review team sought to identify potential areas where NHCDC processes could be improved to further enhance the value of NHCDC data and better streamline the submission process going forward. Five key recommendations are made to improve data and processes for future NHCDC rounds.

2.4.1 Unmatched/unlinked and out-of-scope activity

The review found that financial reconciliation processes are robust for all jurisdictions and occur at the hospital/LHN level and also at the jurisdictional level. Hospitals/LHNs and jurisdictions made a number of adjustments to the financial data, including for unlinked/unmatched and out-of-scope activity. While the basis of these exclusions appears reasonable, it is important that the reasons for this unlinked/unmatched and out-of-scope activity are continually investigated and addressed if necessary. This will ensure appropriate treatment in future rounds.

2.4.2 The Independent Financial Review

As jurisdictions and hospitals are continuously improving their reconciliation processes, linking of feeders and the utilisation of cost data for decision making purposes, it is important the IFR also continues to evolve. IHPA may wish to consider revisiting the scope of the IFR to include focus areas for each round. Examples of focus areas are summarised below:

- *Specific testing of expenditure and exclusion items* for example, out of scope expenditure, non-ABF and unlinked activity.
- *Further testing of source activity used for costing purposes.* It was noted in the review that some jurisdictions will cost using the PAS as the source whilst others will use reconciled activity. Further thought may be given to testing source activity records across all jurisdictions in future reviews to ensure all LHN source records are accounted for.
- *Analysis of improvements between NHCDC rounds* which would involve sampling a hospital from the previous round to test whether changes implemented have had an impact on the cost data submitted to the NHCDC.
- *Understanding costing methodologies for specific expenditure items* for example ward costs and other items that may impact upon funding such as chemotherapy or high cost procedures etc.
- *Review the use of cost data as a management/decision-making tool*. Based on the review discussions held during Round 19, the use of cost data throughout the year continues to vary across hospitals and jurisdictions. Where cost data is utilised as a management/decision-making tool, health services and jurisdictions will have a greater focus on investment in the costing function and improvement of costing methodologies. Thereby improving the robustness of the patient level costing submitted to the NHCDC. Including this discussion as part of the IFR consultations will provide greater insight to IHPA, peer reviewers and the review team into the use of cost data at the hospital and jurisdiction level.

It is important that the IFR still includes a review of the reconciliation of financial data and compliance with the AHPCS, however, to streamline the review process the following

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recommendations are made for incorporation into each hospital/LHN's submission to the NHCDC. The following recommendations have been carried over from the Round 18 IFR.

Reconciliation templates

It is important that the submission of cost and activity data can be followed from the hospital GL, to the jurisdiction for adjustments and finally to IHPA for storage in the NHCDC national dataset. To facilitate this process, it is recommended that financial reconciliation templates form part of the NHCDC submission process for each hospital/LHN. Reconciliations of cost and activity data to source data is considered best practice and is already included in *SCP 3G.001 – Matching Production and Cost – Reconciliation to Source Data* of AHPCS Version 3.1. The requirement to submit an end-to-end reconciliation template as part of NHCDC submission should also be included in the AHPCS.

Application of the AHPCS

A signed jurisdiction declaration in relation to the application of the AHPCS should be included in the NHCDC submission (similar to the directors' declaration required for financial statements[3]). It was observed during the Round 19 IFR that the sign-off process continued to vary across jurisdictions at both hospital and jurisdictional level. The consistency of application of the AHPCS is important for ensuring the NHCDC is comparable across a range of factors such as jurisdictions, DRGs, and hospital settings etc. A signed declaration should require jurisdictions to confirm that they have applied the AHPCS, or identify where the standards were not applied and reasons therefore.

2.4.3 IHPA Process

IHPA undertakes a number of processes on the submitted NHCDC data before it is considered fit-for-purpose as the NHCDC dataset. The processes are conducted by discrete functions being the Electronic Data Warehouse (EDW), IHPA – Data Acquisition and IHPA – Costing. Each of these functions has flow charts and documents describing the separate processes. However, there is no documentation detailing the end-to-end IHPA process from NHCDC submission by hospitals/jurisdictions to the finalisation of the NHCDC dataset.

The NHCDC is an important cost data collection used as the main data set to inform the NEP. It also provides valuable cost data information to enable benchmarking across the sector, such as the newly developed cost benchmarking portal. A consistent theme stated by many hospital/LHN costing staff during the engagement process is that there is disconnect between hospital/LHN staff and IHPA in the use and application of the NHCDC. The provision of end-to-end documentation will provide further transparency to hospital/LHN costing staff when using the portal and importantly in understanding how costs from their hospital/LHN may differ to those in reported in the portal. It is noted that IHPA is re-developing the collection portal to increase transparency, which will include the development of end-to-end NHCDC process documentation.

[3] A directors declaration is required in accordance with s.295(4) of the *Corporations Act 2001* and includes a statement whether in the directors' opinion, the financial statements and notes are in accordance with Accounting standards.

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It is recommended that end-to-end NHCDC process documentation be developed to enhance transparency of the IHPA process, maintain efficiency of process during staff absence and to ensure organisational knowledge is not lost when key staff members depart the organisation. The end-to-end process documentation will provide each stakeholder (including IHPA employees) with an understanding of IHPA's NHCDC processes.

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3. Australian Capital Territory

3.1 Jurisdictional overview

3.1.1 Management of NHCDC process

The Business Intelligence Division of Australian Capital Territory (ACT) Health is responsible for the processing, reconciliation and submission of National Hospital Cost Data Collection (NHCDC) data to the Independent Hospital Pricing Authority (IHPA) for all hospitals in the ACT. Based on discussions with ACT Health representatives, this is consistent with the approach used in prior rounds of the NHCDC submission and ensures that there is a consistent approach applied to costing for all ACT hospitals. The Canberra Hospital and Health Service (Canberra Hospital), one of the two public hospitals in the ACT, was selected as the sample hospital in the ACT for the Round 19 Independent Financial Review (IFR).

The Round 19 NHCDC submission review was a joint collaboration between ACT Health and the Canberra Hospital. ACT Health's Business Intelligence and Innovation Unit is responsible for the management of the clinical costing system and the overall processing of the NHCDC submission. ACT Health uses the Power Performance Manager 2 (PPM2) costing application for patient level costing. All activity is costed and the costing process is currently performed once per year. In 2016-17, ACT Health intends to increase the frequency of the costing process to biannually.

ACT Health performs data validation on feeder data received from each hospital and if issues are identified, the data is returned to the hospital for resolution. Once the cost model has been run and all data is linked, ACT Health provides cost summary reports to the hospitals for review and sign off by the Deputy Director General Canberra Hospital & Health Services. ACT Health then prepares the cost data for IHPA and other submissions.

Key initiatives since Round 18 NHCDC

No ACT Health hospital was included in the Round 18 IFR. However, this review identified that the following initiatives have been implemented since the Round 18 NHCDC submission:

- Development of a costing framework, establishment of costing working group, improved linking rules, better allocation of teaching, training and research costs and corporate costs;
- Increased engagement with hospitals and facilities in regards to use of the costing data; and
- Improved quality of feeder data systems through ongoing discussion with the business areas of the hospitals.

3.2 The Canberra Hospital

3.2.1 Overview

The Canberra Hospital is an acute care teaching hospital of approximately 600 beds. It is a tertiary referral centre that provides a broad range of specialist services to the people of the ACT and South East New South Wales. The Canberra Hospital is the largest public hospital in the region, supporting a population of almost 540,000, with strong links to community-based services that provide continuity of care for patients. The Canberra Hospital is the principal teaching hospital of

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the Australian National University Medical School. The school enhances the hospital's teaching status and capacity in clinical services, teaching and research. The hospital is also part of the University of Canberra's School of Nursing. The hospital has a strong national and international reputation in research and teaching and is affiliated with a number of pre-eminent research institutions including the John Curtin School of Medical Research at the Australian National University.[4]

3.2.2 Financial data

Representatives from ACT Health's Business Intelligence and Innovation Unit and Financial Operations Support Unit completed the IFR templates and participated in consultations for the Round 19 IFR.

Table 3 presents a summary of the Canberra Hospital's costs, from the original extract from the General Ledger (GL) through to the final NHCDC submission for the Canberra Hospital for Round 19.

[4] The Canberra Hospital *Accessed 30 May 2016*

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Table 3 – Round 19 NHCDC Reconciliation – The Canberra Hospital

Hospital				Jurisdiction			IHPA		
Item		**Amount**	**% of GL**	**Item**		**Amount**	**Item**		**Amount**
A General Ledger (GL)	$	1,195,332,954		**F** Costed Products received by jurisidction	$	880,580,140	**I** Total costed products received by IHPA	$	880,580,106
				Variance	*$*	-	*Variance*	*$*	*(34)*
B Adjustments to the GL									
Inclusions	$	-		**G** Final Adjustments			**J** IHPA Adjustments		
Exclusions	$	-					*Admitted ED reallocations*	$	42,238,861
Total hospital expenditure	**$**	**1,195,332,954**	*100.00%*				**Final NHCDC costs**	**$**	**922,818,967**
				Total costs submitted to IHPA	**$**	**880,580,140**			
C Allocation of Costs									
Post Allocation Direct amount	$	912,444,641							
Post Allocation Overhead amount	$	282,888,314							
Total hospital expenditure	**$**	**1,195,332,955**	*100.00%*						
Variance	*$*	*1*	*0.00%*						
D Post Allocation Adjustments									
Out of scope costs	$	(289,776,160)							
WIP patients not discharged	$	(3,847,396)							
Occasions of service	$	(16,750,602)							
Sexual health patients	$	(6,157,071)							
*WIP from prior years**	$	1,778,414							
Total expenditure allocated to patients	**$**	**880,580,140**	*73.52%* *						
E Costed products submitted to jurisdiction				**H** Costed products submitted to IHPA			**K** Final NHCDC costed products		
Acute and Newborns	$	488,610,729		*Acute and Newborns*	$	488,610,729	*Acute^ and Newborns*	$	530,849,588
Non-admitted	$	195,311,331		*Non-admitted*	$	195,311,331	*Non-admitted*	$	195,311,320
Emergency	$	74,993,554		*Emergency*	$	74,993,554	*Emergency*	$	74,993,552
Sub Acute	$	50,073,362		*Sub Acute*	$	50,073,362	*Sub Acute^*	$	50,073,361
Mental Health	$	41,568,354		*Mental Health*	$	41,568,354	*Mental Health*	$	41,568,336
Other	$	-		*Other*	$	-	*Other*	$	-
Research	$	14,611,387		*Research*	$	14,611,387	*Research*	$	14,611,387
Teaching & Training	$	15,411,423		*Teaching & Training*	$	15,411,423	*Teaching & Training*	$	15,411,423
	$	**880,580,140**	*73.52%* *		**$**	**880,580,140**		**$**	**922,818,967**
Variance	*$*	*0*	*0.00%*	*Variance*	*$*	-	*Variance*	*$*	-

Source: KPMG based on data supplied by the Canberra Hospital, jurisdiction and IHPA

** As WIP from prior years expenditure relates to prior year costs, this percentage excludes the $1.78 million from the calculation*

^ These figures include admitted emergency costs.

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Explanation of reconciliation items

This section discusses each of the reconciliation items including adjustments, inclusions and exclusions to the GL. The information is based on the Canberra Hospital templates and review discussions.

Item A – General Ledger

The final GL extracted from ACT Health's financial systems includes expenditure for both ACT Health & Canberra Hospital of $1.195 billion.

Item B – Adjustments to the GL

No adjustments were made to the GL as all activity is costed.

Item C – Allocation of costs

The Canberra Hospital undertakes a process of reclass/transfers between direct cost centres. The net effect of these reclass/transfers was zero.

- It was observed that the total of all direct cost centres of $912.44 million was allocated post allocation.
- It was observed through the templates that all overheads of $282.89 million were allocated to direct cost centres, post allocation.

These amounts reconciled to $1.195 billion and reflect the total for the Canberra Hospital. A minor $1 variance between Item B and Item C was identified.

Item D – Post Allocation Adjustments

A range of post allocation exclusions were made by the Canberra Hospital. These exclusions totalled $314.75 million and included:

- WIP patients not discharged ($3.85 million)
- Occasions of service ($16.75 million)
- Sexual health patients ($6.16 million)
- Out of scope costs totalling $289.78 million. The major out of scope services include:
    - Departmental costs not directly related to hospital services ($79.84 million);
    - Community Health services ($54.39 million);
    - Pathology services provided to external agencies ($19.10 million);
    - Pharmacy services to external clients ($197,191)
    - Services provided relating to Calvary Hospital ($9.89 million);
    - Services provided relating to other hospitals and ACT prison ($3.90 million);
    - Dental services ($2.53 million);
    - Blood products ($1.30 million);
    - Commercial entities ($368,335);
    - Primary care ($2.21 million)

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- Mental Health rehabilitation services at Brian Hennessy Centre ($26.28 million);
- Loss on derecognition of assets ($5.29 million);
- Home and Community Care and other aged care services ($20.26 million);
- Drug and Alcohol Services ($10.21 million); and
- Organ retrieval services ($2.40 million).

WIP patients from prior years and discharged in 2014-15 were also included and totalled $1.78 million.

The basis of these adjustments appears reasonable, with the exception of blood products and organ retrieval services. The exclusion of these costs may impact on the completeness of the NHCDC.

Total expenditure allocated to patients equalled $880.58 million.

Item E - Costed products submitted to jurisdiction

Costs derived by the jurisdiction and reported at product level were equal to $880.58 million. This represented approximately 73.52 percent of the total GL expenditure. Costs were allocated to all products with the exception of 'Other'.

Item F – Costed products received by the jurisdiction

No variance was noted between Items E and F.

Item G – Final adjustments

The jurisdiction did not adjust the cost data prior to submission to IHPA.

Item H – Costed products submitted to IHPA

Costs derived by the jurisdiction and reported at product level reconcile to $880.58 million.

Item I – Total products received by IHPA

Total costed products received by IHPA totalled $880.58 million. There was a minor variance of $34 between costs submitted by the jurisdiction and costs received by IHPA.

Item J – IHPA adjustments

Upon receipt of cost data, IHPA allocates the admitted emergency costs back to admitted patients for the purposes of reporting and analysis. Within IHPA's reconciliation, this amount was a duplication of admitted emergency costs and not an additional cost. For the Canberra Hospital this amounted to $42.24 million.

Item K – Final NHCDC Costed Outputs

The final NHCDC costed data for the Canberra Hospital that was loaded into the National Round 19 cost data set was $922.82 million which included the admitted emergency cost of $42.24 million.

3.2.3 Activity data

Table 4 presents patient activity data based on source and costing systems for the Canberra Hospital. This activity data is then compared to Table 5 which highlights the transfer of activity

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data by NHCDC product from the Canberra Hospital to ACT Health and then through to IHPA submission and finalisation.

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Table 4 – Activity data – The Canberra Hospital

Activity Data	# Records from Source	# Records in costing system	Variance	# Records linked to Admitted	# Records linked to Emergency	# Records linked to Non-admitted	# Records linked to Other	Total Linking Process	# Unlinked records
Inpatient	76,015	76,015	-	76,015	-	-	-	76,015	-
Emergency	73,592	73,592	-	-	73,592	-	-	73,592	-
Outpatients	675,719	675,719	-	-	-	675,719	-	675,719	-
Community Mental Health	302,683	302,683	-	-	-	-	302,683	302,683	-
Created occasions of service	144,040	144,040	-	-	-	-	144,040	144,040	-
WIP	514	514	-	-	-	-	514	514	-
Sexual health patients	51,125	51,125	-	-	-	-	51,125	51,125	-
TOTAL	**1,323,688**	**1,323,688**	**-**	**76,015**	**73,592**	**675,519**	**498,362**	**1,323,688**	**-**

Source: KPMG based on data supplied by the Canberra Hospital and ACT Health

Table 5 – Activity data submission – The Canberra Hospital

Product	Activity related to 2014-15 Costs	Adjustments	Activity submitted to jurisdiction	Adjustments	Activity submitted to IHPA	Activity received by IHPA	Adjustments	Total Activity submitted for Round 19 NHCDC
Acute and Newborns	73,480	-	73,480	-	73,480	73,480	-	73,480
Non-admitted	675,719	-	675,719	-	675,719	675,719	-	675,719
Emergency	73,592	-	73,592	-	73,592	73,592	-	73,592
Sub Acute	2,535	-	2,535	-	2,535	2,535	-	2,535
Mental Health	302,683	-	302,683	-	302,683	302,683	-	302,683
Other	195,679	(195,679)	-	-	-	-	-	-
Research	34	-	34	-	34	34	-	34
Teaching and Training	5	-	5	-	5	5	-	5
Total	**1,323,727**	**(195,679)**	**1,128,048**	**-**	**1,128,048**	**1,128,048**	**-**	**1,128,048**

Source: KPMG based on data supplied by the Canberra Hospital, ACT Health and IHPA

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The following should be noted about the transfer of activity data for the Canberra Hospital:

- The variance between records from source detailed in Table 4 (1,323,688 records) and activity related to 2014-15 costs by NHCDC product in Table 5 (1,323,727 records) was attributable to the addition of Research activity (34 records) and Teaching and Training activity (5 records).
- Adjustments made by the Canberra Hospital relate to the activity associated with the exclusion of costs (at Item G in the reconciliation) such as created occasions of service, WIP and sexual health patients.
- Adjustments made by IHPA relating to admitted emergency reallocations are for reporting and analysis purposes (as discussed in Item J of the explanation of reconciliation items) and have no impact on the reported activity.

3.2.4 Feeder data

Table 6 presents patient feeder data for the Canberra Hospital.

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Table 6 – Feeder data – The Canberra Hospital

Feeder Data	# Records from Source	# Records in costing system	Variance	# Records linked to Admitted	# Records linked to Emergency	# Records linked to Non-admitted	# Records linked to Other	Total Linking Process	# Unlinked records	% Linked
Theatre	15,811	15,811	-	15,620	8	-	183	15,811	-	100.00%
Prosthetics	24,730	24,730	-	18,322	1,155	1,080	4,171	24,728	2	99.99%
Pathology	1,007,458	1,007,458	-	496,527	149,373	251,820	109,738	1,007,458	-	100.00%
Pharmacy	286,249	286,249	-	212,446	9,635	18,745	45,423	286,249	-	100.00%
Imaging	128,793	128,793	-	44,662	46,081	28,512	9,491	128,746	47	99.96%
Allied Health	165,180	165,180	-	157,136	-	-	8,044	165,180	-	100.00%
Metcall	1,779	1,779	-	1,505	66	-	208	1,779	-	100.00%
Bloods / Transfusions Data	12,394	12,394	-	9,360	650	1,637	747	12,394	-	100.00%

Source: KPMG based on data supplied by the Canberra Hospital and ACT Health

The following should be noted about the feeder data for the Canberra Hospital:

- There are eight feeders reported from hospital source systems and they appear to represent major hospital departments providing resource activity.
- Feeder data is extracted, translated and validated outside of the costing system. No records are excluded from the data extract provided by the respective business areas. This year the costing team worked very closely with the business areas in improving the data quality. This is reflected by the fact that there are no variances between the source activity data and the costing system.
- The number of records linked to admitted patients, emergency, non-admitted and other patients had a greater than 99 percent link or match. This suggests that there is robustness in the level of feeder activity reported back to episodes.
- The records linked to other related to the created occasions of service and sexual health patients.
- The unlinked records in the Prosthetics and the Imaging feeder systems relate to data not matching to a specific episode number. The unlinked records are allocated to a system-generated episode.

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3.2.5 Treatment of WIP

Table 7 demonstrates models for WIP and its treatment in the Canberra Hospital's Round 19 NHCDC submission.

Table 7 – WIP – The Canberra Hospital

Model	Description	Submitted to Round 19 NHCDC
1	Cost for patients admitted and discharged in 2014-15 only	Submitted to Round 19 of the NHCDC
2	Costs for patients admitted prior to 2014-15 and discharged in 2014-15	Submitted to Round 19 of the NHCDC. Costs are submitted for 2012-13 and 2013-14.
3	Costs for patients admitted prior to or in 2014-15 and remain admitted at 30 June 2015	Not submitted to Round 19 of the NHCDC

Source: KPMG, based on the Canberra Hospital templates and review discussions

In summary, for the Canberra Hospital, ACT Health submitted WIP costs for admitted and discharged patients in 2014-15 and WIP costs patients admitted in 2012-13 and 2013-14 but discharged in 2014-15.

Escalation factor

ACT Health did not apply the escalation factors provided by IHPA to the costs associated with WIP from prior years as part of the Round 19 submission of the NHCDC.

3.2.6 Critical care

The Canberra Hospital operates two standalone Intensive Care Units (ICU), one adult and one neonatal ICU. All direct costs associated with the adult ICU are recorded in dedicated cost centres. The NICU has a dedicated nursing cost centre. The neonatology medical salaries and wages and VMO payments are accounted for in a single cost centre. Their costs related to intensive care and non-intensive care babies. For costing purposes, their costs are allocated between the two areas. The hospital does not have any dedicated close observation units. Critical care costs are captured in accordance with the applicable standard.

3.2.7 Costing public and private patients

The Canberra Hospital makes no specific adjustments to the way private patients are costed compared to public patients. Applicable costs are allocated to private patients, including pathology, medical imaging and prosthesis, in the same manner as public patients. There is no offsetting of private patient revenue against the expenditure.

The majority of the remuneration payments to medical specialists is paid via the payroll system and recorded in the General Fund General Ledger. Depending on the relevant enterprise agreement, the payment may be included in their salary package or a percentage of the income generated is paid to them as an allowance. For some doctors, the payments relating to the treatment of private patients is paid to them directly from the Private Practice Trust Fund and these payments are excluded from the costing process. For 2014-15, the total amount paid to medical specialists through private practice arrangements totalled $6.40 million or 6.57 percent of total medical costs.

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3.2.8 Treatment of specific items

A number of items were discussed during the review to understand their treatment in the costing process as the cost data is used to inform the NEP and specific funding model adjustments for particular patient cohorts. The Canberra Hospital's treatment of each of the items is summarised below.

Table 8 – Treatment of specific items – The Canberra Hospital

Item	Treatment
Research	Research costs are assigned to a product and submitted to the NHCDC. Research costs are calculated based on 10 percent of medical specialist salaries (based on the percentage detailed in the Enterprise Bargaining Agreement).
Teaching and Training	Teaching and Training costs are assigned to a product and submitted to the NHCDC. Teaching and Training costs are calculated based on 10 percent of medical specialist salaries (based on the percentage detailed in the Enterprise Bargaining Agreement).
Shared/Other commercial entities	The Canberra Hospital operates a staff cafeteria and these costs are included in the NHCDC. All other commercial entity expenditure is excluded.

Source: KPMG, based on IFR discussions

3.2.9 Sample patient data

IHPA selected a sample of five patients from the Canberra Hospital for the purposes of testing the data flow from jurisdictions to IHPA at the patient level. ACT Health provided the patient level costs for all five patients and these reconciled to IHPA records. The results are summarised in Table 9.

Table 9 – Sample patients – The Canberra Hospital

#	Product	Jurisdiction Records	Received by IHPA	Variance
1	Non-Admitted ED	$1,129.39	$1,129.39	-
2	Non-Admitted	$250.45	$250.45	-
3	Rehab	$2,376.33	$2,376.33	-
4	Acute	$15,908.37	$15,908.37	-
5	Acute	$360.00	$360.00	-

Source: KPMG, based on the Canberra Hospital and IHPA data

3.3 Application of AHPCS Version 3.1

The following section summarises ACT Health's application of selected standards from Version 3.1 of the AHPCS (outlined in Appendix B) to the Canberra Hospital Round 19 NHCDC submission.

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3.3.1 SCP 1.004 – Hospital Products in Scope

ACT Health representatives demonstrated through the templates submitted and interview process that costs are reported against all products. It was noted that costs are also created for non-patient products (such as commercial entities) which are not submitted to the NHCDC.

Unlinked feeder data are allocated to system-generated records to which costs are allocated. The generation of these records is specific to the feeder. These system-generated records with costs are not submitted to the NHCDC.

3.3.2 SCP 2.003 – Product Costs in Scope

Through the interview process, ACT Health representatives demonstrated the reconciliation process for financial data used for costing purposes. Discussions indicate that all products are costed, including costs assigned to products in scope for the NHCDC, unlinked activity and costs assigned to system-generated patients where there is no activity.

Blood products and organ retrieval services were removed by ACT Health.

3.3.3 SCP 2B.002 - Research Costs

Research costs are assigned to a product and submitted to the NHCDC. Research costs are calculated based on 10 percent of medical specialist salaries (based on the percentage detailed in the Enterprise Bargaining Agreement).

3.3.4 SCP 3.001 - Matching Production and Cost

The application of this standard was demonstrated during the interview and an excel file was produced from the costing system which outlined all transfers and offsets utilised.

3.3.5 SCP 3A.001 - Matching Production and Cost – Overhead Cost Allocation

The jurisdiction was able to demonstrate that overhead costs were fully allocated to direct patient care areas via the pre allocation and post allocation data included in the templates.

3.3.6 SCP 3B.001 - Matching Production and Cost – Costing all Products

This application of this standard was demonstrated in the template and ACT Health provided an overview of their internal reconciliation process which demonstrated the allocation of costs to products.

3.3.7 SCP 3C.001 - Matching Production and Cost – Commercial Business Entities

Discussions with ACT Health representatives during the review, demonstrated that these costs were excluded from the costing process.

3.3.8 SCP 3E.001 - Matching Production and Cost – Offsets and Recoveries

Revenue is not offset against any expenditure. ACT Health operates separate business units for pathology and medical imaging. The costs associated with these services are allocated to public and private patients. It should be noted that the cost allocation of expenditure to tests is in proportion to the relevant Medicare Benefits Scheme item number's fee. Costs associated with services provided to external clients are excluded from the costing process.

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3.3.9 SCP 3G.001 – Matching Production and Cost – Reconciliation to Source Data

ACT Health representatives outlined the reconciliation process for financial and activity data used for costing purposes. Based on a review of the templates, the process appears robust.

3.3.10 GL 2.004 - Account Code Mapping to Line Items

The template submitted by ACT Health reflected that account codes and associated costs from the costing system were only allocated to the specific line items, in accordance with the standard. This was confirmed during the site visit.

3.3.11 GL 4A.002 – Critical Care Definition

Direct costs associated with the adult ICU is captured in dedicated cost centres. The neonatal ICU has a dedicated nursing cost centre. The neonatology medical salaries and wages and VMO payments are accounted for in a single cost centre. Their costs relate to intensive care and non-intensive care babies. For costing purposes, their costs are allocated between the two. The Canberra Hospital does not have any dedicated close observation units.

3.3.12 COST 3A.002 – Allocation of Medical Costs for Private and Public Patients

Costs are allocated to public and private patients in the same manner. This includes costs associated with medical and nursing salaries and wages, pathology, medical imaging and prosthesis. There is no offsetting of private patient revenue against the expenditure. It should be noted that some payments are made to medical specialists directly from the Private Practice Trust Fund and are excluded from the costing process.

3.3.13 COST 5.002 - Treatment of Work-In-Progress Costs

Discussions revealed that patients are allocated costs based on their consumption of resources for that reporting period. Where costs are incurred in prior years, these are also included in the final costed data and NHCDC submission. These costs were not escalated in the Round 19 NHCDC submission.

3.4 Conclusion

The findings of the ACT Round 19 IFR are summarised below:

- No ACT Health hospitals were included in the Round 18 IFR. However, a number of key initiatives were implemented in Round 19 including: a new costing framework to improve linking rules; the allocation of TTR and corporate costs; increased engagement with the hospitals; and improved quality of feeder data systems.
- The financial reconciliation demonstrates the transformation of cost data from the original GL extract through to the final NHCDC submission for the Canberra Hospital. Major exclusions from this hospital data included out-of-scope costs such as departmental costs not directly related to hospital services, pathology services provided to external agencies, Home and Community Care services and drug and Alcohol Services. Other costs excluded related to created occasions of service, sexual health patients and out of scope costs such as aged care, community health, commercial entities and drug and alcohol services. There were no unexplained variances in the financial reconciliation of the hospital's NHCDC submissions.

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- The basis of the adjustments made by ACT Health appears reasonable, with the exception of blood products and organ retrieval services. The exclusion of these costs may impact on the completeness of the NHCDC.
- Total activity data for the Canberra Hospital was adjusted for the activity associated with excluded costs.
- The number of records linked from source to product was significant with all feeders having a greater than 99 percent link or match. This suggests that there is robustness in the level of feeder activity reported back to episodes.
- WIP was treated in accordance with the COST 5.002 of the AHPCS Version 3.1. ACT Health did not apply any escalation factors to the costs associated with WIP for prior years as part of the Round 19 submission to the NHCDC.
- The five sample patients selected for review for the Canberra Hospital reconciled to IHPA records.

Based on discussions held during the site visits, and a review of the financial reconciliations provided, ACT Health has robust reconciliation processes in place. As such, nothing was identified to suggest that the financial data is not fit for NHCDC submission. Furthermore, the data flow from the jurisdiction to IHPA demonstrated no unexplained variances.

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4. New South Wales

4.1 Jurisdictional overview

4.1.1 Management of NHCDC process

New South Wales (NSW) has fifteen Local Health Districts (LHDs) (eight covering metropolitan areas and seven in rural areas) with three Speciality Health Networks (SHNs) which focus on children's and paediatric services, forensic mental health, justice health and the public hospital services provided by the St Vincent's Health Network. Published financial statements are reported at the LHD/SHN level.

Since the inception of Activity Based Funding (ABF), the NSW Ministry of Health (NSW Health) has invested heavily in patient level costing to inform its Activity Based Management (ABM) functions at both state and national levels. Each of the LHDs/SHNs are required to operate and maintain patient level costing systems as part of their conditions of subsidy with NSW Health.

The ABF Taskforce at NSW Health includes a costing team and data acquisition team, which provide support to the LHD/SHN who prepare, process and submit the District and Network Return (DNR) – the NSW patient level cost submission. This support includes:

- Cost Accounting Guidelines (CAG) – which specifies costing standards, costing guidelines and technical specifications for the DNR. NSW Health advised that the Australian Hospital Costing Standards Version 3.1 are embedded within the CAG and the CAG is reviewed each year.
- Extractor – a tool to extract the inpatient and emergency activity files for costing from the LHD/SHN Health Information Exchange (HIE) in a standard format.
- Non Admitted Patient (NAP) Datamart – which provides costing views to non-admitted activity in a standard format.
- Feeder data – a number of tools have been developed to assist with the standard formatting of feeder data such as operating theatre and imaging.
- A collaborative space – which provides access to the extractor, the general ledger (GL) a, documentation and a range of tools.

Universal access to standard queries and reporting tools has been provided to all LHD/SHN staff to ensure that there is a consistent approach to costing and reporting. This is in recognition of the fact that there is various levels of experience and costing skills within the sector. A NSW Costing Standards User Group is convened and meets on a regular basis. All matters related to costing are considered and determined with the members. The ABF Taskforce also supports the Costing Standards User Group by undertaking a series of workshops and training sessions each year for LHD/SHN costing staff.

NSW Health utilises a standard build of Power Health Performance Manager (PPM) across all LHDs/SHNs. Patient level costing at all LHDs/SHNs is conducted on a bi-annual basis with six monthly data required in April to test preliminary costing results. This also informs a range of data quality issues that may affect the final annual submission. Annual costing is then undertaken by reloading the GL, activity and feeder data for a full twelve months.

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Reloading optimises all revisions in both the financial and activity data. A draft DNR submission is supplied by LHDs and SHNs to NSW Health in October and following further revisions, a final DNR is signed off, reconciled and submitted in November. The DNR submission is made using a secure file transfer environment.

Upon submission, data is treated as draft and over sixty patient-level data quality tests are performed on the cost data and reported back to LHD/SHNs through the RQ application the following business day. The quality of the cost data is scored and a graphical summary of the cost data against previous collections is provided. During the draft submission period, LHD/SHNs may submit repeatedly to correct cost allocation issues.

Once finalised, the LHD/SHN Chief Executive submits a signed letter and reconciliation schedule that demonstrates reconciliation to the published financial statements to formally advise of the finalisation of the DNR submission. The ABF Taskforce does not alter cost data submissions received from LHDs/SHNs.

The data reported through the DNR will inform a range of State and National data reporting obligations, including the NHCDC (based on a policy of single submission for multiple uses). The ABF Taskforce is responsible for the collation, formatting, consolidating, review and submission of the LHD/SHN patient level costed data for the NHCDC.

Only patient level data for ABF facilities is submitted to the NHCDC. The ABF Taskforce adjusts for Work In Progress (WIP) patient records from prior years. Records that fail the IHPA validation checks are excluded from the submission. Once the NHCDC submission is finalised, a data quality statement is provided and published in the cost report.

NSW nominated three LHDs to participate in the review for Round 19, Central Coast LHD, Far West LHD, and Sydney LHD.

Key initiatives since Round 18 NHCDC

The following initiatives have been implemented since the Round 18 NHCDC submission:

- NSW Health (via the ABF Taskforce) has instituted DNR teleconferences with the Chief Executive of each LHD/SHN to discuss cost data results during the draft submission period prior to final DNR submission.
- A refinement of the inclusions and exclusions definitions for Teaching, Training and Research (TTR) products was undertaken for the 2014-15 DNR submission. This culminated in a teleconference with LHD/SHN stakeholders during the draft submission period to review the draft TTR costs to assess the reasonableness across LHD/SHNs.
- LHD/SHN Internal Audit teams conducted a mandatory DNR Audit on the 2014-15 DNR Submission. Attestation Certificates were received from all LHD/SHN Chief Executives indicating that 'effective systems of internal control exist to ensure that the DNR information is true and fair in all material respects'. This audit is now one of the Conditions of Subsidy.
- The cost allocation for organ donor episodes was considerably refined and improved. Costs that are held in up to four separate GLs, were consolidated and appropriately eliminated to ensure the full cost of organ retrievals were reported.
- Linking rule analysis was undertaken to review linking rules with each LHD/SHN during 2015 to seek greater precision in linking of encounter and feeder data.

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4.2 Central Coast Local Health District

4.2.1 Overview

The Central Coast Local Health District (Central Coast LHD) provides public health services to the communities of Gosford City and Wyong Shire Local Government Areas. The region is serviced by two acute hospitals (Gosford Hospital and Wyong Hospital), two sub-acute facilities (Woy Woy Hospital and Long Jetty Healthcare Centre) and ten community health centres, as well as other community based services.

Gosford Hospital is the principal referral hospital and regional trauma centre for the Central Coast and the Central Coast LHD has a bed capacity of approximately 950 beds and approximately 4,956 full time equivalent staff.

Some of the public health services offered by the Central Cost LHD includes:

- Adult Community Services
- Ambulatory Care Units
- Cardiology Services
- Maternity Services
- Mental Health
- Outpatient Clinics
- Public Health
- Renal (kidney) services
- Stroke Services.

Central Coast LHD has a large research program, which allows staff to strive for innovation and apply their knowledge and skills.[5]

Overview of the costing process

Central Coast LHD costing staff advised that they cost according to the DNR process. The CAG is used as a reference for all costing guidelines and informs the methodology. The GL is extracted and reconciled to annual financial results for the LHD.

The preparation and loading of the activity and feeder data uses combined sources. Central Coast LHD's Patient Administration System (PAS) uploads data to the Health Information Exchange (HIE) on a daily basis and is then extracted from the HIE using the Extractor when required. Non-Admitted data is sourced from the NAP Datamart. Feeder data is sourced from a range of departments across the LHD. The standardised databases for operating theatres, imaging and pharmacy are used to format the feeder data for loading into PPM. Once loaded a series of internal quality checks are undertaken for both format and data quality.

[5] Central Coast LHD – accessed 15 June 2016

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Central Coast LHD costing staff indicated that each year a product fraction review is undertaken to inform various reclass rules applied in PPM. Each year costing staff meet with a number of cost centre managers to discuss the relevant split of expenditure across various departments. Cost centre managers are required to formally sign-off their product fractions. The product fractions are further reviewed upon completion of the draft costing results. Where there are significant cost differences between prior years, the product fractions calculated through the reclass rules are further examined to ensure they are not driving irregularities.

Draft DNRs are reviewed for quality with a range of stakeholders within Central Coast LHD including the Director of Finance and the Chief Executive. Stakeholders examine costs between financial years and benchmark to jurisdictional averages. Adjustments are made, where relevant and a final DNR is prepared.

The Chief Executive at Central Coast LHD is the signatory of the final reconciled DNR submission to NSW Health.

4.2.2 Financial data

For the Round 19 IFR, NSW Health on behalf of the Central Coast LHD completed the data collection templates. Representatives from NSW Health attended and participated in the consultation process during the review, as well as senior costing staff from the Central Coast LHD.

Table 10 reflects a summary of the Central Coast LHD's costs, from the original extract from the GL through to the final NHCDC submission for the Central Coast LHD for Round 19.

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Table 10 – Round 19 NHCDC Reconciliation – Central Coast LHD

Hospital			
Item		**Amount**	**% of GL**
A General Ledger (GL)	$	716,870,309	
B Adjustments to the GL			
Inclusions	$	11,373,616	
Exclusions	$	-	
Total hospital expenditure	**$**	**728,243,925**	*101.59%*
C Allocation of Costs			
Post Allocation Direct amount	$	549,662,197	
Post Allocation Overhead amount	$	178,581,728	
Total hospital expenditure	**$**	**728,243,925**	*101.59%*
Variance	*$*	*1*	*0.00%*
D Post Allocation Adjustments			
Nil	$	-	
Total expenditure allocated to patients	**$**	**728,243,925**	*101.59%*
E Costed products submitted to jurisdiction			
Acute and Newborns	$	366,996,164	
Non-admitted	$	149,495,052	
Emergency	$	79,216,142	
Sub Acute	$	56,361,078	
Mental Health	$	-	
Other	$	59,102,783	
Research	$	-	
Teaching & Training	$	17,071,327	
	$	**728,242,546**	*101.59%*
Variance	*$*	*(1,379)*	*0.00%*

Jurisdiction		
Item		**Amount**
F Costed Products received by jurisidction	$	728,242,546
Variance	*$*	*-*
G Final Adjustments		
WIP from prior years	$	9,375,544
Non-ABF facilities	$	(27,017,546)
Teaching, Training and Research	$	(17,071,327)
Non-patient level products in ABF facilities	$	(58,839,757)
Non-patient products in ABF facilities	$	(23,629)
Round 19 WIP	$	(10,497,152)
Unlinked records	$	(11,935,917)
Total costs submitted to IHPA	**$**	**612,232,762**
H Costed products submitted to IHPA		
Acute and Newborns	$	366,892,532
Non-admitted	$	112,892,646
Emergency	$	76,775,240
Sub Acute	$	55,592,369
Mental Health	$	-
Other	$	79,975
Research	$	-
Teaching & Training	$	-
	$	**612,232,763**
Variance	*$*	*0*

IHPA		
Item		**Amount**
I Total costed products received by IHPA	$	612,232,763
Variance	*$*	*1*
J IHPA Adjustments		
Admitted ED reallocations	$	38,202,288
Final NHCDC costs	**$**	**650,435,051**
K Final NHCDC costed products		
Acute^ and Newborns	$	405,069,015
Non-admitted	$	112,894,028
Emergency	$	76,775,240
*Sub Acute^*	$	55,618,175
Mental Health	$	-
Other	$	78,594
Research	$	-
Teaching & Training	$	-
	$	**650,435,051**
Variance	*$*	*(0)*

Source: KPMG based on data supplied by Central Coast LHD, jurisdiction and IHPA

^ These figures include admitted emergency costs.

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Explanation of reconciliation items

This section discusses each of the reconciliation items including adjustments, inclusions and exclusions to the financial data. The information is based on the templates submitted for Central Coast LHD and face-to-face review discussions.

Item A – General Ledger

The final GL amount extracted from the NSW costing system for the LHD totalled $716.87 million. This amount reflected the total expenditure for the Central Coast LHD. This amount reconciled to the total expenditure reported in the 2014-15 audited financial statements for the Central Coast LHD.

Item B – Adjustments to the GL

Inclusions made to the GL totalled $11.37 million. The ABF Taskforce advised the LHD/SHNs of the total for medical indemnity insurance as this expense is held centrally by NSW Health. The Shared services totals were determined by Central Coast LHD in collaboration with the LHD sharing services. The items for Central Coast LHD are summarised below:

- Medical indemnity insurance – $10.72 million
- Shared services – $651,542.

The basis of these adjustments appears reasonable.

These adjustments established an expenditure base for costing of $728.24 million. This was approximately 101.6 percent of total expenditure reported in the GL (note this percentage is greater than 100 percent as the jurisdiction holds costs outside of the health services GL e.g. indemnity insurance).

Item C – Allocation of costs

The Central Coast LHD undertakes a process of reclass/transfers between cost centres.

- It was observed that the total of all direct cost centres of $549.66 million was allocated post allocation.
- It was observed through the templates that overheads of $178.58 million were allocated to direct cost centres, post allocation.

These amounted to $728.24 million and reflected the total expenditure for the Central Coast LHD. No variance was identified between Item B and Item C.

Item D – Post Allocation Adjustments

Central Coast LHD did not make post allocation adjustments.

The total expenditure allocated to patients for Central Coast LHD was $728.24 million, which represented approximately 101.6 percent of the GL.

Item E - Costed products submitted to jurisdiction

Costs submitted to the jurisdiction and reported at product level totalled $728.24 million. Costs were allocated to all products with the exception of Mental Health and Research. Mental Health and Research were reported in the Other product category. A minor variance of $1,379 was identified between Item D and Item E (0.0002 percent of expenditure allocated to patients).

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Item F – Costed products received by the jurisdiction

Costed by product received by the jurisdiction was $728.24 million (Item F). No variance was noted between Items E and F, which indicates that no data was lost in the transmission of costs from the hospital to the jurisdiction.

Item G – Final adjustments

NSW Health transforms the LHD DNR for NHCDC submission to IHPA. The adjustments made for Round 19 totalled $116.01 million and included:

- WIP from prior years totalling $9.38 million was included
- ABF Facility Round 19 WIP totalling $10.50 million excluded
- Non ABF Facilities totalling $27.02 million excluded
- Teaching, Training and Research totalling $17.07 million excluded
- Non Patient Level activity (aggregate activity) in ABF Facilities totalling $58.84 million excluded
- Out of scope products in ABF Facilities totalling $23,629 excluded
- NHCDC Validation and linking exceptions totalling $11.94 million excluded.

The basis of these adjustments appears reasonable. However, the exclusion of Teaching, Training and Research may impact on the completeness of the NHCDC. It is understood that NSW Health will submit Teaching, Training and Research (TTR) costs to the NHCDC following the completion of IHPA's TTR project. In addition, NSW Health should investigate the reasons for unlinked activity to the NHCDC to ensure appropriate treatment in future rounds.

Item H – Costed products submitted to IHPA

Costs derived by the jurisdiction and reported at product level to IHPA totalled $612.23 million.

Item I – Total products received by IHPA

Total costed products received by IHPA totalled $612.23 million. There was a minor variance of $1 between costs submitted by the jurisdiction and costs received by IHPA.

Item J – IHPA adjustments

Upon receipt of cost data, IHPA allocates the admitted emergency costs back to admitted patients for the purposes of reporting and analysis. Within IHPA's reconciliation, this amount was a duplication of admitted emergency costs and not an additional cost. For the Central Coast LHD this amounted to $38.20 million.

Item K – Final NHCDC Costed Outputs

The final NHCDC costed data for Central Coast LHD that was loaded into the National Round 19 cost data set was $650.44 million, which included the admitted emergency cost of $38.20 million.

4.2.3 Activity data

Table 11 presents patient activity data based on source and costing systems for the Central Coast LHD. This activity data is then compared to Table 12 which highlights the transfer of activity data

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by NHCDC product from the Central Coast LHD to NSW Health and then through to IHPA submission and finalisation.

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Table 11 – Activity data – Central Coast LHD

Activity Data	# Records from Source	# Records in costing system	Variance	# Records linked to Admitted	# Records linked to Emergency	# Records linked to Non-admitted	# Records linked to Other	Total Linking Process	# Unlinked records
Inpatient	82,658	82,658	-	82,658	-	-	-	82,658	-
Emergency	120,586	120,586	-	-	120,586	-	-	120,586	-
Outpatients	682,877	682,877	-	-	-	682,877	-	682,877	-
Z Encounters – non patient level, non ABF and system-generated activity data	723	723	-	-	-	-	723	723	
TOTAL	**886,844**	**886,844**	**-**	**82,658**	**120,586**	**682,877**	**723**	**886,844**	**-**

Source: KPMG based on data supplied by the Central Coast LHD and NSW Health

Table 12 – Activity data submission – Central Coast LHD

Product	Activity related to 2014-15 Costs	Adjustments	Activity submitted to jurisdiction	Adjustments	Activity submitted to IHPA	Activity received by IHPA	Adjustments	Total Activity submitted for Round 19 NHCDC
Acute and Newborns	78,154	-	78,154	(645)	77,509	77,509	-	77,509
Non-admitted	682,877	-	682,877	(72,771)	610,106	610,106	-	610,106
Emergency	120,586	-	120,586	(1,908)	118,678	118,678	-	118,678
Sub Acute	4,225	-	4,225	(173)	4,052	4,052	-	4,052
Mental Health	-	-	-	-	-	-	-	-
Other	13,286	-	13,286	(13,281)	5	5	-	5
Research	-	-	-	-	-	-	-	-
Teaching and Training	11	-	11	(11)	-	-	-	-
Total	**899,139**	**-**	**899,139**	**(88,789)**	**810,350**	**810,350**	**-**	**810,350**

Source: KPMG based on data supplied by the Central Coast LHD, NSW Health and IHPA

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The following should be noted about the transfer of activity data in Table 12 for the Central Coast LHD:

- There was a variance between the number of records from source systems, detailed in Table 11 (886,844 records) and activity related to 2014-15 costs by NHCDC product in Table 12 (899,139 records) of 12,295 records. The variance related to the system-generated encounters created when feeder data does not link to an activity file.
- The Central Coast LHD made no activity adjustments.
- Adjustments made by NSW Health related to the activity associated with the excluded costs (refer to Item G in the reconciliation Table 10). These records related to WIP activity, non-ABF facility encounters, non-patient level encounters, non-patient products and records with validation or linking issues.
- Adjustments made by IHPA related to admitted emergency reallocations are for reporting and analysis purposes (as discussed in Item J of the explanation of reconciliation items) and have no impact on the reported activity.

4.2.4 Feeder data

Table 13 reflects data associated with patient feeder data for the Central Coast LHD.

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Table 13 – Feeder data – Central Coast LHD

Feeder Data	# Records from Source	# Records in costing system	Variance	# Records linked to Admitted	# Records linked to Emergency	# Records linked to Non-admitted	# Records linked to Other	Total Linking Process	# Unlinked records	% Linked
OTD	27	27	-	27	-	-	-	27	-	100.00%
Pathology	695,695	695,695	-	400,517	261,029	27,064	7,085	695,695	-	100.00%
NAP SERVICE	1,053	1,053	-	-	-	1,053	-	1,053	-	100.00%
Audiology	867	867	-	15	-	851	1	867	-	100.00%
Cardiac Cath	1,335	1,335	-	791	-	544	-	1,335	-	100.00%
OT	37,903	37,903	-	28,246	26	8,674	957	37,903	-	100.00%
Physio	100,848	100,848	-	65,868	63	32,626	2,291	100,848	-	100.00%
ECT	773	773	-	773	-	-	-	773	-	100.00%
Endoscopy	5,765	5,765	-	2,774	1	2,990	-	5,765	-	100.00%
Imaging	134,310	134,310	-	41,869	78,252	13,662	527	134,310	-	100.00%
Pain Mgmt	7,665	7,665	-	6,751	914	-	-	7,665	-	100.00%
Service ED	120,272	120,272	-	-	120,270	-	-	120,270	2	100.00%
Anaesthetics	23,415	23,415	-	20,394	3	3,018	-	23,415	-	100.00%
Interp	1,189	1,189	-	328	21	635	205	1,189	-	100.00%
NAP SERVICE	721,306	721,306	-	-	-	721,306	-	721,306	-	100.00%
Pharmacy	173,155	173,155	-	155,003	3,809	11,844	2,499	173,155	-	100.00%
SpeechPathology	23,896	23,896	-	15,035	7	8,350	504	23,896	-	100.00%
Blood Products	26,570	26,570	-	10,888	2,704	11,404	1,574	26,570	-	100.00%
Dietetics	21,315	21,315	-	16,284	16	4,228	787	21,315	-	100.00%
NAP SERVICE AGG	745	745	-	-	-	-	745	745	-	100.00%
Prosthetics	19,156	19,156	-	19,120	-	36	-	19,156	-	100.00%
Theatre Nursing	17,357	17,357	-	17,314	-	43	-	17,357	-	100.00%
Transfers	245,685	245,685	-	245,685	-	-	-	245,685	-	100.00%

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Feeder Data	# Records from Source	# Records in costing system	Variance	# Records linked to Admitted	# Records linked to Emergency	# Records linked to Non-admitted	# Records linked to Other	Total Linking Process	# Unlinked records	% Linked
Diagnosis	319,772	319,772	-	319,772	-	-	-	319,772	-	100.00%
Procedures	144,552	144,552	-	144,552	-	-	-	144,552	-	100.00%

Source: KPMG based on data supplied by the Central Coast LHD and NSW Health

The following should be noted about the feeder data in Table 13 for Central Coast LHD:

- There are currently 25 feeders used from a range of hospital source systems that represent major hospital departments providing resource activity.
- LHD and NSW Health representatives stated that all feeder linking rules are reviewed on an individual feeder basis and are informed by rules listed in the CAG, wherever possible. Where the LHD can further refine linking rules to suit their clinical practice, these are adopted at a local level. NSW Health is informed of these specific adjustments. Once the linking has occurred, linking percentages are compared with prior linking results to identify any major variations. Variations are reviewed for data quality issues or to inform linking rule updates.
- The number of records linked to admitted, emergency, non-admitted and other patients had a 100 percent link or match. This suggests that there is robustness in the level of feeder activity reported back to episodes.
- The records that link to Other are records that link to system-generated encounters or the non-patient level encounters

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4.2.5 Treatment of WIP

Table 14 demonstrates models for WIP and its treatment in the Central Coast LHD's Round 19 NHCDC submission.

Table 14 – WIP – Central Coast LHD

Model	Description	Submitted to Round 19 NHCDC
1	Cost for patients admitted and discharged in 2014-15 only	Submitted to Round 19 of the NHCDC
2	Costs for patients admitted prior to 2014-15 and discharged in 2014-15	Submitted to Round 19 of the NHCDC. Costs are submitted for 2013-14.
3	Costs for patients admitted prior to or in 2014-15 and remain admitted at 30 June 2015	Not submitted to Round 19 of the NHCDC

Source: KPMG, based on the Central Coast Hospital templates and review discussions

In summary, Central Coast LHD submitted costs for admitted and discharged patients in 2014-15 and WIP costs for those patients admitted in 2013-14, but discharged, in 2014-15.

Escalation factor

NSW Health did not apply the escalation factors to the costs associated with WIP from prior years in the Round 19 NHCDC submission for Central Coast LHD.

4.2.6 Critical care

Central Coast LHD indicated that they have a critical care mix of Intensive Care Units (ICU's) and High Dependency Units (HDU's) across the LHD. The expenditure is reported in a critical care cost centre (HDU/ICU). The PAS ward transfer activity data extracted from the HIE separately identifies ICU and HDU hours based on the reported bed type. Service codes are built for each critical care area incorporating the bed type detail, and ICU and HDU relative value units (RVUs) are used to allocate critical care costs.

The process described by Central Coast LHD for costing critical areas indicates that intensive care and high dependency unit areas can be separately identified. Critical care costs are captured in accordance with the applicable standard.

4.2.7 Costing public and patients

Central Coast LHD costing staff indicated that the costing of private patients follows the guidelines specified in the CAG. The costing methodology incorporates relative value units for private patients ensuring no Visiting Medical Officer (VMO) payments are allocated to private patients. Salaried Medical Officer and Junior Medical Officer staff salary and wages are allocated to both public and private patients with no adjustments for private patients.

4.2.8 Treatment of specific items

A number of specific items were discussed during the consultation phase of the review to understand the manner in which they are treated in the costing process. These items are used

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to inform the NEP and specific funding model adjustments for particular patient cohorts. The Central Coast LHDs treatment of each of the items is summarised below.

Table 15 – Treatment of specific items – Central Coast LHD

Item	Treatment
Research	Where direct Research expenditure can be identified, it is mapped to a research area. A fraction review is undertaken to identify where research expenditures are embedded within cost centres and this expenditure is mapped to a research area. All research expenditure is then mapped to a non-patient encounter. NSW Health excluded these from the NHCDC submission.
Teaching and Training	Where direct Teaching and Training expenditure can be identified, it is mapped to a Teaching and Training area. A fraction review is undertaken to identify where Teaching and Training expenditures are embedded within cost centres and this expenditure is mapped to a Teaching and Training area. All Teaching and Training expenditure is then mapped to a non-patient encounter. NSW Health excluded these from the NHCDC submission.
Shared/Other commercial entities	Central Coast LHD advised that there is a shared service arrangement with Northern Sydney LHD. Central Coast LHD indicated that it operates a childcare facility. This expenditure is excluded by the LHD by allocating it to a non-patient product.

Source: KPMG, based on IFR discussions

4.2.9 Sample patient data

IHPA selected a sample of five patients from the Central Coast LHD for the purposes of testing the data flow from jurisdictions to IHPA at the patient level. NSW Health provided the patient level costs for all five patients and these reconciled to IHPA records. The results are summarised in Table 16.

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Table 16 – Sample patients – Central Coast LHD

#	Product	Jurisdiction Records	Received by IHPA	Variance
1	Acute	$25,083.38	$25,083.38	-
2	Maintenance	$20,456.10	$20,456.10	-
3	Acute	$12,483.73	$12,483.73	-
4	Non-Admitted ED	$195.24	$195.24	-
5	Non-Admitted	$185.71	$185.71	-

Source: KPMG, based on the Central Coast LHD and IHPA data

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4.3 Far West Local Health District

4.3.1 Overview

The Far West Local Health District (Far West LHD) was established on 1 January 2011. It serves a population of just over 30,000 people dispersed across the second largest geographic area (194,949 square kilometres) of all the LHDs in NSW. Specific locations are as follows:

- Multipurpose Services:
    - Balranald Multipurpose Service
    - Wilcannia Multipurpose Service
- Health Services:
    - Broken Hill Health Service
    - Dareton Primary Health Care Service
    - Ivanhoe Health Service
    - Menindee Health Service
    - Tibooburra Health Service
    - Wentworth Health Service
    - White Cliffs Health Service
- Child and Family Health Centre.

Far West LHD has approximately 150 beds and approximately 652 full time equivalent staff. Its services include:

- Aboriginal and Multicultural Health Services
- Dietetics
- Occupational Therapy
- Physiotherapy
- Speech Pathology
- Mental Health and Drug & Alcohol Services
- Dental Services
- Allied Health Services
- Public Health Services
- Hospital Services – Inpatient
- Emergency and stabilisation services[6].

[6] *Far West LHD* – accessed 15 June 2016

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Overview of the costing process

Costing staff at Far West LHD advised they cost according to the DNR process and reference the CAG to inform the costing methodology. The GL is extracted and reconciled to annual financial results for Far West LHD. The CAG is used to inform both overhead and direct cost allocations.

The preparation and loading of the activity and feeder data uses combined sources. Far West LHD's PAS uploads data to the HIE on a nightly basis and is then extracted from the HIE using the Extractor when required. Non-Admitted data is sourced from the NAP Datamart.

Draft DNRs are reviewed for quality with a range of stakeholders within Far West LHD including the Chief Executive. Stakeholders examine costs between financial years and benchmark to jurisdictional averages. Adjustments are made, where relevant, and a final DNR is prepared.

The Chief Executive at Far West LHD is the signatory of the final reconciled DNR submission to the NSW Health.

4.3.2 Financial data

For the Round 19 IFR, NSW Health completed the data collection templates, on behalf of Far West LHD. Representatives from NSW Health attended and participated in the consultation process during the review, as well as senior costing staff from the Far West LHD.

Table 17 reflects a summary of the Far West LHD's costs, from the original extract from the GL through to the final NHCDC submission for the Far West LHD for Round 19.

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Table 17 – Round 19 NHCDC Reconciliation – Far West LHD

Hospital			
Item		**Amount**	**% of GL**
A General Ledger (GL)	$	104,425,320	
B Adjustments to the GL			
Inclusions	$	1,511,682	
Exclusions	$	-	
Total hospital expenditure	**$**	**105,937,002**	*101.45%*
C Allocation of Costs			
Post Allocation Direct amount	$	73,566,454	
Post Allocation Overhead amount	$	32,370,548	
Total hospital expenditure	**$**	**105,937,002**	*101.45%*
Variance	*$*	*0*	*0.00%*
D Post Allocation Adjustments			
Nil	$	-	
Total expenditure allocated to patients	**$**	**105,937,002**	*101.45%*
E Costed products submitted to jurisdiction			
Acute and Newborns	$	34,018,485	
Non-admitted	$	16,562,153	
Emergency	$	9,171,602	
Sub Acute	$	8,748,260	
Mental Health	$	-	
Other	$	35,925,382	
Research	$	-	
Teaching & Training	$	1,511,122	
	$	**105,937,002**	*101.45%*
Variance	*$*	*0*	*0.00%*

Jurisdiction		
Item		**Amount**
F Costed Products received by jurisidction	$	105,937,002
Variance	*$*	*-*
G Final Adjustments		
WIP from prior years	$	1,032,143
Non-ABF facilities	$	(23,902,989)
Teaching, Training and Research	$	(1,511,122)
Non-patient level products in ABF facilities	$	(19,569,295)
Unlinked records	$	(2,218,275)
Total costs submitted to IHPA	**$**	**59,767,464**
H Costed products submitted to IHPA		
Acute and Newborns	$	31,430,781
Non-admitted	$	11,063,817
Emergency	$	8,874,261
Sub Acute	$	8,398,605
Mental Health	$	-
Other	$	-
Research	$	-
Teaching & Training	$	-
	$	**59,767,465**
Variance	*$*	*0*

IHPA		
Item		**Amount**
I Total costed products received by IHPA	$	59,767,465
Variance	*$*	*1*
J IHPA Adjustments		
Admitted ED reallocations	$	3,359,970
Final NHCDC costs	**$**	**63,127,435**
K Final NHCDC costed products		
Acute^ and Newborns	$	34,763,327
Non-admitted	$	11,063,817
Emergency	$	8,874,261
*Sub Acute^*	$	8,426,029
Mental Health	$	-
Other	$	-
Research	$	-
Teaching & Training	$	-
	$	**63,127,435**
Variance	*$*	*0*

Source: KPMG based on data supplied by Far West LHD, jurisdiction and IHPA

^ These figures include admitted emergency costs.

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Explanation of reconciliation items

This section discusses each of the reconciliation items including adjustments, inclusions and exclusions to the financial data. The information is based on the templates submitted for Far West LHD and face-to-face review discussions.

Item A – General Ledger

The final GL amount extracted from the NSW costing system for the LHD totalled $104.43 million. This amount reflected the total expenditure for the Far West LHD. This amount reconciled to the total expenditure reported in the 2014-15 audited financial statements for the Far West LHD

Item B – Adjustments to the GL

Inclusions made to the GL totalled $1.51 million. The ABF Taskforce advised the LHD/SHNs of the total for medical indemnity insurance as NSW Health holds this expense centrally. The items for Far West LHD are summarised below:

- Medical indemnity insurance – $1.26 million
- VMO indemnity insurance – $255,286.

The basis of these adjustments appears reasonable.

These adjustments established an expenditure base for costing of $105.94 million. This was approximately 101.5 percent of total expenditure reported in the GL (note this percentage is greater than 100 percent due to the fact that the jurisdiction holds costs outside of the health services GL e.g. indemnity insurance).

Item C – Allocation of costs

The Far West LHD undertakes a process of reclass/transfers between cost centres.

- It was observed that the total of all direct cost centres of $73.57 million was allocated post allocation.
- It was observed through the templates that overheads of $32.37 million were allocated to direct cost centres, post allocation.

These amounted to $105.94 million and reflected the total expenditure for the Far West LHD. There was no variance was identified between Item B and Item C.

Item D – Post Allocation Adjustments

Far West LHD did not make post allocation adjustments.

The total expenditure allocated to patients for Far West LHD was $105.94 million, which represented approximately 101.5 percent of the GL.

Item E - Costed products submitted to jurisdiction

Costs submitted to the jurisdiction and reported at product level totalled $105.94 million. Costs were allocated to all products with the exception of Mental Health and Research. Mental Health and Research were reported in the Other product category. There was no variance was identified between Item D and Item E.

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Item F – Costed products received by the jurisdiction

Costs by product received by the jurisdiction was $104.94 million. No variance was noted between Items E and F, which indicates that no data was lost in the transmission of costs from the hospital to the jurisdiction.

Item G – Final adjustments

NSW Health makes adjustments the LHD submission prior to submission to the NHCDC. The adjustments made for Round 19 totalled $46.17 million and included:

- WIP from prior years totalling $1.03 million was included
- Non ABF Facilities totalling $23.90 million excluded
- Teaching and Research totalling $1.51 million excluded
- Non Patient Level activity (aggregate activity) in ABF Facilities totalling $19.57 million excluded
- NHCDC Validation and linking exceptions totalling $2.22 million excluded.

The basis of these adjustments appears reasonable. However, the exclusion of Teaching, Training and Research may impact on the completeness of the NHCDC. It is understood that NSW Health will submit Teaching, Training and Research (TTR) costs to the NHCDC following the completion of IHPA's TTR project. In addition, NSW Health should investigate the reasons for unlinked activity to the NHCDC to ensure appropriate treatment in future rounds.

Item H – Costed products submitted to IHPA

Costs derived by the jurisdiction and reported at product level to IHPA totalled $59.77 million.

Item I – Total products received by IHPA

Total costed products received by IHPA totalled $59.77 million. There was a minor variance of $1 between costs submitted by the jurisdiction and costs received by IHPA.

Item J – IHPA adjustments

Upon receipt of cost data, IHPA allocates the admitted emergency costs back to admitted patients for the purposes of reporting and analysis. Within IHPA's reconciliation, this amount was a duplication of admitted emergency costs and not an additional cost. For Far West LHD this amounted to $3.36 million.

Item K – Final NHCDC Costed Outputs

The final NHCDC costed data for Far West LHD that was loaded into the National Round 19 cost data set was $63.13 million, which included the admitted emergency cost of $3.36 million.

4.3.3 Activity data

Table 18 presents patient activity data based on source and costing systems for the Far West LHD. This activity data is then compared to Table 19 which highlights the transfer of activity data by NHCDC product from the Far West LHD to NSW Health and then through to IHPA submission and finalisation.

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Table 18 – Activity data – Far West LHD

Activity Data	# Records from Source	# Records in costing system	Variance	# Records linked to Admitted	# Records linked to Emergency	# Records linked to Non-admitted	# Records linked to Other	Total Linking Process	# Unlinked records
Inpatient	7,791	7,791	-	7,791	-	-	-	7,791	-
Emergency	20,693	20,693	-	-	20,693	-	-	20,693	-
Outpatients	82,792	82,792	-	-	-	82,792	-	82,792	-
Z Encounters – non patient level, non ABF and system-generated activity data	640	640	-	-	-	-	640	640	-
TOTAL	**111,916**	**111,916**	**-**	**7,791**	**20,693**	**82,792**	**640**	**111,916**	**-**

Source: KPMG based on data supplied by the Far West LHD and NSW Health

Table 19 – Activity data submission – Far West LHD

Product	Activity related to 2014-15 Costs	Adjustments	Activity submitted to jurisdiction	Adjustments	Activity submitted to IHPA	Activity received by IHPA	Adjustments	Total Activity submitted for Round 19 NHCDC
Acute and Newborns	7,365	-	7,365	(365)	7,000	7,000	-	7,000
Non-admitted	82,792	-	82,792	(15,107)	67,685	67,685	-	67,685
Emergency	20,693	-	20,693	(205)	20,488	20,488	-	20,488
Sub Acute	401	-	401	(33)	368	368	-	368
Mental Health	-	-	-	-	-	-	-	-
Other	4,160	-	4,160	(4,160)	-	-	-	-
Research	-	-	-	-	-	-	-	-
Teaching and Training	2	-	2	(2)	-	-	-	-
Total	**115,413**	**-**	**115,413**	**(19,872)**	**95,541**	**95,541**	**-**	**95,541**

Source: KPMG based on data supplied by the Far West LHD, NSW Health and IHPA

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The following should be noted about the transfer of activity data in Table 19 for the Far West LHD:

- There was a variance between the number of records from source systems, detailed in Table 18 (111,916 records) and activity related to 2014-15 costs by NHCDC product in Table 19 (115,413 records) of 3,497 records. The variance related to the system-generated encounters created when feeder data does not link to an activity file.
- The Far West LHD did not adjust the activity data.
- Adjustments made by NSW Health related to the activity associated with the excluded costs (refer to Item G in the reconciliation). These records related to non-ABF facility encounters, non-patient level encounters, non-patient products, and records with validation or linking issues.
- Adjustments made by IHPA related to admitted emergency reallocations are for reporting and analysis purposes (as discussed in Item J of the explanation of reconciliation items) and have no impact on the reported activity.

4.3.4 Feeder data

Table 20 reflects data associated with patient feeder data for the Far West LHD.

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Table 20 – Feeder data – Far West LHD

Feeder Data	# Records from Source	# Records in costing system	Variance	# Records linked to Admitted	# Records linked to Emergency	# Records linked to Non-admitted	# Records linked to Other	Total Linking Process	# Unlinked records	% Linked
Blood	277	277	-	213	6	-	58	277	-	100.00%
Theatre Anaesthetic_Doctor	2,255	2,255	-	2,253	-	-	2	2,255	-	100.00%
Pharmacy	18,355	18,355	-	14,324	2,378	1,328	325	18,355	-	100.00%
Service NAP	100,288	100,288	-	-	-	100,288	-	100,288	-	100.00%
Service Z	39	39	-	-	-	-	39	39	-	100.00%
Service Z	33	33	-	-	-	-	33	33	-	100.00%
Pathology	39,551	39,551	-	15,732	21,901	633	1,285	39,551	-	100.00%
Service ED	20,649	20,649	-	-	20,649	-	-	20,649	-	100.00%
Service NAP Agg	605	605	-	-	-	605	-	605	-	100.00%
Theatre Anaesthetic_Nurse	2,255	2,255	-	2,253	-	-	2	2,255	-	100.00%
Theatre Surgery_Nurse	2,336	2,336	-	2,334	-	-	2	2,336	-	100.00%
Transfers 06/10/2015	16,370	16,370	-	16,370	-	-	-	16,370	-	100%
Diagnosis 06/10/2015	31,116	31,116	-	31,116	-	-	-	31,116	-	100%
Procedure 06/10/2015	13,366	13,366	-	13,366	-	-	-	13,366	-	100%

Source: KPMG based on data supplied by the Far West LHD and NSW Health

The following should be noted about the feeder data represented in Table 20 at Far West LHD:

- There are currently 14 feeders used from a range of hospital source systems and they represent major hospital departments providing resource activity.
- All feeder linking rules are reviewed on an individual-feeder basis and are informed by rules listed in the CAG, wherever possible. Once the linking has occurred, linking percentages are compared with prior linking results to identify any major variations. Variations are reviewed for data quality issues or to inform linking rule updates.

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- The number of records linked to admitted, emergency, non-admitted and other patients had a 100 percent link or match. This suggests that there is robustness in the level of feeder activity reported back to episodes.
- Other records include records that linked to system-generated encounters or the non-patient level encounters.

4.3.5 Treatment of WIP

Table 21 demonstrates models for WIP and its treatment in Far West LHD's Round 19 NHCDC submission.

Table 21 – WIP – Far West LHD

Model	Description	Submitted to Round 19 NHCDC
1	Cost for patients admitted and discharged in 2014-15 only	Submitted to Round 19 of the NHCDC
2	Costs for patients admitted prior to 2014-15 and discharged in 2014-15	Submitted to Round 19 of the NHCDC. Costs are submitted for 2013-14.
3	Costs for patients admitted prior to or in 2014-15 and remain admitted at 30 June 2015	Not submitted to Round 19 of the NHCDC

Source: KPMG, based on the Far West Local Health District templates and review discussions

In summary, Far West LHD submitted costs for admitted and discharged patients in 2014-15 and WIP costs for those patients admitted in 2013-14, but discharged, in 2014-15.

Escalation factor

NSW Health did not apply the escalation factors to the costs associated with WIP from prior years in the Round 19 NHCDC submission for Far West LHD.

4.3.6 Critical care

Far West LHD does not have critical care units designated greater than Level 1.

4.3.7 Costing public and private patients

Far West LHD costing staff indicated that the costing of private patients follows the guidelines specified in the CAG. The costing methodology incorporates relative value units for private patients ensuring no VMO payments are allocated to private patients. Salaried Medical Officer and Junior Medical Officer staff salary and wages are allocated to both public and private patients with no adjustments for private patients.

4.3.8 Treatment of specific items

A number of items were discussed during the review to understand their treatment in the costing process as the cost data is used to inform the NEP and specific funding model adjustments for particular patient cohorts. Far West LHD's treatment of each of the items is summarised below.

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Table 22 – Treatment of specific items – Far West LHD

Item	Treatment
Research	Far West LHD have no research costs to report.
Teaching and Training	Where direct Teaching and Training expenditure can be identified, it is mapped to a Teaching and Training area. A fraction review is undertaken to identify where Teaching and Training expenditures are embedded within cost centres and this expenditure is mapped to a Teaching and Training area. All Teaching and Training expenditure is then mapped to a non-patient encounter. NSW Health excluded these from the NHCDC submission.
Shared/Other commercial entities	Far West LHD does not operate shared or commercial facilities.

Source: KPMG, based on IFR discussions

4.3.9 Sample patient data

IHPA selected a sample of five patients from the Far West LHD for the purposes of testing the data flow from jurisdictions to IHPA at the patient level. NSW Health provided the patient level costs for all five patients and these reconciled to IHPA records. The results are summarised in Table 23.

Table 23 – Sample patients – Far West LHD

#	Product	Jurisdiction Records	Received by IHPA	Variance
1	Acute	$560.12	$560.12	-
2	Acute	$372.24	$372.24	-
3	Palliative CD	$4,175.80	$4,175.80	-
4	Admitted ED	$1,473.57	$1,473.57	-
5	Non-Admitted	$89.50	$89.50	-

Source: KPMG, based on the Far West LHD and IHPA data

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4.4 Sydney Local Health District

4.4.1 Overview

Sydney Local Health District (Sydney LHD) is responsible for all public hospitals and healthcare facilities in the central Sydney metropolitan area from Balmain to Canterbury. Hospitals included in the Sydney LHD are listed below:

- Balmain Hospital
- Canterbury Hospital
- Concord Repatriation General Hospital
- Royal Prince Alfred Hospital
- Sydney Dental Hospital.

The Sydney LHD employs over 11,000 staff members (approximately 7,000 full time equivalents).

Sydney LHD supports the healthcare of populations in other LHDs, States across Australia and other countries through research, education and the provision of tertiary referral services. A sample of the specialty services provided by the Sydney LHD includes:[7]

- Aboriginal Health
- Allied Health
- Community Health
- Drug Health
- Mental Health
- Population Health
- Nursing and Midwifery
- Aged Care, Rehabilitation and General Medicine
- Cancer Services
- Cardiovascular Services
- Critical Care
- Gastro and Liver Services
- Medical Imaging Services
- Neurosciences, Bone and Joint, Plastics and Trauma Surgery
- Women's Health, Neonatology and Paediatrics
- Oral Health.

[7] Sydney LHD – accessed 16 June 2016

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Overview of the costing process

Costing staff at Sydney LHD advised that they cost according to the DNR process. The CAG is used as a reference for all costing guidelines and informs methodology. The GL is extracted and reconciled to annual financial results for the LHD.

The preparation and loading of the activity and feeder data uses combined sources. Sydney LHD's PAS uploads data to the HIE on a nightly basis and is then extracted from the HIE using the Extractor when required. Non-admitted data is sourced from the NAP Datamart. Feeder data is sourced from a range of departments across the LHD. The standardised databases for operating theatres, imaging and pharmacy are used to format the feeder data for loading into PPM. Costing staff liaise with departmental managers across the LHD to optimise both feeders and the quality of data within them.

Once activity and feeder data is loaded, a series of internal checks are undertaken for both format and data quality. Examples of checks include patients with a duration that is less than 20 minutes, missing specialties, and ward stays for greater than a year. These checks are returned to the relevant departmental managers for correction in source systems.

Facility champions for costing (usually facility finance managers and performance unit managers) are identified and Sydney LHD costing staff train these facility champions in the cost centre review process. The facility champions for costing meet with cost centre managers or clinical managers to discuss the split of expenditure across various departments to inform various reclass rules applied in PPM. The cost centre review is undertaken annually.

Draft DNRs are reviewed for quality with a range of stakeholders within Sydney LHD including the Director of Finance and the Chief Executive. Stakeholders examine costs between financial years and benchmark to jurisdictional averages. Adjustments are made, where relevant and a final DNR is prepared.

The Chief Executive at Sydney LHD is the signatory of the final reconciled DNR submission to NSW Health.

4.4.2 Financial data

For the Round 19 IFR, NSW Health completed the data collection templates on behalf of the Sydney LHD. Representatives from NSW Health attended and participated in the consultation process during the review, as well as senior costing staff from the Sydney LHD.

Table 24 reflects a summary of the Sydney LHD's costs, from the original extract from the GL through to the final NHCDC submission for the Sydney LHD for Round 19.

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Table 24 – Round 19 NHCDC Reconciliation – Sydney LHD

Hospital/LHD - local organisation			
Item		**Amount**	**% of GL**
A General Ledger (GL)	$	1,530,641,408	
B Adjustments to the GL			
Inclusions	$	19,970,280	
Exclusions	$	-	
Total hospital expenditure	**$**	**1,550,611,689**	*101.30%*
C Allocation of Costs			
Post Allocation Direct amount	$	1,177,360,989	
Post Allocation Overhead amount	$	373,250,699	
Total hospital expenditure	**$**	**1,550,611,689**	*101.30%*
Variance	***$***	*-*	*0.00%*
D Post Allocation Adjustments			
Nil	$	-	
Total expenditure allocated to patients	**$**	**1,550,611,689**	*101.30%*
E Costed products submitted to jurisdiction			
Acute and Newborns	$	820,897,767	
Non-admitted	$	133,701,846	
Emergency	$	96,460,130	
Sub Acute	$	53,334,877	
Mental Health	$	-	
Other	$	354,147,399	
Research	$	-	
Teaching & Training	$	92,069,670	
	$	**1,550,611,688**	*101.30%*
Variance	***$***	*(0)*	*0.00%*

Jurisdiction		
Item		**Amount**
F Costed Products received by jurisidction	$	1,550,611,688
Variance	***$***	*-*
G Final Adjustments		
WIP from prior years	$	29,172,180
Non-ABF facilities	$	(227,920,887)
Teaching, Training and Research	$	(92,069,670)
Non-patient level products in ABF facilities	$	(134,773,266)
Non-patient products in ABF facilities	$	(5,254,207)
Round 19 WIP	$	(34,781,855)
Unlinked records	$	(31,161,961)
Total costs submitted to IHPA	**$**	**1,053,822,022**
H Costed products submitted to IHPA		
Acute and Newborns	$	807,066,711
Non-admitted	$	105,510,568
Emergency	$	89,893,658
Sub Acute	$	51,058,028
Mental Health	$	-
Other	$	293,058
Research	$	-
Teaching & Training	$	-
	$	**1,053,822,023**
Variance	***$***	*1*

IHPA		
Item		**Amount**
I Total costed products received by IHPA	$	1,053,822,023
Variance	***$***	*0*
J IHPA Adjustments		
Admitted ED reallocations	$	49,520,271
Final NHCDC costs	**$**	**1,103,342,294**
K Final NHCDC costed products		
Acute^ and Newborns	$	856,410,425
Non-admitted	$	105,510,568
Emergency	$	89,893,658
*Sub Acute^*	$	51,058,662
Mental Health	$	-
Other	$	468,982
Research	$	-
Teaching & Training	$	-
	$	**1,103,342,294**
Variance	***$***	*(0)*

Source: KPMG based on data supplied by Sydney LHD, jurisdiction and IHPA

^ These figures include admitted emergency costs.

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Explanation of reconciliation items

This section discusses each of the reconciliation items including adjustments, inclusions and exclusions to the financial data. The information is based on the templates submitted for Sydney LHD and face-to-face review discussions.

Item A – General Ledger

The final GL amount loaded to the NSW costing system for the LHD totalled $1.531 billion. This amount reflected the total expenditure for the Sydney LHD. A minor variance of $408 was noted between the total expenditure reported in the 2014-15 audited financial statements for the Sydney LHD and the final GL used for costing (0.00003 percent of the expenditure in the audited financial statements).

Item B – Adjustments to the GL

Inclusions made to the GL totalled $19.97 million. ABF Taskforce advise the LHD/SHNs of the total for medical indemnity insurance as this expense is held centrally by NSW. The items for Sydney LHD are summarised below:

- Medical indemnity insurance – $17.82 million
- VMO indemnity insurance – $2.15 million.

The basis of these adjustments appears reasonable.

These adjustments established an expenditure base for costing of $1.551 billion. This was approximately 101.3 percent of total expenditure reported in the GL (note this percentage is greater than 100 percent due to the fact that the jurisdiction holds costs outside of the health services GL e.g. indemnity insurance).

Item C – Allocation of costs

The Sydney LHD undertakes a process of reclass/transfers between cost centres.

- It was observed that the total of all direct cost centres of $1.177 billion was allocated post allocation.
- It was observed through the templates that overheads of $373.25 million were allocated to direct cost centres, post allocation.

These amounted to $1.551 billion and reflected the total expenditure for the Sydney LHD. No variance was identified between Item B and Item C.

Item D – Post Allocation Adjustments

Sydney LHD did not make post allocation adjustments.

The total expenditure allocated to patients for Sydney LHD was $1.551 billion, which represented approximately 101.3 percent of the GL.

Item E - Costed products submitted to jurisdiction

Costs submitted to the jurisdiction and reported at product level totalled $1.551 billion. Costs were allocated to all products with the exception of Mental Health and Research. Mental Health and Research were reported in the Other product category. No variance was identified between Item D and Item E.

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Item F – Costed products received by the jurisdiction

Costed products received by the jurisdiction totalled $1.551 billion (Item E). Costs by product received by the jurisdiction was $1.551 billion (Item F). No variance was noted between Items E and F, which indicates that no data was lost in the transmission of costs from the hospital to the jurisdiction.

Item G – Final adjustments

NSW Health makes adjustments the LHD submission prior to submitting to the NHCDC. The adjustments made for Round 19 totalled $496.79 million and included:

- WIP from prior years totalling $29.17 million was included
- ABF Facility Round 19 WIP totalling $34.78 million excluded
- Non ABF Facilities totalling $227.92 million excluded
- Teaching and Research totalling $92.07 million excluded
- Non Patient Level activity (aggregate activity) in ABF Facilities totalling $134.78 million excluded
- Out of scope products in ABF Facilities totalling $5.25 million excluded
- NHCDC Validation and linking exceptions totalling $31.16 million excluded.

The basis of these adjustments appears reasonable. However, the exclusion of Teaching, Training and Research may impact on the completeness of the NHCDC. It is understood that NSW Health will submit Teaching, Training and Research (TTR) costs to the NHCDC following the completion of IHPA's TTR project. In addition, NSW Health should investigate the reasons for unlinked activity to the NHCDC to ensure appropriate treatment in future rounds.

Item H – Costed products submitted to IHPA

Costs derived by the jurisdiction and reported at product level to IHPA totalled $1.054 billion. A minor $1 variance was noted between Items G and H.

Item I – Total products received by IHPA

Total costed products received by IHPA totalled $1.054 million.

Item J – IHPA adjustments

- *Admitted emergency*

  Upon receipt of cost data, IHPA allocates the admitted emergency costs back to admitted patients for the purposes of reporting and analysis. Within IHPA's reconciliation, this amount was a duplication of admitted emergency costs and not an additional cost. For Sydney LHD this amounted to $49.52 million.

- *Unqualified Baby Adjustment*

  Upon receipt of cost data, IHPA redistributes the unqualified baby cost to the mother separation to provide a complete delivery cost. Within IHPAs reconciliation, this was not an additional cost but a movement between patients.

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Item K – Final NHCDC Costed Outputs

The final NHCDC costed data for Sydney LHD that was loaded into the National Round 19 cost data set was $1.103 billion, which included the admitted emergency cost of $49.52 million.

4.4.3 Activity data

Table 25 presents patient activity data based on source and costing systems for the Sydney LHD. This activity data is then compared to Table 26 which highlights the transfer of activity data by NHCDC product from the Sydney LHD to NSW Health and then through to IHPA submission and finalisation.

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Table 25 – Activity data – Sydney LHD

Activity Data	# Records from Source	# Records in costing system	Variance	# Records linked to Admitted	# Records linked to Emergency	# Records linked to Non-admitted	# Records linked to Other	Total Linking Process	# Unlinked records
Inpatient	153,613	153,613	-	153,613	-	-	-	153,613	-
Emergency	151,831	151,831	-	-	151,831	-	-	151,831	-
Outpatients	544,274	544,274	-	-	-	544,274	-	544,274	-
Z Encounters – non patient level, non ABF and system-generated activity data	16,177	16,177		-	-	-	16,177	16,177	-
TOTAL	**865,895**	**865,895**	**-**	**153,613**	**151,831**	**544,274**	**16,177**	**865,895**	**-**

Source: KPMG based on data supplied by the Sydney LHD and NSW Health

Table 26 – Activity data submission – Sydney LHD

Product	Activity related to 2014-15 Costs	Adjustments	Activity submitted to jurisdiction	Adjustments	Activity submitted to IHPA	Activity received by IHPA	Adjustments	Total Activity submitted for Round 19 NHCDC
Acute and Newborns	148,722	-	148,722	(4,466)	144,256	144,256	(22)	144,234
Non-admitted	544,274	-	544,274	(38,719)	505,555	505,555	-	505,555
Emergency	151,831	-	151,831	(6,141)	145,690	145,690	-	145,690
Sub Acute	4,882	-	4,882	(232)	4,650	4,650	-	4,650
Mental Health	-	-	-	-	-	-	-	-
Other	97,881	-	97,881	(97,874)	7	7	-	7
Research	-	-	-	-	-	-	-	-
Teaching and Training	33	-	33	(33)	-	-	-	-
Total	**947,623**	**-**	**947,623**	**(147,465)**	**800,158**	**800,158**	**(22)**	**800,136**

Source: KPMG based on data supplied by the Sydney LHD, NSW Health and IHPA

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The following should be noted about the transfer of activity data in Table 26 for the Sydney LHD:

- There was a variance between the number of records from source systems, detailed in Table 25 (865,895 records) and activity related to 2014-15 costs by NHCDC product in Table 26 (947,623 records) of 81,728 records. The variance related to system-generated encounters being created when feeder data does not link to an Activity file.
- The Sydney LHD does not adjust the activity data.
- Adjustments made by NSW Health related to the activity associated with the excluded costs (refer to Item G in the reconciliation). These records related to WIP activity, non-ABF facility encounters, non-patient level encounters, non-patient products and records with validation or linking issues.
- The adjustment made by IHPA to the Acute and Newborns product related to the UQB adjustment discussed in Item J of the explanation of reconciliation items.
- Adjustments made by IHPA related to admitted emergency reallocations are for reporting and analysis purposes (as discussed in Item J of the explanation of reconciliation items) and have no impact on the reported activity.

4.4.4 Feeder data

Table 27 reflects data associated with patient feeder data for the Sydney LHD.

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Table 27 – Feeder data – Sydney LHD

Feeder Data	# Records from Source	# Records in costing system	Variance	# Records linked to Admitted	# Records linked to Emergency	# Records linked to Non-admitted	# Records linked to Other	Total Linking Process	# Unlinked records	% Linked
Service Z	15	15	-	-	-	-	15	15	-	100%
Anaesthesia	20,197	20,197	-	20,175	-	-	22	20,197	-	100%
Imaging	125,456	125,456	-	37,766	53,377	12,345	21,968	125,456	-	100%
Service Z	3	3	-	-	-	-	3	3	-	100%
Prosthesis - Coded	13,452	13,452	-	13,452	-	-	-	13,452	-	100%
OTD 2015-	96	96	-	96	-	-	-	96	-	100%
Pharmacy Disp NonED	246,468	246,468	-	204,638	-	16,432	25,396	246,466	2	100%
Imaging	103	103	-	5	-	-	98	103	-	100%
Pathology	595,771	595,771	-	198,137	42,050	205,382	150,202	595,771	-	100%
Renal Transplant	35	35	-	35	-	-	-	35	-	100%
Service Z	1	1	-	-	-	-	1	1	-	100%
Theatre	1	1	-	1	-	-	-	1	-	100%
Prosthesis	43,746	43,746	-	43,722	-	-	-	43,722	24	99.9%
Service Z	245	245	-	-	-	-	245	245	-	100%
Service NAP	4	4	-	-	-	4	-	4	-	100%
Pharmacy Disp ED	3,113	3,113	-	150	2,674	-	289	3,113	-	100%
Imaging	7,689	7,689	-	1,492	37	338	5,821	7,688	1	100%
Prosthesis	6	6	-	6	-	-	-	6	-	100%
Service ED	151,401	151,401	-	-	151,401	-	-	151,401	-	100%
Pathology	689,033	689,033	-	463,833	188,847	16,117	20,236	689,033	-	100%
Cardiac Catheter - RPA	3,021	3,021	-	1,717	-	1,088	216	3,021	-	100%
Prosthesis	27,446	27,446	-	27,446	-	-	-	27,446	-	100%
Service NAP	52	52	-	-	-	-	52	52	-	100%

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Feeder Data	# Records from Source	# Records in costing system	Variance	# Records linked to Admitted	# Records linked to Emergency	# Records linked to Non-admitted	# Records linked to Other	Total Linking Process	# Unlinked records	% Linked
Service NAP	650,045	650,045	-	-	-	647,559	2,486	650,045	-	100%
Service Z	1	1	-	-	-	-	1	1	-	100%
Service NAP	4	4	-	-	-	4	-	4	-	100%
Pathology - MH	30,981	30,981	-	30,487	-	-	494	30,981	-	100%
Service NAP	15,995	15,995	-	-	-	-	15,995	15,995	-	100%
Pathology	724,902	724,902	-	497,818	185,094	18,380	23,610	724,902	-	100%
Anaesthesia	1	1	-	1	-	-	-	1	-	100%
Recovery	20,138	20,138	-	20,117	-	-	21	20,138	-	100%
Blood	48,480	48,480	-	33,642	2,680	8,757	3,400	48,479	1	100%
Cardiac Catheter - CRGH	1,474	1,474	-	1,474	-	-	-	1,474	-	100%
Theatre	18,953	18,953	-	18,922	-	-	31	18,953	-	100%
Pathology	585,363	585,363	-	190,337	43,265	202,171	149,590	585,363	-	100%
Anaesthesia	17,173	17,173	-	17,142	-	-	31	17,173	-	100%
Recovery	18,073	18,073	-	18,046	-	-	27	18,073	-	100%
Imaging	140,041	140,041	-	59,962	47,005	13,338	19,736	140,041	-	100%
Theatre	20,192	20,192	-	20,170	-	-	22	20,192	-	100%
Transfers	373,492	373,492	-	373,492	-	-	-	373,492	-	100%
Diagnosis	619,283	619,283	-	619,283	-	-	-	619,283	-	100%
Procedure	289,872	289,872	-	289,872	-	-	-	289,872	-	100%

Source: KPMG based on data supplied by the Sydney LHD and NSW Health

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The following should be noted about the feeder data in Table 27 for Sydney LHD:

- There are currently 42 feeders used from a range of hospital source systems and they appear to represent major hospital departments providing resource activity.
- The LHD's PAS uploads data to the NSW Health Information Exchange (HIE) on a monthly basis.
- There is a range of standardised feeder systems across the hospitals departmental units within the LHD. Costing staff liaise with departmental managers across the LHD to optimise both feeders and the quality of data within them.
- All feeder linking rules are reviewed on an individual-feeder basis and are informed by rules listed in the CAG, wherever possible.
- The number of records linked to admitted, emergency, non-admitted and other patients had a greater than 99 percent link or match. This suggests that there is robustness in the level of feeder activity reported back to episodes.
- Other records refer to records that link to system-generated encounters or the non-patient level encounters.

4.4.5 Treatment of WIP

Table 28 demonstrates models for WIP and its treatment in the Sydney LHD's Round 19 NHCDC submission.

Table 28 – WIP – Sydney LHD

Model	Description	Submitted to Round 19 NHCDC
1	Cost for patients admitted and discharged in 2014-15 only	Submitted to Round 19 of the NHCDC
2	Costs for patients admitted prior to 2014-15 and discharged in 2014-15	Submitted to Round 19 of the NHCDC. Costs are submitted for 2012-13 and 2013-14.
3	Costs for patients admitted prior to or in 2014-15 and remain admitted at 30 June 2015	Not submitted to Round 19 of the NHCDC

Source: KPMG, based on the Gold Coast Hospital templates and review discussions

In summary, Sydney LHD submitted costs for admitted and discharged patients in 2014-15 and WIP costs for those patients admitted in 2013-14, but discharged, in 2014-15.

Escalation factor

NSW Health did not apply the escalation factors to the costs associated with WIP from prior years in the Round 19 NHCDC submission for Sydney LHD.

4.4.6 Critical care

Sydney LHD has a critical care mix of Intensive Care Units (ICU's) and High Dependency Units (HDU's) across the LHD. The expenditure is reported in a critical care cost centre (HDU/ICU). The PAS ward transfer activity data extracted from the HIE separately identifies ICU and HDU hours

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based on the reported bed type. Service codes are built for each critical care area incorporating the bed type detail, and ICU and HDU RVUs are used to allocate critical care costs.

The process described by Sydney LHD for costing critical areas indicates that intensive care and high dependency unit areas can be separately identified. Critical care costs are captured in accordance with the applicable standard.

4.4.7 Costing public and private patients

Sydney LHD costing staff indicated that the costing of private patients follows the guidelines specified in the CAG. The costing methodology incorporates relative value units for private patients ensuring no VMO payments are allocated to private patients. Salaried Medical Officer and Junior Medical Officer staff salary and wages are allocated to both public and private patients with no adjustments for private patients.

4.4.8 Treatment of specific items

A number of specific items were discussed during the consultation phase of the review to understand the manner in which they are treated in the costing process. These items are used to inform the NEP and specific funding model adjustments for particular patient cohorts. The Sydney LHD's treatment of each of the items is summarised below.

Table 29 – Treatment of specific items – Sydney LHD

Item	Treatment
Research	Where direct Research expenditure can be identified, it is mapped to a research area. A fraction review is undertaken to identify where research expenditures are embedded within cost centres and this expenditure is mapped to a research area. All research expenditure is then mapped to a non-patient encounter. NSW Health excluded these from the NHCDC submission.
Teaching and Training	Where direct Teaching and Training expenditure can be identified, it is mapped to a Teaching and Training area. A fraction review is undertaken to identify where Teaching and Training expenditures are embedded within cost centres and this expenditure is mapped to a Teaching and Training area. All Teaching and Training expenditure is then mapped to a non-patient encounter. NSW Health excluded these from the NHCDC submission.
Shared/Other commercial entities	Sydney LHD identified that the childcare facility and the cafeteria are considered commercial entities. This expenditure is excluded by the LHD by allocating it to a non-patient product.

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Item	Treatment
	Shared services across the LHD include Information Technology and this expenditure is split to the various facilities.

Source: KPMG, based on IFR discussions

4.4.9 Sample patient data

IHPA selected a sample of five patients from the Sydney LHD for the purposes of testing the data flow from jurisdictions to IHPA at the patient level. NSW Health provided the patient level costs for all five patients and these reconciled to IHPA records. The results are summarised in Table 30.

Table 30 – Sample patients – Sydney LHD

#	Product	Jurisdiction Records	Received by IHPA	Variance
1	Border	$4,789.61	$4,789.61	-
2	Acute	$903.19	$903.19	-
3	Acute	$352.57	$352.57	-
4	Non-Admitted ED	$225.52	$225.52	-
5	Non-Admitted	$386.08	$386.08	-

Source: KPMG, based on the Sydney LHD and IHPA data

4.5 Application of AHPCS Version 3.1

The following section summarises the NSW Health's application of selected standards from Version 3.1 of the AHPCS (outlined in Appendix B) to the Round 19 NHCDC submission.

4.5.1 SCP 1.004 – Hospital Products in Scope

NSW Health representatives and LHD costing staff demonstrated through the templates and interview process that costs are reported against all products.

It was noted that costs are reported for non-patient products (such as commercial entities) which are not submitted to the NHCDC. Teaching, Training and Research products are assigned costs by the LHD and submitted to NSW Health, but are attached to non–patient encounters. NSW Health excludes non-patient products and non-patient level encounters from the NHCDC submission.

4.5.2 SCP 2.003 – Product Costs in Scope

LHD costing staff and NSW Health representatives discussed the NSW reconciliation process for financial data used for costing purposes and fully populated templates to demonstrate products costed.

At the LHD level, it was demonstrated that all products are costed. This includes all products in scope for the NHCDC both at a patient level and non-patient level and where appropriate, non-patient products.

For private patient costs, both LHD costing staff and NSW Health staff indicated that all LHDs in NSW cost according to the NSW costing guidelines. It was noted in the templates completed for

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each LHD reviewed that no VMO costs were assigned to private patients, as VMO costs related solely to public patients.

4.5.3 SCP 2B.002 - Research Costs

At the LHD level, if direct research expenditure can be identified it is mapped to a research area. Embedded research is fractioned out and reclassed to the research area. All research expenditure is then mapped to a non-patient encounter. These encounters were submitted to NSW Health who then excluded them from the Round 19 NHCDC submission.

4.5.4 SCP 3.001 - Matching Production and Cost

All three LHD's provided reclass and transfer detail in the templates. The application of this standard was demonstrated during the interview process including discussion of examples.

4.5.5 SCP 3A.001 - Matching Production and Cost – Overhead Cost Allocation

All three LHD's demonstrated that overhead costs were fully allocated to direct patient care areas via the pre allocation and post allocation data included in the templates.

LHD Costing staff also demonstrated the order of preference for overhead allocation listed in the CAG. NSW Health staff indicated that these preferences are based on the AHPCS Version 3.1.

4.5.6 SCP 3B.001 - Matching Production and Cost – Costing all Products

The application of this standard was demonstrated in the templates for each of the three LHD's. NSW Health provided an overview of their internal reconciliation process that demonstrated the allocation of costs to products.

It should be noted that NSW LHDs cost to the CAG. Whist LHDs noted they assigned teaching, training and research costs to non-patient encounters, these were not reported to the NHCDC.

4.5.7 SCP 3C.001 - Matching Production and Cost – Commercial Business Entities

LHD costing staff indicated that where commercial entities existed, the expenditure was allocated to a non-patient product. Costs in relation to commercial and shared entities were treated in accordance with the standard.

4.5.8 SCP 3E.001 - Matching Production and Cost – Offsets and Recoveries

No offsets were presented in the final templates. All three LHDs indicated that revenue is not offset against costs in accordance with the CAG and the applicable standard.

4.5.9 SCP 3G.001 – Matching Production and Cost – Reconciliation to Source Data

NSW Health representatives demonstrated the NSW reconciliation process for financial and activity data used for costing purposes. The process appears robust. This was further verified in the completion of the templates used in this review.

4.5.10 GL 2.004 - Account Code Mapping to Line Items

The purpose of this standard is to ensure that all cost data can be mapped to standardised line items for both NHCDC collection and comparative purposes.

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NSW Health demonstrated reconciled costs by line item as indicated in this standard.

4.5.11 GL 4A.002 – Critical Care Definition

Two of the three LHDs participating in this review indicated that they had critical care areas comprising dedicated ICU's and HDU's. The expenditure is reported in a critical care cost centre (HDU/ICU).

The PAS ward transfer activity data extracted from the HIE separately identifies ICU and HDU hours based on the reported bed type.

Service codes are then built incorporating the bed type and enables the allocation on critical care costs using the ICU/HDU RVUs. All areas are mapped to critical care as specified in this standard.

4.5.12 COST 3A.002 – Allocation of Medical Costs for Private and Public Patients

All three LHDs indicated that costing of private patients follows the guidelines specified in the CAG.

The costing methodology incorporates relative value units for private patients ensuring no VMO payments are allocated to private patients. Salaried Medical Officer and Junior Medical Officer staff salary and wages are allocated to both public and private patients with no adjustments for private patients.

4.5.13 COST 5.002 - Treatment of Work-In-Progress Costs

Patients are allocated costs based on their consumption of resources for that reporting period. Costs are incurred in prior years they are included in the NHCDC submission. In Round 19, this included costs from both 2012-13 and from 2013-14. NSW Health includes these WIP costs. These costs were not escalated in the Round 19 NHCDC submission to ensure consistency with other jurisdictions.

4.6 Conclusion

The findings of the NSW Round 19 IFR are summarised below:

- For the first time in Round 19, the ABF Taskforce instituted DNR teleconferences with each LHD/SHN Chief Executive to discuss cost data results prior to final DNR.
- LHD/SHN Internal Audit teams conducted a mandatory DNR Audit on the 2014-15 DNR Submission. Attestation Certificates were received from all LHD/SHN Chief Executives indicating that 'effective systems of internal control exist to ensure that the DNR information is true and fair in all material respects'. This audit is now one of the Conditions of Subsidy.
- The financial reconciliation for each of the sampled LHDs demonstrates the transformation of cost data from the original GL extract through to the final NHCDC submission for the LHD. LHDs include costs such as medical indemnity insurance and shared services. All LHD expenditure is uploaded to the costing system to generate patient/encounter or non-patient product costs.
- Upon submission of the DNR, NSW Health transforms the data for submission to the NHCDC. This incorporates the inclusion of WIP costs for patients admitted prior to and discharged in Round 19. Some major exclusions of data prior to NHCDC submission included

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encounters from non-ABF facilities, non-patient level and non-patient product encounters from ABF facilities and encounters with data quality or linking issues.

- The basis of the adjustments at all LHDs appears reasonable. However, the exclusion of Teaching, Training and Research may impact on the completeness of the NHCDC. It is understood that NSW Health will submit Teaching, Training and Research (TTR) costs to the NHCDC following the completion of IHPA's TTR project. In addition, NSW Health should investigate the reasons for unlinked activity to the NHCDC to ensure appropriate treatment in future rounds.
- The LHDs reviewed, have a strong focus on data quality cleansing activity and ensuring episodes link appropriately. Linking rule analysis was undertaken to review linking rules with each LHDs during 2015 to seek greater precision in linking of encounter and feeder data to improve costing results.
- WIP was treated in accordance with the COST 5.002 of the AHPCS Version 3.1. NSW Health included WIP costs for patients admitted in 2012-13 or 2013-14, and discharged in 2014-15. NSW Health did not apply any escalation factors to the costs associated with WIP for prior years as part of the Round 19 submission to the NHCDC to ensure consistency with other jurisdictions. Escalation
- The five sample patients selected for review for Central Coast LHD, Far West LHD and Sydney LHD reconciled to IHPA records.

Based on discussions held during the site visits, and a review of the financial reconciliations provided, NSW Health has robust reconciliation processes in place. As such, nothing was identified to suggest that the financial data is not fit for NHCDC submission. Furthermore, the data flow from the jurisdiction to IHPA demonstrated no unexplained variances.

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5. Northern Territory

5.1 Jurisdictional overview

5.1.1 Management of NHCDC process

The Northern Territory Department of Health (NT Health), through the Activity Based Funding (ABF) team, is responsible for the processing, reconciliation and submission of National Hospital Cost Data Collection (NHCDC) data for all hospitals in the NT. This is consistent with the approach used in prior rounds of the NHCDC submission and ensures that there is a consistent approach applied to costing for all NT hospitals. NT Health adopted the Power Performance Manager (PPM2) system for costing of Territory hospitals in Round 18. Round 19 is the second year this system has been used to cost hospitals in the NT.

Local Health Networks (LHNs) are responsible for the capture and maintenance of financial data in the hospital general ledger (GL). The hospital financial data is signed-off and submitted to NT Health via the LHN. NT Health includes expenditure related to employee leave liabilities (annual leave and long service leave) as these liabilities are held centrally by the NT Department of Treasury.

Hospitals are responsible for recording activity data in the relevant system, e.g. the Patient Administration System (PAS). Activity data is extracted to a central NT Health data warehouse. There is a quality assurance process undertaken by the LHN and NT Health. Product fractioned (PFRAC) data is reviewed by cost centre at the hospital and LHN level, prior to submission to NT Health.

Alice Springs Hospital was selected for review as part of the Round 19 Independent Financial Review (IFR).

Overview of the costing process

Hospitals in the NT do not have a costing function. The costing function is undertaken by NT Health staff and supported by PowerHealth Solutions, with patient level costing conducted on an annual basis. NT Health Finance provides a GL extract to the ABF team. The GL is reconciled to final financial results for the hospital. Any adjustments made to the total operating expenditure are made by the ABF team as advised by NT Health Finance.

The preparation and loading of the activity and feeder data uses combined sources. Activity information for admitted, emergency and non-admitted patients is sourced directly from the Data Management and System Reporting Branch. Feeder data is sourced from the hospital. The ABF team source some feeders directly, whilst for others they will make contact with Departmental staff within the hospital and request a feeder extract. Once loaded, a series of internal quality checks are undertaken for both format and data quality. The data is formatted to the requirements of PPM2 and linking occurs within this costing system.

NT Health improved linking rules upon implementation of the new costing system and continues to refine them. During the interview process, staff from the ABF team noted that, where possible, linking rules were deployed to link records using hours, then days to enable greater linking percentages. Where possible, all feeder linking rules are reviewed on an individual feeder basis. Once linking has occurred, the proportions linked are reviewed with prior linking results to check

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for any major variations. Where variations occur, these are reviewed for data quality issues or to inform linking rule updates.

A product fraction review is undertaken to inform the various reclassification rules applied in PPM2. Work has commenced in high cost areas such as patient transport and accommodation. Work also continues in ensuring greater specificity in mapping expenditure to specialities. The assumptions of these linking rules are further reviewed upon completion of the draft costing results. Where there are significant cost differences compared to the prior year, the assumptions underlying the reclassification rules are further examined.

Prior to submitting NHCDC data to IHPA, NT Health undertakes a number of quality assurance procedures prior to sign-off of the final file by the Chief Operating Officer, Corporate Services Bureau. The Quality Reports provided by IHPA are also used to assess results.

Key initiatives since Round 18 NHCDC

Round 18 was the first year the NT submitted data using PPM2. The primary focus for Round 19 was improving the costing methodology to be in line with the Australian Hospital Patient Costing Standards (AHPCS) Version 3.1. Some of the key initiatives since Round 18 include:

- Improvements to allocation statistics for overhead costs. For example, in Round 18, total expenditure was applied as an allocation statistic for a number of overhead areas, whereas in Round 19, there was an adoption of the order of preference as per the AHPCS Version 3.1.
- Increased education for hospitals in relation to potential feeders that inform the costing process. As a result, the following changes for Round 19 occurred:
    - Blood products had a separate feeder and costs were allocated directly; and
    - Ambulance costs were directly allocated in Round 19, compared to allocation as an overhead in Round 18.

The jurisdiction reported that the costs across product categories had changed between Round 18 to Round 19, following a change in the overhead allocation methodology to better reflect overhead usage. Focus for Round 19 and beyond will be to continue overhead refinements, but to also commence work on reviewing direct care costs.

5.2 Alice Springs Hospital

5.2.1 Overview

Alice Springs Hospital is the specialist referral centre for Central Australia. It has 186 beds, and serves up to 60,000 people including visitors to the region. It is the only major secondary referral hospital in Central Australia with a catchment area that covers approximately 1.6 million square kilometres and supports people residing in the Northern Territory, in remote communities in northern South Australia and in the south west of Western Australia. In the 2014-15 year, Alice Springs Hospital employed 156 Full Time Equivalent staff. The Alice Springs Hospital provides a range of specialist services including:

- General Medicine
- Intensive Care
- Rehabilitation medicine

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- Anaesthesia
- Palliative care medicine
- Psychiatry
- Nephrology
- Paediatrics
- Emergency Medicine
- Obstetrics and Gynaecology
- Surgery (including Ophthalmology, ENT and Orthopaedics)

Alice Springs Hospital is a teaching hospital, and a campus of the Northern Territory Clinical School of the Flinders University of South Australia. It is accredited by the Northern Territory Postgraduate Medical Council on behalf of the Medical Board of the Northern Territory for intern and junior medical officer training, and has an active clinical training program. It provides clinical training opportunities and experience relevant to rural general practice, and is an affiliated teaching hospital of the Universities of Sydney, New South Wales and Queensland. There is also a strong culture of research and the hospital works closely with Flinders University and Baker IDI[8].

5.2.2 Financial data

Representatives of NT Health and PowerHealth Solutions completed the relevant IFR templates. Both these representatives participated in consultations for the Round 19 IFR.

Table 31 presents a summary of the Alice Springs Hospital's costs, from the original extract from the GL for all LHNs in the NT, through to the final NHCDC submission for the Alice Springs Hospital for Round 19.

[8] Alice Springs Hospital - *Accessed 15 June 2016*; NT Health 2014-15 Annual Report – *Accessed 15 June 2016*

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Table 31 – Round 19 NHCDC Reconciliation – Alice Springs Hospital

Hospital				Jurisdiction			IHPA		
Item		**Amount**	**% of GL**	**Item**		**Amount**	**Item**		**Amount**
A General Ledger (GL)	$	1,096,290,980		**F** Costed Products received by jurisidction	$	223,225,305	**I** Total costed products received by IHPA	$	219,785,198
				Variance	*$*	*-*	*Variance*	*$*	*0*
B Adjustments to the GL									
Inclusions	$	(8,825,581)		**G** Final Adjustments			**J** IHPA Adjustments		
				Teaching and Training	$	(3,557,264)			
Exclusions	$	-		*Escalation Factor*	$	117,157	*Admitted ED reallocations*	$	12,582,760
Total hospital expenditure	**$**	**1,087,465,399**	*99.19%*	**Total costs submitted to IHPA**	**$**	**219,785,198**	**Final NHCDC costs**	**$**	**232,367,958**
C Allocation of Costs									
Post Allocation Direct amount	$	852,850,211							
Post Allocation Overhead amount	$	234,615,187							
Total hospital expenditure	**$**	**1,087,465,399**	*99.19%*						
Variance	*$*	*0*	*0.00%*						
D Post Allocation Adjustments									
WIP patients not discharged	$	(4,725,369)							
Other facilities in GL	$	(582,210,676)							
Out of scope expenditure	$	(280,366,781)							
Dummy encounters	$	(2,516,174)							
*WIP from prior years**	$	5,578,906							
Total expenditure allocated to patients	**$**	**223,225,305**	*19.85%* *						
E Costed products submitted to jurisdiction				**H** Costed products submitted to IHPA			**K** Final NHCDC costed products		
Acute and Newborns	$	160,931,316		*Acute and Newborns*	$	160,998,541	*Acute^ and Newborns*	$	173,576,221
Non-admitted	$	23,780,643		*Non-admitted*	$	23,780,643	*Non-admitted*	$	23,780,643
Emergency	$	25,597,294		*Emergency*	$	25,597,392	*Emergency*	$	25,597,392
Sub Acute	$	9,360,621		*Sub Acute*	$	9,408,621	*Sub Acute^*	$	9,413,701
Mental Health				*Mental Health*	$	-	*Mental Health*	$	-
Other	$	(1,833)		*Other*	$	-	*Other*	$	-
Research				*Research*	$	-	*Research*	$	-
Teaching & Training	$	3,557,264		*Teaching & Training*	$	-	*Teaching & Training*	$	-
	$	**223,225,305**	*19.85%* *		**$**	**219,785,198**		**$**	**232,367,957**
Variance	*$*	*(0)*		*Variance*	*$*	*(0)*	*Variance*	*$*	*(1)*

Source: KPMG based on data supplied by Alice Springs Hospital, jurisdiction and IHPA

** As WIP from prior years expenditure relates to prior year costs, this percentage excludes the $5.58 million from the calculation*

^ These figures include admitted emergency costs.

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Explanation of reconciliation items

This section discusses each of the reconciliation items including adjustments, inclusions and exclusions to the GL. The information is based on the Alice Springs Hospital's templates and review discussions.

Item A – General Ledger

The GL amount extracted reflected expenditure of $1.096 billion. This is expenditure for all LHNs in the NT, i.e. Top End and Central. The GL is extracted and loaded directly into PPM and a single costing figuration is undertaken for the NT. This amount reconciled to the expenditure reported in the audited financial statements.

Item B – Adjustments to the GL

The ABF team made adjustments for a number of revenue items that have the effect of offsetting expenditure for Round 19. These items totalled $8.83 million and related to the entire Department. In particular, they related to:

- Rental revenue totalling $2.19 million for Departmental staff residing at health services. This comprises a number of rental items associated with:
    - Royal Darwin Hospital – $751,629
    - Alice Springs Hospital – $579,117
    - Mental Health and Primary Care Services – $475,457
    - Katherine Hospital – $343,671
    - Gove Hospital – $41,600
    - Tennant Creek Hospital – $1,662
- External salary recoveries - $1.81 million
- Other - $4.82 million. This comprises of a number of revenue items, including:
    - Stock for community services and non-public hospital services – $1.71 million
    - Medical, dental and pharmaceutical supplies – $1.36 million
    - Cost Recoveries for water and sewerage, waste disposal, electricity, telecommunications, other meals and Darwin Private Hospital services – $1.02 million
    - Furniture, electricity, rental of Departmental Facilities, cleaning and equipment rental – $612,141
    - Pathology testing conducted for private businesses – $120,934.

The basis of these adjustments appears reasonable.

These adjustments established an expenditure base for costing of $1.087 billion. This was approximately 99.19 percent of total expenditure reported in the GL.

Item C – Allocation of costs

The ABF team undertakes a process of reclass/transfers between direct cost centres. The net effect of these reclass/transfers was zero. Reclass/transfers are determined based on discussions with LHN representatives.

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- It was observed that the total for all direct cost centres of $852.85 million were allocated.
- It was observed that overheads of $234.62 million were allocated.

These amounts reconciled to $1.087 billion and reflected the total for NT LHNs, including out of scope hospitals.

Item D – Post Allocation Adjustments

Post allocation adjustments totalling $864.24 million were made for:

- Excluded WIP patients not discharged – $4.73 million
- Excluded other NT hospitals and services listed in the GL - $582.21 million
- Excluded out of scope expenditure (including Aged Care, Community Health and Mental Health) - $280.37 million
- Excluded system-generated encounters – $2.52 million
- Included WIP from prior years - $5.58 million.

The basis of these adjustments appears reasonable.

The total expenditure allocated to patients for Alice Springs Hospital was $223.23 million, which represented approximately 19.85 percent of the total expenditure for the NT LHNs (excluding WIP from prior years' expenditure as it relates to prior year costs).

Item E – Costed products submitted to jurisdiction

Costs derived by the jurisdiction and reported at product level are equal to $223.23 million. Alice Springs Hospital submitted acute, non-admitted, emergency care, subacute, other (comprising solely of costs for newborns) and teaching and training costed products.

Item F – Costed products received by the jurisdiction

No variance was noted between Items E and F.

Item G – Final adjustments

As the jurisdiction undertakes the costing function on behalf of the hospital all adjustments are made at the jurisdiction. The jurisdiction applied an escalation factor of 2.1 percent factor to index costs for patients with costs in 2013-14, but discharged in 2014-15. This equated to $117,157. IHPA advised jurisdictions in February 2016 that escalation factors should not be applied to prior years WIP in Round 19.

NT Health also excluded Teaching and Training costs of $3.56 million before submission to IHPA. The exclusion of Teaching and Training costs may impact on the completeness of the NHCDC.

Item H – Costed products submitted to IHPA

Costs derived by the jurisdiction and reported at product level total $223.34 million.

Item I – Total products received by IHPA

Costed products received by IHPA totalled $219.79 million.

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Item J - IHPA Adjustments

- *Admitted emergency*

  Upon receipt of cost data, IHPA allocates the admitted emergency costs back to admitted patients for the purposes of reporting and analysis. Within IHPA's reconciliation, this amount was a duplication of admitted emergency costs and not an additional cost. For Alice Springs Hospital this amounted to $12.58 million.

- *Unqualified Baby Adjustment*

  Upon receipt of cost data, IHPA redistributes the unqualified baby cost to the mother separation to provide a complete delivery cost. Within IHPAs reconciliation this was not an additional cost but a movement between patients.

Item K - Final NHCDC Costed Outputs

The final NHCDC costed data for Alice Springs Hospital that was loaded into the National Round 19 cost data set was $232.37 million which included the admitted emergency cost of $12.58 million. A minor $1 variance was noted between Items J and K.

5.2.3 Activity data

Table 32 presents patient activity data based on source and costing systems for Alice Springs Hospital. This activity data is then compared to Table 33 which highlights the transfer of activity data by NHCDC product from the Alice Springs Hospital to NT Health and then through to IHPA submission and finalisation.

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Table 32 – Activity data – Alice Springs Hospital

Activity Data	# Records from Source	# Records in costing system	Variance	# Records linked to Admitted	# Records linked to Emergency	# Records linked to Non-admitted	# Records linked to Other	Total Linking Process	# Unlinked records
Encounter Admitted	52,858	52,858	-	52,858	-	-	-	52,858	-
Encounter Emergency	44,455	44,455	-	-	44,455	-	-	44,455	-
Encounter Non-Admitted	57,270	57,270	-	-	-	57,270	-	57,270	-
TOTAL	**154,583**	**154,583**	**-**	**52,858**	**44,455**	**57,270**	**-**	**154,583**	**-**

Source: KPMG based on data supplied by Alice Springs Hospital and NT Health

Table 33 – Activity data submission – Alice Springs Hospital

Product	Activity related to 2014-15 Costs	Adjustments	Activity submitted to jurisdiction	Adjustments	Activity submitted to IHPA	Activity received by IHPA	Adjustments	Total Activity submitted for Round 18 NHCDC
Acute and Newborns	51,711	(230)	51,481	-	52,449	52,449	(735)	51,714
Non-admitted	57,270	-	57,270	-	57,270	57,270	-	57,270
Emergency	44,455	(25)	44,430	-	44,430	44,430	-	44,430
Sub Acute	166	(16)	150	-	150	150	-	150
Mental Health	-	-	-	-	-	-	-	-
Other	12,477	(11,509)	968	-	-	-	-	-
Research	-	-	-	-	-	-	-	-
Teaching and Training	1	-	1	(1)	-	-	-	-
Total	**166,080**	**(11,780)**	**154,300**	**(1)**	**154,299**	**154,299**	**(735)**	**153,564**

Source: KPMG based on data supplied by Alice Springs Hospital, NT Health and IHPA

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The following should be noted about the transfer of activity data for the Alice Springs Hospital:

- The variance between records from source detailed in Table 32 (154,583 records) and activity related to 2014-15 costs by NHCDC product in Table 33 (166,080 records) of 11,497 records related to the creation of system-generated records or non-patient products. These records are not loaded from a feeder and are created in PPM2. These system-generated patient records are not submitted to IHPA.
- Adjustments made by NT Health on behalf of Alice Springs Hospital related to the activity associated with the exclusion of WIP, and system-generated encounters (detailed in Item D of the financial reconciliation).
- The adjustment made by IHPA to the Acute and Newborns product related to the UQB adjustment discussed in Item J of the explanation of reconciliation items.
- Adjustments made by IHPA related to admitted emergency reallocations are for reporting and analysis purposes (as discussed in Item J of the explanation of reconciliation items) and have no impact on the reported activity.

5.2.4 Feeder data

Table 34 presents patient feeder data for Alice Springs Hospital.

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Table 34 – Feeder data – Alice Springs Hospital

Feeder Data	# Records from Source	# Records in costing system	Variance	# Records linked to Admitted	# Records linked to Emergency	# Records linked to Non-admitted	# Records linked to Other	Total Linking Process	# Unlinked records	% Linked
Allied Health (Hospital)	13,037	13,037	-	10,272	67	2,613	-	12,952	85	99.35%
Blood (Hospital)	762	762	-	676	20	42	-	738	24	96.85%
Emergency (Hospital)	40,504	40,504	-	-	40,504	-	-	40,504	-	100.00%
Imaging (Hospital)	41,844	41,844	-	11,259	12,674	9,304	8,607	41,844	-	100.00%
Pathology (Hospital)	228,047	228,047	-	144,775	50,670	22,739	9,863	228,047	-	100.00%
Pharmacy (Hospital)	821,390	821,390	-	815,955	1,848	2,108	1,471	821,382	8	100.00%
Pharmacy_HSD (Hospital)	4,527	4,527	-	2,764	47	1,303	413	4,527	-	100.00%
Theatre Anaesthesia (Hospital)	6,039	6,039	-	6,039	-	-	-	6,039	-	100.00%
Theatre Nursing (Hospital)	7,809	7,809	-	7,809	-	-	-	7,809	-	100.00%
Theatre Recovery (Hospital)	6,147	6,147	-	6,147	-	-	-	6,147	-	100.00%
Theatre Surgeon (Hospital)	7,812	7,812	-	7,812	-	-	-	7,812	-	100.00%
Catheter Laboratory (All NT)	3,450	3,450	-	3,387	23	10	-	3,420	30	99.13%
Travel RFDS (All NT)	2,129	2,129	-	1,488	566	4	71	2,129	-	100.00%
Travel TMS (All NT)	40,331	40,331	-	9,046	2,603	12,147	16,535	40,331	-	100.00%

Source: KPMG based on data supplied by Alice Springs Hospital and NT Health

The following should be noted about the feeder data for the Alice Springs Hospital:

- There are 14 feeders reported from hospital source systems, 11 of which are specific to Alice Springs Hospital, and three that are generic to NT Health. They appear to represent major hospital departments providing resource activity.
- The number of records linked to admitted patients, emergency, non-admitted or other patients had a greater than 96 percent link or match. This suggests that there is robustness in the level of feeder activity reported back to episodes and is representative of increased data quality checks at both the jurisdiction and hospital level.

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- The unlinked records in the Allied Health, Catheter laboratory and Blood feeder systems related to data quality issues.

5.2.5 Treatment of WIP

Table 35 demonstrates models for WIP and its treatment in the Alice Springs Hospital's Round 19 NHCDC submission.

Table 35 – WIP – Alice Springs Hospital

Model	Description	Submitted to Round 19 NHCDC
1	Cost for patients admitted and discharged in 2014-15 only	Submitted to Round 19 of the NHCDC
2	Costs for patients admitted prior to 2014-15 and discharged in 2014-15	Submitted to Round 19 of the NHCDC. Costs are submitted for 2013-14.
3	Costs for patients admitted prior to or in 2014-15 and remain admitted at 30 June 2015	Not submitted to Round 19 of the NHCDC

Source: KPMG, based on Alice Springs Hospital templates and review discussions

In summary, Alice Springs Hospital submitted costs for admitted and discharged patients in 2014-15 and WIP costs for those patients admitted in 2013-14, but discharged in 2014-15.

Escalation factor

NT Health applied the escalation factors to the costs associated with WIP from prior years as part of the Round 19 submission of the NHCDC.

5.2.6 Critical care

The Alice Springs Hospital operates one Intensive Care Unit (ICU). All direct costs associated with the ICU are recorded in one cost centre. The hospital has one dedicated high and coronary care observation unit (HDU/CCU), with all costs recorded in the ICU cost centre. Alice Springs Hospital also operates a special care nursery which can be separately identified and costed.

The activity associated with patients in both ICU and the HDU/CCU can be extracted and identified. Expenditure for each unit is then allocated using weightings. Patients in the ICU receive double the allocation of minutes compared to the HDU/CCU to demonstrate greater staffing intensity (and hence greater costs). Critical care costs are captured in accordance with the applicable standard.

5.2.7 Costing public and private patients

The Alice Springs Hospital does not adjust its costing methodology for specific patients based on their financial classification, i.e. whether they are a public or a privately insured patient. Applicable costs are allocated to private patients, including a share of nursing, pathology, medical imaging and prosthesis in the same manner as public patients.

Systems cannot determine whether a patient has been treated by a Visiting Medical Officer or Consultant. Applicable medical costs are allocated to private patients in the same manner as public patients.

Private patient revenue is not offset against any related expenditure.

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5.2.8 Treatment of specific items

A number of items were discussed during the review to understand their treatment in the costing process as the cost data is used to inform the NEP and specific funding model adjustments for particular patient cohorts. Alice Springs Hospital's treatment of each of the items is summarised below.

Table 36 – Treatment of specific items – Alice Springs Hospital

Item	Treatment
Research	There are no research costs assigned to any products.
Teaching and Training	Teaching and Training costs are separately costed based on PFRAC information. All costs are assigned to a system-generated patient and not submitted to the NHCDC.
Shared/Other commercial entities	All commercial entity expenditure is deemed out of scope and excluded by the hospital. The NT government charge the hospital for shared services such as ICT.

Source: KPMG, based on IFR discussions

5.2.9 Sample patient data

IHPA selected a sample of five patients from Alice Springs Hospital for the purposes of testing the data flow from jurisdictions to IHPA at the patient level. NT Health provided the patient level costs for all five patients and these reconciled to IHPA records. The results are summarised in Table 37.

Table 37 – Sample patients – Alice Springs Hospital

#	Product	Jurisdiction Records	Received by IHPA	Variance
1	Acute	$884.65	$884.65	-
2	Acute	$561.89	$561.89	-
3	Rehab	$108,677.49	$108,677.49	-
4	Non-Admitted ED	$396.78	$396.78	-
5	Non-Admitted	$444.94	$444.94	-

Source: KPMG, based on Alice Springs Hospital and IHPA data

5.3 Application of AHPCS Version 3.1

The following section summarises NT Health's application of selected standards from Version 3.1 of the AHPCS (outlined in Appendix B) to the Alice Springs Hospital Round 19 NHCDC submission.

5.3.1 SCP 1.004 – Hospital Products in Scope

All products are reported by NT Health. This was demonstrated through the templates submitted and interview process. NT Health staff noted that the AHPCS Version 3.1 are used as the basis for costing in the NT. Research undertaken at Alice Springs Hospital is not separately costed.

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Teaching and Training costs are allocated to the system-generated patient and these records are not submitted to the NHCDC.

5.3.2 SCP 2.003 – Product Costs in Scope

The NT reconciliation process for financial data used for costing purposes was demonstrated through the interview process. It was also stated that all products are costed, which includes costs assigned to products in scope for the NHCDC, unlinked activity, and costs assigned to system-generated patients where there is no activity.

5.3.3 SCP 2B.002 - Research Costs

There are no research costs assigned to the research product. Where research is undertaken, these expenditures are embedded within cost centres and spread across patients but are not assigned to the Research product.

5.3.4 SCP 3.001 - Matching Production and Cost

NT Health staff provided reclass and transfer detail in the templates. The application of this standard was demonstrated during the interview process including discussion of examples.

5.3.5 SCP 3A.001 - Matching Production and Cost – Overhead Cost Allocation

The jurisdiction was able to demonstrate that overhead costs were fully allocated to direct patient care areas via the pre allocation and post allocation data included in the templates.

5.3.6 SCP 3B.001 - Matching Production and Cost – Costing all Products

The application of this standard was demonstrated in the templates for Alice Springs Hospital. NT Health also provided an overview of their internal reconciliation process which demonstrated the allocation of costs to products.

5.3.7 SCP 3C.001 - Matching Production and Cost – Commercial Business Entities

NT Health staff indicated that where commercial entities existed, the expenditure was allocated to a non-patient product. Shared services in the NT were charged to various facilities. Costs in relation to commercial and shared entities were treated in accordance with the standard.

5.3.8 SCP 3E.001 - Matching Production and Cost – Offsets and Recoveries

NT Health staff nominated offsets for rent, salary recoveries and other departmental costs (such as offsite pathology, stock reserves for community based services). At the interview, NT Health staff indicated that these offsets do not relate to production costs at Alice Springs Hospital.

5.3.9 SCP 3G.001 – Matching Production and Cost – Reconciliation to Source Data

During the consultation process, NT Health representatives demonstrated that the NT reconciliation for financial and activity appears robust through the use of the templates.

5.3.10 GL 2.004 - Account Code Mapping to Line Items

The purpose of this standard is to ensure that all cost data can be mapped to standardised line items for both NHCDC collection and comparative purposes.

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NT Health staff demonstrated reconciled costs by line item as indicated in the standard.

5.3.11 GL 4A.002 – Critical Care Definition

NT Health staff indicated that all direct costs associated with the ICU and HDU/CCU at Alice Springs Hospital are recorded in one cost centre. The activity associated with patients in both ICU and the HDU/CCU can be extracted and identified. Costs for each are then allocated using weightings, where patients in ICU have minutes weighted twice that of HDU/CCU to demonstrate greater staffing intensity and hence greater costs. Critical care costs are captured in accordance with the applicable standard.

5.3.12 COST 3A.002 – Allocation of Medical Costs for Private and Public Patients

NT Health staff indicated that costs are allocated to public and private patients in the same manner at Alice Springs Hospital. This includes costs associated with nursing salaries and wages, pathology, medical imaging and prosthesis.

Medical expenditure is handled in a similar way for both public and private patients as there is currently no feeder identifying patient resource consumption of VMOs or consultants.

Private patient revenue is not offset against the expenditure.

5.3.13 COST 5.002 - Treatment of Work-In-Progress Costs

Patients are allocated costs based on their consumption of resources for that reporting period. NT Health submitted WIP costs for admitted and discharged patients in 2014-15 and WIP costs for 2013-14 for those patients admitted prior to, but discharged, in 2014-15.

Where costs are incurred in prior years, only the costs for 2013-14 are included in the final costed data and NHCDC submission. These costs were escalated in the Round 19 NHCDC submission.

5.4 Conclusion

The findings of the NT Round 19 IFR are summarised below:

- NT Health's primary focus in Round 19 was to make improvements to the costing methodology. Focused efforts included refining the allocation of overhead costs, improving feeder data and strengthening linking rules.
- The financial reconciliation demonstrated the transformation of cost data for the entire group of LHNs in the NT. The costs submitted to the jurisdiction for Alice Springs Hospital accounted for 19.85 percent of the GL for the NT LHNs. Adjustments to the GL included offsetting expenditure with rental revenue received from Departmental staff, external salary recoveries, other cost recoveries, and medical, dental and pharmaceutical supplies. There were no exclusions of costs. NT Health adjusted the cost data for WIP escalation and the removal of Teaching and Training.
- The basis of the adjustments made by NT Health were reasonable. However, the exclusion of Teaching and Training costs may impact on the completeness of the NHCDC.
- WIP was treated in accordance with the COST 5.002 of the AHPCS Version 3.1. NT Health applied the escalation factors to the costs associated with WIP for prior years as part of the Round 19 submission to the NHCDC. IHPA advised jurisdictions that escalation factors should not be applied to prior year costs in February 2016.

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- There were no unexplained variances in the financial reconciliation of the Alice Springs Hospital's NHCDC submission.
- Total activity data for Alice Springs Hospital was adjusted for the removal of system-generated patients and the exclusion of WIP by NT Health.
- The number of records linked to admitted patients, emergency, non-admitted or other patients had a greater than 96 percent link or match. This suggests that there is robustness in the level of feeder activity reported back to episodes and is representative of increased data quality checks at both the jurisdiction and hospital level.
- The five sample patients selected for review for Alice Springs Hospital reconciled to IHPA records.

Based on discussions held during the site visits, and a review of the financial reconciliations provided, NT Health has robust reconciliation processes in place. As such, nothing was identified to suggest that the financial data is not fit for NHCDC submission. Furthermore, the data flow from the jurisdiction to IHPA demonstrated no unexplained variances.

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6. Queensland

6.1 Jurisdictional overview

6.1.1 Management of NHCDC process

The Queensland NHCDC process is a shared responsibility between both the Queensland Department of Health (Queensland Health) and the State's sixteen (16) Hospital and Health Services (HHS) and the Mater Adult and Mater Mothers Public Hospitals in Brisbane that support the provision of public health services throughout Queensland. Each HHS, with the exception of four Rural and Remote HHSs where the costing function is managed by the Department of Health, is responsible for the preparation and submission of the costing data that contributes to the NHCDC submission. Queensland Health, through the HHS Funding and Costing Unit (a part of the Healthcare Purchasing and System Performance branch) provides overall oversight, quality control and reconciliation of the final data submitted. The costing data submitted by the HHS's supports the costing function in Queensland, with cost data seen as an essential component of the State's healthcare funding model, including through its submission to the NHCDC.

The HHS's have costing staff who undertake patient costing at the hospital level. Once the costing process has been completed, the HHS costing staff inform Queensland Health that the data has been finalised and it is submitted to a central state-wide database.

There are two costing systems used across Queensland Health, Transition II and Power Performance Manager (PPM2). The majority of HHSs use Transition II as their clinical costing solution. Four HHSs use PPM2. Queensland Health's Funding and Costing Unit has direct access to the HHS costing system database where the site uses the Transition II costing system. The submission files are extracted from the database (or supplied as a load file from Power Performance Manager (PPM) sites) once notification has been received from the respective site and a series of validation processes and reports are run for quality assurance purposes. The interview process identified that Queensland Health has implemented a number of additional data validation and reconciliation processes since Round 18. There are also extract data audit reports that assess records for errors in activity and mismatching of costed data to source activity systems. These audit reports also assess if there are new cost departments (hospital departments) that require mapping to local and national requirements.

There are two approaches to the recognition of work in progress (WIP) transactions. Transition II is a multi-year costing system and data is extracted for patients present in the reference year regardless of admission or discharge date. All transactions are date stamped and this means that no WIP adjustments are required to be processed at year-end. The four PPM2 sites are responsible for providing WIP data and adjustments on an annual basis.

Once finalised, a State costing report is produced for each hospital that includes all episodes costed. This report includes information on costs for Diagnosis Related Groups (DRGs), Tier 2 and subacute activity for the current round and previous round of the NHCDC. The report is provided to each HHS costing team. The costing results are reviewed and compared to the previous round and variances in the results of less than 10 percent are deemed insignificant. Additionally, costs for emergency departments and emergency services are reported by Urgency Related Group (URG) and Urgency Diagnosis Group (UDG) cost weights. All reports are provided

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to hospitals for review prior to the submission of the data for the NHCDC. It is noted that comparative data using cost weight reports is provided at LHN level for the current and previous five years, with a summary table of average cost outcomes.

Where data quality issues are identified, hospital costing staff address these and prepare for final submission to Queensland Health. Hospital Chief Financial Officers will sign off on the data. This cost data submission is used for both the Queensland state funding model and NHCDC submission. Queensland Health prepared the NHCDC submission according to the NHCDC Round 19 Data Request Specifications (DRS) provided by IHPA.

Queensland nominated three hospitals to participate in the Round 19 IFR: Gold Coast University Hospital, Toowoomba Base Hospital and Logan Hospital. Each of these hospitals are members of separate HHSs.

Queensland Health selected these three hospitals as they included a tertiary hospital, a medium sized hospital and a hospital with some rural services. These facilities have not been involved in any previous IFR's.

Key initiatives since Round 18 NHCDC

The following initiatives have been implemented since the Round 18 NHCDC submission:

- In prior years, where costs were excluded for Transition II sites, all relevant overhead costs were mapped to goods and services. The revised process for Round 19, for excluded Transition II sites sees the total cost of these overheads costs allocated to cost records based on an allocation statistic relevant for each overhead cost area. For example, where there are overheads associated with Nursing Administration for Nursing Salaries and Wages, a percentage of these overheads are allocated to the relevant patient record. These overheads are then reported to their respective cost bucket.

  Further improvements for Round 19, see Queensland Health undertake a full reconciliation of the system produced overhead cost amounts for each patient record to ensure that all overheads have been allocated.

- Improved reconciliation processes whereby Queensland Health undertook an end-to-end reconciliation process from General Ledger (GL) data through to final submission. In total there are seven stages:

  - Reconcile costing system general ledger (GL) load file to source GL data from the Decision Support System (DSS). HHS Costing and Dead ending process
  - Initial Extraction
  - Cost Type Category Validation. The Queensland Health Activity Costing Team completes a reconciliation as part of the final NHCDC data transformation process.
  - Virtual Patient Generator (VPG) Management. A reconciliation is completed by the Department of Health Activity Costing Team as part of the final NHCDC data transformation process.B2A/ Initial Cost Weight Report (Activity Based Funding (ABF) Costing Team)
  - Cost A/Cost C Final Submission (ABF Costing Team)

Final reports are analysed by Queensland Health in conjunction with the HHS for:

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- ABF / Non ABF splits;
- Public Hospital Establishments Collection data;
- Teaching, Training and Research reporting; and
- Activity matching.

6.2 Gold Coast University Hospital

6.2.1 Overview

The Gold Coast University Hospital (Gold Coast Hospital) is part of the Gold Coast Hospital and Health Service and is located in Southport. The hospital was relocated from its previous location in Broadbeach to a new purpose built facility and opened in September 2013. The hospital has approximately 750 overnight beds and provides a range of tertiary services including:

- Emergency medicine;
- Cardiology;
- Oncology;
- Neurosurgery;
- Obstetrics;
- Intensive neonatal care;
- Aged and dementia care; and
- Mental health services.

Gold Coast Hospital is one of Queensland's largest clinical teaching and research facilities. Gold Coast Hospital provides specialised health services to meet the needs of patients as well as the learning requirements of future clinicians. Additionally, the Gold Coast Hospital Foundation, based at the Gold Coast Hospital is dedicated to fundraising to support Gold Coast Health research and education activities.[9]

In 2014-15, the HHS employed approximately 6,400 full time equivalent staff with a total expenditure of $1.149 billion.

Gold Coast Hospital uses PPM2 software after moving from Transition II three years ago. The hospital runs the PPM cost model weekly to allow for regular monitoring of feeder systems and data issues. The HHS provides the Funding and Costing unit with direct access to PPM2 GL data and all activity including raw and NHCDC format cost outputs to facilitate review and extraction on demand.

[9] Gold Coast Health and Gold Coast University Hospital – *accessed 15 June 2016*

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6.2.2 Financial data

For the Round 19 IFR, the data collection templates were completed and submitted by the Department's HHS Costing and Funding Unit on behalf of the Gold Coast Hospital. Representatives from the HHS Costing and Funding Unit attended and participated in consultation process during the review, as well as senior costing staff from the Gold Coast Hospital.

Table 38 reflects a summary of the Gold Coast Hospital's costs, from the original extract from the GL through to the final NHCDC submission for the hospital for Round 19.

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Table 38 – Round 19 NHCDC Reconciliation – Gold Coast University Hospital

Hospital					Jurisdiction			IHPA		
Item		Amount	% of GL		Item		Amount	Item		Amount
A General Ledger (GL)	$	1,142,379,681			**F** Costed Products received by jurisidction	$	699,097,138	**I** Total costed products received by IHPA	$	709,278,465
					Variance	*$*	*-*	*Variance*	*$*	*(41)*
B Adjustments to the GL										
Inclusions	$	-			**G** Final Adjustments			**J** IHPA Adjustments		
Exclusions	$	(13,271,273)			*Robina matched to Gold Coast activity data*	$	36,551,276	*Admitted ED reallocations*	$	32,776,314
Total hospital expenditure	**$**	**1,129,108,408**	*98.84%*		*AdmED epi with no matching Inpatient epi*	$	(548,979)	**Final NHCDC costs**	**$**	**742,054,779**
					Admitted episode different to IHPA Prod Type	$	(1,110)			
C Allocation of Costs					*Cost record with no matching episode record*	$	(58,774)			
Post Allocation Direct amount	$	907,063,873			*Negative cost records*	$	490,007			
Post Allocation Overhead amount	$	222,032,249			*ED ProdType different to IHPA ProdtType*	$	(530,864)			
Total hospital expenditure	**$**	**1,129,096,122**	*98.84%*		*Missing DRG records*	$	(154,027)			
Variance	*$*	*(12,286)*	*0.00%*		*Record not matched to PAS data*	$	(25,569,228)			
					Total costs submitted to IHPA	**$**	**709,275,439**			
D Post Allocation Adjustments										
Out of scope costs	$	(438,636,359)								
*WIP from prior years**	$	8,642,261								
Total expenditure allocated to patients	**$**	**699,102,023**	*60.44%*	*						
E Costed products submitted to jurisdiction					**H** Costed products submitted to IHPA			**K** Final NHCDC costed products		
Acute and Newborns	$	477,823,546			*Acute and Newborns*	$	477,659,201	*Acute^ and Newborns*	$	510,429,137
Non-admitted	$	139,613,321			*Non-admitted*	$	151,617,321	*Non-admitted*	$	151,617,295
Emergency	$	65,352,807			*Emergency*	$	63,776,068	*Emergency*	$	63,776,060
Sub Acute	$	16,291,889			*Sub Acute*	$	16,225,916	*Sub Acute^*	$	16,232,287
Mental Health	$	-			*Mental Health*	$	-	*Mental Health*	$	-
Other	$	15,576			*Other*	$	-	*Other*	$	-
Research	$	-			*Research*	$	-	*Research*	$	-
Teaching & Training	$	-			*Teaching & Training*	$	-	*Teaching & Training*	$	-
	$	**699,097,138**	*60.44%*	*		**$**	**709,278,506**		**$**	**742,054,779**
Variance	*$*	*(4,886)*	*0.00%*		*Variance*	*$*	*3,066*	*Variance*	*$*	*-*

Source: KPMG based on data supplied by Gold Coast Hospital, jurisdiction and IHPA

** As WIP from prior years expenditure relates to prior year costs, this percentage excludes the $8.64 million from the calculation*

^ These figures include admitted emergency costs.

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Explanation of reconciliation items

This section discusses each of the reconciliation items including adjustments, inclusions and exclusions to the financial data. The information is based on the templates submitted for Gold Coast Hospital and face-to-face review discussions.

Item A – General Ledger

The final GL amount extracted by Queensland Health from the costing system totalled $1.142 billion. This amount reflected the total expenditure for the Gold Coast Hospital and Health Service, which includes Gold Coast Hospital. This amount did not reconcile to the total expenditure reported in the 2014-15 financial statements for the Gold Coast HHS, i.e. $1.149 billion. The $6.82 million variance (0.6 percent of the HHS GL) related to:

- Differences between the classifications of five account codes in the DSS system compared to the costing GL. In DSS, these items are accounted for as revenue whereas in the costing GL they are recognised as expenditure recoups. This difference accounted for $3.64 million of the variance
- Cost centre 738999 – Capital Works – $3.19 million
- Minor variances due to timing differences – $4,157.

Item B – Adjustments to the GL

Exclusions were made to the GL of approximately $13.27 million, these are defined as 'dead ended' costs and are made up of services that are defined as out of scope for patient costing by the Australian Hospital Patient Costing Standards (AHPCS) Version 3.1. The items are summarised below:

- Cost Centres related to the transition from the Gold Coast Hospital to the new Gold Coast University Hospital (Area IFIN07) – $2.34 million
- Dead-ended cost centres - $3.57 million. The majority of this amount related to the impact of the Revaluation Decrement on Building ($3.43 million)
- All other out of scope costs – $7.36 million. These costs related to inter-entity expenses, bad and doubtful debt adjustments, asset disposal adjustments and inventory adjustments.

The basis of these exclusions appears reasonable. The AHPCS is silent on the specific inclusion or exclusion of bad and doubtful debts. Bad and doubtful debts expenditure relates to the provision for debts that are unrecoverable from patients/clients. It does not have an impact on the cost of patient services provided by the hospital.

These adjustments established an expenditure base for costing of $1.129 billion. This was approximately 98.8 percent of total expenditure reported in the GL.

Item C – Allocation of costs

The Gold Coast Hospital undertakes a process of reclass/transfers between cost centres. The net effect of these reclass/transfers was the transfer of $13.28 million to the dead ended cost centres (refer above).

- It was observed that the total of all direct cost centres of $907.06 million were allocated in the costing system.

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- It was observed through the templates that all overheads of $222.03 million were allocated to direct cost centres post allocation.

These amounted to $1.129 billion and reflected the total for the Gold Coast Health Service. A minor variance of $12,286 (0.001 percent of the total GL) was identified between Item B and Item C.

Item D – Post Allocation Adjustments

A number of adjustments were made post allocation and included:

- Other HHS facilities (e.g. Robina Hospital) excluded - $419.33 million
- WIP patients not discharged at year end excluded - $13.06 million
- Cost records excluded because they could not be linked to a specific episode – $6.25 million
- WIP from prior years included - $8.64 million.

The basis of these adjustments appears reasonable.

The total expenditure allocated to patients for Gold Coast Hospital was $699.10 million which represented approximately 60.4 percent of the GL note this percentage calculation is based on Gold Coast Hospital only and excludes WIP from prior years, as it is not part of the current year).

Item E - Costed products submitted to jurisdiction

Costs submitted to the jurisdiction and reported at product level totalled $699.10 million. Costs were allocated to all products with the exception of Mental Health, Teaching, Training and Research. A minor variance of $4,886 was noted between Item D and Item E (0.0007 percent of the expenditure allocated to patients).

Item F – Costed products received by the jurisdiction

Costed products received by the jurisdiction totalled $699.10 million. No variance was noted between Items E and F.

Item G – Final adjustments

Queensland Health adjusts the hospital submission. The adjustments made for Round 19 totalled $10.18 million and included:

- Excluded costs of $548,979 related to admitted emergency episodes with no matching admitted acute episodes. These records were not submitted to IHPA
- Costs associated with non-admitted activity matched to where the activity was reported. Non-admitted activity related to Robina Hospital was reported as occurring at Gold Coast Hospital. The associated costs, amounting to $36.55 million were transferred from Robina to the Gold Coast
- Costs records totalling $25.57 million were excluded because they could not be linked to activity data. The majority of this related to non-admitted patient activity where there was no patient level activity reported
- Emergency product type different to IHPA product type amounting to $530,864 excluded
- Admitted episode different to IHPA product type totalling $1,110 excluded
- Cost records with no matching episode totalling $58,774 excluded

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- To meet IHPA data requirements cost records were adjusted to remove negative costs. This increased the total by $490,007
- Missing DRG records totalling $154,027 excluded.

The basis of these adjustments appears reasonable. It is recommended that Queensland Health investigates the reasons for the unlinked and unmatched records to ensure appropriate treatment in future rounds.

Item H – Costed products submitted to IHPA

Costs derived by the jurisdiction and reported at product level to IHPA totalled $709.28 million. A minor variance of $3,066 was noted (0.0004 percent of the total cost submitted to IHPA).

Item I – Total products received by IHPA

Total costed products received by IHPA totalled $709.28 million. There was a minor variance of $41 between costs submitted by the jurisdiction and costs received by IHPA.

Item J – IHPA adjustments

- *Admitted Emergency*

  Upon receipt of cost data, IHPA allocates the admitted emergency costs back to admitted patients for the purposes of reporting and analysis. Within IHPA's reconciliation, this amount was a duplication of admitted emergency costs and not an additional cost. For the Gold Coast Hospital, this amounted to $32.78 million.

- *Unqualified Baby Adjustment*

  Upon receipt of cost data, IHPA redistributes the unqualified baby cost to the mother separation to provide a complete delivery cost. Within IHPAs reconciliation, this was not an additional cost but a movement between patients.

Item K – Final NHCDC Costed Outputs

The final NHCDC costed data for the Gold Coast Hospital that was loaded into the National Round 19 cost data set was $742.05 million, which included the admitted emergency cost of $32.78 million.

6.2.3 Activity data

Table 39 presents patient activity data based on source and costing systems for the Gold Coast Hospital. This activity data is then compared to Table 40 which highlights the transfer of activity data by NHCDC product from the Gold Coast Hospital to Queensland Health and then through to IHPA submission and finalisation.

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Table 39 – Activity data – Gold Coast University Hospital

Activity Data	# Records from Source	# Records in costing system	Variance	# Records linked to Admitted	# Records linked to Emergency	# Records linked to Non-admitted	# Records linked to Other	Total Linking Process	# Unlinked records
Inpatient	136,923	136,923	-	136,923	-	-	-	136,923	-
Emergency	150,508	150,508	-	-	150,508	-	-	150,508	-
Outpatients	494,918	494,918	-	-	-	494,918	-	494,918	-
TOTAL	**782,349**	**782,349**	**-**	**136,923**	**150,508**	**494,918**	**-**	**782,349**	**-**

Source: KPMG based on data supplied by the Gold Coast Hospital and Queensland Health

Table 40 – Activity data submission – Gold Coast University Hospital

Product	Activity related to 2014-15 Costs	Adjustments	Activity submitted to jurisdiction	Adjustments	Activity submitted to IHPA	Activity received by IHPA	Adjustments	Total Activity submitted for Round 19 NHCDC
Acute and Newborns	132,030	(37,740)	94,290	(87)	94,203	94,203	(3,803)	90,400
Non-admitted	494,921	(100,955)	393,966	24,985	418,951	418,951	-	418,951
Emergency	150,508	(58,550)	91,958	(5,390)	86,568	86,568	-	86,568
Sub Acute	3,878	(3,053)	825	(12)	813	813	-	813
Mental Health	-	-	-	-	-	-	-	-
Other	1,012	(1,008)	4	(4)	-	-	-	-
Research	-	-	-	-	-	-	-	-
Teaching and Training	-	-	-	-	-	-	-	-
Total	**782,349**	**(201,306)**	**581,043**	**19,492**	**600,535**	**600,535**	**(3,803)**	**596,732**

Source: KPMG based on data supplied by the Gold Coast Hospital, Queensland Health and IHPA

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The following should be noted about the transfer of activity data for the Gold Coast Hospital:

- There was no variance between the number of records from source systems, detailed in Table 39 (782,349 records) and activity related to 2014-15 costs by NHCDC product in Table 40 (782,349 records).
- Adjustments made by the Gold Coast Hospital related to the activity associated with the excluded costs, e.g. other facilities (Robina) and WIP (refer to Item D in the reconciliation above).
- Adjustments made by Queensland Health related to the activity associated with the excluded costs (refer to Item G in the reconciliation). These records related to record matching issues for emergency and admitted patients, outpatient records at other facilities and product types that differ from the in-scope IHPA product type.
- The adjustment made by IHPA to the acute and newborns product related to the UQB adjustment discussed in Item J of the explanation of reconciliation items.
- Adjustments made by IHPA related to admitted emergency reallocations are for reporting and analysis purposes (as discussed in Item J of the explanation of reconciliation items) and have no impact on the reported activity.

6.2.4 Feeder data

Table 41 reflects data associated with patient feeder data for the Gold Coast Hospital.

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Table 41 – Feeder data – Gold Coast University Hospital

Feeder Data	# Records from Source	# Records in costing system	Variance	# Records linked to Admitted	# Records linked to Emergency	# Records linked to Non-admitted	# Records linked to Other	Total Linking Process	# Unlinked records	% Linked
Allied Health	577,596	577,596	-	445,538	9,939	122,119	-	577,596	-	100.00%
Cath Lab Multi-maps	846	846	-	-	-	846	-	846	-	100.00%
Cath Lab Consumables	458	458	-	321	-	137	-	458	-	100.00%
Cath Lab Procedures	2,361	2,361	-	1,849	-	512	-	2,361	-	100.00%
Cath Lab Prostheses	1,363	1,363	-	1,349	-	14	-	1,363	-	100.00%
Clinical Measurement Multi-Maps	661	661	-	-	-	661	-	661	-	100.00%
Clinical Measurements	15,880	15,880	-	7,763	31	8,086	-	15,880	-	100.00%
CSSD	265	265	-	265	-	-	-	265	-	100.00%
CSSD Endoscopy	8,162	8,162	-	4,099	-	4,063	-	8,162	-	100.00%
CSSD ICU	6,647	6,647	-	6,647	-	-	-	6,647	-	100.00%
CSSD Imaging	2,349	2,349	-	285	307	1,757	-	2,349	-	100.00%
CSSD Outpatient	8,085	8,085	-	-	-	8,085	-	8,085	-	100.00%
CSSD Podiatry	1,810	1,810	-	-	-	1,810	-	1,810	-	100.00%
CSSD Theatre	45,142	45,142	-	43,745	-	1,397	-	45,142	-	100.00%
Discharge Planning	341,187	341,187	-	341,187	-	-	-	341,187	-	100.00%
Emergency Doctor Services	138,483	138,483	-	-	138,483	-	-	138,483	-	100.00%
Emergency Nurse Services	140,488	140,488	-	-	140,488	-	-	140,488	-	100.00%
Emergency UDG	140,849	140,849	-	-	140,849	-	-	140,849	-	100.00%
Endoscopy Hours	31,267	31,267	-	15,604	-	15,663	-	31,267	-	100.00%
Endoscopy Procedures	8,183	8,183	-	4,120	-	4,063	-	8,183	-	100.00%
Food Services	383,232	383,232	-	383,232	-	-	-	383,232	-	100.00%
Home Dialysis	897	897	-	-	-	897	-	897	-	100.00%

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Feeder Data	# Records from Source	# Records in costing system	Variance	# Records linked to Admitted	# Records linked to Emergency	# Records linked to Non-admitted	# Records linked to Other	Total Linking Process	# Unlinked records	% Linked
Hotel Services (ED)	138,836	138,836	-	-	138,836	-	-	138,836	-	100.00%
Hotel Services (MH)	98,479	98,479	-	3	-	98,476	-	98,479	-	100.00%
Hotel Services (OP)	402,019	402,019	-	-	-	402,019	-	402,019	-	100.00%
Hotel Services (Theatre)	49,666	49,666	-	48,865	-	801	-	49,666	-	100.00%
Hotel Services (Ward)	488,306	488,306	-	488,306	-	-	-	488,306	-	100.00%
Imaging	409,993	409,993	-	216,444	75,587	117,962	-	409,993	-	100.00%
Infection Control	485,188	485,188	-	485,188	-	-	-	485,188	-	100.00%
Infusion Therapy Services	1,195	1,195	-	1,190	1	4	-	1,195	-	100.00%
Infusion Therapy TPN	31	31	-	-	-	31	-	31	-	100.00%
Interventional Radiology Services	1,408	1,408	-	1,408	-	-	-	1,408	-	100.00%
Lithotripsy Services	42	42	-	42	-	-	-	42	-	100.00%
MH Notes	328,347	328,347	-	176,586	7,105	144,656	-	328,347	-	100.00%
MH Outcomes	164,187	164,187	-	57,491	3,931	102,765	-	164,187	-	100.00%
MH POS Activity	481,218	481,218	-	159,685	5,561	315,972	-	481,218	-	100.00%
MH POS Activity Preparation	90,928	90,928	-	26,222	2,745	61,961	-	90,928	-	100.00%
MH POS Activity Travel	31,788	31,788	-	2,272	150	29,366	-	31,788	-	100.00%
MH Seclusion Constant	25	25	-	25	-	-	-	25	-	100.00%
MH Seclusion Interval Doctor	234	234	-	233	1	-	-	234	-	100.00%
MH Seclusion Interval Nurse	234	234	-	233	1	-	-	234	-	100.00%
NULL	18,780	18,780	-	2	7,434	11,344	-	18,780	-	100.00%
OP Ante-Natal & Parenting	33,339	33,339	-	-	-	33,339	-	33,339	-	100.00%
OP Cancer Outpatients	13,552	13,552	-	171	-	13,381	-	13,552	-	100.00%
OP Clinics	467,943	467,943	-	15,378	-	452,565	-	467,943	-	100.00%
OP Comm Mental Health	1	1	-	1	-	-	-	1	-	100.00%

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Feeder Data	# Records from Source	# Records in costing system	Variance	# Records linked to Admitted	# Records linked to Emergency	# Records linked to Non-admitted	# Records linked to Other	Total Linking Process	# Unlinked records	% Linked
OP Community Health (Paediatrics)	555	555	-	-	-	555	-	555	-	100.00%
OP Diabetes Resource Centre	4,972	4,972	-	25	-	4,947	-	4,972	-	100.00%
OP Early Pregnancy	315	315	-	6	-	309	-	315	-	100.00%
OP GCH Breast Care Nursing	241	241	-	-	-	241	-	241	-	100.00%
OP GCH OPD	151,309	151,309	-	2,807	-	148,502	-	151,309	-	100.00%
OP Medical Services	23	23	-	23	-	-	-	23	-	100.00%
OP Paeds	8,258	8,258	-	33	-	8,225	-	8,258	-	100.00%
OP Respiratory Resource Centre	6,104	6,104	-	83	-	6,021	-	6,104	-	100.00%
OP ROB Breast Care Nursing	4,365	4,365	-	11	-	4,354	-	4,365	-	100.00%
OP ROB OPD	50,088	50,088	-	686	-	49,402	-	50,088	-	100.00%
Orthotics	245	245	-	118	-	127	-	245	-	100.00%
Pathology	1,123,380	1,123,380	-	823,870	89,537	209,973	-	1,123,380	-	100.00%
Pharmacy	521,101	521,101	-	371,656	1,745	147,700	-	521,101	-	100.00%
Radiation Oncology Queensland (ROQ)	1,784	1,784	-	1,781	-	3	-	1,784	-	100.00%
Radiology Neurocoils	3	3	-	3	-	-	-	3	-	100.00%
ROQ	7	7	-	7	-	-	-	7	-	100.00%
Theatre Hours Nurse	75,031	75,031	-	73,841	-	1,190	-	75,031	-	100.00%
Theatre Hours Nurse (MM)	721	721	-	721	-	-	-	721	-	100.00%
Theatre Anaesthetics	41,397	41,397	-	40,842	-	555	-	41,397	-	100.00%
Theatre Anaesthetics (MM)	368	368	-	368	-	-	-	368	-	100.00%
Theatre Hours Doctor	83,226	83,226	-	82,141	-	1,085	-	83,226	-	100.00%
Theatre Procedures	45,590	45,590	-	44,193	-	1,397	-	45,590	-	100.00%
Theatre Prosthetics	35,026	35,026	-	35,026	-	-	-	35,026	-	100.00%
TPN Services	200	200	-	-	-	200	-	200	-	100.00%

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Feeder Data	# Records from Source	# Records in costing system	Variance	# Records linked to Admitted	# Records linked to Emergency	# Records linked to Non-admitted	# Records linked to Other	Total Linking Process	# Unlinked records	% Linked
Trauma	1,411	1,411	-	888	523	-	-	1,411	-	100.00%
Unit Hours	9,037	9,037	-	9,037	-	-	-	9,037	-	100.00%
Unit Days	477,161	477,161	-	477,161	-	-	-	477,161	-	100.00%
Ward Admission	136,877	136,877	-	136,877	-	-	-	136,877	-	100.00%
Ward Discharge	137,828	137,828	-	137,828	-	-	-	137,828	-	100.00%
Ward Hours	65,212	65,212	-	65,212	-	-	-	65,212	-	100.00%
Ward Neonatal ICU (MM)	739	739	-	-	-	739	-	739	-	100.00%
Ward Neur (MM)	21	21	-	-	-	21	-	21	-	100.00%
Ward Paed (MM)	19	19	-	-	-	19	-	19	-	100.00%
Ward Persons	214,243	214,243	-	214,243	-	-	-	214,243	-	100.00%
Ward Pre Admission (MM)	10,815	10,815	-	-	-	10,815	-	10,815	-	100.00%
Ward Resp (MM)	302	302	-	-	-	302	-	302	-	100.00%
Ward Special Care Nursery (MM)	739	739	-	-	-	739	-	739	-	100.00%
Ward Days	485,177	485,177	-	485,177	-	-	-	485,177	-	100.00%

Source: KPMG based on data supplied by the Gold Coast Hospital and Queensland Health

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In relation to the feeder data for the Gold Coast Hospital, the following should be noted:

- There are 84 feeders used from a range of hospital source systems and they appear to represent major hospital departments providing resource activity.
- Source data is used as much as possible and is the preferred method for capturing activity, hence the large number of data records from feeder systems. The HHS costing team use their knowledge to scope what is required from a feeder system and then design an interface into the costing system to allow for minimal manual intervention.
- The non-admitted feeder systems are problematic as the current method for capturing the appointment time is to use the booking time, which will not always reflect the actual time spent with the patient.
- Monthly reconciliations occur between the costing ledger and the finance ledger. If there are reconciliation issues, the costing team are able to identify the issues and check the feeder system. In regards to volume and activity, reports are generated to monitor trends and compare to previous months and years for any anomalies.

6.2.5 Treatment of WIP

Table 42 demonstrates models for WIP and its treatment in the Gold Coast Hospital's Round 19 NHCDC submission.

Table 42 – WIP – Gold Coast University Hospital

Model	Description	Submitted to Round 19 NHCDC
1	Cost for patients admitted and discharged in 2014-15 only	Submitted to Round 19 of the NHCDC
2	Costs for patients admitted prior to 2014-15 and discharged in 2014-15	Submitted to Round 19 of the NHCDC. Costs are submitted for 2013-14.
3	Costs for patients admitted prior to or in 2014-15 and remain admitted at 30 June 2015	Not submitted to Round 19 of the NHCDC

Source: KPMG, based on the Gold Coast Hospital templates and review discussions

In summary, for the Gold Coast Hospital, costs were submitted for admitted and discharged patients in 2014-15 and WIP costs for 2013-14 for those patients admitted prior to, but discharged, in 2014-15.

Escalation factor

Queensland Health did not apply any escalation factors to the costs associated with WIP from prior years as part of the Round 19 submission of the NHCDC.

6.2.6 Critical care

There are two dedicated Intensive Care Units (ICU) at the Gold Coast Hospital. The hospital does not have any High Dependency Units or Close Observation Units located in wards in the hospital. All direct costs associated with ICU are allocated to specific ICU cost centres. Critical care costs are captured in accordance with the applicable standard.

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6.2.7 Costing public and private patients

The Gold Coast Hospital does not adjust costing specific patients based on their financial classification, i.e. whether they are a public or a privately insured patient. Applicable costs are allocated to private patients, including a share of pathology, medical imaging, prosthesis and medical costs, in the same manner as public patients. Private patient revenue is not offset against any related expenditure.

The issues associated with costing private patients at Gold Coast Hospital related to the level of cost allocated to pathology and imaging. Where a patient is private and billed under the Medical Benefits Scheme (MBS), the feeder system reflects the activity however there is zero cost. Costs are allocated to all patients based on a relative value unit (RVU) based on the actual service (MBS item number) provided.

The costs of diagnostic services, pathology and medical imaging, for public patients is included at product level in the final patient cost and these costs are reflected in the HHS GL. The equivalent costs are not reflected in the GL for private patients as the HHS does not incur any cost, as there is direct billing to a third party. The activity, for private patients, is visible for clinical reporting however, the utilisation record is not costed. This aligns with the principles of the AHPCS Version 3.1 and reflects the true patient level data cost incurred for public and private patients treated by the HHS.

The majority of medical officers at Gold Coast Hospital are paid an allowance in-lieu of private practice arrangements, i.e. there is limited use of private practice funds to supplement the employment costs. Hence, the full employment cost associated with medical officers is allocated to all patients, regardless of financial class.

6.2.8 Treatment of specific items

A number of specific items were discussed during the consultation phase of the review to understand the manner in which they are treated in the costing process. These items are used to inform the NEP and specific funding model adjustments for particular patient cohorts. The Gold Coast Hospital's treatment of each of the items is summarised below.

Table 43 – Treatment of specific items – Gold Coast University Hospital

Item	Treatment
Research	Research costs are captured in specific, separate cost centres and allocated to a Virtual Patient. For Round 19 these costs were excluded and not submitted as part of the NHCDC.
Teaching and Training	Teaching and Training is embedded in costs but not split out. Any costs designated as pure teaching and training are allocated to a virtual patient group for dead ending (exclusion). Teaching and Training costs are captured but separately to the patient level costing process.

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Item	Treatment
Shared/Other commercial entities	Any expenditure associated with these activities is excluded by the hospital for costing purposes.

Source: KPMG, based on IFR discussions

6.2.9 Sample patient data

IHPA selected a sample of five patients from the Gold Coast Hospital for the purposes of testing the data flow from jurisdictions to IHPA at the patient level. Queensland Health provided the patient level costs for all five patients and these reconciled to IHPA records. The results are summarised in Table 44.

Table 44 – Sample patients – Gold Coast University Hospital

#	Product	Jurisdiction Records	Received by IHPA	Variance
1	Non-Admitted ED	$307.44	$307.44	-
2	Non-Admitted	$192.90	$192.90	-
3	Acute	$147.19	$147.19	-
4	Maintenance	$14,989.67	$14,989.67	-
5	Acute	$622.63	$622.63	-

Source: KPMG, based on the Gold Coast Hospital and IHPA data

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6.3 Toowoomba Base Hospital

6.3.1 Overview

Toowoomba Base Hospital (Toowoomba Hospital) is the largest facility in the Darling Downs Hospital and Health Service. It is a 324-bed hospital, accredited as a Level 2 Teaching Hospital with the Royal Australasian College of Physicians. There are approximately 285 medical staff, 923 nursing staff and 269 health practitioners. The hospital is located approximately 110 kilometres west of Brisbane on the edge of the Great Dividing Range. The hospital provides a range of services including[10]:

- General medicine;
- Emergency medicine;
- Endocrinology;
- Gastroenterology;
- Obstetrics and gynaecology;
- Orthopaedic surgery;
- Oncology; and
- Paediatrics.

Toowoomba Hospital uses Transition II for costing purposes.

6.3.2 Financial data

This section discusses each of the reconciliation items including adjustments, inclusions and exclusions to the financial data. The information is based on the templates submitted for Toowoomba Hospital and face-to-face review discussions.

Table 45 presents a summary of the Toowoomba Hospital's costs, from the original extract from the General Ledger (GL) through to the final NHCDC submission for the Toowoomba Hospital for Round 19.

[10] Toowoomba Hospital and Toowoomba Hospital (My Hospital website) – *accessed 15 June 2016*

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Table 45 – Round 19 NHCDC Reconciliation – Toowoomba Base Hospital

Hospital					Jurisdiction			IHPA		
Item		Amount	% of GL		Item		Amount	Item		Amount
A General Ledger (GL)	$	623,044,761			**F** Costed Products received by jurisidction	$	336,400,124	**I** Total costed products received by IHPA	$	248,514,950
					Variance	*$*	-	*Variance*	*$*	*(8)*
B Adjustments to the GL										
Inclusions	$	-			**G** Final Adjustments			**J** IHPA Adjustments		
Exclusions	$	(290,862,252)			*Outpatient records not matched to PAS*	$	(11,471,482)	*Admitted ED reallocations*	$	16,317,987
Total hospital expenditure	**$**	**332,182,508**	*53.32%*		*AdmED epi with no matching inpatient epi*	$	(250,392)	**Final NHCDC costs**	**$**	**264,832,937**
					Non-AdmED epi not matched to PAS	$	(28,166)			
C Allocation of Costs					*Round 19 WIP*	$	(5,759,623)			
Post Allocation Direct amount	$	277,315,457			*Unlinked/unmapped errors*	$	(6,418,860)			
Post Allocation Overhead amount	$	54,867,051			*Virtual Patient feeder*	$	(65,871,650)			
Total hospital expenditure	**$**	**332,182,508**	*53.32%*		*Negative costs added back*	$	2,585,932			
Variance	*$*	*(0)*	*0.00%*		*Other*	$	(670,663)			
					Total costs submitted to IHPA	**$**	**248,515,219**			
D Post Allocation Adjustments										
*WIP from prior years**	$	4,217,616								
Total expenditure allocated to patients	**$**	**336,400,124**	*53.32%*	*						
E Costed products submitted to jurisdiction					**H** Costed products submitted to IHPA			**K** Final NHCDC costed products		
Acute and Newborns	$	165,400,203			*Acute and Newborns*	$	166,719,784	*Acute^ and Newborns*	$	182,896,725
Non-admitted	$	48,508,235			*Non-admitted*	$	37,056,268	*Non-admitted*	$	37,056,267
Emergency	$	29,804,582			*Emergency*	$	30,755,726	*Emergency*	$	30,755,719
Sub Acute	$	13,959,372			*Sub Acute*	$	13,976,244	*Sub Acute^*	$	14,117,290
Mental Health	$	-			*Mental Health*	$	-	*Mental Health*	$	-
Other	$	78,727,731			*Other*	$	6,935	*Other*	$	6,935
Research	$	-			*Research*	$	-	*Research*	$	-
Teaching & Training	$	-			*Teaching & Training*	$	-	*Teaching & Training*	$	-
	$	**336,400,124**	*53.32%*	*		**$**	**248,514,958**		**$**	**264,832,936**
Variance	*$*	*0*	*0.00%*		*Variance*	*$*	*(261)*	*Variance*	*$*	*(1)*

Source: KPMG based on data supplied by the Toowoomba Hospital, jurisdiction and IHPA

** As WIP from prior years expenditure relates to prior year costs, this percentage excludes the $4.22 million from the calculation*

^ These figures include admitted emergency costs.

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Explanation of reconciliation items

This section discusses each of the reconciliation items including adjustments, inclusions and exclusions to the financial data. The information is based on the templates submitted for Toowoomba Hospital and face-to-face review discussions.

Item A – General Ledger

The final GL amount extracted by Queensland Health from the costing system totalled $622.00 million. This amount reflected the total expenditure for the Darling Downs Hospital and Health Service, which includes Toowoomba Hospital. This amount did not reconcile to the $622.20 million in total expenditure reported in the 2014-15 audited financial statements for the Darling Downs HHS. The $222,240 variance related to differences between the classifications of five account codes in the DSS system compared to the costing GL. In DSS, these items are accounted for as revenue whereas in the costing GL they are recognised as expenditure recoups.

Item B – Adjustments to the GL

Adjustments totalling $290.86 million were made to the initial GL amount. These adjustments related to the removal of expenditure related to other HHS facilities ($289.58 million) and costs defined as 'dead ended' ($1.28 million). Dead ended costs reflect services, which are defined as out of scope for patient costing by the AHPCS Version 3.1.

The basis of these exclusions appears reasonable.

These adjustments established an expenditure base for costing of $332.18 million for Toowoomba Hospital. This was approximately 53.3 percent of total expenditure reported in the GL (which was for the Darling Downs Hospital and Health Service).

Item C – Allocation of costs

Using the costing system Toowoomba Hospital undertakes a process of allocating overhead costs to direct cost centres.

- It was observed that the total of all direct cost centres of $277.32 million were allocated in the costing system.
- It was observed through the templates that all overheads of $54.87 million were allocated to direct cost centres, post allocation.

These amounted to $332.18 million and reflected the total for the Toowoomba Hospital. No variance was noted between Item B and Item C.

Item D – Post Allocation Adjustments

Post allocation adjustments were made for WIP patients discharged during the 2014-15 financial year with costs from prior years. This adjustment totalled $4.22 million.

The basis of this adjustment appears reasonable.

Item E - Costed products submitted to jurisdiction

Costs extracted by the jurisdiction and reported at product level are equal to $336.40 million. This represents approximately 53.3 percent of the total HHS expenditure. Costs were allocated to all products with the exception of Mental Health, Teaching, Training and Research.

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Item F – Costed products received by the jurisdiction

Costed products received by the jurisdiction totalled $336.40 million. No variance was noted between Items E and F.

Item G – Final adjustments

Queensland Health adjusts the hospital submission. The adjustments made for Round 19 totalled $87.88 million and included:

- Outpatient records not matched to patient administration system totalling $11.47 million were excluded
- Excluded costs of $250,392 related to admitted emergency episodes that could not be matched to an admitted acute episode
- Excluded costs of $28,166 related to non-admitted emergency episodes not matched to patient administration system
- To meet IHPA data requirements cost records were adjusted to remove negative costs. This increased the total by $2.59 million
- Virtual Patient feeder data ($65.87 million). The Virtual Patient feeder data adjustment included Community Outreach ($22.41 million), Dental Services ($14.33 million), Business and Commercial services ($13.30 million), Breastscreening ($3.84 million),Public Health ($3.69 million), Population Health ($2.77 million), Drug and Alcohol services ($2.42 million), Patient Transit Scheme ($2.05 million), Commonwealth Mental Health programs ($0.68 million), Research ($0.16 million), Organ and Tissue donation ($0.11 million) and Home Medical Aids ($0.11 million)
- Round 19 WIP excluded - ($5.76 million)
- Unmapped/unlinked outpatient records ($6.42 million)
- Other costs totalling $670,663 were excluded. and were made up of
    - Mismatched cost records excluded - $766,272
    - Merged cost records excluded - $3,892
    - Negative cost encounters added back – $99,502.

The basis of these adjustments appears reasonable, with the exception of Research and Organ and Tissue donation excluded as part of the Virtual Patient feeder. It is recommended that these costs be investigated in future rounds to ensure they are treated in accordance with the AHPCS Version 3.1.

Item H – Costed products submitted to IHPA

Costs derived by the jurisdiction and reported at product level to IHPA totalled $248.51 million. There was a minor variance of $261 between Item G and Item H.

Item I – Total products received by IHPA

Total costed products received by IHPA totalled $248.51 million. There was a minor variance of $8 between costs submitted by the jurisdiction and costs received by IHPA.

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Item J – IHPA adjustments

- *Admitted Emergency*

  Upon receipt of cost data, IHPA allocates the admitted emergency costs back to admitted patients for the purposes of reporting and analysis. Within IHPA's reconciliation, this amount was a duplication of admitted emergency costs and not an additional cost. For Toowoomba Hospital, this amounted to $16.32 million.

- *Unqualified Baby Adjustment*

  Upon receipt of cost data, IHPA redistributes the unqualified baby cost to the mother separation to provide a complete delivery cost. Within IHPAs reconciliation, this was not an additional cost but a movement between patients.

Item K – Final NHCDC Costed Outputs

The final NHCDC costed data for Toowoomba Hospital that was loaded into the National Round 19 cost data set was $264.83 million, which included the admitted emergency cost of $16.32 million.

6.3.3 Activity data

Table 46 reflects patient activity data from the source and costing systems for the Toowoomba Hospital. This activity data is compared to Table 47 which highlights the transfer of activity data by NHCDC product from the Toowoomba Hospital to Queensland Health and then through to IHPA submission and finalisation.

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Table 46 – Activity data – Toowoomba Base Hospital

Activity Data	# Records from Source	# Records in costing system	Variance	# Records linked to Admitted	# Records linked to Emergency	# Records linked to Non-admitted	# Records linked to Other	Total Linking Process	# Unlinked records
Inpatient	42,605	42,605	-	42,605	-	-	-	42,605	-
Emergency	49,408	49,408	-	-	49,408	-	-	49,408	-
Outpatients	157,460	157,460	-	-	-	157,460	-	157,460	-
Other	80,733	80,733		-	-	-	80,733	80,733	-
TOTAL	**330,206**	**330,206**	**-**	**42,605**	**49,408**	**238,193**	**80,733**	**330,206**	**-**

Source: KPMG based on data supplied by the Toowoomba Hospital and Queensland Health

Table 47 – Activity data submission – Toowoomba Base Hospital

Product	Activity related to 2014-15 Costs	Adjustments	Activity submitted to jurisdiction	Adjustments	Activity submitted to IHPA	Activity received by IHPA	Adjustments	Total Activity submitted for Round 19 NHCDC
Acute and Newborns	41,285	247	41,532	-	41,532	41,532	(1,436)	40,096
Non-admitted	156,401	-	156,401	(30,319)	126,082	126,082	-	126,082
Emergency	49,380	2	49,382	(317)	49,065	49,065	-	49,065
Sub Acute	745	32	777	-	777	777	-	777
Mental Health	-	-	-	-	-	-	-	-
Other	79,385	2,729	82,114	(82,084)	30	30	-	30
Research	-	-	-	-	-	-	-	-
Teaching and Training	-	-	-	-	-	-	-	-
Total	**327,196**	**3,010**	**330,206**	**(112,720)**	**217,486**	**217,486**	**(1,436)**	**216,050**

Source: KPMG based on data supplied by the Toowoomba Hospital, Queensland Health and IHPA

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In relation to the activity data for the Toowoomba Hospital, the following should be noted:

- There was a variance of 3,010 between the number of records from source systems, detailed in Table 46 (330,206 records) and activity related to 2014-15 costs by NHCDC product in Table 47 (327,196 records). The majority of this variance related to the addition of WIP activity (1,109 records) and Outpatient Tier 2 (1,620 records). The total adjustments made by Toowoomba Hospital equate to this variance.
- Adjustments made by Queensland Health related to the activity associated with excluded costs (refer to Item G in the reconciliation above), e.g. record matching issues for emergency and admitted patients, VPG feeder data and data quality errors. The 82,084 records removed from other, related to the $76.13 million adjustments listed in Item G of the financial reconciliation explanation.
- The adjustment made by IHPA to the acute and newborns product related to the UQB adjustment discussed in Item J of the explanation of reconciliation items.
- Adjustments made by IHPA related to admitted emergency reallocations are for reporting and analysis purposes (as discussed in Item J of the explanation of reconciliation items) and have no impact on the reported activity.

6.3.4 Feeder data

Table 48 presents patient feeder data for the Toowoomba Hospital.

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Table 48 – Feeder data – Toowoomba Base Hospital

Feeder Data	# Records from Source	# Records in costing system	Variance	# Records linked to Admitted	# Records linked to Emergency	# Records linked to Non-admitted	# Records linked to Other	Total Linking Process	# Unlinked records	% Linked
Allied Health Intervention Data	64,899	64,899	-	21,736	457	32,593	10,113	64,899	-	100.00%
Appointment Schedule Outpatient Data	144,505	144,505	-	4,635	95	139,530	245	144,505	-	100.00%
Blood Transfusion	1,531	1,531	-	774	446	216	95	1,531	-	100.00%
Community Mental Health Data	51,795	51,795	-	11,596	3,752	-	36,447	51,795	-	100.00%
Delivery (Birthing) Data	1,416	1,416	-	1,408	-	-	8	1,416	-	100.00%
Diagnostic Imaging Data	119,052	119,052	-	29,617	53,217	29,342	6,876	119,052	-	100.00%
Emergency Presentation Data	49,413	49,413	-	-	49,382	-	31	49,413	-	100.00%
Local Clinical System Data	1,473	1,473	-	27	-	640	806	1,473	-	100.00%
Medical ATD (Bed day) Data	50,622	50,622	-	50,254	-	-	368	50,622	-	100.00%
Nursing Acuity Data	65,429	65,429	-	64,686	-	-	743	65,429	-	100.00%
Nursing ATD (Bed day) Data	212,474	212,474	-	210,905	-	-	1,569	212,474	-	100.00%
Operating Theatre Data	69,796	69,796	-	69,236	-	5	555	69,796	-	100.00%
Pathology Data	233,829	233,829	-	96,232	79,119	55,127	3,351	233,829	-	100.00%
Pharmacy Data	73,368	73,368	-	39,448	422	31,082	2,416	73,368	-	100.00%
Virtual Patient Data	240	240	-	-	-	-	240	240	-	100.00%

Source: KPMG based on data supplied by Toowoomba Hospital and Queensland Health

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The following should be noted about the feeder data for the Toowoomba Hospital:

- There are fifteen feeders reported from hospital source systems and they appear to represent major hospital departments providing resource activity.
- Activity data is cleansed through Talons (third party product) on a monthly basis prior to entry into Transition II. This is where the matching of the four main categories occurs. Only valid records (where there is no activity mismatch) are loaded into the costing system. This explains why there are no variances between the source activity data and the costing system.
- Activity feeder checks are also conducted through the hospital based corporate information system patient administration system four times a day. If any records have changed then it is updated in the next extract to Transition II once a week.
- Activity is the key component of patient costing and the costing team regularly monitor feeder systems for anomalies. Where identified, anomalies are corrected by the hospital costing teams. There is a culture of continuous activity review process.

6.3.5 Treatment of WIP

Table 49 demonstrates models for WIP and its treatment in the Toowoomba Hospital's Round 19 NHCDC submission.

Table 49 – WIP – Toowoomba Base Hospital

Model	Description	Submitted to Round 19 NHCDC
1	Cost for patients admitted and discharged in 2014-15 only	Submitted to Round 19 of the NHCDC
2	Costs for patients admitted prior to 2014-15 and discharged in 2014-15	Submitted to Round 19 of the NHCDC. Costs are submitted for 2013-14.
3	Costs for patients admitted prior to or in 2014-15 and remain admitted at 30 June 2015	Not submitted to Round 19 of the NHCDC

Source: KPMG, based on Toowoomba Hospital templates and review discussions

In summary, for the Toowoomba Hospital, costs were submitted for admitted and discharged patients in 2014-15 and WIP costs for 2013-14 for those patients admitted prior to, but discharged, in 2014-15.

Escalation factor

Queensland Health did not apply any escalation factors to the costs associated with WIP from prior years as part of the Round 19 submission of the NHCDC.

6.3.6 Critical care

The Toowoomba Hospital operates an 8-bed critical care ward that includes both coronary care and ICU beds. The hospital does not have any High Dependency Units or Close Observation units located in wards. Critical care costs are captured in accordance with the applicable standard.

6.3.7 Costing public and private patients

Toowoomba Hospital does not allocate pathology and medical imaging costs to private patients. The resource utilisation is reflected against the patient however the applicable relative value unit

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is set to zero and no costs are allocated. Private patient revenue is not offset against any related expenditure.

The costs of diagnostic services, pathology and medical imaging, for public patients are included at product level in the final patient cost and these costs are reflected in the HHS GL. The equivalent costs are not reflected in the general ledger for private patients as the HHS does not incur any cost, rather there is direct billing to a third party. The activity, for private patients, is visible for clinical reporting however, the utilisation record is not costed. This aligns with the principles of the AHPCS Version 3.1 and reflects the true patient level data cost incurred for public and private patients treated by the HHS.

All medical officers at Toowoomba Hospital are paid an allowance in-lieu of private practice arrangements. There is no use of private practice funds to supplement the employment costs. The full employment cost associated with medical officers is allocated to all patients, regardless of financial class.

6.3.8 Treatment of specific items

A number of specific items were discussed during the consultation phase of the review to understand the manner in which they are treated in the costing process. These items have been considered separately as the cost data is used to inform the NEP and specific funding model adjustments for particular patient cohorts. Toowoomba Hospital's treatment of each of the items is summarised below.

Table 50 – Treatment of specific items – Toowoomba Base Hospital

Item	Treatment
Research	Research costs are captured in specific, separate cost centres and allocated to a Virtual Patient. For Round 19 these costs were excluded and not submitted as part of the NHCDC.
Teaching and Training	Teaching and Training is embedded in costs but not split out. Any costs designated as pure teaching and training are allocated to a virtual patient group for dead ending. Teaching and Training costs will be captured but separately to the patient level costing process.
Shared/Other commercial entities	Any expenditure associated with these activities is excluded by the hospital for costing purposes.

Source: KPMG, based on IFR discussions

6.3.9 Sample patient data

IHPA selected a sample of five patients from the Toowoomba Hospital for the purposes of testing the data flow from jurisdictions to IHPA at the patient level. Queensland Health provided the patient level costs for all five patients and these reconciled to IHPA records. The results are summarised in Table 51.

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Table 51 – Sample patients – Toowoomba Base Hospital

#	Product	Jurisdiction Records	Received by IHPA	Variance
1	Admitted ED	$929.80	$929.80	-
2	Non-Admitted	$339.98	$339.98	-
3	Acute	$5,620.02	$5,620.02	-
4	Acute	$745.69	$745.69	-
5	Rehab	$6,956.65	$6,956.65	-

Source: KPMG, based on the Toowoomba Hospital and IHPA data

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6.4 Logan Hospital

6.4.1 Overview

Logan Hospital is a major health service in one of the fastest growing regions in southeast Queensland. The hospital is part of the Metro South Hospital and Health Service. The hospital has grown from a 48-bed community hospital in 1990 to a 344-bed hospital, mirroring the rapid growth in population in the Logan region. The hospital provides a range of services including:

- General Medical and Surgical Services;
- Obstetrics and Gynaecology;
- Orthopaedics;
- Paediatrics;
- Palliative Care;
- Renal Dialysis; and
- Mental Health

Logan Hospital employs over 2,000 staff, including 979 nurses, 309 doctors (including visiting medical officers), 176 health professionals, 258 operational officers, and 274 managerial and clerical officers. Logan Hospital is a teaching hospital, which helps in training future health care professionals and participates in research through strong partnerships with Queensland's leading tertiary institutions.[11]

6.4.2 Financial data

This section discusses each of the reconciliation items including adjustments, inclusions and exclusions to the financial data. The information is based on the templates submitted for Logan Hospital and face-to-face review discussions.

Table 52 presents a summary of the Logan Hospital's costs, from the original extract from the General Ledger (GL) through to the final NHCDC submission for the Logan Hospital for Round 19.

[11] Logan Hospital and Logan Hospital (QLD Health website) – *accessed 15 June 2016*

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Table 52 – Round 19 NHCDC Reconciliation – Logan Hospital

Hospital				
Item			**Amount**	**% of GL**
A General Ledger (GL)	$	1,978,810,031		
B Adjustments to the GL				
Inclusions	$	-		
Exclusions	$	(1,392,282,817)		
Total hospital expenditure	**$**	**586,527,214**	*29.64%*	
C Allocation of Costs				
Post Allocation Direct amount	$	492,020,743		
Post Allocation Overhead amount	$	94,506,471		
Total hospital expenditure	**$**	**586,527,214**	*29.64%*	
Variance	*$*	*-*	*0.00%*	
D Post Allocation Adjustments				
Nil	$	-		
Total expenditure allocated to patients	**$**	**586,527,214**	*29.64%*	
E Costed products submitted to jurisdiction				
Acute and Newborns	$	191,704,510		
Non-admitted	$	33,445,960		
Emergency	$	73,305,095		
Sub Acute	$	11,562,761		
Mental Health	$	-		
Other	$	276,508,887		
Research	$	-		
Teaching & Training	$	-		
	$	**586,527,214**	*29.64%*	
Variance	*$*	*(0)*	*0.00%*	

Jurisdiction		
Item		**Amount**
F Costed Products received by jurisidction	$	586,527,214
Variance	*$*	*-*
G Final Adjustments		
Admitted not matched to PAS	$	(6,937)
Outpatient records not matched to PAS	$	(6,438,246)
AdmED with no matching inpatient epi	$	(941,784)
NonAdmED not matched to PAS or IHPA ProdType	$	(226,425)
Unlinked or mismatched records	$	(15,914,938)
Negative costs added back	$	9,729,063
Round 19 WIP	$	(8,345,282)
Virtual Patient feeder	$	(252,223,305)
Other	$	33,380
Total costs submitted to IHPA	**$**	**312,192,739**
H Costed products submitted to IHPA		
Acute and Newborns	$	197,755,167
Non-admitted	$	29,004,479
Emergency	$	72,142,776
Sub Acute	$	13,220,532
Mental Health	$	-
Other	$	68,890
Research	$	-
Teaching & Training	$	-
	$	**312,191,844**
Variance	*$*	*(896)*

IHPA		
Item		**Amount**
I Total costed products received by IHPA	$	312,191,832
Variance	*$*	*(12)*
J IHPA Adjustments		
Admitted ED reallocations	$	35,565,432
Final NHCDC costs	**$**	**347,757,264**
K Final NHCDC costed products		
Acute^ and Newborns	$	233,183,513
Non-admitted	$	29,004,477
Emergency	$	72,142,771
*Sub Acute^*	$	13,355,662
Mental Health	$	-
Other	$	70,841
Research	$	-
Teaching & Training	$	-
	$	**347,757,264**
Variance	*$*	*-*

Source: KPMG based on data supplied by Logan Hospital, jurisdiction and IHPA

^ These figures include admitted emergency costs.

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Explanation of reconciliation items

This section discusses each of the reconciliation items including adjustments, inclusions and exclusions to the financial data. The information is based on the templates submitted for Logan Hospital and face-to-face review discussions.

Item A – General Ledger

The final GL amount extracted by Queensland Health from the costing systems totalled $1.979 billion. This amount reflected the total expenditure for the Metro South Hospital and Health Service, which includes Logan Hospital and the Princess Alexandra Hospital. This amount did not reconcile to the total expenditure reported in the 2014-15 audited financial statements for the Metro South HHS, i.e. $1.981 billion. During the interview process, it was identified that the $1.87 million variance related to differences between the classifications of five account codes in the DSS system compared to the costing GL. In DSS, these items are accounted for as revenue whereas in the costing GL they are recognised as expenditure recoups.

Item B – Adjustments to the GL

Adjustments totalling approximately $1.392 billion were made to the GL. These adjustments related to the exclusion of expenditure for other HHS facilities ($1.377 billion) and costs defined as 'dead ended', that is out of scope for patient costing by the AHPCS Version 3.1 ($15.75 million).

The basis of these exclusions appears reasonable.

These adjustments established an expenditure base for costing of $586.53 million. This was approximately 29.6 percent of total expenditure reported in the GL (which was for the Metro South HHS).

Item C – Allocation of costs

The Logan Hospital undertakes a process of allocating overhead costs to direct cost centres.

- It was observed that the total of all direct cost centres of $492.02 million were allocated in the costing system.
- It was observed through the templates that all overheads of $94.51 million were allocated to direct cost centres, post allocation.

These amounted to $586.53 million and reflected the total for the Logan Hospital. No variance was noted between Item B and Item C.

Item D – Post Allocation Adjustments

Logan Hospital did not make post allocation adjustments for WIP patients discharged in Round 19 financial year with costs from prior years (as per the other Queensland sites reviewed). The amount was deleted from the submission due to a processing error in the Transition II software. The estimated impact was approximately 574 patients and 800 days. The cost impact cannot be quantified as the records were inadvertently deleted.

Item E - Costed products submitted to jurisdiction

Costs extracted by the jurisdiction and reported at product level are equal to $586.53 million. This represents approximately 29.6 percent of the total GL expenditure. Costs were allocated to all products with the exception of Mental Health, Teaching, Training and Research.

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Item F – Costed products received by the jurisdiction

Costed products received by the jurisdiction totalled $586.53 million. No variance was noted between Items E and F.

Item G – Final adjustments

Queensland Health adjusts the hospital submission. The adjustments made for Logan Hospital Round 19 submission totalled $274.33 million and included:

- Acute records not matched to patient administration system totalling $6,937 was excluded
- Cost records totalling $6.44 million were excluded. This related to outpatient records not matched to patient administration system. Only matched records were included in the final IHPA submission
- Excluded costs of $941,784 related to admitted emergency episodes with no matching admitted acute episodes
- Excluded costs of $226,425 related to non-admitted emergency episodes not matched to patient administration system or the IHPA product type
- Data quality errors related to unlinked/mismatched records excluded ($15.78 million)
- Round 19 WIP excluded - $8.35 million
- To meet IHPA data requirements cost records were adjusted to remove negative costs. This increased the total by $9.73 million
- Virtual Patient feeder data ($252.22 million). The Virtual Patient feeder data adjustment included the following services: Community Outreach ($124.06 million), Business and Commercial services ($80.93 million), Residential Aged Care ($18.54 million), Palliative Care Hospice ($12.06 million), Mental Health Services ($5.76 million), Renal Dialysis ($5.25 million), Patient Transport ($2.41 million), Adolescent Mental Health ($0.95 million), Patient Food Services ($0.55 million), Child Protection Service ($0.41 million), Hospital in the Home ($0.39 million), Hotel Services ($0.25 million), Chronic Disease Service ($0.24 million), Pharmacy ($0.17 million), Paediatrics ($0.15 million) and Other Services ($0.10 million)
- Other costs totalling $33,380 were excluded and were made up of
    - Negative cost encounters added back – $43,497
    - Subacute records with an admitted episode with a different product type to IHPA totalling $10,116 was excluded.

The basis of these adjustments appears reasonable. It is recommended that Queensland Health investigates the reasons for the unlinked and unmatched records to ensure appropriate treatment in future rounds.

Item H – Costed products submitted to IHPA

Costs derived by the jurisdiction and reported at product level to IHPA totalled $312.19 million with a minor variance of $896 noted between Item G and Item H (0.0003 percent of total costs submitted to IHPA).

Item I – Total products received by IHPA

Total costed products received by IHPA totalled $312.19 million. There was a minor variance of $12 between costs submitted by the jurisdiction and costs received by IHPA.

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Item J – IHPA adjustments

- *Admitted Emergency*

  Upon receipt of cost data, IHPA allocates the admitted emergency costs back to admitted patients for the purposes of reporting and analysis. Within IHPA's reconciliation, this amount was a duplication of admitted emergency costs and not an additional cost. For Logan Hospital, this amounted to $35.57 million.

- *Unqualified Baby Adjustment*

  Upon receipt of cost data, IHPA redistributes the unqualified baby cost to the mother separation to provide a complete delivery cost. Within IHPAs reconciliation, this was not an additional cost but a movement between patients.

Item K – Final NHCDC Costed Outputs

The final NHCDC costed data for Logan Hospital that was loaded into the National Round 19 cost data set was $347.76 million, which included the admitted emergency cost of $35.57 million.

6.4.3 Activity data

Table 53 presents patient activity data based on source and costing systems for the Logan Hospital. This activity data is then compared to Table 54 which highlights the transfer of activity data by NHCDC product from the Logan Hospital to Queensland Health and then through to IHPA submission and finalisation.

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Table 53 – Activity data – Logan Hospital

Activity Data	# Records from Source	# Records in costing system	Variance	# Records linked to Admitted	# Records linked to Emergency	# Records linked to Non-admitted	# Records linked to Other	Total Linking Process	# Unlinked records
Inpatient	61,007	61,007	-	61,007	-	-	-	61,007	-
Emergency	76,001	76,001	-	-	76,001	-	-	76,001	-
Outpatients	174,018	174,018	-	-	-	174,018	-	174,108	-
VPG	168	168	-	-	-	-	168	168	-
Other	44,530	44,530	-	-	-	-	44,350	44,350	-
TOTAL	**355,724**	**355,724**	**-**	**61,007**	**76,001**	**174,018**	**44,698**	**355,724**	**-**

Source: KPMG based on data supplied by Logan Hospital and Queensland Health

Table 54 – Activity data submission – Logan Hospital

Product	Activity related to 2014-15 Costs	Adjustments	Activity submitted to jurisdiction	Adjustments	Activity submitted to IHPA	Activity received by IHPA	Adjustments	Total Activity submitted for Round 19 NHCDC
Acute and Newborns	58,903	222	59,125	(5)	59,120	59,120	(2,618)	56,502
Non-admitted	172,866	-	172,866	(29,566)	143,300	143,300	-	143,300
Emergency	75,961	17	75,978	(1,072)	74,906	74,906	-	74,906
Sub Acute	1,114	14	1,128	(1)	1,127	1,127	-	1,127
Mental Health	-	-	-	-	-	-	-	-
Other	43,477	3,150	46,627	(46,244)	383	383	-	383
Research	-	-	-	-	-	-	-	-
Teaching and Training	-	-	-	-	-	-	-	-
Total	**352,321**	**3,403**	**355,724**	**(76,888)**	**278,836**	**278,836**	**(2,618)**	**276,218**

Source: KPMG based on data supplied by Logan Hospital, Queensland Health and IHPA

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The following should be noted about the transfer of activity data for the Logan Hospital:

- There was a variance of 3,403 records between the source data, detailed in Table 53 (355,724 records) and activity related to 2014-15 costs by NHCDC product in Table 54 (352,321 records). The majority of this variance was attributed to WIP activity (1,841 records) and Other (1,308 records). It should be noted that there was WIP activity, however the WIP costs were excluded due to the processing error described above. The total adjustments made by Logan Hospital equate to this variance.
- There were 76,888 records removed by Queensland Health prior to the final submission. These records related to the activity associated with the excluded costs (refer to Item G in the reconciliation). The largest variances related to 29,566 (Non-admitted) records not matched to the patient activity system, 27,337 (Other) records with mismatched site encounter records and 15,247 (Other) records with data quality errors making them un-mappable to encounters.
- The adjustment made by IHPA to the acute and newborns product related to the UQB adjustment discussed in Item J of the explanation of reconciliation items.
- Adjustments made by IHPA related to admitted emergency reallocations are for reporting and analysis purposes (as discussed in Item J of the explanation of reconciliation items) and have no impact on the reported activity.

6.4.4 Feeder data

Table 55 presents patient feeder data for the Logan Hospital.

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Table 55 – Feeder data – Logan Hospital

Feeder Data	# Records from Source	# Records in costing system	Variance	# Records linked to Admitted	# Records linked to Emergency	# Records linked to Non-admitted	# Records linked to Other	Total Linking Process	# Unlinked records	% Linked
Allied Health Intervention Data	63,995	63,995	-	25,985	1,334	31,141	5,535	63,995	-	100.00%
Appointment Schedule Outpatient Data	165,831	165,831	-	3,186	163	160,514	1,968	165,831	-	100.00%
Blood Transfusion	2,559	2,559	-	1,275	477	575	232	2,559	-	100.00%
Community Mental Health Data	222,595	222,595	-	27,833	14,438	-	180,324	222,595	-	100.00%
Delivery (Birthing) Data	3,316	3,316	-	3,301	-	-	15	3,316	-	100.00%
Diagnostic Imaging Data	89,928	89,928	-	21,363	40,971	22,454	5,140	89,928	-	100.00%
Emergency Presentation Data	75,976	75,976	-	-	75,953	-	23	75,976	-	100.00%
Medical ATD (Bed day) Data	46,949	46,949	-	46,652	-	-	297	46,949	-	100.00%
Nursing ATD (Bed day) Data	132,427	132,427	-	131,716	-	-	711	132,427	-	100.00%
Operating Theatre Data	51,049	51,049	-	50,824	-	-	225	51,049	-	100.00%
Pathology Data	390,740	390,740	-	151,979	149,921	86,278	2,562	390,740	-	100.00%
Pharmacy Data	69,554	69,554	-	51,055	995	14,680	2,824	69,554	-	100.00%
Virtual Patient Data	288	288	-	-	-	-	288	288	-	100.00%

Source: KPMG based on data supplied by Logan Hospital and Queensland Health

The following should be noted about the feeder data for Logan Hospital:

- There are thirteen feeders reported from hospital source systems and they appear to represent major hospital departments providing resource activity.
- Activity data is cleansed through Talons (third party product) via a state-wide SQL database whereby records will cascade through business linking rules to select where the record is to be allocated.
- An example of the cascading business linking rules for the pathology feeder file involves the system checking if there was an inpatient episode on the same day. If yes, then the record will link, if not, then it will check the Emergency episodes. If there is still no match, then it will check the outpatient episodes.

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6.4.5 Treatment of WIP

Table 56 demonstrates models for WIP and its treatment in Logan Hospital's Round 19 NHCDC submission.

Table 56 – WIP – Logan Hospital

Model	Description	Submitted to Round 19 NHCDC
1	Cost for patients admitted and discharged in 2014-15 only	Submitted to Round 19 of the NHCDC
2	Costs for patients admitted prior to 2014-15 and discharged in 2014-15	Not submitted to Round 19 of the NHCDC.
3	Costs for patients admitted prior to or in 2014-15 and remain admitted at 30 June 2015	Not submitted to Round 19 of the NHCDC. The normal practice is to submit this data, however, a processing error occurred in Round 19 as described in section 6.4.2

Source: KPMG, based on the Logan Hospital templates and review discussions

In summary, for Logan Hospital, costs were submitted for admitted and discharged patients in 2014-15. However, WIP costs were not submitted for those patients admitted prior to, but discharged, in 2014-15 as identified above.

Escalation factor

Queensland Health did not apply any escalation factors to the costs associated with WIP from prior years as part of the Round 19 submission of the NHCDC.

6.4.6 Critical care

Logan Hospital operates a dedicated ICU, with costs associated with that unit captured in a dedicated cost centre. There is also a Coronary Care Unit (CCU), which is located, adjacent to the cardiac care ward. The costs associated with the CCU are derived from the cardiac care ward. Patients are admitted to defined beds and this is the basis for allocating costs, there are seven ICU beds and five CCU beds. The hospital does not have any dedicated close observation units or high dependency units. Critical care costs are captured in accordance with the applicable standard.

6.4.7 Costing public and private patients

Logan Hospital does not allocate pathology and medical imaging costs to private patients. The resource utilisation is reflected against the patient however the applicable relative value unit is set to zero and no costs are allocated. Applicable costs are allocated to private patients, including a share of pathology, medical imaging, prosthesis and medical costs, in the same manner as public patients. Private patient revenue is not offset against any related expenditure.

The issues associated with costing private patients at Logan Hospital related to the level of cost allocated to pathology and medical imaging. Where a patient is private and billed under Medical Benefits Scheme (MBS), the feeder system reflects the activity however there is zero cost. Costs are allocated to all patients based on a relative value unit based on the actual service (MBS item

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number) provided. The costs of diagnostic services, pathology and medical imaging, for public patients are included at product level in the final patient cost and these costs are reflected in the HHS GL. The equivalent costs are not reflected in the general ledger for private patients as the HHS does not incur any cost, as there is direct billing to a third party. The activity, for private patients, is visible for clinical reporting however, the utilisation record is not costed. This aligns with the principles of the AHPCS Version 3.1 and reflects the true patient level data cost incurred for public and private patients treated by the HHS.

The majority of medical officers at Logan Hospital are paid an allowance in-lieu of private practice arrangements, i.e. there is limited use of private practice funds to supplement the employment costs. Hence, the full employment cost associated with medical officers is allocated to all patients, regardless of financial class. It should be noted that payments made to medical specialists directly from the Private Practice Trust Fund are excluded from the costing process.

6.4.8 Treatment of specific items

A number of specific items were discussed during the consultation phase of the review to understand the manner in which they are treated in the costing process. These items have been considered separately as the cost data is used to inform the NEP and specific funding model adjustments for particular patient cohorts. Logan Hospital's treatment of each of the items is summarised below.

Table 57 – Treatment of specific items – Logan Hospital

Item	Treatment
Research	Trust and research cost centres are treated in the same fashion. That is, as separate departments and sent to a virtual patient group for dead ending.
Teaching and Training	Teaching and Training is embedded in costs but not split out. Any costs designated as pure teaching and training are allocated to a virtual patient group for dead ending. Teaching and Training costs will be captured, but separately to the patient level costing process.
Shared/Other commercial entities	Expenditure is excluded by the hospital.

Source: KPMG, based on IFR discussions

6.4.9 Sample patient data

IHPA selected a sample of five patients from Logan Hospital for the purposes of testing the data flow from jurisdictions to IHPA at the patient level. Queensland Health provided the patient level costs for all five patients and these reconciled to IHPA records. The results are summarised in Table 58.

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Table 58 – Sample patients – Logan Hospital

#	Product	Jurisdiction Records	Received by IHPA	Variance
1	Non-Admitted ED	$812.74	$812.74	-
2	Non-Admitted	$30.72	$30.72	-
3	Acute	$2,816.42	$2,816.42	-
4	Palliative CD	$1,117.05	$1,117.05	-
5	Acute	$290.51	$290.51	-

Source: KPMG, based on the Logan Hospital and IHPA data

6.5 Application of AHPCS Version 3.1

The following section summarises Queensland Health's application of selected standards from Version 3.1 of the AHPCS (outlined in Appendix B) to the Round 19 NHCDC submission.

6.5.1 SCP 1.004 – Hospital Products in Scope

Queensland Health representatives completed templates for this review for hospitals and demonstrated through the templates and interview process that costs are reported against admitted acute, emergency care and non-admitted products.

It was noted that costs are also created for non-patient products (such as unlinked records).

6.5.2 SCP 2.003 – Product Costs in Scope

During the interview process, Queensland Health and HHS representatives stated that all products are costed, which includes costs assigned to products in scope for the NHCDC, unlinked activity, and costs assigned to virtual patients. Unlinked activity and virtual patients are not submitted to the NHCDC.

It was noted in the interview process that costs are applied using the same standards and principles to patients regardless of their financial classification.

6.5.3 SCP 2B.002 - Research Costs

Queensland HHS's manage research expenditure by mapping costs to dedicated cost centres. These costs are excluded from final patient costing as per the AHPCS Version 3.1.

6.5.4 SCP 3.001 - Matching Production and Cost

The application of this standard was demonstrated during the interview and an Excel file was produced from the various hospital costing systems outlining the derived accounts.

6.5.5 SCP 3A.001 - Matching Production and Cost – Overhead Cost Allocation

The jurisdiction was able to demonstrate that overhead costs were fully allocated to direct patient care areas via the pre allocation and post allocation data included in the templates.

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6.5.6 SCP 3B.001 - Matching Production and Cost – Costing all Products

The application of this standard was demonstrated in the template and Queensland Health provided an overview of their internal reconciliation process, which demonstrated the allocation of costs to products.

6.5.7 SCP 3C.001 - Matching Production and Cost – Commercial Business Entities

Based on discussions with Queensland Health and hospital representatives during the review, commercial business entity expenditure was excluded in accordance with the standard.

6.5.8 SCP 3E.001 - Matching Production and Cost – Offsets and Recoveries

There was no offsetting of costs with revenue with the exception of salaries and wages recoups from internal and external clients.

6.5.9 SCP 3G.001 – Matching Production and Cost – Reconciliation to Source Data

Based on discussions during the review, Queensland Health completes a final reconciliation of its costing system to source documentation.

6.5.10 GL 2.004 - Account Code Mapping to Line Items

Queensland Health representatives indicated that total costs were mapped to the standard specified line items; this was reflected in the hospital templates submitted.

6.5.11 GL 4A.002 – Critical Care Definition

The three hospitals reviewed had dedicated ICUs in their facilities. The direct costs associated with ICU are allocated to discrete cost centres and those costs are only applied to patients who used the ICU. There were no examples of close observation units of High Dependency Units at any of the hospitals reviewed.

6.5.12 COST 3A.002 – Allocation of Medical Costs for Private and Public Patients

Costs are allocated to public and private patients in the same manner. This includes costs associated with medical and nursing salaries and wages, pathology, medical imaging and prosthesis. There is no offsetting of private patient revenue against the expenditure.

The majority of medical officers at each of the hospitals reviewed are paid an allowance in lieu of private practice and all of these costs are captured in the General Ledger. It should be noted that some Logan Hospital payments are made to medical specialists directly from the Private Practice Trust Fund and are excluded from the costing process.

6.5.13 COST 5.002 - Treatment of Work-In-Progress Costs

Discussions revealed that patients are allocated costs based on their consumption of resources for that reporting period. Where costs are incurred in prior years, these are also included in the final costed data and NHCDC submission. A processing error occurred at Logan Hospital which resulted in the deletion of these WIP costs from prior years for Round 19. This amount could not be quantified.

No escalation factors were applied to these costs for Round 19 or any previous round of the NHCDC.

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6.6 Conclusion

The findings of the Queensland Round 19 IFR are summarised below:

- Queensland Health has improved its NHCDC reconciliation processes since Round 18, by implementing an end-to-end reconciliation process from GL data through to final submission.
- The financial reconciliation demonstrates the transformation of cost data from the original GL extract through to the final NHCDC submission for the respective hospitals. Major exclusions from the original GL data include the removal of other hospitals and services in the respective HHS and the removal of dead ended cost centres. There were variances between the audited statements and final GL amount entered into the respective costing system.
- The basis of the adjustments appears reasonable, with the exception of:
    - Gold Coast Hospital excluded bad and doubtful debts expenditure. The AHPCS is silent on the specific inclusion or exclusion of bad and doubtful debts. Bad and doubtful debts expenditure related to the provision for debts that are unrecoverable from patients/clients. It does not have an impact on the cost of patient services provided by the hospital.
    - It is recommended that Queensland Health investigates the reasons for the unlinked and unmatched records to ensure appropriate treatment in future rounds.
    - Research and Organ and Tissue donation were excluded as part of the Virtual Patient feeder at Toowoomba Hospital. It is recommended that these costs be investigated in future rounds to ensure they are treated in accordance with the AHPCS.
- Minor variances were noted in the financial reconciliations for each Queensland hospital. These variances were less than 0.001 percent of the relevant expenditure. Minor variances were also noted between the costed products submitted to IHPA and the costed products received by IHPA.
- Total activity data submitted by the Queensland hospitals reviewed was adjusted by Queensland Health to reflect WIP adjustments, adjustments for out of scope activity and data validation issues. IHPA reduced activity by the IHPA UQB adjustment.
- The hospitals reviewed have a strong focus on cleansing activity and ensuring episodes link appropriately. At hospital level, the number of records linked from source to product was significant with all feeders having a 100 percent link or match. This suggests that there is robustness in the level of feeder activity reported back to episodes.
- WIP was treated in accordance with the COST 5.002 of the AHPCS Version 3.1 with the exception of Logan Hospital, where WIP from prior years was excluded due to a processing error. This cost could not be quantified. Queensland Health did not apply any escalation factors to the costs associated with WIP for prior years as part of the Round 19 submission to the NHCDC.
- The five sample patients selected for review for Gold Coast University Hospital, Toowoomba Hospital and Logan Hospital reconciled to IHPA records.

Based on discussions held during the site visits, and a review of the financial reconciliations provided, Queensland Health has robust reconciliation processes in place. As such, nothing was identified to suggest that the financial data is not fit for NHCDC submission. Furthermore, the data flow from the jurisdiction to IHPA demonstrated no unexplained variances.

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7. South Australia

7.1 Jurisdictional overview

7.1.1 Management of NHCDC process

The South Australian Department of Health and Ageing (SA Health) through the Funding Models Unit is responsible for the preparation and submission of South Australia's (SA) NHCDC submission. The approach for Round 19 is consistent with the approach used for the Round 18 submission, i.e. SA Health prepared and submitted the Round 19 submission in consultation with the relevant hospitals and Local Health Networks (LHNs).

SA Health has a single instance of PowerHealth Solutions Power Performance Management 2 (PPM2) as its corporate clinical costing solution. The use of a single instance, co-ordinated by a central unit ensures that the approach to costing in SA is consistent across all hospitals.

Hospitals are responsible for recording activity data in the Patient Administration System (PAS). Hospital activity data is uploaded to a state-wide data warehouse. Quality assurance processes are conducted by the LHN and SA Health to ensure that the activity data is robust and consistent. As the activity file has multiple uses (reporting, funding and costing), the data is cleansed before submission to the state-wide database.

SA Health has a single instance of its financial management information system with each LHN having a dedicated general ledger (GL). Individual health services are responsible for the financial data in their respective ledgers. The hospital financial data is extracted from the GL as part of the costing process. For costing purposes, SA Health provides the LHN with financial information on a range of services that they manage, which is not allocated to the respective LHN ledgers during the financial year. These costs include Information and Communications Technology (ICT) Services, Procurement Services and the Work Cover Levy. Costs associated with other centralised services, e.g. finance and workforce services, are allocated to the LHNs during the financial year.

Prior to submitting NHCDC data to IHPA, the Funding Model Unit provides each LHN with the costing submission and seeks Executive sign-off from the LHN. The Manager, Funding Models is responsible for the sign-off of the final data submitted to IHPA.

Two hospitals from the Central Adelaide LHN were nominated to participate in the IFR for Round 19, Royal Adelaide Hospital and The Queen Elizabeth Hospital. In addition to these hospitals, the Central Adelaide LHN is responsible for the provision of services for central metropolitan Adelaide residents including two rehabilitation hospitals, GP Plus Centres and mental health services. Central Adelaide LHN also governs a number of state-wide services including the SA Dental Service (SADS), Breastscreen SA (BSSA), SA Pathology and SA Medical Imaging.

Product fractioned (PFRAC) data is utilised for the costing of the hospitals included in this IFR (there were over 10,000 reclassification rules for the Central Adelaide LHN submission). The focus for the fractions is to allocate costs to a range of products including acute admitted, non-admitted, teaching and training.

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Key initiatives since Round 18 NHCDC

The major initiative that has been implemented since Round 18 was the submission of non-admitted patient level data (both activity and costs), as part of the Round 19 submission.

7.2 Royal Adelaide Hospital

7.2.1 Overview

Royal Adelaide Hospital is part of the Central Adelaide LHN and is located on North Terrace in the city of Adelaide. Royal Adelaide Hospital is an accredited teaching hospital for all health professionals, offering basic training positions in internal medicine, surgery, and general practice, as well as providing services and training. Some of the services covered are listed below:

- Cardiothoracic Surgery
- Emergency Medicine
- Infectious Diseases
- Intensive Care Medicine
- Internal Medicine
- Medical Oncology
- Neurology
- Psychiatry
- Radiation Oncology
- Urology.

Royal Adelaide Hospital's North Terrace campus employs around 6,000 employees and has 544 general medical beds and 96 speciality beds. Royal Adelaide Hospital also includes the 115-bed Hampstead Rehabilitation Centre. This facility provides clinical rehabilitation services for people of all ages recovering from traumatic brain injury, stroke, other neurological and medical disorders, dementia, geriatric rehabilitation, spinal cord injury, orthopaedic conditions and amputations and burns rehabilitation.[12] It should be noted that the Hampstead Rehabilitation Centre is not included in the Royal Adelaide Hospital's submission to the NHCDC.

7.2.2 Financial data

For the Round 19 IFR, the data collection templates were completed and submitted by SA Health's Finance and Corporate Services (Funding Models) unit on behalf of Royal Adelaide Hospital. Representatives from the Unit attended and participated in the consultation process during the review, as well as senior casemix staff from Royal Adelaide Hospital.

Table 59 reflects a summary of Royal Adelaide Hospital's costs, from the original extract from the GL through to the final NHCDC submission for Round 19.

[12] Royal Adelaide Hospital – *accessed 15 June 2016*

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Table 59 – Round 19 NHCDC Reconciliation – Royal Adelaide Hospital

Hospital			
Item		**Amount**	**% of GL**
A General Ledger (GL)	$	897,110,237	
B Adjustments to the GL			
Inclusions	$	34,483,242	
Exclusions	$	(23,479,598)	
Total hospital expenditure	**$**	**908,113,882**	*101.23%*
C Allocation of Costs			
Post Allocation Direct amount	$	639,417,604	
Post Allocation Overhead amount	$	268,696,296	
Total hospital expenditure	**$**	**908,113,900**	*101.23%*
Variance	*$*	*18*	*0.00%*
D Post Allocation Adjustments			
Research	$	(2,394,637)	
Teaching	$	(22,199,017)	
System-generated/Non-Casemix	$	(14,996,960)	
Organ transplant encounters	$	(3,112,997)	
Non-patient costing items	$	(23,339,451)	
Total expenditure allocated to patients	**$**	**842,070,837**	*93.86%*
E Costed products submitted to jurisdiction			
Acute	$	611,703,936	
Non-admitted	$	163,421,488	
Emergency	$	58,862,054	
Sub Acute	$	8,083,373	
Mental Health	$	-	
Other	$	-	
Research	$	-	
Teaching & Training	$	-	
	$	**842,070,851**	*93.86%*
Variance	*$*	*13*	*0.00%*

Jurisdiction		
Item		**Amount**
F Costed Products received by jurisidction	$	842,070,851
Variance	*$*	*-*
G Final Adjustments		
WIP - Round 19	$	(13,822,893)
WIP prior years	$	21,137,949
Patient level data unavailable	$	(15,288,668)
Unlinked to Admitted Patient Care data	$	(796,267)
Incomplete cost record	$	(44,182)
Total costs submitted to IHPA	**$**	**833,256,790**
H Costed products submitted to IHPA		
Acute	$	618,429,373
Non-admitted	$	148,132,823
Emergency	$	58,795,115
Sub Acute	$	7,899,484
Mental Health	$	-
Other	$	-
Research	$	-
Teaching & Training	$	-
	$	**833,256,795**
Variance	*$*	*6*

IHPA		
Item		**Amount**
I Total costed products received by IHPA	$	833,137,223
Variance	*$*	*(119,567)*
J IHPA Adjustments		
Admitted ED reallocations	$	34,487,267
Final NHCDC costs	**$**	**867,624,490**
K Final NHCDC costed products		
*Acute^*	$	652,872,740
Non-admitted	$	148,070,357
Emergency	$	58,772,694
*Sub Acute^*	$	7,908,700
Mental Health	$	-
Other	$	-
Research	$	-
Teaching & Training	$	-
	$	**867,624,491**
Variance	*$*	*1*

Source: KPMG based on data supplied by Royal Adelaide Hospital, jurisdiction and IHPA

^ These figures include admitted emergency costs.

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Explanation of reconciliation items

This section discusses each of the reconciliation items including adjustments, inclusions and exclusions to the financial data. The information is based on the templates submitted for Royal Adelaide Hospital by SA Health and face-to-face review discussions.

Item A – General Ledger

The final GL amount extracted by SA Health from the GL totalled $1.974 billion. This amount reflected the total expenditure for Central Adelaide LHN, which includes Royal Adelaide Hospital, however the total for Central Adelaide LHN did not reconcile to the total expenditure reported in the 2014-15 financial statements. There was a minor variance noted of $64,952 or 0.003 percent of the expenditure reported in the audited financial statements.

This amount was then split in the template to identify the costs related to Royal Adelaide Hospital. The final amount that related to Royal Adelaide Hospital was $897.11 million.

Item B – Adjustments to the GL

For costing purposes, a number of inclusions and exclusions were made to the GL data. These adjustments had a net impact of $11.00 million. Inclusions made to the GL were approximately $34.48 million, the majority of which related to various state-wide services and intra health network cost centres that related directly to Royal Adelaide Hospital. The items are summarised below:

- Cost centres from the Northern Adelaide Local Health Network which related to Central Adelaide LHN - $1.46 million
- Clinical Services paid by SA Pathology - $2.75 million
- South Australian Medical Imaging – ($3.03 million), this amount is negative as the South Australian Medical Imaging administration sits in Royal Adelaide Hospital cost centres and these costs are distributed to other hospitals
- Procurement Services - $4.25 million
- ICT Services - $5.73 million
- Work Cover Levy - $668,981
- SA Pathology Overhead Charges - $9.21 million
- SA Pharmacy Overhead Charges – ($1.31 million). This amount is a negative as the SA Pharmacy administration is a cost centre within Royal Adelaide Hospital and these costs are distributed to other hospitals
- Overhead Allocation - $29.36 million
- Recharges added back – a negative adjustment of ($14.60 million).

Exclusions made to the GL were approximately $23.48 million, the majority of which are corporate costs defined as out of scope for patient costing by the Australian Hospital Patient Costing Standards (AHPCS) Version 3.1.

- Transfer Central and Northern Adelaide Renal and Transplant Services to North Adelaide LHN - $313,700

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- Capital Assets - $16.76 million. This amount is associated with the gain and loss of sale of capital infrastructure within the LHN
- Bad and Doubtful Debts - $2.72 million
- Costs excluded during the reclass process - $3.68 million related to the Royal Adelaide Hospital's share of the end of financial year revaluation decrements processed at the LHN level.

The basis of these adjustments appears reasonable, with the exception of expenditure related to the gain and loss of sale of capital infrastructure within the LHN. This expenditure should be included in accordance with the AHPCS Version 3.1.

In addition, the AHPCS is silent on the specific inclusion or exclusion of bad and doubtful debts. Bad and doubtful debts expenditure relates to the provision for debts that are unrecoverable from patients/clients. It does not have an impact on the cost of patient services provided by the hospital.

These adjustments established an expenditure base for costing of $908.11 million. This was approximately 101.2 percent of total expenditure reported in the GL.

Item C – Allocation of costs

Royal Adelaide Hospital undertakes a process of reclass/transfers between cost centres. For Central Adelaide LHN there were over 10,000 reclass rules in PPM2, predominantly related to product fractions to allocate costs to various products, e.g. acute admitted, non-admitted, teaching etc. It was observed that:

- the total of all direct cost centres of $639.42 million was allocated post allocation.
- overheads of $268.70 million were allocated to direct cost centres, post allocation.

These amounted to $908.11 million and reflected the total for Royal Adelaide Hospital. A minor variance of $19 was identified between Item B and Item C.

Item D – Post Allocation Adjustments

A number of exclusions were made post allocation and included:

- Research - $2.39 million
- Teaching – $22.20 million
- System-generated/Non Casemix - $15.00 million. This expenditure is predominantly made up of unlinked activity (activity for which the patient is not associated with a hospital attendance e.g. pharmacy walk-ins).
- Encounters related to organ transplantation were excluded - $3.11 million.
- Removal of non-patient costing related items. - $23.34 million. This included but is not limited to:
    - Residential wing - $10.67 million
    - Pharmacy non-patient products - $8.64 million
    - Car Parking - $3.19 million
    - Clinic renal home dialysis - $2.98 million

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The basis of these exclusions appears reasonable. However, the exclusion of Teaching, Training and Research may impact on the completeness of the NHCDC. SA Health is awaiting the outcome of the TTR project undertaken by IHPA to provide sufficient guidance on how to cost TTR. In addition, Royal Adelaide Hospital/Central Adelaide LHN should investigate the reasons for unlinked activity to ensure it is treated appropriately in future rounds.

The total expenditure allocated to patients for Royal Adelaide Hospital was $842.07 million which represented approximately 93.9 percent of the GL.

Item E - Costed products submitted to jurisdiction

Costs submitted to the jurisdiction and reported at product level totalled $842.07 million. Costs were allocated to all products with the exception of Mental Health, Other, Teaching, Training and Research. A minor variance of $13 was identified between Item D and Item E.

Item F – Costed products received by the jurisdiction

Costed products received by the jurisdiction totalled $842.07 million. No variance was noted between Items E and F.

Item G – Final adjustments

SA Health made a number of adjustments to the final hospital submission. The adjustments made for Round 19 totalled $8.81 million and included:

- Excluded costs of $13.82 million related to WIP records for patients still admitted in 2014-15.
- Included costs of $21.14 million related to WIP records for patients admitted prior to 2014-15 and discharged in 2014-15 (but only back to 2012-13).
- Excluded cost records with no matching patient level data totalling $15.29 million.
- Excluded unlinked to Admitted Patient Care (APC) data totalling $796,267.
- Excluded incomplete cost records totalling $44,182.

The basis of these exclusions appears reasonable. It is recommended that SA Health investigates the reasons for unlinked activity to ensure it is treated appropriately in future rounds.

The total NHCDC costs submitted to IHPA by SA Health was $833.26 million.

Item H – Costed products submitted to IHPA

Costs derived by the jurisdiction and reported at product level to IHPA totalled $833.26 million. A minor variance of $6 was noted.

Item I – Total products received by IHPA

Total costed products received by IHPA totalled $833.14 million. A variance of $119,567 was noted between costs submitted by the jurisdiction and costs received by IHPA. This variance represented 0.014 percent of the costs submitted by the jurisdiction.

A variance was observed between that which was submitted by SA and that received by IHPA due to SA's new submission method containing more decimal places than permitted by IHPA's automated collection portal. IHPA reviewed the impact of this on the state-level collection and considered it immaterial and less than 0.02 percent of total expenditure.

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Item J – IHPA adjustments

Upon receipt of cost data, IHPA allocates the admitted emergency costs back to admitted patients for the purposes of reporting and analysis. Within IHPA's reconciliation, this amount was a duplication of admitted emergency costs and not an additional cost. For Royal Adelaide Hospital this amounted to $34.49 million.

Item K – Final NHCDC Costed Outputs

The final NHCDC costed data for Royal Adelaide Hospital that was loaded into the National Round 19 cost data set was $867.49 million, which included the admitted emergency cost of $34.49 million.

7.2.3 Activity data

Table 60 presents patient activity data based on source and costing systems for Central Adelaide LHN that was used for the costing of activity at Royal Adelaide Hospital. This activity data is then compared to Table 61 which highlights the transfer of activity data by NHCDC product from Royal Adelaide Hospital to SA Health and then through to IHPA submission and finalisation.

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Table 60 – Activity data – Central Adelaide LHN for Royal Adelaide Hospital

Activity Data	# Records from Source	# Records in costing system	Variance	# Records linked to Admitted	# Records linked to Emergency	# Records linked to Non-admitted	# Records linked to Other	Total Linking Process	# Unlinked records
SAH Encounter ED (CALHN)	114,310	114,344	34	-	114,344	-	-	114,344	-
SAH Encounter Inpatient Metro (CALHN)	124,257	124,234	(23)	124,234	-	-	-	124,234	-
SAH Encounter Outpatient (CALHN)	491,612	490,649	(968)	-	-	490,649	-	490,649	-
SAH Encounter Outpatient Manual (CALHN)	294	78,101	77,807	-	-	78,101	-	78,101	-
TOTAL	**730,473**	**807,328**	**76,855**	**124,234**	**114,344**	**567,750**	**-**	**807,328**	**-**

Source: KPMG based on data supplied by SA Health

The following should be noted about the variances between records from source and records in the costing system for Central Adelaide LHN:

- The variance of 34 records in the Encounter ED system related to WIP records at the start of the year i.e. presented prior to 1 July 2014.
- The variance of 23 records in the Encounter Inpatient Metro system related to records where no costs were to be allocated (40 records) and records that were costed but did not match APC activity (17 records).
- The variance of 968 records in the Encounter Outpatient system related to records where no costs were allocated.
- The 294 SAH Encounter Outpatient Manual records are at an aggregate level by clinic per month. For costing purposes, these records are split by the number of service events, which for Central Adelaide LHN totalled 115,460 records, of which 78,101 records were costed. The 37,359 remaining records were not costed as they related to the Tier 2 clinic, Clinical Measurement and the cost is allocated to the relevant clinic e.g. ECG tests are costed to a cardiology service event.

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Table 61 – Activity data submission – Royal Adelaide Hospital

Product	Activity related to 2014-15 Costs	Adjustments	Activity submitted to jurisdiction	Adjustments	Activity submitted to IHPA	Activity received by IHPA	Adjustments	Total Activity submitted for Round 19 NHCDC
Acute	81,272	-	81,272	(651)	80,621	80,621	-	80,621
Non-admitted	384,075	-	384,075	(60,725)	323,350	323,350	-	323,350
Emergency	70,867	-	70,867	(78)	70,789	70,789	-	70,789
Sub Acute	461	-	461	(30)	431	431	-	431
Mental Health	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-
Research	-	-	-	-	-	-	-	-
Teaching and Training	-	-	-	-	-	-	-	-
Total	**536,675**	**-**	**536,675**	**(61,484)**	**475,191**	**475,191**	**-**	**475,191**

Source: KPMG based on data supplied by Royal Adelaide Hospital, SA Health and IHPA

The following should be noted about the transfer of activity data for Royal Adelaide Hospital:

- There was a variance between the number of records in the costing system for Central Adelaide LHN, detailed in Table 60 (807,328 records) and activity related to 2014-15 costs by NHCDC product for Royal Adelaide Hospital in Table 61 (536,675 records) of 270,653 records. This variance related to The Queen Elizabeth Hospital costing records of 262,719 and other facilities in Central Adelaide LHN records of 7,934.
- Royal Adelaide Hospital made no further adjustments to activity.
- Adjustments made by SA Health related to the activity associated with the excluded costs (refer to Item G above). These records related to excluded WIP activity, activity with no patient level data available and unlinked APC data.
- Adjustments made by IHPA related to admitted emergency reallocations are for reporting and analysis purposes (as discussed in Item J of the explanation of reconciliation items) and have no impact on the reported activity.

7.2.4 Feeder data

Table 62 reflects data associated with patient feeder data for Royal Adelaide Hospital.

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Table 62 – Feeder data – Royal Adelaide Hospital

Feeder Data	# Records from Source	# Records in costing system	Variance	# Records linked to Admitted	# Records linked to Emergency	# Records linked to Non-admitted	# Records linked to Other	Total Linking Process	# Unlinked records	% Linked
SAH Coding Diagnosis	385,128	385,128	-	385,128	-	-	-	385,128	-	100.00%
SAH Coding Procedure	238,308	238,308	-	238,308	-	-	-	238,308	-	100.00%
SAH ED Medical	114,310	114,310	-	-	114,310	-	-	114,310	-	100.00%
SAH ED Nursing	114,310	114,310	-	-	114,310	-	-	114,310	-	100.00%
SAH Pharmacy	554,904	554,893	(11)	341,347	91,702	99,232	22,612	554,893	-	100.00%
SAH Pharmacy S100	1,749	1,749	-	1,647	-	6	-	1,653	96	94.51%
SAH Service Outpatient Manual	294	294	-	-	-	294	-	294	-	100.00%
SAH Theatre Anaesthesia	32,786	32,786	-	30,120	-	2,617	-	32,737	49	99.85%
SAH Theatre Nursing	36,109	36,109	-	31,190	-	4,470	-	35,660	449	98.76%
SAH Theatre Recovery	29,190	29,190	-	29,011	-	160	-	29,171	19	99.93%
SAH Theatre Surgeons	46,174	46,174	-	37,069	-	8,462	-	45,531	643	98.61%
SAH Transfers	258,188	258,188	-	258,188	-	-	-	258,188	-	100.00%
Central Adelaide LHN Royal Adelaide Hospital Allied Health	201,700	201,700	-	155,199	371	39,539	-	195,109	6,591	96.73%
Central Adelaide LHN Royal Adelaide Hospital Bone Grafts	47	47	-	45	-	-	2	47	-	100.00%
Central Adelaide LHN Royal Adelaide Hospital Burns Skin Products	84	84	-	77	-	-	-	77	7	91.67%
Central Adelaide LHN Royal Adelaide Hospital Cardiology Med Surg	48,414	48,414	-	48,055	-	-	-	48,055	359	99.26%
Central Adelaide LHN Royal Adelaide Hospital Cardiology Prosthesis	2,645	2,645	-	2,625	-	-	-	2,625	20	99.24%
Central Adelaide LHN Royal Adelaide Hospital Cardiovascular CVIU	14,660	14,660	-	9,428	-	4,943	-	14,371	289	98.03%

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Feeder Data	# Records from Source	# Records in costing system	Variance	# Records linked to Admitted	# Records linked to Emergency	# Records linked to Non-admitted	# Records linked to Other	Total Linking Process	# Unlinked records	% Linked
Central Adelaide LHN Royal Adelaide Hospital DaVinci	162	162	-	160	-	-	-	160	2	98.77%
Central Adelaide LHN Royal Adelaide Hospital Diagnostic	1,921	1,921	-	523	-	490	-	1,013	908	52.73%
Central Adelaide LHN Royal Adelaide Hospital ED Resuscitation	12,736	12,736	-	210	12,525	-	-	12,735	1	99.99%
Central Adelaide LHN Royal Adelaide Hospital Hyperbaric	2,144	2,144	-	2,102	-	-	-	2,102	42	98.04%
Central Adelaide LHN Royal Adelaide Hospital Imaging	183,259	183,259	-	82,811	56,177	28,482	15,789	183,259	-	100.00%
Central Adelaide LHN Royal Adelaide Hospital Implants	30,125	30,125	-	29,731	-	-	-	29,731	394	98.69%
Central Adelaide LHN Royal Adelaide Hospital Implants Imputed Costs	1,048	1,046	(2)	1,046	-	-	-	1,046	-	100.00%
Central Adelaide LHN Royal Adelaide Hospital MET	3,794	3,794	-	3,526	46	39	-	3,611	183	95.18%
Central Adelaide LHN Royal Adelaide Hospital OP Service for IP	11,267	11,267	-	10,986	-	-	-	10,986	281	97.51%
Central Adelaide LHN Royal Adelaide Hospital Pathology	838,349	838,349	-	437,059	253,206	122,937	25,147	838,349	-	100.00%
Central Adelaide LHN Royal Adelaide Hospital Recovery Skin Sensitivity	34	34	-	34	-	-	-	34	-	100.00%
Central Adelaide LHN Royal Adelaide Hospital Security	18,684	18,684	-	13,168	5,003	-	-	18,171	513	97.25%

Source: KPMG based on data supplied by Royal Adelaide Hospital and SA Health

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In relation to the feeder data for Royal Adelaide Hospital, the following should be noted:

- There are 30 feeders used from a range of SA Health databases and hospital source systems and they appear to represent the major hospital departments providing resource activity.
- Source data is used as much as possible particularly from central databases, which SA Health maintains to ensure consistency e.g. Pharmacy, Emergency, Inpatients and Pathology. If data is unavailable from a central system then the LHN sources the feeder information e.g. theatre, cardiac units etc.
- For 29 of the 30 feeders, the number of records linked to admitted patients, emergency, non-admitted or other patients had a greater than 91 percent link or match. This suggests that there is robustness in the level of feeder activity reported back to episodes.
- System-generated encounters for Pharmacy (22,612), Imaging (15,789) and Pathology (25,147) are created and linked to other. Variances in pharmacy feeder data were primarily related to matching scripts that are issued for a 12-month period from the original encounter.
- The largest percentage variance was associated with a hospital diagnostic feeder. This is a new feeder for outpatients and the high-unlinked count is a known issue due to a manual process of preparing outpatient encounter data. SA Health indicated that they are working on improving this for future costing rounds.

7.2.5 Treatment of WIP

Table 63 demonstrates models for WIP and its treatment in Royal Adelaide Hospital's Round 19 NHCDC submission.

Table 63 – WIP – Royal Adelaide Hospital

Model	Description	Submitted to Round 19 NHCDC
1	Cost for patients admitted and discharged in 2014-15 only	Submitted to Round 19 of the NHCDC
2	Costs for patients admitted prior to 2014-15 and discharged in 2014-15	Submitted to Round 19 of the NHCDC. Costs are submitted back to 2012-13.
3	Costs for patients admitted prior to or in 2014-15 and remain admitted at 30 June 2015	Not submitted to Round 19 of the NHCDC

Source: KPMG, based on Royal Adelaide Hospital templates and review discussions

In summary, Royal Adelaide Hospital submitted costs for admitted and discharged patients in 2014-15 and WIP costs for those patients admitted in 2013-14, but discharged in 2014-15.

Escalation factor

SA Health did not apply any escalation factors to the costs associated with WIP from prior years as part of the Round 19 submission of the NHCDC. Escalation factors had been applied to previous submissions and this data was adjusted, i.e. the escalation factor removed, for Round 19.

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7.2.6 Critical care

There are two dedicated critical care units at Royal Adelaide Hospital, an Intensive Care Unit (ICU) and a Coronary Care Unit (CCU). The costs associated with these areas are captured in dedicated cost centres. The GL amount is adjusted for the costs associated with the Medical Emergency Team service, pathology and pharmacy costs. The costs associated with pathology and pharmacy are consolidated and then reallocated using the appropriate feeder system. All costs including medical are captured in this cost centre. Critical care costs are captured in accordance with the applicable standard.

7.2.7 Costing public and private patients

Royal Adelaide Hospital does not make specific adjustments to the costing methodology, based on the financial classification of the patient. Applicable costs are allocated to private patients, including pathology, medical imaging and prosthesis, in the same manner as public patients. Private patient revenue is not offset against any related expenditure.

Costs associated with medical imaging services, for public and private patients are reflected in the Royal Adelaide Hospital GL. These costs are distributed to all patients (both public and private), based on the MBS item number for the service utilised by the patient. For pathology services, only the costs associated with public patients are reflected in the Royal Adelaide Hospital GL. The feeder file from the pathology service provider only includes data on services provided to public patients, reflecting the fact that services provided to private patients are billed to a third party. This approach aligns with the principles of the AHPCS Version 3.1 and reflects the true patient level data cost incurred for public and private patients treated by Royal Adelaide Hospital.

The majority of medical consultants at Royal Adelaide Hospital use private patient generated revenue to supplement their employment costs. The portion of the salary generated through private patient revenue is not allocated to patients, public or private.

7.2.8 Treatment of specific items

A number of specific items were discussed during the consultation phase of the review to understand the manner in which they are treated in the costing process. These items are used to inform the NEP and specific funding model adjustments for particular patient cohorts. Royal Adelaide Hospital's treatment of each of the items is summarised below.

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Table 64 – Treatment of specific items – Royal Adelaide Hospital

Item	Treatment
Research	Costs are allocated to Research using PFRACs however, these costs are excluded prior to submission of the NHCDC to IHPA.
Teaching and Training	Costs are allocated to Teaching and Training using PFRACs however, these costs are excluded prior to submission of the NHCDC to IHPA.
Shared/Other commercial entities	Any expenditure associated with these activities is excluded by the hospital for costing purposes.

Source: KPMG, based on IFR discussions

7.2.9 Sample patient data

IHPA selected a sample of five patients from Royal Adelaide Hospital for the purposes of testing the data flow from jurisdictions to IHPA at the patient level. SA Health provided the patient level costs for all five patients and these reconciled to IHPA records, with only minor variances noted (all less than $1) for all five patients. The results are summarised in Table 65.

Table 65 – Sample patients – Royal Adelaide Hospital

#	Product	Jurisdiction Records	Received by IHPA	Variance
1	Non-Admitted ED	$166.04	$166.01	$0.03
2	Acute	$1,635.69	$1,635.11	$0.58
3	Acute	$3,890.58	$3,890.52	$0.06
4	Maintenance	$17,890.70	$17,890.05	$0.65
5	Non-Admitted	$223.00	$222.63	$0.37

Source: KPMG, based on Royal Adelaide Hospital and IHPA data

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7.3 The Queen Elizabeth Hospital

7.3.1 Overview

The Queen Elizabeth Hospital is also part of the Central Adelaide LHN and is located in Woodville South in Adelaide's western suburbs, and employs approximately 2,500 staff.

The Queen Elizabeth Hospital is a 311-bed, acute care teaching hospital that provides inpatient, outpatient, emergency, and mental health services to a population of more than 250,000 people living primarily in Adelaide's western suburbs. A sample of the services covered are listed below:

- Critical Care
- Mental Health
- Pharmacy
- Medical Imaging
- Non-Medical
- Surgical
- Medical
- Outpatient
- Telehealth.

The hospital has a proud and strong tradition of providing excellent clinical care, teaching and research. It has developed a fine reputation as a teaching hospital with many world-acclaimed achievements in its history. Further to this, The Queen Elizabeth Hospital has research affiliations with the Basil Hetzel Institute for Translational Health Research and The Hospital Research Foundation.[13]

7.3.2 Financial data

For the Round 19 IFR, the data collection templates were completed and submitted by SA Health's Finance and Corporate Services (Funding Models) unit on behalf of The Queen Elizabeth Hospital. Representatives from the Funding Models Unit attended and participated in the consultation process during the review, as well as senior casemix staff from The Queen Elizabeth Hospital. The costing process at The Queen Elizabeth Hospital is consistent with the approach at Royal Adelaide Hospital and across the other LHNs in SA Health.

Table 66 reflects a summary of The Queen Elizabeth Hospital's costs, from the original extract from the GL through to the final NHCDC submission for The Queen Elizabeth Hospital for Round 19.

[13] The Queen Elizabeth Hospital – *accessed 15 June 2016*

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Table 66 – Round 19 NHCDC Reconciliation – The Queen Elizabeth Hospital

Hospital				Jurisdiction			IHPA		
Item		**Amount**	**% of GL**	**Item**		**Amount**	**Item**		**Amount**
A General Ledger (GL)	$	381,826,691		**F** Costed Products received by jurisidction	$	373,947,616	**I** Total costed products received by IHPA	$	370,504,568
				Variance	*$*	*-*	*Variance*	*$*	*(60,172)*
B Adjustments to the GL									
Inclusions	$	17,314,893		**G** Final Adjustments			**J** IHPA Adjustments		
Exclusions	$	(2,247,129)		*WIP Round 19*	$	(5,484,377)	*Admitted ED reallocations*	$	14,905,719
Total hospital expenditure	**$**	**396,894,455**	*103.95%*	*WIP prior years*	$	6,798,680	**Final NHCDC costs**	**$**	**385,410,287**
				Patient level data unavailable	$	(3,106,317)			
C Allocation of Costs				*Unlinked to Admitted Patient Care data*	$	(76,692)			
Post Allocation Direct amount	$	279,563,888		*Incomplete cost records*	$	(522,911)			
Post Allocation Overhead amount	$	117,330,575		*Tier2 30.08 - Diagnostic services in Non-admitted*	$	(991,258)			
Total hospital expenditure	**$**	**396,894,463**	*103.95%*	**Total costs submitted to IHPA**	**$**	**370,564,740**			
Variance	*$*	*8*	*0.00%*						
D Post Allocation Adjustments									
Research	$	(1,344,495)							
Teaching	$	(11,185,218)							
System-generated/Non-Casemix	$	(5,267,775)							
Out of scope encounters	$	(298,363)							
Costs shared across hospitals and removed of non-patient costing items	$	(4,850,987)							
Total expenditure allocated to patients	**$**	**373,947,625**	*97.94%*						
E Costed products submitted to jurisdiction				**H** Costed products submitted to IHPA			**K** Final NHCDC costed products		
Acute	$	257,055,123		*Acute*	$	257,768,486	*Acute^*	$	272,541,919
Non-admitted	$	71,906,980		*Non-admitted*	$	67,809,432	*Non-admitted*	$	67,775,765
Emergency	$	28,913,411		*Emergency*	$	28,889,358	*Emergency*	$	28,878,525
Sub Acute	$	16,072,102		*Sub Acute*	$	16,097,497	*Sub Acute^*	$	16,214,079
Mental Health	$	-		*Mental Health*	$	-	*Mental Health*	$	-
Other	$	-		*Other*	$	-	*Other*	$	-
Research	$	-		*Research*	$	-	*Research*	$	-
Teaching & Training	$	-		*Teaching & Training*	$	-	*Teaching & Training*	$	-
	$	**373,947,616**	*97.94%*		**$**	**370,564,772**		**$**	**385,410,288**
Variance	*$*	*(10)*	*0.00%*	*Variance*	*$*	*32*	*Variance*	*$*	*1*

Source: KPMG based on data supplied by The Queen Elizabeth Hospital, jurisdiction and IHPA

^ These figures include admitted emergency costs.

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Explanation of reconciliation items

This section discusses each of the reconciliation items including adjustments, inclusions and exclusions to the financial data. The information is based on the templates submitted for The Queen Elizabeth Hospital and face-to-face review discussions.

Item A – General Ledger

The final GL amount extracted by SA Health from the general ledger totalled $1.974 billion. This amount reflected the total expenditure for Central Adelaide LHN, which includes The Queen Elizabeth Hospital, however the total for Central Adelaide LHN did not reconcile to the total expenditure reported in the 2014-15 financial statements. There was a minor variance noted of $64,952 or 0.003 percent of the expenditure reported in the audited financial statements.

This amount was split in the template to identify the costs specifically related to The Queen Elizabeth Hospital. The final amount that related to The Queen Elizabeth Hospital was $381.83 million.

Item B – Adjustments to the GL

A number of inclusions and exclusions were made to the GL data with a net impact (inclusion) of $15.07 million. Inclusions made to the GL were approximately $17.31 million, the significant portion of which were determined by SA Health and related to a range of centrally managed, state-wide services. The items are summarised below:

- Clinical Services paid by SA Pathology - $850,000
- South Australian Medical Imaging – $691,568
- Procurement Services - $1.96 million
- ICT Services - $2.54 million
- Work Cover Levy - $307,497
- SA Pathology Overhead Charges - $3.73 million
- SA Pharmacy Overhead Charges – $263,205
- Overhead Allocation - $13.98 million
- Recharges added back – $7.00 million.

Exclusions made to the GL totalled approximately $2.25 million, the majority of which are related to corporate costs defined as out of scope for patient costing by the AHPCS version 3.1. The exclusions included:

- Bad and Doubtful Debts - $658,093
- Costs excluded during the reclass process - $1.59 million related to The Queen Elizabeth Hospital's share of the end of financial year revaluation decrements processed at the LHN level.

The basis of these adjustments appears reasonable, with the exception of Bad and Doubtful debts. The AHPCS is silent on the specific inclusion or exclusion of bad and doubtful debts. Bad and doubtful debts expenditure relates to the provision for debts that are unrecoverable from

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patients/clients. It does not have an impact on the cost of patient services provided by the hospital.

The impact of these adjustments established an expenditure base for costing purposes of $396.89 million. This was approximately 104.0 percent of total expenditure reported in the GL.

Item C – Allocation of costs

The Queen Elizabeth Hospital undertakes a process of reclass/transfers between cost centres. The Central Adelaide LHN has over 10,000 reclass rules entered into PPM, primarily related to rules for product fractions. Product fractions are used extensively to allocate costs for a range of products including acute admitted, non-admitted, teaching and training etc.

- It was observed that the total of all direct cost centres of $279.56 million was allocated post allocation.
- It was observed that overheads of $117.33 million were allocated to direct cost centres, post allocation.

These amounted to $396.89 million and reflected the total for The Queen Elizabeth Hospital. A minor variance of $7 was identified between Item B and Item C.

Item D – Post Allocation Adjustments

A number of exclusions were made post allocation and included:

- Research - $1.34 million
- Teaching – $11.19 million
- System-generated/Non Casemix - $5.27 million, this is predominately made up of unlinked activity (activity for which the patient is not associated with a hospital attendance e.g. pharmacy walk-ins.
- Out of scope encounters - $298,363
- Costs shared with activity across hospitals and removal of non-patient costing related items - $4.85 million. This included but not limited to:
    - St Margaret's Rehabilitation Hospital - $1.13 million
    - Wayville satellite dialysis - $1.49 million
    - Car parking - $617,587

The basis of these exclusions appears reasonable. However, the exclusion of Teaching, Training and Research may impact on the completeness of the NHCDC. SA Health is awaiting the outcome of the TTR project undertaken by IHPA to provide sufficient guidance on how to cost TTR. In addition, Queen Elizabeth Hospital/Central Adelaide LHN should investigate the reasons for unlinked activity to ensure appropriate treatment in future rounds.

The total expenditure allocated to patients for The Queen Elizabeth Hospital was $373.95 million, which represented approximately 97.9 percent of the GL.

Item E - Costed products submitted to jurisdiction

Costs submitted to the jurisdiction and reported at product level totalled $373.95 million. Costs were allocated to all products with the exception of Mental Health, Other, Teaching, Training and Research. A minor variance of $10 was identified between Item D and Item E.

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Item F – Costed products received by the jurisdiction

Costed products received by the jurisdiction totalled $373.95 million. No variance was noted between Items E and F.

Item G – Final adjustments

SA Health made a number of adjustments to the final data submitted by the hospital. The adjustments made for Round 19 totalled $3.38 million and included:

- Excluded costs of $5.48 million related to WIP records that are either; patients still admitted in 2014-15.
- Included costs of $6.80 million related to WIP records for patients admitted prior to 2014-15 but discharged in 2014-15 (but only back to 2012-13).
- Excluded cost records with no matching patient level data totalling $3.11 million.
- Excluded data not linked to APC data totalling $76,692.
- Excluded incomplete cost records totalling $522,911.
- Tier 2 category 30.08 costs totalling $991,258 removed. These costs are related to diagnostic services in the non-admitted environment and as such are not reported as service events and are excluded.

The basis of these exclusions appears reasonable. It is recommended that SA Health investigates the reasons for unlinked activity to ensure appropriate treatment in future rounds.

The total NHCDC costs submitted to IHPA by SA Health was $370.56 million.

Item H – Costed products submitted to IHPA

Costs derived by the jurisdiction and reported at product level to IHPA totalled $370.56 million. A minor variance of $32 was noted between Item G and Item H.

Item I – Total products received by IHPA

Total costed products received by IHPA totalled $370.50 million. A variance of $60,172 was noted between costs submitted by the jurisdiction and costs received by IHPA. This variance represented 0.016 percent of the costs submitted by the jurisdiction.

A variance was observed between that which was submitted by SA and that received by IHPA due to SA's new submission method containing more decimal places than permitted by IHPA's automated collection portal. IHPA reviewed the impact of this on the state-level collection and considered it immaterial and less than 0.02 percent of total expenditure.

Item J – IHPA adjustments

Upon receipt of cost data, IHPA allocates the admitted emergency costs back to admitted patients for the purposes of reporting and analysis. Within IHPA's reconciliation, this amount was a duplication of admitted emergency costs and not an additional cost. For The Queen Elizabeth Hospital this amounted to $14.91 million.

Item K – Final NHCDC Costed Outputs

The final NHCDC costed data for The Queen Elizabeth Hospital that was loaded into the National Round 19 cost data set was $385.41 million, which included the admitted emergency cost of $14.91 million.

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7.3.3 Activity data

Table 67 presents patient activity data based on source and costing systems for the Central Adelaide LHN, which was utilised for costing activity at The Queen Elizabeth Hospital. This activity data is then compared to Table 68 which highlights the transfer of activity data by NHCDC product from The Queen Elizabeth Hospital to SA Health and then through to IHPA submission and finalisation.

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Table 67 – Activity data – Central Adelaide LHN for The Queen Elizabeth Hospital

Activity Data	# Records from Source	# Records in costing system	Variance	# Records linked to Admitted	# Records linked to Emergency	# Records linked to Non-admitted	# Records linked to Other	Total Linking Process	# Unlinked records
SAH Encounter ED (CALHN)	114,310	114,344	34	-	114,344	-	-	114,344	-
SAH Encounter Inpatient Metro (CALHN)	124,257	124,234	(23)	124,234	-	-	-	124,234	-
SAH Encounter Outpatient (CALHN)	491,612	490,649	(968)	-	-	490,649	-	490,649	-
SAH Encounter Outpatient Manual (CALHN)	294	78,101	77,807	-	-	78,101	-	78,101	-
TOTAL	**730,473**	**807,328**	**76,855**	**124,234**	**114,344**	**567,750**	**-**	**807,328**	**-**

Source: KPMG based on data supplied by SA Health

The following should be noted about the variances between records from source and records in the costing system for Central Adelaide LHN:

- The variance of 34 records in the Encounter ED system related to WIP records at the start of the year i.e. presented prior to 1 July 2014.
- The variance of 23 records in the Encounter Inpatient Metro system related to records where no costs were to be allocated (40 records) and records that were costed but did not match APC activity (17 records).
- The variance of 968 records in the Encounter Outpatient system related to records where no costs were allocated.
- The 294 SAH Encounter Outpatient Manual records are at an aggregate level by clinic per month. For costing purposes, these records are split by the number of service events, which for Central Adelaide LHN totalled 115,460 records, of which 78,101 records were costed. The 37,359 remaining records were not costed as they related to the Tier 2 clinic, Clinical Measurement and the cost is allocated to the relevant clinic e.g. ECG tests are costed to a cardiology service event.

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Table 68 – Activity data submission – The Queen Elizabeth Hospital

Product	Activity related to 2014-15 Costs	Adjustments	Activity submitted to jurisdiction	Adjustments	Activity submitted to IHPA	Activity received by IHPA	Adjustments	Total Activity submitted for Round 19 NHCDC
Acute	37,971	-	37,971	(282)	37,689	37,689	-	37,689
Non-admitted	180,344	-	180,344	(19,299)	161,045	161,045	-	161,045
Emergency	43,477	-	43,477	(45)	43,432	43,432	-	43,432
Sub Acute	927	-	927	(32)	895	895	-	895
Mental Health	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-
Research	-	-	-	-	-	-	-	-
Teaching and Training	-	-	-	-	-	-	-	-
Total	**262,719**	**-**	**262,719**	**(19,658)**	**243,061**	**243,061**	**-**	**243,061**

Source: KPMG based on data supplied by The Queen Elizabeth Hospital, SA Health and IHPA

The following should be noted about the transfer of activity data for The Queen Elizabeth Hospital:

- There was a variance between the number of records in the costing system for Central Adelaide LHN, detailed in Table 67 (807,328 records) and activity related to 2014-15 costs by NHCDC product for The Queen Elizabeth Hospital in Table 68 (262,719 records) of 544,609 records. This variance related to Royal Adelaide Hospital costing records of 536,675 and other facilities in Central Adelaide LHN records of 7,934.
- The Queen Elizabeth Hospital made no further adjustments to activity.
- Adjustments made by SA Health related to the activity associated with the excluded costs (refer to Item G in the reconciliation). These records related to excluded WIP activity, activity with patient level data unavailable, unlinked to APC data and removal of Tier 2 records within the 30.08 category.
- Adjustments made by IHPA related to admitted emergency reallocations are for reporting and analysis purposes (as discussed in Item J of the explanation of reconciliation items) and have no impact on the reported activity.

7.3.4 Feeder data

Table 69 reflects data associated with patient feeder data for The Queen Elizabeth Hospital.

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Table 69 – Feeder data – The Queen Elizabeth Hospital

Feeder Data	# Records from Source	# Records in costing system	Variance	# Records linked to Admitted	# Records linked to Emergency	# Records linked to Non-admitted	# Records linked to Other	Total Linking Process	# Unlinked records	% Linked
SAH Coding Diagnosis	385,128	385,128	-	385,128	-	-	-	385,128	-	100.00%
SAH Coding Procedure	238,308	238,308	-	238,308	-	-	-	238,308	-	100.00%
SAH ED Medical	114,310	114,310	-	-	114,310	-	-	114,310	-	100.00%
SAH ED Nursing	114,310	114,310	-	-	114,310	-	-	114,310	-	100.00%
SAH Pharmacy	554,904	554,893	(11)	341,347	91,702	99,232	22,612	554,893	-	100.00%
SAH Pharmacy S100	1,749	1,749	-	1,647	-	6	-	1,653	96	94.51%
SAH Service Outpatient Manual	294	294	-	-	-	294	-	294	-	100.00%
SAH Theatre Anaesthesia	32,786	32,786	-	30,120	-	2,617	-	32,737	49	99.85%
SAH Theatre Nursing	36,109	36,109	-	31,190	-	4,470	-	35,660	449	98.76%
SAH Theatre Recovery	29,190	29,190	-	29,011	-	160	-	29,171	19	99.93%
SAH Theatre Surgeons	46,174	46,174	-	37,069	-	8,462	-	45,531	643	98.61%
SAH Transfers	258,188	258,188	-	258,188	-	-	-	258,188	-	100.00%
Central Adelaide LHN Queen Elizabeth Hospital Allied Health	87,473	87,473	-	48,826	262	28,830	-	77,918	9,555	89.08%
Central Adelaide LHN Queen Elizabeth Hospital Cardiac Implants	285	285	-	285	-	-	-	285	-	100.00%
Central Adelaide LHN Queen Elizabeth Hospital Imaging	18,213	18,213	-	1,833	4,006	11,779	595	18,213	-	100.00%
Central Adelaide LHN Queen Elizabeth Hospital Imaging	42,364	42,364	-	16,367	16,098	6,532	3,367	42,364	-	100.00%
Central Adelaide LHN Queen Elizabeth Hospital Pacemaker Implants	1,075	1,075	-	1,075	-	-	-	1,075	-	100.00%
Central Adelaide LHN Queen Elizabeth Hospital Pathology	386,035	386,035	-	221,942	94,337	47,621	19,386	383,286	2,749	99.29%
Central Adelaide LHN Queen Elizabeth Hospital Theatre Implants	2,485	2,485	-	2,480	-	-	-	2,480	5	99.80%

Source: KPMG based on data supplied by The Queen Elizabeth Hospital and SA Health

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In relation to the feeder data for The Queen Elizabeth Hospital, the following should be noted:

- There are 19 feeders used from a range of SA Health databases and hospital source systems and they appear to represent the major hospital departments providing resource activity.
- Source data is used as much as possible particularly from central databases, which SA Health maintain to ensure consistency e.g. Pharmacy, Emergency, Inpatients and Pathology. If data is unavailable centrally then the LHNs provide feeder information e.g. theatre, cardiac units etc.
- The number of records linked to admitted patients, emergency, non-admitted or other patients had a greater than 89 percent link or match. This suggests that there is robustness in the level of feeder activity reported back to episodes.
- System-generated encounters for Pharmacy (22,612), Imaging (3,962) and Pathology (19,386) are created and linked to 'other'. Variances in pharmacy feeder data were primarily related to matching scripts that are issued for a 12-month period to the original encounter.
- There were two imaging feeder files for The Queen Elizabeth Hospital for Round 19. A replacement medical imaging system was implemented during the financial year, the system changed from Kestral to Enterprise System for Medical Imaging.
- Issues with the Allied health feeder related to mapping between the hospital and the clinic. SA Health will refine this feeder in 2016-17 in order to ensure consistency and matching, as data is currently supplied by the LHN.

7.3.5 Treatment of WIP

Table 70 demonstrates models for WIP and its treatment in The Queen Elizabeth Hospital's Round 19 NHCDC submission.

Table 70 – WIP – The Queen Elizabeth Hospital

Model	Description	Submitted to Round 19 NHCDC
1	Cost for patients admitted and discharged in 2014-15 only	Submitted to Round 19 of the NHCDC
2	Costs for patients admitted prior to 2014-15 and discharged in 2014-15	Submitted to Round 19 of the NHCDC. Costs are submitted back to 2012-13
3	Costs for patients admitted prior to or in 2014-15 and remain admitted at 30 June 2015	Not submitted to Round 19 of the NHCDC

Source: KPMG, based on The Queen Elizabeth Hospital templates and review discussions

In summary, The Queen Elizabeth Hospital submitted costs for admitted and discharged patients in 2014-15 and WIP costs for those patients admitted in 2013-14, but discharged in 2014-15.

Escalation factor

SA Health did not apply any escalation factors to the costs associated with WIP from prior years as part of the Round 19 submission of the NHCDC for The Queen Elizabeth Hospital.

7.3.6 Critical care

At the beginning of 2014-15 there were three dedicated critical care units at The Queen Elizabeth Hospital, an Intensive Care Unit (ICU), Coronary Care Unit (North 1A) and a High Dependency

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Unit (HDU). In October 2015, the HDU was amalgamated into the ICU and from that point forward, it was not possible to identify the specific costs associated with the HDU and the ICU. The GL amount is adjusted for the costs associated with pathology and pharmacy costs. The costs associated with pathology and pharmacy are consolidated, using reclass rules, and then reallocated using the appropriate feeder system. All direct patient costs, including medical salaries and wages, are captured in the relevant cost centres except for Ward 1A. This cost centre only captures nursing and consumable costs. The medical costs are captured in a broader cardiology cost centre. PFRACs are used to allocate medical costs to the CCU. Critical care costs are captured in accordance with the applicable standard.

7.3.7 Costing public and private patients

The Queen Elizabeth Hospital does not make specific adjustments to the costing methodology, based on the financial classification of the patient. Applicable costs are allocated to private patients, including pathology, medical imaging and prosthesis, in the same manner as public patients. Private patient revenue is not offset against any related expenditure.

Costs associated with medical imaging services, for public and private patients are reflected in The Queen Elizabeth Hospital GL. These costs are distributed to all patients, public and private, based on the MBS item number for the service utilised by the patient. For pathology services, only the costs associated with public patients are reflected in The Queen Elizabeth Hospital GL. The feeder file from the pathology service provider only includes data on services provided to public patients, reflecting the fact that services provided to private patients are billed to a third party. This approach aligns with the principles of the AHPCS Version 3.1 and reflects the true patient level data cost incurred for public and private patients treated by The Queen Elizabeth Hospital.

The majority of medical consultants at Queen Elizabeth Hospital use private patient generated revenue to supplement the employment costs. These employment costs are not allocated to public and private patients.

7.3.8 Treatment of specific items

A number of specific items were discussed during the consultation phase of the review to understand the manner in which they are treated in the costing process. These items are used to inform the NEP and specific funding model adjustments for particular patient cohorts. The Queen Elizabeth Hospital's treatment of each of the items is summarised below.

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Table 71 – Treatment of specific items – The Queen Elizabeth Hospital

Item	Treatment
Research	Costs are allocated to Research using PFRACs however; these costs are excluded prior to submission of the NHCDC to IHPA.
Teaching and Training	Costs are allocated to Teaching and Training using PFRACs however, these costs are excluded prior to submission of the NHCDC to IHPA.
Shared/Other commercial entities	Any expenditure associated with these activities is excluded by the hospital for costing purposes.

Source: KPMG, based on IFR discussions

7.3.9 Sample patient data

IHPA selected a sample of five patients from The Queen Elizabeth Hospital for the purposes of testing the data flow from jurisdictions to IHPA at the patient level. SA Health provided the patient level costs for all five patients and these reconciled to IHPA records, with only minor variances noted (all less than $1) for all five patients. The results are summarised in Table 72.

Table 72 – Sample patients – The Queen Elizabeth Hospital

#	Product	Jurisdiction Records	Received by IHPA	Variance
1	Non-Admitted ED	$586.64	$586.36	$0.28
2	Acute	$14,696.43	$14,695.91	$0.52
3	Maintenance	$14,052.31	$14,051.95	$0.36
4	Acute	$6,414.11	$6,413.70	$0.41
5	Non-Admitted	$155.12	$154.86	$0.26

Source: KPMG, based on The Queen Elizabeth Hospital and IHPA data

7.4 Application of AHPCS Version 3.1

The following section summarises SA Health's application of selected standards from Version 3.1 of the AHPCS (outlined in Appendix B) to the Round 19 NHCDC submission.

7.4.1 SCP 1.004 – Hospital Products in Scope

SA Health representatives completed templates for this review for hospitals and demonstrated through the templates and interview process that costs are reported against admitted acute, emergency care, non-admitted and sub-acute products.

Teaching, Training and Research is costed using PFRACs by the hospitals, but is excluded prior to NHCDC submission.

7.4.2 SCP 2.003 – Product Costs in Scope

SA Health representatives demonstrated through the interview process that the SA Health reconciliation process for financial data is used for costing purposes. It was also stated that all

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products are costed, which includes costs assigned to products in scope for the NHCDC, unlinked activity, and costs assigned to system-generated patients where there is no activity. Unlinked activity is not submitted to the NHCDC.

7.4.3 SCP 2B.002 - Research Costs

Costs are allocated to Research using PFRACs however; these costs are excluded prior to submission of the NHCDC to IHPA.

7.4.4 SCP 3.001 - Matching Production and Cost

Application of this standard was demonstrated during the site visit and an excel file was produced from the costing system which outlined all reclass rules.

7.4.5 SCP 3A.001 - Matching Production and Cost – Overhead Cost Allocation

The jurisdiction was able to demonstrate that overhead costs were fully allocated to direct patient care areas via the pre allocation and post allocation data included in the templates.

7.4.6 SCP 3B.001 - Matching Production and Cost – Costing all Products

The application of this standard was demonstrated in the template and SA Health provided an overview of their internal reconciliation process, which demonstrated the allocation of costs to products.

7.4.7 SCP 3C.001 - Matching Production and Cost – Commercial Business Entities

Based on discussions with SA Health and hospital representatives during the review, in addition to an excel file produced, commercial business entity expenditure was excluded in accordance with the standard.

7.4.8 SCP 3E.001 - Matching Production and Cost – Offsets and Recoveries

The application of this standard was demonstrated in the template and confirmed during the consultation process. Recoveries were excluded from the expenditure base for both hospitals. There were no offsets identified.

7.4.9 SCP 3G.001 – Matching Production and Cost – Reconciliation to Source Data

Based on discussions during the review, SA Health completes a final reconciliation of its costing system to source documentation.

7.4.10 GL 2.004 - Account Code Mapping to Line Items

SA Health mapped total costs to the standard specified line items.

7.4.11 GL 4A.002 – Critical Care Definition

One of the hospitals reviewed has a dedicated ICU, the other had a combined ICU/HDU. The direct costs associated with ICU are allocated to a discrete cost centre and those costs are only applied to patients who used the ICU. The costs associated with the combined ICU/HDU are allocated to all patients that use the facility. Critical care costs are captured in accordance with the standard.

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7.4.12 COST 3A.002 – Allocation of Medical Costs for Private and Public Patients

SA Health does not make specific adjustments to the costing methodology, based on the financial classification of the patient. Applicable costs are allocated to private patients, including pathology, medical imaging and prosthesis, in the same manner as public patients. Private patient revenue is not offset against any related expenditure.

Costs associated with medical imaging services, for public and private patients are reflected in the Hospital GL. These costs are distributed to all patients, public and private, based on the MBS item number for the service utilised by the patient. This approach aligns with the principles of the standard.

Medical costs are allocated to private patients in the same manner as public patients. Private patient revenue is not offset against any related expenditure.

The majority of medical consultants use private patients' generated revenue to supplement the employment costs. These employment costs are not allocated to public and private patients.

7.4.13 COST 5.002 - Treatment of Work-In-Progress Costs

Discussions revealed that patients are allocated costs based on their consumption of resources for that reporting period. Where costs are incurred in prior years, these are also included in the final costed data and NHCDC submission.

7.5 Conclusion

The findings of the South Australian Round 19 IFR are summarised below:

- SA Health has not made any significant changes to the costing process since the Round 18 NHCDC submission. Costing data for non-admitted patients was submitted for the first time in Round 19.
- The review of the financial reconciliation templates for Royal Adelaide Hospital and The Queen Elizabeth Hospital, demonstrated the transformation of cost data from the source LHN GL to the final NHCDC submission to IHPA. There were minor variances noted through the reconciliation process however these were considered insignificant. The major inclusions to the original GL data related to costs centrally managed by SA Health (ICT and Procurement services). Exclusions from the source GL data included costs associated with other hospitals and services in the LHN, state-wide services hosted by the LHN, SA Pathology and SA Medical Imaging,
- There was a variance of $64,952 noted between the LHN GL data used for costing and the audited financial statements of the LHN. This equates to a variance of 0.003 percent of the expenditure in the audited financial statements.
- The basis of the adjustments made by the hospitals and SA Health appears reasonable, with the exception of:
    - Royal Adelaide Hospital excluded expenditure related to the gain and loss of sale of capital infrastructure within the LHN. This expenditure should be included in accordance with the AHPCS Version 3.1.
    - SA Health excluded Teaching, Training and Research prior to submission to the NHCDC. The exclusion of these costs may impact on the completeness of the NHCDC. SA Health

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is awaiting the outcome of the TTR project undertaken by IHPA to provide sufficient guidance on how to cost TTR.

  - Both hospitals and SA Health should investigate the reasons for unlinked activity to ensure appropriate treatment in future rounds.

  - Bad and Doubtful debts. The AHPCS is silent on the specific inclusion or exclusion of bad and doubtful debts. Bad and doubtful debts expenditure relates to the provision for debts that are unrecoverable from patient/clients. It does not have an impact on the cost of patient services provided by the hospital.

- The activity data submitted by the hospitals was adjusted by the jurisdiction for WIP, activity with patient level data unavailable, unlinked to Admitted Patient Care data and removal of Tier 2 records related to diagnostic services in a non-admitted setting.

- A variance was observed between the costs submitted by SA and that received by IHPA, due to SA's new submission method containing more decimal places than permitted by IHPA's automated collection portal. IHPA reviewed the impact of this on the jurisdiction-level collection and considered it immaterial and less than 0.02 percent of total jurisdiction expenditure (Royal Adelaide Hospital - $119,567, The Queen Elizabeth Hospital - $60,172).

- The number of records linked from source to product at both hospitals reviewed was significant. For both hospitals, the linking percentage for all feeders was greater than 89 percent. This suggests that there is robustness in the level of feeder activity reported back to episodes.

- WIP was treated in accordance with the COST 5.002 of the AHPCS Version 3.1. SA Health did not apply any escalation factors to the costs associated with WIP for prior years as part of the Round 19 submission to the NHCDC. It was noted that SA Health had applied an escalation factor for previous submissions and the escalation costs were removed for the Round 19 submission.

- The five sample patients selected for review for Royal Adelaide Hospital and The Queen Elizabeth Hospital reconciled to IHPA records, with only minor variances noted (all less than $1) for the five patients at each hospital.

Based on discussions held during the site visits, and a review of the financial reconciliations provided, SA Health has robust reconciliation processes in place. As such, nothing was identified to suggest that the financial data is not fit for NHCDC submission. Furthermore, the data flow from the jurisdiction to IHPA demonstrated no unexplained variances.

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8. Tasmania

8.1 Jurisdictional overview

8.1.1 Management of NHCDC process

The Tasmanian Department of Health and Human Services (TAS-DHHS) through the Patient Level Costing team in Planning Purchasing and Performance is responsible for the processing, reconciliation and submission of National Hospital Cost Data Collection (NHCDC) data for all four major public hospitals in Tasmania.

This is consistent with the approach used in prior rounds of the NHCDC submission and ensures that there is a consistent approach applied to costing for all Tasmanian hospitals. TAS-DHHS utilises the User Cost costing system by Visasys to undertake patient level costing. This costing system was used for the second time in Round 19. TAS-DHHS has access to the relevant files/feeders to perform this costing function. The decision to undertake costing at the jurisdiction level was made to ensure cost data is created and is consistent across rounds of the NHCDC. It is also a decision made given costing workforce shortages in Tasmania.

A central Financial Management System (FMS) is maintained at the jurisdictional level which reports the financial information for all Tasmanian hospitals. The relevant expenditure data used for the costing process is extracted from this system. The GL is reconciled to final financial results for the hospital. Any adjustments made to the total operating expenditure are made by the Costing team as advised by TAS-DHHS Finance and hospital representatives.

The process of extracting activity data differs slightly depending on the data required. There is a central Patient Administration System (PAS) with slight configuration differences depending upon the hospital. For example, hospitals have the ability to configure beds according to their needs. Some feeders may be configured across two hospitals, some may be independent and for others such as Pharmacy, the data is stored in a central data warehouse.

The preparation and loading of the activity and feeder data uses combined sources. The Patient Administration System provides activity data for inpatients, outpatients, and theatres. Third party systems provide data for pharmacy, imaging, and allied health. Data is also extracted from the nurse rostering systems directly into the costing system. The data is formatted to the requirements of User Cost and linking occurs through a scripted process. Where possible, all feeder linking rules are reviewed on an individual feeder basis. Once linking has occurred, a series of internal quality checks are undertaken for both format and data quality. Where variations occur, these are reviewed for data quality issues or to inform linking rule updates.

The initial costing methodology is based on the prior year allocation metrics. TAS-DHHS staff and the hospital Finance Managers meet to discuss the methodology and adjust it where necessary. For example, from year-to-year, clinicians may vary business units (cost centres) in which they work, which requires allocation metrics to be adjusted. Once the methodology is finalised, TAS-DHHS costing staff process expenditure through the User Cost costing software.

TAS-DHHS staff noted that all hospital cost centres are mapped to the Australian Hospital Patient Costing Standards (AHPCS) Version 3.1 cost centre and line items and these are used for costing purposes. This process is undertaken in User Cost.

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All patient data and feeder system data is loaded into a data warehouse. A staging database is then utilised to overlay this feeder data from source systems and to produce a final reporting database. A series of reports are created in the database as a means of internal checks for data quality and reconciliation purposes.

The costed output is then reviewed based on a number of internal checks such as the cost per unit and average cost per bucket compared to prior year costing. Hospital representatives are able to access a series of costing reports to review. Adjustments are made where required and once TAS-DHHS deems the data to be fit for submission, it is submitted to IHPA. There is no official sign off process in place. TAS-DHHS will address any further checks or queries that may arise from the IHPA data validation process.

Tasmania nominated two hospitals, North West Regional Hospital and Mersey Community Hospital, to participate in the Round 19 NHCDC IFR.

Key initiatives since Round 18 NHCDC

TAS-DHHS staff identified an improvement in the way Ward Segments are allocated. Previously, TAS-DHHS would allocate costs based on minutes each patient spent on the ward. For Round 19, TAS-DHHS applied a weighted minute to patient costs depending on the number of nurses and their respective levels that are rostered on the ward in which each patient is located. TAS-DHHS staff noted that using this method has allowed nursing costs to be more accurately reflected in patient level costs.

8.2 North West Regional Hospital

8.2.1 Overview

The North West Regional Hospital located in Burnie is a modern 160 bed facility providing high quality health care and specialist services to North West Tasmania and King Island. It offers services in medical, surgical and allied health specialties through inpatient and outpatient departments. The hospital caters for the emergency resuscitation, surgery and intensive care of most trauma patients and other medical conditions. North West Regional Hospital is accredited by the Australian Council on Healthcare Standards.

As North West Regional Hospital is a secondary level service, transfer to comprehensive tertiary hospitals occurs for some injuries and illnesses. Further to this, the following outpatient services are provided by the North West Regional Hospital:

- Genetic Counselling
- Social Work
- Orthotic and Prosthetics
- Speech Pathology
- Pharmacy
- Stomal Therapy
- Physiotherapy
- Department of Emergency Medicine
- Pre-Admission Clinic

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- Diabetes Education[14].

8.2.2 Financial data

For the Round 19 IFR, TAS-DHHS staff completed the IFR templates and participated in consultations during the review.

Table 73 reflects a summary of North West Regional Hospital's costs, from the original extract from the GL through to the final NHCDC submission for North West Regional Hospital for Round 19.

[14] North West Regional Hospital - Department of Health and Human Services - Tasmanian Government - *Accessed 15 June 2016*

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Table 73 – Round 19 NHCDC Reconciliation – North West Regional Hospital

Hospital					Jurisdiction			IHPA		
Item		**Amount**	**% of GL**		**Item**		**Amount**	**Item**		**Amount**
A General Ledger (GL)	$	128,866,878			**F** Costed Products received by jurisidiction	$	131,325,879	**I** Total costed products received by IHPA	$	99,007,790
					Variance	***$***	***-***	***Variance***	***$***	***763***
B Adjustments to the GL										
Inclusions	$	5,584,024			**G** Final Adjustments			**J** IHPA Adjustments		
Exclusions	$	(3,125,046)			*WIP*	$	(890,503)	*Admitted ED reallocations*	$	4,584,734
Total hospital expenditure	**$**	**131,325,856**	*100.53%*	*	*Outside referred patients (ORP)*	$	(2,000,130)	**Final NHCDC costs**	**$**	**103,592,524**
					Allied - Non Tier 2	$	(1,281,183)			
C Allocation of Costs					*Teaching*	$	(5,121,140)			
Post Allocation Direct amount	$	100,590,648			*Bulk billed Outpatient*	$	(3,370,562)			
Post Allocation Overhead amount	$	30,735,232			*Other*	$	(19,655,334)			
Total hospital expenditure	**$**	**131,325,881**	*100.53%*	*	**Total costs submitted to IHPA**	**$**	**99,007,027**			
Variance	***$***	***24***	*0.00%*							
D Post Allocation Adjustments										
Nil	$	-								
Total expenditure allocated to patients	**$**	**131,325,881**	*100.53%*	*						
E Costed products submitted to jurisdiction					**H** Costed products submitted to IHPA			**K** Final NHCDC costed products		
Acute and Newborns	$	73,851,355			*Acute and Newborns*	$	70,960,722	*Acute^ and Newborns*	$	75,542,714
Non-admitted	$	14,783,467			*Non-admitted*	$	10,131,722	*Non-admitted*	$	10,131,807
Emergency	$	12,890,761			*Emergency*	$	12,890,761	*Emergency*	$	12,890,859
Sub Acute	$	4,927,793			*Sub Acute*	$	4,927,793	*Sub Acute^*	$	4,931,114
Mental Health	$	-			*Mental Health*	$	-	*Mental Health*	$	-
Other	$	19,751,364			*Other*	$	96,030	*Other*	$	96,031
Research	$	-			*Research*	$	-	*Research*	$	-
Teaching & Training	$	5,121,140			*Teaching & Training*	$	-	*Teaching & Training*	$	-
	$	**131,325,879**	*100.53%*	*		**$**	**99,007,027**		**$**	**103,592,524**
Variance	***$***	***(1)***			***Variance***	***$***	***0***	***Variance***	***$***	***-***

Source: KPMG based on North West Regional Hospital IFR templates

** As WIP from prior years relates to prior year costs, this percentage excludes $1.77 million (included in Item B) from the calculation*

^ These figures include admitted emergency costs.

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Explanation of reconciliation items

This section discusses each of the reconciliation items including adjustments, inclusions and exclusions to the GL. The information is based on the North West Regional Hospital templates and review discussions.

Item A - General Ledger

The final GL extracted from the FMS for North West Regional Hospital indicates expenditure of $128.87 million. The final GL reconciled to the expenditure in the audited financial statements.

Item B - Adjustments to the GL

A number of adjustments were made to the GL. Expenditure included totalled $5.58 million and related to:

- TAS-DHHS corporate overheads of human resources and ICT – $206,486
- Overheads for management of mental health services –$114,082
- Shared services, whereby certain services, such as genetic services, are based in Hobart but delivered to North West Regional Hospital –$2.06 million
- Royal Hobart Hospital provided services – $228,590
- Workers compensation salary wage recoveries – $1.20 million
- Work in progress (WIP) - 2013-14 costs for patients admitted prior to 2014-15 but discharged in 2014-15 of $1.77 million. The WIP data was only included for 2013-14. There may be costs for patients prior to 2013-14, but this was not included in the costing process. WIP costs are only accessible from 2013-14 onwards due a costing system change in that year.

Excluded expenditure totalled $3.13 million. This was due to a cross-over of cost centres with Mersey Community Hospital. This occurs due to instances where North West Regional Hospital provides services for Mersey Community Hospital, for example, for pharmacy, some drugs can be dispensed from North West Regional Hospital for Mersey Community Hospital patients.

The basis of these adjustments appears reasonable.

These adjustments established an expenditure base for costing of $131.33 million. This was approximately 100.53 percent of total expenditure reported in the GL (this percentage excludes the $1.77 million in 2013-14 WIP costs as it related to expenditure in a prior year).

Item C - Allocation of Costs

North West Regional Hospital undertook a process of reclass/transfers/offsets between direct cost centres. Reclass/transfers/offsets are determined based on discussions with cost centre managers.

- It was observed that the total for all direct cost centres of $100.59 million were allocated.
- It was observed that overheads of $30.74 million were allocated.

These amounts reconciled to $131.33 million. A minor $24 variance between Item B and Item C was noted.

Item D - Post Allocation Adjustments

No post allocation adjustments were made at the hospital level.

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The total expenditure allocated to patients for North West Regional Hospital was $131.33 million, which represented approximately 100.53 percent of the total hospital expenditure (note this percentage calculation excludes WIP from prior years as it is not part of the current year GL).

Item E - Costed Products Submitted to jurisdiction

Costs derived and reported at product level reconcile to $131.33 million. North West Regional Hospital included acute, non-admitted, emergency care, subacute, other, and teaching and training costed products. A minor $1 variance between Item D and Item E was noted.

Item F – Costed Products received by jurisdiction

As TAS-DHHS performs costing for both the hospital and the jurisdiction, there is no variance between Items E and F.

Item G - Final Adjustments

The jurisdiction made adjustments to the cost data prior to submission to IHPA. These adjustments related to the exclusion of WIP and activity data and associated costs. Excluded expenditure totalled $32.32 million and related to:

- WIP costs (Patients admitted in 2014-15, but not discharged in 2014-15) - $890,503
- Outside Referred Patients - $2.00 million
- Teaching and Training costs - $5.12 million
- Non-Tier 2 Clinics - $1.28 million
- Bulk Billed outpatients - $3.37 million
- Other - $19.66 million, comprising:
    - Patient travel – $3.59 million
    - Travel for interstate services - $3.58 million
    - Records not matched to a patient episode – $2.22 million
    - Special project providing audio-visual services to rural doctors – $2.22 million
    - Community services – $1.71 million
    - Services provided to other district hospitals – $1.66 million
    - Special purpose funds – $1.14 million
    - Other - $3.53 million.

The basis of these exclusions appears reasonable. However, the exclusion of Teaching and Training may impact on the completeness of the NHCDC.

Item H - Costed Products submitted to IHPA

Costs derived by the jurisdiction and reported at product level totalled $99.01 million. TAS-DHHS included acute, non-admitted, emergency, subacute and other costed products.

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Item I - Total Products received by IHPA

Total costed products received by IHPA totalled $99.01 million. There was a variance of $763 between costs submitted by the jurisdiction and costs received by IHPA (0.0008 percent of costs submitted by the jurisdiction).

It should be noted that a variance of ($759) between costs submitted by the jurisdiction and costs received by IHPA was identified for Mersey Community Hospital. Tasmania costed both IFR sampled hospitals together in one costing study and the IFR process requested that a reconciliation be undertaken for each hospital separately. As such, when the costing data of both hospitals is combined, the variances offset each other resulting in a minor $4 variance between the costs submitted to IHPA and the costs received by IHPA.

Item J - IHPA Adjustments

- *Admitted emergency*

  Upon receipt of cost data, IHPA allocates the admitted emergency costs back to admitted patients for the purposes of reporting and analysis. Within IHPA's reconciliation, this amount was a duplication of admitted emergency costs and not an additional cost. For North West Regional Hospital this amounted to $4.58 million.

- *Unqualified Baby Adjustment*

  Upon receipt of cost data, IHPA redistributes the unqualified baby cost to the mother separation to provide a complete delivery cost. Within IHPAs reconciliation this was not an additional cost but a movement between patients.

Item K - Final NHCDC Costed Outputs

The final NHCDC costed data for North West Regional Hospital that was loaded into the National Round 19 cost data set was $103.59 million which included the admitted emergency cost of $4.58 million.

8.2.3 Activity data

Table 74 presents patient activity data based on source and costing systems for North West Regional Hospital. This activity data is then compared to Table 75 which highlights the transfer of activity data by NHCDC product from North West Regional Hospital to TAS-DHHS and then through to IHPA submission and finalisation.

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Table 74 – Activity data – North West Regional Hospital

Activity Data	# Records from Source	# Records in costing system	Variance	# Records linked to Admitted	# Records linked to Emergency	# Records linked to Non-admitted	# Records linked to Other	Total Linking Process	# Unlinked records
Inpatients	13,988	13,988	-	13,988	-	-	-	13,988	-
Emergency	23,758	23,758	-	-	23,758	-	-	23,758	-
Outpatients	51,949	51,949	-	-	-	51,949	-	51,949	-
System-generated records	-	82	82	-	-	-	82	82	-
TOTAL	**89,695**	**89,777**	**82**	**13,988**	**23,758**	**51,949**	**82**	**89,777**	**-**

Source: KPMG based on data supplied by North West Regional Hospital and TAS-DHHS

Table 75 – Activity data submission – North West Regional Hospital

Product	Activity related to 2014-15 Costs	Adjustments	Activity submitted to jurisdiction	Adjustments	Activity submitted to IHPA	Activity received by IHPA	Adjustments	Total Activity submitted for Round 19 NHCDC
Acute and Newborns	13,266	-	13,266	(1,775)	11,491	11,491	(528)	10,963
Non-admitted	77,612	-	77,612	(36,809)	40,803	40,803	-	40,803
Emergency	23,758	-	23,758	-	23,758	23,758	-	23,758
Sub Acute	194	-	194	(15)	179	179	-	179
Mental Health	-	-	-	-	-	-	-	-
Other	610	-	610	(87)	523	523	-	523
Research	-	-	-	-	-	-	-	-
Teaching and Training	1	-	1	(1)	-	-	-	-
Total	**115,441**	**-**	**115,441**	**(38,687)**	**76,754**	**76,754**	**(528)**	**76,226**

Source: KPMG based on data supplied by North West Regional Hospital, TAS-DHHS and IHPA

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The following should be noted about transfer of activity data for North West Regional Hospital:

- A variance of 25,664 records was noted between total records from costing system detailed in Table 74 (89,777 records) and total activity related to 2014-15 costs by NHCDC product in Table 75 (115,441 records) and related to activity allocated to Non Tier 2 Outpatients (25,663 records).
- North West Regional Hospital made adjustments for the inclusion of WIP from prior years, however, TAS-DHHS staff noted that the 2013-14 WIP cost data was loaded into User Cost in the 2014-15 costing configuration as a utilisation feeder. The 2013-14 costs were then attached to the relevant patients. The WIP activity is already included across product types in the 115,441 records costed in Table 75.
- The adjustments made by the jurisdiction related to the inclusion of WIP, externally-referred patients (identified as either non-hospital patients or bulk-billed), teaching and training, and system-generated patients.
- The adjustment made by IHPA to the Acute and Newborns product related to the UQB adjustment discussed in Item J of the explanation of reconciliation items.
- Adjustments made by IHPA related to admitted emergency reallocations are for reporting and analysis purposes (as discussed in Item J of the explanation of reconciliation items) and have no impact on the reported activity.

8.2.4 Feeder data

Table 76 presents patient feeder data for North West Regional Hospital.

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Table 76 – Feeder data – North West Regional Hospital

Feeder Data	# Records from Source	# Records in costing system	Variance	# Records linked to Admitted	# Records linked to Emergency	# Records linked to Non-admitted	# Records linked to Other	Total Linking Process	# Unlinked records	% Linked
Theatre	33,948	33,948	-	33,948	-	-	-	33,948	-	100.00%
Prosthetics	1,540	1,540	-	1,540	-	-	-	1,540	-	100.00%
ED Locations	46,056	46,056	-	-	46,056	-	-	46,056	-	100.00%
Care Segments (Specialty)	120,033	120,033	-	68,181	-	51,852	-	120,033	-	100.00%
Ward Stay Segments	68,645	68,645	-	68,645	-	-	-	68,645	-	100.00%
Pathology	47,642	47,642	-	32,552	6,105	6,640	2,345	47,642	-	100.00%
Pharmacy	43,960	43,960	-	31,945	1,217	4,153	6,644	43,959	1	100.00%
Imaging	24,278	24,278	-	11,497	6,839	4,200	1,742	24,278	-	100.00%
Allied Health	103,375	103,375	-	42,906	323	39,124	20,933	103,286	89	99.91%
Blood	623	623	-	610	7	3	3	623	-	100.00%

Source: KPMG based on data supplied by North West Regional Hospital and TAS-DHHS

The following should be noted about the feeder data for North West Regional Hospital:

- There are ten feeders utilised by North West Regional Hospital and they appear to represent major hospital departments providing resource activity.
- The number of records linked from source to product was greater than 99 percent link or match for each of the ten feeders. This suggests that there is robustness in the level of feeder activity reported back to episodes.
- The 89 unlinked records in the Allied Health feeder system arose from data quality issues, where no episode data existed and a system-generated patient was not created.
- Records linked to 'other' related to system-generated patients created in the costing system.

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8.2.5 Treatment of WIP

Table 77 demonstrates models for WIP and what was included in the North West Regional Hospital Round 19 NHCDC submission.

Table 77 – WIP – North West Regional Hospital

Model	Description	Submitted to Round 19 NHCDC
1	Cost for patients admitted and discharged in 2014-15 only	Submitted to Round 19 of the NHCDC
2	Costs for patients admitted prior to 2014-15 and discharged in 2014-15	Submitted to Round 19 of the NHCDC. WIP costs were submitted for 2013-14 only.
3	Costs for patients admitted prior to or in 2014-15 and remain admitted at 30 June 2015	Not submitted to Round 19 of the NHCDC

Source: KPMG, based on North West Regional Hospital templates and review discussions

In summary, North West Regional Hospital submitted costs for admitted and discharged patients in 2014-15 and WIP costs for those patients admitted in 2013-14, and discharged in 2014-15.

Escalation factor

No escalation factor to costs incurred prior to 2014-15 was applied to the North West Regional Hospital Round 19 NHCDC submission.

8.2.6 Critical care

No critical care is undertaken at North West Regional Hospital.

8.2.7 Costing public and private patients

TAS-DHHS made no specific adjustments to the way private patients are costed compared to public patients on behalf of North West Regional Hospital. Applicable costs are allocated to private patients, including pathology, medical imaging and prosthesis, in the same manner as public patients.

There are no changes to the costing methodology for medical costs for private patients, as the costing methodology is identical for both public and private patients. Private patient revenue is not offset against expenditure.

8.2.8 Treatment of specific items

A number of items were discussed during the review to understand their treatment in the costing process as the cost data is used to inform the NEP and specific funding model adjustments for particular patient cohorts. North West Regional Hospital's treatment of each of the items is summarised in Table 78.

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Table 78 – Treatment of other specific cost items – North West Regional Hospital

Item	Treatment
Research	Research costs are unable to be separately identified within cost centres, but costs are allocated and contribute to the total patient cost.
Teaching and Training	Teaching and Training is reported at product level but is not submitted to IHPA.
Shared/Other commercial entities	For shared service arrangements, inpatient fractions are applied to expenditures to ensure the relevant expenditures are assigned to the appropriate hospital for costing purposes. There were no commercial entities reported.

Source: KPMG

8.2.9 Sample patient data

IHPA selected a sample of five patients from North West Regional Hospital for the purposes of testing the data flow from jurisdictions to IHPA at the patient level. TAS-DHHS provided the patient level costs for all five patients and these reconciled to IHPA records. The results are summarised in Table 79.

Table 79 – Sample patients – North West Regional Hospital

#	Product	Jurisdiction Records	Received by IHPA	Variance
1	Acute	$4,133.08	$4,133.08	-
2	Acute	$103,710.16	$103,710.16	-
3	Rehab	$11,710.75	$11,710.75	-
4	Non-Admitted ED	$245.70	$245.70	-
5	Non-Admitted	$146.42	$146.42	-

Source: KPMG, based on North West Regional Hospital and IHPA data

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8.3 Mersey Community Hospital

8.3.1 Overview

The Mersey Community Hospital has 100 beds and offers general and specialist health services to the region. The hospital has a dedicated team of more than 300 full time equivalent staff committed to providing quality healthcare services to its community. Such services include:

- Dietetics
- Occupational Therapy
- Physiotherapy
- Social Work
- Medical Day Procedure / Oncology Department
- Cardiac Rehabilitation
- Outpatient / Specialist Clinics
- Department of Emergency Medicine
- Speech Pathology
- Department of Surgery
- Orthopaedics

Located in Latrobe, in Tasmania, Mersey Community Hospital is an integral part of the Tasmanian Health Organisation - North West and works closely with other hospitals and primary health services to meet the needs of patients across the region. Mersey Community Hospital is fully accredited by the Australian Council on Healthcare Standards. They have a comprehensive undergraduate and graduate clinical training program and have close ties with the University of Tasmania through the Rural Clinical School and TAFE Tasmania.[15] Mersey Community Hospital is Commonwealth funded and not an Activity Based Funded hospital.

8.3.2 Financial data

For the Round 19 IFR, TAS-DHHS staff completed the IFR templates and participated in consultations during the review.

Table 80 reflects a summary of Mersey Community Hospital's costs, from the original extract from the GL through to the final NHCDC submission for Mersey Community Hospital for Round 19.

[15] Mersey Community Hospital - Department of Health and Human Services - Tasmanian Government. *Accessed 15 June 2016.*

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Table 80 – Round 19 NHCDC Reconciliation – Mersey Community Hospital

Hospital				Jurisdiction			IHPA		
Item		**Amount**	**% of GL**	**Item**		**Amount**	**Item**		**Amount**
A General Ledger (GL)	$	76,155,055		**F** Costed Products received by jurisidiction	$	79,713,599	**I** Total costed products received by IHPA	$	61,701,798
				Variance	***$***	*-*	***Variance***	***$***	***(759)***
B Adjustments to the GL									
Inclusions	$	3,558,526		**G** Final Adjustments			**J** IHPA Adjustments		
Exclusions	$	-		*WIP*	$	(320,408)	*Admitted ED reallocations*	$	5,547,797
Total hospital expenditure	**$**	**79,713,582**	*104.63%* *	*Outside referred patients (ORP)*	$	(1,903,537)	**Final NHCDC costs**	**$**	**67,249,595**
				Outside bulk billed	$	(2,767,365)			
C Allocation of Costs				*Teaching*	$	(2,602,161)			
Post Allocation Direct amount	$	62,118,719		*Other*	$	(10,417,571)			
Post Allocation Overhead amount	$	17,594,882		**Total costs submitted to IHPA**	**$**	**61,702,557**			
Total hospital expenditure	**$**	**79,713,601**	*104.63%* *						
Variance	***$***	*19*	*0.00%*						
D Post Allocation Adjustments									
Nil	$	-							
Total expenditure allocated to patients	**$**	**79,713,601**	*104.63%* *						
E Costed products submitted to jurisdiction				**H** Costed products submitted to IHPA			**K** Final NHCDC costed products		
Acute and Newborns	$	42,139,460		*Acute and Newborns*	$	39,915,516	*Acute^ and Newborns*	$	45,457,751
Non-admitted	$	8,067,006		*Non-admitted*	$	4,711,296	*Non-admitted*	$	4,711,296
Emergency	$	15,309,893		*Emergency*	$	15,309,893	*Emergency*	$	15,309,706
Sub Acute	$	1,751,197		*Sub Acute*	$	1,751,197	*Sub Acute^*	$	1,756,244
Mental Health	$	-		*Mental Health*	$	-	*Mental Health*	$	-
Other	$	9,843,882		*Other*	$	14,599	*Other*	$	14,598
Research	$	-		*Research*	$	-	*Research*	$	-
Teaching & Training	$	2,602,161		*Teaching & Training*	$	-	*Teaching & Training*	$	-
	$	**79,713,599**	*104.63%* *		**$**	**61,702,501**		**$**	**67,249,595**
Variance	***$***	***(1)***		***Variance***	***$***	***(56)***	***Variance***	***$***	*-*

Source: KPMG based on Mersey Community Hospital IFR templates

** As WIP from prior years expenditure relates to prior year costs, this percentage excludes the $34,708 (Included in Item B) from the calculation*

^ These figures include admitted emergency costs.

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Explanation of reconciliation items

This section discusses each of the reconciliation items including adjustments, inclusions and exclusions to the GL. The information is based on the Mersey Community Hospital templates and review discussions.

Item A - General Ledger

The final GL extracted from the FMS for Mersey Community Hospital indicates expenditure of $76.16 million. The final GL reconciled to the expenditure in the audited financial statements.

Item B - Adjustments to the GL

A number of adjustments were made to the GL. Expenditure included totalled $3.56 million and related to:

- Cross-over of cost centres with North West Regional Hospital totalling $3.13 million. This occurs as there are instances where North West Regional Hospital provides services, such as pharmacy, for Mersey Community Hospital
- Work in progress (WIP) - 2013-14 costs for patients admitted prior to 2014-15 but discharged in 2014-15 of $34,708. The WIP data was only included for 2013-14. There may be costs for patients prior to 2013-14, but this was not included in the costing process. WIP costs are only accessible from 2013-14 onwards due a costing system change in that year
- Royal Hobart Hospital provided services - $398,771.

The basis of these inclusions appears reasonable. There was no excluded expenditure.

These adjustments established an expenditure base for costing of $79.71 million. This was approximately 104.63 percent of total expenditure reported in the GL (this excludes the $34,708 in 2013-14 WIP costs as it related to expenditure in a prior year).

Item C - Allocation of Costs

Mersey Community Hospital undertook a process of reclass/transfers/offsets between direct cost centres. Reclass/transfers/offsets are determined based on discussions with cost centre managers.

- It was observed that the total for all direct cost centres of $62.12 million were allocated.
- It was observed that overheads of $17.59 million were allocated.

These amounts reconciled to $79.71 million. A minor $19 variance was noted between Items B and C.

Item D - Post Allocation Adjustments

No post allocation adjustments were made at the hospital level.

The total expenditure allocated to patients for Mersey Community Hospital was $79.71 million, which represented approximately 104.63 percent of the total hospital expenditure.

Item E - Costed Products Submitted to jurisdiction

Costs derived and reported at product level reconciled to $79.71 million. Mersey Community Hospital included acute, non-admitted, emergency care, subacute, other, and teaching and training costed products. A minor $1 variance was noted between Item D and Item E.

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Item F – Costed Products received by jurisdiction

As TAS-DHHS performs costing for both the hospital and the jurisdiction, there is no variance between Items E and F.

Item G - Final Adjustments

The jurisdiction makes adjustments to the cost data prior to submission to IHPA. These adjustments related to the inclusion of WIP and exclusions of activity data and associated costs. Excluded expenditure totalled $18.01 million and included:

- WIP costs (Patients admitted in 2014-15, but not discharged in 2014-15) - $320,408
- Outside Referred Patients - $1.90 million
- Teaching and Training costs - $2.60 million
- Outside bulk billed patients - $2.77 million
- Other - $10.42 million, comprising:
    - Travel for interstate services – $3.72 million
    - Services provided to other district hospitals – $3.17 million
    - Records not matched to a patient episode – $2.11 million
    - Non Tier 2 patients – $588,288
    - Community services – $123,461
    - Other - $707,809.

The basis of these exclusions appears reasonable. However, the exclusion of Teaching and Training may impact on the completeness of the NHCDC.

Item H - Costed Products submitted to IHPA

Costs derived by the jurisdiction and reported at product level total $61.70 million. TAS-DHHS included acute, non-admitted, emergency, subacute and other costed products. A minor $56 variance was noted between Item G and Item H.

Item I - Total Products received by IHPA

Costed products received by IHPA totalled $61.70 million. There was a variance of ($759) between costs submitted by the jurisdiction and costs received by IHPA (0.0008 percent of costs submitted by the jurisdiction).

It should be noted that a variance of $763 between costs submitted by the jurisdiction and costs received by IHPA was identified for North West Regional Hospital. Tasmania costed both IFR sampled hospitals together in one costing study and the IFR process requested that a reconciliation be undertaken for each hospital separately. As such, when the costing data of both hospitals is combined, the variances offset each other resulting in a minor $4 variance between the costs submitted to IHPA and the costs received by IHPA.

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Item J - IHPA Adjustments

- *Admitted emergency*

  Upon receipt of cost data, IHPA allocates the admitted emergency costs back to admitted patients for the purposes of reporting and analysis. Within IHPA's reconciliation, this amount was a duplication of admitted emergency costs and not an additional cost. For Mersey Community Hospital this amounted to $5.55 million.

- *Unqualified Baby Adjustment*

  Upon receipt of cost data, IHPA redistributes the unqualified baby cost to the mother separation to provide a complete delivery cost. Within IHPAs reconciliation this was not an additional cost but a movement between patients.

Item K - Final NHCDC Costed Outputs

The final NHCDC costed data for Mersey Community Hospital that was loaded into the National Round 19 cost data set was $67.25 million which included the admitted emergency cost of $5.55 million.

8.3.3 Activity data

Table 81 presents patient activity data based on source and costing systems for Mersey Community Hospital. This activity data is then compared to Table 82 which highlights the transfer of activity data by NHCDC product from Mersey Community Hospital to TAS-DHHS and then through to IHPA submission and finalisation.

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Table 81 – Activity data – Mersey Community Hospital

Activity Data	# Records from Source	# Records in costing system	Variance	# Records linked to Admitted	# Records linked to Emergency	# Records linked to Non-admitted	# Records linked to Other	Total Linking Process	# Unlinked records
Inpatients	12,837	12,837	-	12,837	-	-	-	12,837	-
Emergency	25,853	25,853	-	-	25,853	-	-	25,853	-
Outpatients	25,741	25,741	-	-	-	25,741	-	25,741	-
System-generated records	-	82	82	-	-	-	82	82	-
TOTAL	**64,431**	**64,513**	**82**	**12,837**	**25,853**	**25,741**	**82**	**64,513**	**-**

Source: KPMG based on data supplied by Mersey Community Hospital and TAS-DHHS

Table 82 – Activity data submission – Mersey Community Hospital

Product	Activity related to 2014-15 Costs	Adjustments	Activity submitted to jurisdiction	Adjustments	Activity submitted to IHPA	Activity received by IHPA	Adjustments	Total Activity submitted for Round 19 NHCDC
Acute and Newborns	12,581	-	12,581	(1,203)	11,378	11,378	(345)	11,033
Non-admitted	49,296	-	49,296	(33,032)	16,264	16,264	-	16,264
Emergency	25,853	-	25,853	-	25,853	25,853	-	25,853
Sub Acute	120	-	120	(5)	115	115	-	115
Mental Health	-	-	-	-	-	-	-	-
Other	218	-	218	(84)	134	134	-	134
Research	-	-	-	-	-	-	-	-
Teaching and Training	1	-	1	(1)	-	-	-	-
Total	**88,069**	**-**	**88,069**	**(34,325)**	**53,744**	**53,744**	**(345)**	**53,399**

Source: KPMG based on data supplied by Mersey Community Hospital, TAS-DHHS and IHPA

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The following should be noted about transfer of activity data for Mersey Community Hospital:

- A variance of 23,556 records was noted between total records from costing system detailed in Table 81 (64,513 records) and total activity related to 2014-15 costs by NHCDC product in Table 82 (88,069 records) and related to activity allocated to Non Tier 2 Outpatients (23,555 records).
- Mersey Community Hospital made adjustments for the inclusion of WIP from prior years, however, TAS-DHHS staff noted that the 2013-14 WIP cost data was loaded into User Cost in the 2014-15 costing configuration as a utilisation feeder. The 2013-14 costs were then attached to the relevant patients. The WIP activity is already included in the 88,069 records costed in Table 82.
- The adjustments made by the jurisdiction related to the inclusion of WIP, externally-referred patients (identified as either non-hospital patients or bulk-billed), teaching and training, and system-generated patients.
- The adjustment made by IHPA to the Acute and Newborns product related to the UQB adjustment discussed in Item J of the explanation of reconciliation items.
- Adjustments made by IHPA related to admitted emergency reallocations are for reporting and analysis purposes (as discussed in Item J of the explanation of reconciliation items) and have no impact on the reported activity.

8.3.4 Feeder data

Table 83 presents patient feeder data for Mersey Community Hospital.

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Table 83 – Feeder data – Mersey Community Hospital

Feeder Data	# Records from Source	# Records in costing system	Variance	# Records linked to Admitted	# Records linked to Emergency	# Records linked to Non-admitted	# Records linked to Other	Total Linking Process	# Unlinked records	% Linked
Theatre	33,080	33,080	-	33,080	-	-	-	33,080	-	100.00%
Prosthetics	1,602	1,602	-	1,602	-	-	-	1,602	-	100.00%
ED Locations	51,002	51,002	-	-	51,002	-	-	51,002	-	100.00%
Care Segments (Specialty)	68,994	68,994	-	43,311	-	25,683	-	68,994	-	100.00%
Ward Stay Segments	46,189	46,189	-	46,189	-	-	-	46,189	-	100.00%
Pathology	35,250	35,250	-	22,453	8,126	4,116	555	35,250	-	100.00%
Pharmacy	26,131	26,131	-	16,080	1,860	2,372	5,819	26,131	-	100.00%
Imaging	22,831	22,831	-	8,109	9,882	4,433	407	22,831	-	100.00%
Allied Health	43,206	43,206	-	17,258	222	24,653	1,073	43,206	-	100.00%
Blood	320	320	-	301	16	2	1	320	-	100.00%

Source: KPMG based on data supplied by Mersey Community Hospital and TAS-DHHS

The following should be noted about the feeder data for Mersey Community Hospital:

- There are ten feeders utilised by Mersey Community Hospital and they appear to represent major hospital departments providing resource activity.
- The number of records linked from source to product was significant, with all feeders having a 100 percent link or match. There is robustness in the level of feeder activity reported back to episodes.
- Records linked to 'other' related to system-generated patients created in the costing system.

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8.3.5 Treatment of WIP

Table 84 demonstrates models for WIP and what was included in the Mersey Community Hospital Round 19 NHCDC submission.

Table 84 – WIP – Mersey Community Hospital

Model	Description	Submitted to Round 19 NHCDC
1	Cost for patients admitted and discharged in 2014-15 only	Submitted to Round 19 of the NHCDC
2	Costs for patients admitted prior to 2014-15 and discharged in 2014-15	Submitted to Round 19 of the NHCDC. WIP costs were submitted for 2013-14 only due to a change in costing system in that year.
3	Costs for patients admitted prior to or in 2014-15 and remain admitted at 30 June 2015	Not submitted to Round 19 of the NHCDC

Source: KPMG, based on Mersey Community Hospital templates and review discussions

In summary, Mersey Community Hospital submitted costs for admitted and discharged patients in 2014-15 and WIP costs for those patients admitted in 2013-14, but discharged in 2014-15.

Escalation factor

No escalation factor was applied to costs incurred prior to 2014-15 to the Mersey Community Hospital Round 19 NHCDC submission.

8.3.6 Critical care

No critical care is undertaken at Mersey Community Hospital.

8.3.7 Costing public and private patients

Mersey Community Hospital makes no specific adjustments to the way private patients are costed compared to public patients. Applicable costs are allocated to private patients, including pathology, medical imaging and prosthesis, in the same manner as public patients.

There are no changes to the costing methodology for medical costs for private patients, as the costing methodology is identical for both public and private patients. Private patient revenue is not offset against expenditure.

8.3.8 Treatment of specific items

A number of items were discussed during the review to understand their treatment in the costing process as the cost data is used to inform the NEP and specific funding model adjustments for particular patient cohorts. Mersey Community Hospital's treatment of each of the items is summarised in Table 85.

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Table 85 – Treatment of other specific cost items – Mersey Community Hospital

Item	Treatment
Research	Research costs are unable to be separately identified within cost centres, but costs are allocated and contribute to the total patient cost.
Teaching and Training	Teaching and Training is reported at product level but is not submitted to IHPA.
Shared/Other commercial entities	For shared service arrangements, inpatient fractions are applied to expenditures to ensure the relevant expenditures are assigned to the appropriate hospital for costing purposes. There are no commercial entities reported.

Source: KPMG

8.3.9 Sample patient data

IHPA selected a sample of five patients from Mersey Community Hospital for the purposes of testing the data flow from jurisdictions to IHPA at the patient level. TAS-DHHS provided the patient level costs for all five patients and these reconciled to IHPA records. The results are summarised in Table 86.

Table 86 – Sample patients – Mersey Community Hospital

#	Product	Jurisdiction Records	Received by IHPA	Variance
1	Maintenance	$9,016.50	$9,016.50	-
2	Acute	$2,658.44	$2,658.44	-
3	Acute	$1,360.12	$1,360.12	-
4	Non-Admitted ED	$438.68	$438.68	-
5	Non-Admitted	$205.28	$205.28	-

Source: KPMG, based on Mersey Community Hospital and IHPA data

8.4 Application of AHPCS Version 3.1

The following section summarises TAS-DHHS's application of selected standards from Version 3.1 of the AHPCS (outlined in Appendix B) to the North West Regional Hospital and Mersey Community Hospital Round 19 NHCDC submissions.

8.4.1 SCP 1.004 – Hospital Products in Scope

For the two Tasmanian hospitals reviewed, costs are allocated to all products and reported by TAS-DHHS, with the exception of research. This was demonstrated through the templates submitted and interview process. TAS-DHHS staff noted that the AHPCS Version 3.1 is used as the basis for costing. Teaching and Training costs are allocated at patient level but are not submitted to the NHCDC.

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8.4.2 SCP 2.003 – Product Costs in Scope

The IFR templates were completed by TAS-DHHS staff to demonstrate the reconciliation of financial data, which was demonstrated through the interview process. Discussions also indicated that all products other than research are costed, which includes costs assigned to products in scope for the NHCDC, with minimal unlinked activity.

8.4.3 SCP 2B.002 - Research Costs

Research costs are not assigned to a product as they are unable to be separately identified within cost centres. These costs are then allocated and contribute to the total patient cost and are submitted to the NHCDC.

8.4.4 SCP 3.001 - Matching Production and Cost

The application of this standard was demonstrated during the interview and an excel file was produced from the costing system which outlined all transfers and offsets utilised.

8.4.5 SCP 3A.001 - Matching Production and Cost – Overhead Cost Allocation

The jurisdiction was able to demonstrate that overhead costs were fully allocated to direct patient care areas via the pre allocation and post allocation data included in the templates. TAS-DHHS staff also indicated in the interview that the AHPCS Version 3.1 order of preference is applied to allocate overhead costs.

8.4.6 SCP 3B.001 - Matching Production and Cost – Costing all Products

The application of this standard was demonstrated in the templates for each hospital. TAS-DHHS also provided an overview of their internal reconciliation process which demonstrated the allocation of costs to products.

8.4.7 SCP 3C.001 - Matching Production and Cost – Commercial Business Entities

No commercial entities were reported. TAS-DHHS Finance staff make adjustments to the GL for some shared service arrangements by hospital. TAS-DHHS costing staff make further adjustments for shared service arrangements through the use of inpatient fractions. Based on discussions during the review, adherence with the standard was demonstrated.

8.4.8 SCP 3E.001 - Matching Production and Cost – Offsets and Recoveries

Cost recoveries for salaries and wages and work cover expenses were noted in the template for North West Regional Hospital. During the interview, TAS-DHHS staff confirmed that no revenue offsetting was undertaken.

8.4.9 SCP 3G.001 – Matching Production and Cost – Reconciliation to Source Data

TAS-DHHS staff demonstrated during the interview that the Tasmanian reconciliation for financial and activity is robust through the use of the templates.

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8.4.10 GL 2.004 - Account Code Mapping to Line Items

The purpose of this standard is to ensure that all cost data can be mapped to standardised line items for both NHCDC collection and comparative purposes. TAS-DHHS staff demonstrated (in the templates) that costs reconciled by NHCDC line item

8.4.11 GL 4A.002 – Critical Care Definition

This standard is not applicable as both hospitals reviewed did not have dedicated critical care units.

8.4.12 COST 3A.002 – Allocation of Medical Costs for Private and Public Patients

TAS-DHHS staff indicated that costs are allocated to public and private patients in the same manner at all hospitals within Tasmania. This includes costs associated with nursing salaries and wages, pathology, medical imaging and prosthesis.

Medical expenditure is handled in a similar way for both public and private patients. Private patient revenue is not offset against the expenditure.

8.4.13 COST 5.002 - Treatment of Work-In-Progress Costs

Patients are allocated costs based on their consumption of resources for that reporting period. TAS-DHHS submitted WIP costs for admitted and discharged patients in 2014-15 and WIP costs for 2013-14 for those patients admitted prior to, but discharged, in 2014-15.

Where costs are incurred in prior years, only the costs for 2013-14 are included in the final costed data and NHCDC submission, due to a change in costing system in that year. These costs were not escalated in the Round 19 NHCDC submission.

8.5 Conclusion

The findings of the Tasmania Round 19 IFR are summarised below:

- Since Round 18, TAS-DHHS improved the allocation of nursing costs to patients by utilising a weighted minute based on the number of nurses and their respective levels that are rostered on the ward in which each patient is located.
- The financial reconciliations demonstrated the transformation of cost data for the sampled hospitals based on the GL of the respective hospital. The GL for each hospital reconciled to the expenditure in the audited financial statements. Major exclusions from North West Regional Hospital data included costs that related to Mersey Community Hospital, which were recorded as inclusions in the Mersey Community Hospital data. Minor variances were noted for the sampled hospitals between the hospital expenditure and the costs allocated to patients.
- Non-admitted patient costs relating to externally referred and bulk-billed patients were excluded. Costs were also excluded for WIP, system-generated patients and for Teaching and Training costs (these teaching and training costs are reported at product level, just not submitted as part of the NHCDC).
- The basis of the adjustments made by TAS-DHHS appears reasonable. However, the exclusion of Teaching and Training may impact on the completeness of the NHCDC.

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- Total NHCDC activity data for the hospitals was adjusted by TAS-DHHS for the removal of records associated with excluded costs.
- In Tasmania, a variance of ($759) was noted for Mersey Community Hospital and $763 was noted for North West Regional Hospital. Tasmania costed these hospitals together in one costing study and the IFR process requested that a reconciliation be undertaken for each hospital separately. As such, when the costing data of both hospitals is combined, the variances offset each other resulting in a minor $4 variance between the costs submitted to IHPA and the costs received by IHPA.
- The number of records linked from source to product was significant with all feeders having a greater than 99 percent link or match. This suggests that there is robustness in the level of feeder activity reported back to episodes.
- WIP was treated in accordance with the COST 5.002 of the AHPCS Version 3.1. It is noted that no escalation factor was applied to prior year costs. WIP costs are included for 2013-14 onwards due to a change in costing system in that year.
- The five sample patients selected for review for North West Regional Hospital and Mersey Community Hospital reconciled to IHPA records.

Based on discussions held during the site visit, and a review of the financial reconciliation provided, TAS-DHHS has robust reconciliation processes in place. As such, nothing has come to our attention to suggest that the financial data for North West Regional Hospital and Mersey Community Hospital is not fit for NHCDC submission. Furthermore, the data flow from the jurisdiction to IHPA demonstrated no unexplained variances.

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9. Victoria

9.1 Jurisdictional overview

9.1.1 Management of NHCDC process

The Victorian Department of Health and Human Services (VIC Health) is responsible for the collation, review and submission of data to the NHCDC. All major Victorian health services are required to operate and maintain patient level costing systems to determine accurate patient level costs. This is specified within VIC Health's annual Victorian Policy and Funding Guidelines.

The Victorian patient level costing process is supported by the Victorian Clinical Costing User Group (VCCUG). The VCCUG is an independent group, supported by the VIC Health. It is comprised of costing staff from Victorian health services, a number of costing vendor representatives and departmental staff. This group meets on a monthly basis to discuss and action jurisdictional, and where relevant national costing items. Currently a member of the VCCUG holds a position on the NHCDC Advisory Committee (NAC).

VIC Health conducts an annual costing collection known as the Victorian Cost Data Collection (VCDC) that collects patient level costed data from a number of major Victorian health services and a number of smaller rural health services. The VCDC is used to support Victoria's annual funding model (such as the calculation of the Weighted Inlier Equivalent Separation price) and is used for a number of other supporting purposes (such as jurisdictional and national costing reviews).

Victorian health services do not cost to the format of the NHCDC data specification. Whilst Victorian health services are responsible for the preparation of the costing data, the cost data submission to the VCDC must comply with the VCDC Business Rules and VCDC file specification documentation that are reviewed and updated annually.

VIC Health holds the responsibility of transforming the VCDC data into the format of the NHCDC file specification. Upon receipt of the health service submission to the VCDC, VIC Health staff will undertake a three stage linking process. This process links the patient-level cost record to existing activity data sets that have been previously collected from health services. Examples of these activity data sets include the Victorian Admitted Episodes Data (VAED) and Victorian Emergency Episodes Data (VEMD). Following this linking process a series of validation reports are submitted to the health service for review. Health services are then offered the opportunity to review and resubmit their reviewed data. VIC Health does not adjust any costing record submitted by the health service (for inclusions, exclusions or validity) without the direct advice of the health service.

Following the completion of this validation process, a series of quality checks are undertaken to test the data for a range of cost quality controls, including low and high cost cases. These are again reviewed by health services who advise on the validity of the costed record to finalise the number of costed records for the Victorian cost data set. To accompany the validation and quality assurance checks, a series of reconciliation templates are supplied as part of the VCDC process. These are submitted five days post the health services final VCDC submission.

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The dataset provided through the VCDC submission informs the NHCDC submission. The format of the VCDC allows the VCDC output to be mapped to the NHCDC file specification. VIC Health undertakes this mapping. VIC Health reviews the specification each year and performs a number of data checks against the NHCDC specifications to enable submission to IHPA.

Prior to the final NHCDC submission to IHPA, a brief is provided to the Secretary of VIC Health demonstrating the type and number of activity and the associated costs to be submitted to IHPA for NHCDC purposes. The Secretary of VIC Health is the signatory to the submission.

VIC Health nominated three hospitals to participate in the IFR for Round 19, Ballarat Health Service, Eastern Health and Latrobe Regional Hospital.

Key initiatives since Round 18 NHCDC

Since the Round 18 NHCDC, VIC Health has undertaken a series of initiatives to further support the VCDC process. Whilst health services provide reconciliation templates for expenditure and activity to VIC Health, VIC Health has formalised their internal reconciliation process from health service submission to final VCDC and NHCDC data sets for 2014-15. From 2015-16 onwards, this reconciliation will be presented back to the health services. A process is also currently underway to formalise the sign off process for Victorian health services submitting to the VCDC.

9.2 Ballarat Health Service

9.2.1 Overview

Ballarat Health Service (Ballarat Health) is a total health care provider based in North Ballarat. This health facility delivers numerous services including acute care, sub-acute care, psychiatric care, community programs and residential care.

Ballarat Health operates the Ballarat Base Hospital, the largest regional hospital in the Grampians region. It is the principal referral hospital for the entire region, which extends from Bacchus Marsh to the South Australian border, an area of 48,000 square kilometres. The key services are based at two sites, the Base Hospital site and the Queen Elizabeth Centre site. Each site is located close to the central business district, with the remaining residential, day centres and community sites located throughout Ballarat.

Ballarat Health employs over 4,000 staff and has a total bed count of 785, which includes residential aged care. It also provides a wide range of educational and research services through their Centre of Education and Training, including allied health clinical educations; mental health research and education; and nursing and health related education services.[16]

Overview of the costing process

The Visasys costing system is used at Ballarat Health and is an outsourced function where a Visasys consultant works with the health service to obtain data, define the costing methodology, and undertake the costing function. Patient level costing has traditionally been undertaken on an annual basis but recently changed to bi-yearly, beginning with 2015-16.

[16] Ballarat Health Service - *Accessed 15 June 2016*

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Activity and feeder data is derived from the Patient Administration System (PAS) and VIC Health data collections. The activity data extracted from the PAS is reviewed for data quality and where relevant reconciled against the VAED, VEMD, Victorian Integrated Non-Admitted Data Set (VINAH) and the Mental Health Client Management Interface. Each feeder is tested for data quality to ensure records can be linked to the appropriate activity. Following the linking process, a review of unlinked activity is undertaken to ensure that any errors in records are amended to enable further linking.

At the completion of the costing process, the consultant presents a number of reports to the Manager of Decision Support to review the costing data. This review includes consultation with a range of stakeholders within the health service including representatives from Health Information Services and Finance. Stakeholders examine costs between financial years and benchmark to jurisdictional averages. The health service relies on both the validation and quality checks required as part of the VCDC process to inform the robustness of its submission to VIC Health.

The Director of Finance at Ballarat Health is the signatory to the final VCDC submission to VIC Health.

9.2.2 Financial data

Representatives from VIC Health and Visasys Consulting completed the IFR templates based on similar templates supplied by Ballarat Health as part of the VCDC submission. A representative from Visasys Consulting completed the VCDC templates and the Decision Support Manager from Ballarat Health reviewed the templates, prior to submission to VIC Health. Both representatives from Ballarat Health participated in the consultations for the Round 19 IFR.

Table 87 presents a summary of Ballarat Health's costs, from the original extract from the General Ledger (GL) through to Ballarat Health's final NHCDC submission for Round 19.

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Table 87 – Round 19 NHCDC Reconciliation – Ballarat Health Service

Hospital					Jurisdiction			IHPA		
Item		Amount	% of GL		Item		Amount	Item		Amount
A General Ledger (GL)	$	419,875,181			**F** Costed Products received by jurisidction	$	292,001,585	**I** Total costed products received by IHPA	$	234,284,877
					Variance	*$*	*(15,768)*	*Variance*	*$*	*(2)*
B Adjustments to the GL										
Inclusions	$	4,527,674			**G** Final Adjustments			**J** IHPA Adjustments		
Exclusions	$	-			*Activity related to Stawell Hospital*	$	15,768	*Admitted ED reallocations*	$	10,699,122
Total hospital expenditure	**$**	**424,402,855**	*101.08%*		*National Blood Authority*	$	(2,191,027)	**Final NHCDC costs**	**$**	**244,983,999**
					Unlinked records	$	(157,374)			
C Allocation of Costs					*Tier 2 clinics - out of scope*	$	(7,066,044)			
Post Allocation Direct amount	$	356,716,450			*Mental Health activity excluded*	$	(17,713,651)			
Post Allocation Overhead amount	$	67,686,435			*Other non-admitted activity*	$	(23,972,450)			
Total hospital expenditure	**$**	**424,402,885**	*101.08%*		*Other admitted activity*	$	(6,631,929)			
Variance	*$*	*30*	*0.00%*		**Total costs submitted to IHPA**	**$**	**234,284,879**			
D Post Allocation Adjustments										
WIP patients not discharged	$	(10,509,627)								
Out of scope expenditure	$	(141,073,999)								
Negative cost centres	$	11,452,460								
*WIP data error**	$	(7,825)		*						
*WIP from prior years**	$	7,753,480		*						
Total expenditure allocated to patients	**$**	**292,017,375**	*67.70%*							
E Costed products submitted to jurisdiction					**H** Costed products submitted to IHPA			**K** Final NHCDC costed products		
Acute and Newborns	$	194,563,253			*Acute and Newborns*	$	165,228,679	*Acute^ and Newborns*	$	175,927,800
Non-admitted	$	-			*Non-admitted*	$	17,404,114	*Non-admitted*	$	17,404,114
Emergency	$	66,849,722			*Emergency*	$	24,665,912	*Emergency*	$	24,665,912
Sub Acute	$	30,604,379			*Sub Acute*	$	26,983,901	*Sub Acute^*	$	26,983,901
Mental Health	$	-			*Mental Health*	$	-	*Mental Health*	$	-
Other	$	-			*Other*	$	2,271	*Other*	$	2,271
Research	$	-			*Research*	$	-	*Research*	$	-
Teaching & Training	$	-			*Teaching & Training*	$	-	*Teaching & Training*	$	-
	$	**292,017,354**	*67.70%*	*		**$**	**234,284,877**		**$**	**244,983,998**
Variance	*$*	*(21)*			*Variance*	*$*	*(2)*	*Variance*	*$*	*(1)*

Source: KPMG based on data supplied by Ballarat Health Service, jurisdiction and IHPA

** As WIP from prior years expenditure relates to prior year costs, this percentage excludes the $7.75 million in WIP from prior years and the WIP error of $7,825 from the calculation*

^ These figures include admitted emergency costs.

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Explanation of reconciliation items

This section discusses each of the reconciliation items including adjustments, inclusions and exclusions to the GL. The information is based on the Ballarat Health templates and review discussions.

Item A – General Ledger

The final GL extracted from Ballarat Health's financial systems included expenditure of $419.88 million. This amount varied from the audited financial statements for Ballarat Health by $994,181 that related to the sale of fixed assets ($1.03 million) and a rounding error of $39,343. This variance equated to 0.24 percent of the audited expenditure in the financial statements.

Item B – Adjustments to the GL

Ballarat Health included additional expenditure items in the GL for costing purposes. Expenditure items included totalled $4.53 million and related to:

- National Blood allocation from VIC Health - $2.21 million
- Health Purchasing Victoria form VIC Health - $320,824
- Private patient prosthesis revenue (previously recognised as negative expenditure the GL) – $1.97 million.

The basis of these adjustments appears reasonable.

These adjustments established an expenditure base for costing of $424.40 million. This was approximately 101 percent of total expenditure reported in the GL.

Item C – Allocation of costs

Ballarat Health undertakes a process of reclass/transfers between direct and overhead cost centres. The net effect of these reclass/transfers was zero.

- It was observed that the total of all direct cost centres of $356.72 million was allocated post allocation.
- It was observed that all overheads of $67.69 million were allocated to direct cost centres, post allocation.

These amounts reconciled to $424.40 million and reflected the total hospital expenditure for Ballarat Health. A minor $30 variance between Item B and Item C was identified.

Item D – Post Allocation Adjustments

A range of costs were excluded after the allocation of costs in Item C and related to:

- WIP patients not discharged - $10.51 million
- WIP data error - $7,825
- Out of scope expenditure ($141.07 million) which includes:
    - Community and aged care programs - $86.19 million
    - Capital expenditure (deemed out of scope by the VCDC Business Rules) - $31.06 million
    - Commercial ventures - $13.31 million

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- Special Purpose Funds related to specific funding for projects ($5.34 million) and Departmental internal funds ($3.31 million)
- Breast Screening program - $1.40 million
- Other excluded programs - $457,424.

Ballarat Health also included WIP from prior years totalling $7.75 million and negative cost centres of $11.45 million in its post allocation adjustments.

The basis of these adjustments appears reasonable, with the exception of capital expenditure. This expenditure is deemed out of scope by the VCDC Business Rules and is therefore, not included in the costs submitted by hospitals to VIC Health. The exclusion of this expenditure may impact on the completeness of the NHCDC.

The total expenditure allocated to patients for Ballarat Health was $292.02 million which represented approximately 67.7 percent of the GL (note this percentage calculation excludes WIP from prior years and WIP data errors as they are not part of the current year GL).

Item E - Costed products submitted to jurisdiction

Costs derived by the Ballarat Health and reported at product level were equal to $292.02 million. Costs were allocated to the VCDC Program categories. However, when mapped to the NHCDC product types, costs were allocated to Acute, Non-admitted, Emergency, Mental Health and Other. A minor $21 variance between Item D and Item E was identified.

Item F – Costed products received by the jurisdiction

A variance of $15,768 was noted between Items E and F. This amount related to activity for Stawell hospital, which was included in the hospital submission but was not included in the cost data that VIC Health collected from its systems.

Item G – Final adjustments

VIC Health made the following exclusions from Ballarat Health's cost data before submission to IHPA:

- Cost data failing linking validation tests to the VAED - $157,374
- National Blood Authority allocation - $2.19 million
- Out of scope Tier 2 clinics (related to sub acute and mental health activity) - $7.07 million
- Out of scope mental health activity - $17.71 million
- Other non-admitted activity such as home based aged care services, private patient clinics operated by the health service, services that could not be linked to a patient episode - $23.97 million
- Other admitted activity such as residential aged care - $6.63 million.

The activity related to Stawell Hospital was included in the Ballarat Health NHCDC submission to IHPA. The cost of this activity ($15,768) has been included as a final adjustment for reconciliation purposes.

The basis of these exclusions appears reasonable, with the exception of National Blood Authority allocation. The exclusion of these costs may impact on the completeness of the NHCDC.

The total NHCDC costs submitted to IHPA by VIC Health was $234.28 million.

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Item H – Costed products submitted to IHPA

Costs derived by the jurisdiction and reported at product level reconcile to $234.28 million. A minor variance of $2 was noted between Items G and H.

Item I – Total products received by IHPA

Total costed products received by IHPA totalled $234.28 million. There was a minor variance of $2 between costs submitted by the jurisdiction and costs received by IHPA.

Item J – IHPA adjustments

- *Admitted emergency*

  Upon receipt of cost data, IHPA allocates the admitted emergency costs back to admitted patients for the purposes of reporting and analysis. Within IHPA's reconciliation, this amount was a duplication of admitted emergency costs and not an additional cost. For Ballarat Health this amounted to $10.70 million.

- *Unqualified Baby Adjustment*

  Upon receipt of cost data, IHPA redistributes the unqualified baby cost to the mother separation to provide a complete delivery cost. Within IHPAs reconciliation, this was not an additional cost but a movement between patients.

Item K – Final NHCDC Costed Outputs

The final NHCDC costed data for Ballarat Health that was loaded into the National Round 19 cost data set was $244.98 million, which included the admitted emergency cost of $10.70 million. A minor $1 variance was noted between Items J and K.

9.2.3 Activity data

Table 88 presents patient activity data based on source and costing systems for Ballarat Health. This activity data is then compared to Table 89 which highlights the transfer of activity data by NHCDC product from Ballarat Health to VIC Health and then through to IHPA submission and finalisation.

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Table 88 – Activity data – Ballarat Health Service

Activity Data	# Records from Source	# Records in costing system	Variance	# Records linked to Admitted	# Records linked to Emergency	# Records linked to Non-admitted	# Records linked to Other	Total Linking Process	# Unlinked records
Patient Admission System- BASE	37,147	37,106	(41)	37,106	-	-	-	37,106	-
Patient Admission System- QEC	1,390	1,390	-	1,390	-	-	-	1,390	-
Emergency System	51,413	51,413	-	-	51,413	-	-	51,413	-
Outpatient Booking System	127,574	51,863	(75,711)	-	-	51,863	-	51,863	-
Mental Health - Episode	85,861	83,150	(2,711)	695	-	-	82,455	83,150	-
VinahHARP	6,858	6,858	-	-	-	6,858	-	6,858	-
VinahHBPCCT	2,362	2,362	-	-	-	2,362	-	2,362	-
VinahPAC	8,727	8,727	-	-	-	8,727	-	8,727	-
VinahRIR	1,382	1,382	-	-	-	1,382	-	1,382	-
VinahSAC	18,755	18,755	-	-	-	18,755	-	18,755	-
VinahSCOP	66,445	66,445	-	-	-	66,445	-	66,445	-
VinahTCP	1,852	1,852	-	-	-	1,852	-	1,852	-
Additional records created from Feeder Data	76,244	76,244	-	-	-	-	76,244	76,244	-
TOTAL	**486,010**	**407,547**	**(78,463)**	**39,191**	**51,413**	**158,244**	**158,699**	**407,547**	-

Source: KPMG based on data supplied by Ballarat Health and VIC Health

The following should be noted about the activity data provided by Ballarat Health:

- 41 records were cancelled in the Patient Admission System (Ballarat Base campus).
- 75,711 records in the Outpatient Booking System were duplicate records or Did Not Attend status.
- 2,711 records in the Mental Health – Episode system were duplicate records or records outside of the financial year.
- The additional records created from feeder data related to the creation of episode numbers where services could not be linked to an existing episode.

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Table 89 – Activity data submission – Ballarat Health Service

Product	Activity related to 2014-15 Costs	Adjustments	Activity submitted to jurisdiction	Adjustments	Activity submitted to IHPA	Activity received by IHPA	Adjustments	Total Activity submitted for Round 18 NHCDC
Acute and Newborns	38,394	(259)	38,135	(1,039)	37,096	37,096	(1,082)	36,014
Non-admitted	123,736	-	123,736	(38,084)	85,652	85,652	-	85,652
Emergency	51,413	-	51,413	-	51,413	51,413	-	51,413
Sub Acute	-	-	-	1,025	1,025	1,025	-	1,025
Mental Health	83,150	(647)	82,503	(82,503)	-	-	-	-
Other	110,854	(326)	110,528	(110,527)	1	1	-	1
Research	-	-	-	-	-	-	-	-
Teaching and Training	-	-	-	-	-	-	-	-
Total	**407,547**	**(1,232)**	**406,315**	**(231,128)**	**175,187**	**175,187**	**(1,082)**	**174,105**

Source: KPMG based on data supplied by Ballarat Health, VIC Health and IHPA

The following should be noted about the transfer of activity data for Ballarat Health:

- Ballarat Health submits data to VIC Health in accordance with the VCDC guidelines in relation to product type. VIC Health reallocated activity data to align with NHCDC product types.
- The total activity related to 2014-15 costs in Table 89 (407,547 records) reconciled with the activity data loaded into the costing system in Table 88.
- Adjustments made by Ballarat Health related to the activity associated with the exclusion of WIP and out of scope programs (detailed in Item D of the financial reconciliation).
- Adjustments made by VIC Health related to the mapping of VCDC products to NHCDC products and the exclusion of records that failed validation tests, out of scope tier 2 clinics, mental health activity, other non-admitted activity and other admitted activity (detailed in Item G of the reconciliation).
- The adjustment made by IHPA to the Acute and Newborns product related to the UQB adjustment discussed in Item J of the explanation of reconciliation items.

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- Adjustments made by IHPA related to admitted emergency reallocations are for reporting and analysis purposes (as discussed in Item J of the explanation of reconciliation items) and have no impact on the reported activity.

9.2.4 Feeder data

Table 90 presents patient feeder data for Ballarat Health.

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Table 90 – Feeder data – Ballarat Health Service

Feeder Data	# Records from Source	# Records in costing system	Variance	# Records linked to Admitted	# Records linked to Emergency	# Records linked to Non-admitted	# Records linked to Other	Total Linking Process	# Unlinked records	% Linked
Radiology - General	359,571	149,050	(210,521)	28,374	33,584	34,302	387	96,647	52,403	64.84%
Pathology	213,916	213,861	(55)	163,394	39,283	7,309	163	210,149	3,712	98.26%
Pharmacy - Dispensed	114,094	83,437	(30,657)	72,602	1,645	5,941	658	80,846	2,591	96.89%
Pharmacy - PBS	17,746	16,816	(930)	9,763	277	3,282	1,492	14,814	2,002	88.09%
Prosthesis	7,242	7,143	(99)	7,143	-	-	-	7,143	-	100.00%
Interpreting Services	231	230	(1)	59	3	83	2	147	83	63.91%
Mental Health - Utilisation	83,659	83,332	(327)	2,331	-	-	81,001	83,332	-	100.00%
Transfers System	163,072	163,072	-	163,072	-	-		163,072		100.00%
Allied Health	176,690	175,526	(1,164)	72,002	262	55,391	428	128,083	47,443	72.97%
Operating Theatre System	13,180	13,178	(2)	13,178	-	-	-	13,178	-	100.00%
Procedure Codes	128,726	128,726	-	128,726	-	-	-	128,726	-	100.00%

Source: KPMG based on data supplied by Ballarat Health

The following should be noted about the feeder data for Ballarat Health:

- There are 11 feeders reported from hospital source systems and they appear to represent major hospital departments providing resource activity.
- The variances between the records from source and the records in the costing system related to records outside of the financial year, zero cost records, duplicated records, Did Not Attend status records and cancelled records.
- The number of records linked to admitted, emergency, non-admitted or other patients had a greater than 88 percent link or match for eight of the 11 feeders. This suggests that there is robustness in the level of feeder activity reported back to episodes.
- The records linked to other included records relating to the VCDC W Program that are admitted patients that are not included in the VAED, community mental health patients and bed-based patients in the Transition Care Programme (funded separately by Commonwealth Department of Health).

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- The unlinked records in the Radiology, Pharmacy and allied health feeder systems related to the provision of services to external clients.
- The unlinked records in the Interpreting Services feeder system related to data not matching to a specific episode number.

9.2.5 Treatment of WIP

Table 91 demonstrates models for WIP and its treatment in Ballarat Health's Round 19 NHCDC submission.

Table 91 – WIP – Ballarat Health Service

Model	Description	Submitted to Round 19 NHCDC
1	Cost for patients admitted and discharged in 2014-15 only	Submitted to Round 19 of the NHCDC
2	Costs for patients admitted prior to 2014-15 and discharged in 2014-15	Submitted to Round 19 of the NHCDC. Costs are submitted for 2013-14.
3	Costs for patients admitted prior to or in 2014-15 and remain admitted at 30 June 2015	Not submitted to Round 19 of the NHCDC

Source: KPMG, based on Ballarat Health Service templates and review discussions

In summary, Ballarat Health submitted costs for admitted and discharged patients in 2014-15 and WIP costs for those patients admitted in 2013-14 and discharged in 2014-15.

Escalation factor

Neither VIC Health nor Ballarat Health applied the escalation factors to the costs associated with WIP from prior years in the Round 19 NHCDC submission for Ballarat Health.

9.2.6 Critical care

Ballarat Health reported costs associated with an Adult Intensive Care Unit, a High Dependency Unit, a Special Care Nursery and a Coronary Care Unit. All expenditure for these units is allocated to cost centres as per the Victorian Chart of Accounts and mapped to the relevant VCDC cost area. Transfers of expenditure between cost centres is discussed directly with the associated unit and applied on a percentage basis.

Expenditure in intensive care areas and observation areas can be separately identified. Critical care costs are captured in accordance with the applicable standard.

9.2.7 Costing public and private patients

Ballarat Health does not adjust costing specific patients based on their financial classification, i.e. whether they are a public or a privately insured patient. Applicable costs are allocated to private patients, including a share of pathology, medical imaging, prosthesis and medical costs, in the same manner as public patients. All external provider costs are billed to the hospital and are reported against the appropriate cost centre.

Private patient revenue is not offset against any related expenditure.

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Private practice arrangements for medical officers can be difficult to determine and may differ within the health service. The payments relating to the treatment of private patients paid directly from Private Practice Funds are excluded from the costing process.

9.2.8 Treatment of specific items

A number of items were discussed during the review to understand their treatment in the costing process as the cost data is used to inform the NEP and specific funding model adjustments for particular patient cohorts. Ballarat Health's treatment of each of the items is summarised below.

Table 92 – Treatment of specific items – Ballarat Health Services

Item	Treatment
Research	VCDC Business Rules were applied. Research expenditure embedded within operational cost centres is spread across patients and not assigned to the Research product. Where research expenditure is allocated within special purpose funds, it is separately identified and not submitted to the NHCDC.
Teaching and Training	Direct Teaching and Training expenditure is treated as an overhead and spread across patients. This expenditure is not assigned to the Teaching and Training product.
Shared/Other commercial entities	Commercial entities are deemed out of scope and excluded from the costing process. Where shared services exist, a percentage transfer is made to include the expenditure for the health service only.

Source: KPMG, based on IFR discussions

9.2.9 Sample patient data

IHPA selected a sample of five patients from Ballarat Health for the purposes of testing the data flow from jurisdictions to IHPA at the patient level. VIC Health provided the patient level costs for all five patients and these reconciled to IHPA records. The results are summarised in Table 93.

Table 93 – Sample patients – Ballarat Health Service

#	Product	Jurisdiction Records	Received by IHPA	Variance
1	Acute	$11,222.54	$11,222.54	-
2	Acute	$1,201.88	$1,201.88	-
3	Organ PD	$2,271.01	$2,271.01	-
4	Non-Admitted ED	$1,813.00	$1,813.00	-
5	Non-Admitted	$320.43	$320.43	-

Source: KPMG, based on Ballarat Health and IHPA data

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9.3 Eastern Health

9.3.1 Overview

Eastern Health is one of Victoria's largest metropolitan public health services. It provides a range of emergency, medical and general healthcare services, obstetrics, mental health, drug and alcohol, residential care, statewide specialist services and community health services to Melbourne's diverse eastern community. Eastern Health consists of the seven hospitals listed below:

- Box Hill Hospital
- Maroondah Hospital
- Angliss Hospital
- The Peter James Centre
- Wantirna Health
- Healesville and District Hospital
- Yarra Ranges Health.

Eastern Health employs over 8,683 staff and has a total bed count of 1,456[17]. It also has an active education and research focus and strong affiliations with some of Australia's top universities and educational institutions[18].

Overview of the costing process

Eastern Health uses the Power Performance Manager (PPM2) costing system. Eastern Health employs a Costing Analyst who is solely responsible for the oversight and the reporting of costs across seven hospitals (for internal and VCDC purposes). The health service operates one GL across the seven campuses and the costing system is configured to cost and report separately for each site.

Costs are calculated at Eastern Health on an annual basis. However, the Costing Analyst loads the GL into the costing system on a quarterly basis and reviews it for any new cost centres that require mapping to the VCDC format. The Costing Analyst works with the Finance Department to ensure the mapping is reflective of the operations of the health service.

Activity and feeder system data is extracted from the Eastern Health data warehouse. The activity data is reviewed for data quality and where relevant, reconciled against the VAED, VEMD and VINAH. The feeders are extracted for various Departments within Eastern Health. Throughout the financial year, the Costing Analyst undertakes spot audits and works with Departmental Data Managers as required. Data quality checks are conducted to ensure records can be linked to the appropriate activity before loading into costing system. Upon completion of the linking process within the costing system, a review of unlinked activity is undertaken to amend errors to enable relinking.

[17] Eastern Health Quick Facts - *Accessed 28 June 2016*

[18] Eastern Health - *Accessed 28 June 2016*

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At the completion of the costing process, the Costing Analyst will review the costing output between financial years and benchmark costs to jurisdictional averages. The health service relies on both the validation and quality checks required as part of the VCDC process to inform the robustness of its submission to VIC Health. Eastern Health completes VIC Health's reconciliation templates.

There is currently no formal sign off process for the VCDC costing submission by a member of the Eastern Health Executive. However, the Costing Analyst informs the Director of Performance Analysis and Health Information along with the Decision Support Manager of the years costing via DHHS reconciliation templates. Given the Costing Analyst's experience and the round of checks and validations undertaken pre and post costing, the health service relies on the Costing Analyst's assessment as to whether the costs are fit for final VCDC submission to VIC Health.

9.3.2 Financial data

Representatives from VIC Health and Eastern Health completed the IFR templates based on similar templates supplied by Eastern Health as part of the VCDC submission. The Costing Analyst completed the VCDC templates prior to submission to VIC Health and participated in consultations for the Round 19 IFR.

Table 94 presents a summary of Eastern Health's costs, from the original extract from the GL through to Eastern Health's final NHCDC submission for Round 19.

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Table 94 – Round 19 NHCDC Reconciliation – Eastern Health

Hospital				Jurisdiction			IHPA		
Item		**Amount**	**% of GL**	**Item**		**Amount**	**Item**		**Amount**
A General Ledger (GL)	$	885,042,119		**F** Costed Products received by jurisdiction	$	822,789,245	**I** Total costed products received by IHPA	$	659,350,925
				Variance	*$*	*-*	*Variance*	*$*	*(0)*
B Adjustments to the GL									
Inclusions	$	8,620,875		**G** Final Adjustments			**J** IHPA Adjustments		
Exclusions	$	(61,348,687)		*National Blood Authority*	$	(7,507,788)	*Admitted ED reallocations*	$	47,129,602
Total hospital expenditure	**$**	**832,314,306**	*94.04%*	*Unlinked records*	$	(3,890,799)	**Final NHCDC costs**	**$**	**706,480,527**
				Tier 2 clinics - out of scope	$	(28,019,105)			
C Allocation of Costs				*Boarders excluded*	$	(9,705)			
Post Allocation Direct amount	$	670,854,257		*Community Health excluded*	$	(35,947,237)			
Post Allocation Overhead amount	$	161,460,049		*Mental Health activity excluded*	$	(55,156,068)			
Total hospital expenditure	**$**	**832,314,306**	*94.04%*	*Other non-admitted activity*	$	(11,032,025)			
Variance	*$*	*0*	*0.00%*	*Other admitted activity*	$	(21,875,593)			
				Total costs submitted to IHPA	**$**	**659,350,925**			
D Post Allocation Adjustments									
WIP patients not discharged	$	(24,542,406)							
*WIP from prior years**	$	15,017,432							
Total expenditure allocated to patients	**$**	**822,789,332**	*91.27%* *						
E Costed products submitted to jurisdiction				**H** Costed products submitted to IHPA			**K** Final NHCDC costed products		
Acute and Newborns	$	547,869,135		*Acute and Newborns*	$	473,654,684	*Acute^ and Newborns*	$	520,779,614
Non-admitted	$	66,632,971		*Non-admitted*	$	38,613,866	*Non-admitted*	$	38,613,866
Emergency	$	84,266,512		*Emergency*	$	84,266,444	*Emergency*	$	84,266,444
Sub Acute	$	-		*Sub Acute*	$	62,797,757	*Sub Acute^*	$	62,802,428
Mental Health	$	55,156,068		*Mental Health*	$	-	*Mental Health*	$	-
Other	$	68,864,560		*Other*	$	18,174	*Other*	$	18,174
Research	$	-		*Research*	$	-	*Research*	$	-
Teaching & Training	$	-		*Teaching & Training*	$	-	*Teaching & Training*	$	-
	$	**822,789,245**	*91.27%* *		**$**	**659,350,925**		**$**	**706,480,526**
Variance	*$*	*(87)*		*Variance*	*$*	*-*	*Variance*	*$*	*(1)*

Source: KPMG based on data supplied by Eastern Health, jurisdiction and IHPA

** As WIP from prior years expenditure relates to prior year costs, this percentage excludes the $15.02 million from the calculation*

^ These figures include admitted emergency costs.

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Explanation of reconciliation items

This section discusses each of the reconciliation items including adjustments, inclusions and exclusions to the GL. The information is based on the Eastern Health templates and review discussions.

Item A – General Ledger

The final GL extracted from Eastern Health's financial systems includes expenditure of $885.04 million. There was no variance between the expenditure reported in the financial statements (as per the F1 Victorian Financial Return provided to VIC Health) and the GL used for costing.

Item B – Adjustments to the GL

Eastern Health included additional expenditure items in the GL for costing purposes. Expenditure items included totalled $8.62 million and related to:

- National Blood allocation from VIC Health - $7.63 million
- Health Purchasing Victoria from VIC Health - $994,591.

Eastern Health also excluded expenditure items from the GL for costing purposes. Expenditure excluded totalled $61.35 million and related to:

- Depreciation and amortisation - $61.65 million
- Out of scope special purpose funds - $3.48 million.
- Other non-patient related costs ($92,134) relating to deceased estates and funds held in perpetuity.
- End of year audit adjustments as advised by Eastern Health finance - $3.09 million

The basis of these adjustments appears reasonable, with the exception of Depreciation and amortisation. This expenditure should be costed in accordance with the AHPCS Version 3.1. This expenditure is deemed out of scope by the VCDC Business Rules and is therefore, not included in the costs submitted to VIC Health by the hospitals.

These adjustments established an expenditure base for costing of $832.31 million. This was approximately 94 percent of total expenditure reported in the GL.

Item C – Allocation of costs

Eastern Health undertakes a process of reclass/transfers between direct and overhead cost centres. The net effect of these reclass/transfers was zero.

- It was observed that the total of all direct cost centres of $670.85 million was allocated post allocation.
- It was observed through the templates that all overheads of $161.46 million were allocated to direct cost centres, post allocation.

These amounts reconciled to $832.31 million and reflected the total hospital expenditure for Eastern Health.

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Item D – Post Allocation Adjustments

WIP patients not discharged in 2014-15 totalling $24.54 million were excluded post the allocation of costs in Item C. Eastern Health also included WIP from prior years totalling $15.02 million in its post allocation adjustments.

The basis of these adjustments appears reasonable.

The total expenditure allocated to patients for Eastern Health was $822.79 million which represented approximately 91.3 percent of the GL (note this percentage calculation excludes WIP from prior years as it is not part of the current year GL).

Item E - Costed products submitted to jurisdiction

Costs derived by the Eastern Health and reported at product level were equal to $822.79 million. Costs were allocated to the VCDC Program categories. However, when mapped to the NHCDC product types, costs were allocated to Acute, Non-admitted, Emergency, Mental Health and Other. A minor $87 variance between Item D and Item E was identified.

Item F – Costed products received by the jurisdiction

No variance was noted between Items E and F.

Item G – Final adjustments

VIC Health made the following exclusions from Eastern Health's cost data before submission to IHPA:

- Cost data failing validation tests including linking to the VAED - $3.89 million
- National Blood Authority - $7.51 million
- Out of scope Tier 2 clinics (related to sub acute and mental health activity) - $28.02 million
- Boarders - $9,705
- Community Health program - $35.95 million
- Out of scope mental health activity - $55.16 million
- Other non-admitted activity such as home based aged care services, private patient clinics operated by the health service, services that could not be linked to a patient episode - $11.03 million
- Other admitted activity such as residential aged care - $21.88 million.

The basis of these exclusions appears reasonable, with the exception of National Blood Authority allocation. The exclusion of these costs may impact on the completeness of the NHCDC.

The total NHCDC costs submitted to IHPA by VIC Health was $659.30 million.

Item H – Costed products submitted to IHPA

Costs derived by the jurisdiction and reported at product level reconciled to $659.30 million.

Item I – Total products received by IHPA

Total costed products received by IHPA totalled $659.30 million.

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Item J – IHPA adjustments

- *Admitted emergency*

  Upon receipt of cost data, IHPA allocates the admitted emergency costs back to admitted patients for the purposes of reporting and analysis. Within IHPA's reconciliation, this amount was a duplication of admitted emergency costs and not an additional cost. For Eastern Health this amounted to $47.13 million.

- *Unqualified Baby Adjustment*

  Upon receipt of cost data, IHPA redistributes the unqualified baby cost to the mother separation to provide a complete delivery cost. Within IHPAs reconciliation, this was not an additional cost but a movement between patients.

Item K – Final NHCDC Costed Outputs

The final NHCDC costed data for Eastern Health that was loaded into the National Round 19 cost data set was $706.48 million, which included the admitted emergency cost of $47.13 million. A minor $1 variance was noted between Items J and K.

9.3.3 Activity data

Table 95 presents patient activity data based on source and costing systems for Eastern Health. This activity data is then compared to Table 96 which highlights the transfer of activity data by NHCDC product from Eastern Health to VIC Health and then through to IHPA submission and finalisation.

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Table 95 – Activity data – Eastern Health

Activity Data	# Records from Source	# Records in costing system	Variance	# Records linked to Admitted	# Records linked to Emergency	# Records linked to Non-admitted	# Records linked to Other	Total Linking Process	# Unlinked records
Encounter_IP	145,347	145,347	-	145,347	-	-	-	145,347	-
Encounter_OP	211,881	211,881	-	-	-	211,881	-	211,881	-
Encounter_ED	151,895	151,895	-	-	151,895	-	-	151,895	-
Encounter_HMS	188,471	188,471	-	-	-	188,471	-	188,471	-
Encounter_HMS	71,081	71,081	-	-	-	71,081	-	71,081	-
Encounter_CMIContacts	381,450	381,450	-	-	-	381,450	-	381,450	-
Encounter_CMIResiPats	545	545	-	545	-	-	-	545	-
Encounter_System-gen	1	1	-	-	-	-	1	1	-
Encounter_System-gen	24	24	-	-	-	-	24	24	-
Encounter BDR	409	409	-	409	-	-	-	409	-
TOTAL	**1,151,104**	**1,151,104**	**-**	**146,301**	**151,895**	**852,883**	**25**	**1,115,104**	**-**

Source: KPMG based on data supplied by Eastern Health and VIC Health

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Table 96 – Activity data submission – Eastern Health

Product	Activity related to 2014-15 Costs	Adjustments	Activity submitted to jurisdiction	Adjustments	Activity submitted to IHPA	Activity received by IHPA	Adjustments	Total Activity submitted for Round 18 NHCDC
Acute and Newborns	144,195	(1,013)	143,182	(9,383)	138,678	138,678	(3,996)	134,682
Non-admitted	429,373	(45,293)	384,080	(184,659)	199,421	199,421	-	199,421
Emergency	151,866	(85)	151,781	(1)	151,780	151,780	-	151,780
Sub Acute	-	-	-	4,332	4,332	4,332	-	4,332
Mental Health	381,995	(40)	381,955	(381,955)	-	-	-	-
Other	98,940	(41,992)	56,948	(52,067)	2	2	-	2
Research	-	-	-	-	-	-	-	-
Teaching and Training	-	-	-	-	-	-	-	-
Total	**1,206,369**	**(88,423)**	**1,117,946**	**(623,733)**	**494,213**	**494,213**	**(3,996)**	**490,217**

Source: KPMG based on data supplied by Eastern Health, VIC Health and IHPA

The following should be noted about the transfer of activity data for Eastern Health:

- The variance between records from source detailed in Table 95 (1,151,104 records) and activity related to 2014-15 costs by NHCDC product in Table 96 (1,206,369 records) was attributable to the creation of system-generated encounters.
- Adjustments made by Eastern Health related to the activity associated with WIP (discussed at Item D in the reconciliation).
- Adjustments made by VIC Health related to the activity associated with the exclusion of costs (at Item G in the reconciliation) such as unlinked records, out of scope tier 2 clinics, boarders, community health, mental health and other admitted and non-admitted activity.
- The adjustment made by IHPA to the Acute and Newborns product related to the UQB adjustment discussed in Item J of the explanation of reconciliation items.
- Adjustments made by IHPA related to admitted emergency reallocations are for reporting and analysis purposes (as discussed in Item J of the explanation of reconciliation items) and have no impact on the reported activity.

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9.3.4 Feeder data

Table 97 presents patient feeder data for Eastern Health.

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Table 97 – Feeder data – Eastern Health

Feeder Data	# Records from Source	# Records in costing system	Variance	# Records linked to Admitted	# Records linked to Emergency	# Records linked to Non-admitted	# Records linked to Other	Total Linking Process	# Unlinked records	% Linked
Diagnoses	474,657	474,657	-	474,657	-	-	-	474,657	-	100.00%
Procedure	241,402	241,402	-	241,402	-	-	-	241,402	-	100.00%
WardTransfer	201,118	201,109	(9)	201,109	-	-	-	201,109	-	100.00%
Service_ED	151,895	151,895	-	-	151,895			151,895	-	100.00%
Service_OP	211,881	211,881	-	-	-	211,881		211,881	-	100.00%
BOS	4,714	4,714	-	4,714	-	-	-	4,714	-	100.00%
BHH,Mar and ANGTheatre	93,114	93,114	-	93,093	-	-	21	93,114	-	100.00%
HEA_Theatre	1,850	1,850	-	1,850	-	-	-	1,850	-	100.00%
Prostheses	5,169	5,169	-	5,168	-	-	1	5,169	-	100.00%
ServiceMedicalRehab	2,755	2,755	-	2,755	-	-	-	2,755	-	100.00%
CathLab	7,633	7,633	-	7,628	-	-	5	7,633	-	100.00%
Pathology	971,135	971,135	-	439,554	326,221	120,390	84,970	971,135	-	100.00%
Imaging	244,433	244,433	-	62,669	108,567	39,635	33,562	244,433	-	100.00%
MIA	3,259	3,259	-	2,436	251	454	118	3,259	-	100.00%
Pharmacy	455,300	455,300	-	383,576	27,468	13,856	30,400	455,300	-	100.00%
Allied Health IP	67,293	67,293	-	67,291	-	-	2	67,293	-	100.00%
Allied Health OP	13,108	13,108	-	-	-	12,995	113	13,108	-	100.00%
Allied Health ED	19,423	19,423	-	-	19,423	-	-	19,423	-	100.00%
Service_BHHICU	2,902	2,902	-	2,902	-	-	-	2,902	-	100.00%
Service_MARICU	2,452	2,452	-	2,452	-	-	-	2,452	-	100.00%
Service_BHHCCU	4,218	4,218	-	4,218	-	-	-	4,218	-	100.00%
Service_MARCCU	250	250	-	250	-	-	-	250	-	100.00%
Service_ANGCCU	2,435	2,435	-	2,329	-	-	106	2,435	-	100.00%

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Feeder Data	# Records from Source	# Records in costing system	Variance	# Records linked to Admitted	# Records linked to Emergency	# Records linked to Non-admitted	# Records linked to Other	Total Linking Process	# Unlinked records	% Linked
Service HMS_IND	188,471	188,471	-	-	-	188,471	-	188,471	-	100.00%
Service HMS_GRP	71,081	71,081	-	-	-	56,355	14,726	71,081	-	100.00%
Service_PED	52	52	-	52	-	-	-	52	-	100.00%
CMI Resi	545	545	-	-	-	-	545	545	-	100.00%
CMI Contacts	381,450	381,450	-	-	-	-	381,450	381,450	-	100.00%
CMI VAED RestraintsSecEtc	172	172	-	-	-	-	172	172	-	100.00%
CMI DoctorsInContacts	332,069	332,069	-	-	-	-	332,069	332,069	-	100.00%
CMI DoctorsInResi	545	545	-	-	-	-	545	545	-	100.00%
Service_BloodProducts	5,627	5,627	-	5,132	-	-	495	5,627	-	100.00%
Service_AmbulanceED	3,458	3,458	-	-	3,458	-	-	3,458	-	100.00%
Service_AmbulanceAdm	4,666	4,666	-	4,666	-	-	-	4,666	-	100.00%
Service_AmbulanceNonAdm	1,766	1,766	-	-	-	1,637	129	1,766	-	100.00%
WaitList	8,456	8,456	-	8,456	-	-	-	8,456	-	100.00%
Service System-generated	25	25	-	-	-	-	25	25	-	100.00%
Boarders	409	409	-	-	-	-	409	409	-	100.00%

Source: KPMG based on data supplied by the Eastern Health

The following should be noted about the feeder data for Eastern Health:

- There are 38 feeders reported from hospital source systems and they appear to represent major hospital departments providing resource activity. Each of the seven hospitals operates the same feeder systems (as applicable).
- Feeder data is extracted, translated and validated outside of the costing system on a continuous basis throughout the year. This includes spot audits on different feeder systems. Reconciliation processes are undertaken in PPM2 based on the number of records loaded and the number of records linked. This is the reason why the number of records linked to admitted, emergency, non-admitted and other patients had a 100 percent link or match. This suggests that there is robustness in the level of feeder activity reported back to episodes.

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- The records linked to other included records relating to the VCDC W Program that are admitted patients that are not included in the VAED (e.g. residential aged care).

9.3.5 Treatment of WIP

Table 98 demonstrates models for WIP and its treatment in the Eastern Health Round 19 NHCDC submission.

Table 98 – WIP – Eastern Health

Model	Description	Submitted to Round 19 NHCDC
1	Cost for patients admitted and discharged in 2014-15 only	Submitted to Round 19 of the NHCDC
2	Costs for patients admitted prior to 2014-15 and discharged in 2014-15	Submitted to Round 19 of the NHCDC. Costs are submitted for 2013-14.
3	Costs for patients admitted prior to or in 2014-15 and remain admitted at 30 June 2015	Not submitted to Round 19 of the NHCDC

Source: KPMG, based on the Eastern Health templates and review discussions

In summary, Eastern Health submitted costs for admitted and discharged patients in 2014-15 and WIP costs for those patients admitted in 2013-14 and discharged in 2014-15.

Escalation factor

Neither VIC Health nor Eastern Health applied the escalation factors to the costs associated with WIP from prior years in the Round 19 NHCDC submission for Eastern Health.

9.3.6 Critical care

Eastern Health reported costs associated with an Adult Intensive Care Unit, a Special Care Nursery and a Coronary Care Unit. All expenditure for these units is allocated to cost centres as per the Victorian Chart of Accounts and mapped to the relevant VCDC cost area.

Expenditure in intensive care areas and observation areas can be separately identified. Critical care costs are captured in accordance with the applicable standard.

9.3.7 Costing public and private patients

Eastern Health does not adjust costing for specific patients based on their financial classification, i.e. whether they are a public or a privately insured patient. Applicable costs are allocated to private patients, including pathology, medical imaging and prosthesis, in the same manner as public patients. Actual charges are used in the costing process and are taken directly from the feeder system. For example, variations in prosthesis values used to weight prosthesis costs would reflect the choice of prosthesis according to patient need, patient or clinician choice and not directly based on an assessment of the patient's financial class.

Any patient related expenditure in special purpose funds that can be identified will be reclassed to the appropriate cost centre and costed in the same manner for private or public patients.

Private patient revenue is not offset against any related expenditure.

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9.3.8 Treatment of specific items

A number of items were discussed during the review to understand their treatment in the costing process as the cost data is used to inform the NEP and specific funding model adjustments for particular patient cohorts. Eastern Health's treatment of each of the items is summarised below.

Table 99 – Treatment of specific items – Eastern Health

Item	Treatment
Research	VCDC Business Rules were applied. Research expenditure embedded within operational cost centres is spread across patients and not assigned to the Research product. Where research expenditure is allocated within special purpose funds, it is separately identified and not submitted to the NHCDC.
Teaching and Training	Direct Teaching and Training expenditure is treated as an overhead and spread across patients. This expenditure is not assigned to the Teaching and Training product.
Shared/Other commercial entities	Commercial entities such as the car park, café etc. are mapped to commercial venture cost centres and costed as a system-generated patient. Eastern Health does not have any shared entities or services.

Source: KPMG, based on IFR discussions

9.3.9 Sample patient data

IHPA selected a sample of five patients from Eastern Health for the purposes of testing the data flow from jurisdictions to IHPA at the patient level. VIC Health provided the patient level costs for all five patients and these reconciled to IHPA records. The results are summarised in Table 100.

Table 100 – Sample patients – Eastern Health

#	Product	Jurisdiction Records	Received by IHPA	Variance
1	Acute	$1,148.77	$1,148.77	-
2	Acute	$2,470.41	$2,470.41	-
3	GEM	$28,684.97	$28,684.97	-
4	Non-Admitted ED	$138.50	$138.50	-
5	Non-Admitted	$53.83	$53.83	-

Source: KPMG, based on Eastern Health and IHPA data

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9.4 Latrobe Regional Hospital

9.4.1 Overview

Latrobe Regional Hospital is a purpose-built teaching hospital caring for a population of more than 250,000 people. Latrobe Regional Hospital is Gippsland's specialist referral and trauma centre located 150km east of Melbourne and is one of the region's largest employers with more than 1,800 staff.

Latrobe Regional Hospital contains 289 beds and treatment chairs and offers multiple medical services such as elective surgery, emergency care, aged care, obstetrics, mental health, pharmacy, rehabilitation and medical and radiation oncology.

As a teaching hospital, Latrobe Regional Hospital is closely affiliated with Monash University's School of Rural Health and Federation University and provides placements and clinical experience for students. Additionally, Latrobe Regional Hospital is a participating member in the National Mutual Acceptance system for mutual acceptance of scientific and ethical review for multi-site clinical trials.[19]

Overview of the costing process

Latrobe Regional Hospital uses the SyRis Adaptive Costing system. The costing function is outsourced to SyRis Consulting who works with the health service to obtain data and define the costing methodology for input into the costing system. Patient level costing at Latrobe Regional Hospital is undertaken on a quarterly basis. The GL and the activity and feeder data is extracted by the health service and supplied to SyRis on a quarterly basis.

Activity and feeder data is extracted from the Patient Administration System (PAS) and from the VIC Health data collections. The activity data extracted from the PAS will be reviewed for data quality and where relevant reconciled against the VAED and VEMD. Each feeder is tested for data quality to ensure records can be linked to the appropriate activity. The linking process for each feeder has been developed in conjunction with the health service and each linking rule is feeder dependent. Following the linking process, a review of unlinked activity is undertaken to ensure that any errors in records are amended to enable relinking.

At the completion of the costing process each quarter, SyRis presents a number of reports to the health service to verify costs. Health service staff undertake a review of the costing data with a range of stakeholders at the health service. The health service relies on both the validation and quality checks required as part of the VCDC process to inform the robustness of its submission to VIC Health. All these checks are performed prior to reporting to Latrobe Regional Hospital's Executive. The Chief Executive Officer at Latrobe Regional Hospital signs off on the final VCDC submission to VIC Health.

[19] Latrobe Regional Hospital - *Accessed 15 June 2016*

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9.4.2 Financial data

Representatives from VIC Health, Latrobe Regional Hospital and SyRis Consulting completed the IFR templates based on similar templates supplied by Latrobe Regional Hospital as part of the VCDC submission. These representatives also participated in consultations for the Round 19 IFR.

Table 101 presents a summary of Latrobe Regional Hospital's costs, from the original extract from the General Ledger (GL) through to Latrobe Regional Hospital's final NHCDC submission for Round 19.

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Table 101 – Round 19 NHCDC Reconciliation – Latrobe Regional Hospital

Hospital					Jurisdiction			IHPA		
Item		Amount	% of GL		Item		Amount	Item		Amount
A General Ledger (GL)	$	205,612,767			**F** Costed Products received by jurisidction	$	188,893,375	**I** Total costed products received by IHPA	$	115,540,170
					Variance	*$*	*45*	*Variance*	*$*	*(0)*
B Adjustments to the GL										
Inclusions	$	2,092,681			**G** Final Adjustments			**J** IHPA Adjustments		
Exclusions	$	(12,116,739)			*Mapping of Chart of Accounts*	$	(885,621)	*Admitted ED reallocations*	$	7,938,456
Total hospital expenditure	**$**	**195,588,710**	*95.12%*		*Unlinked records*	$	(1,406,926)	**Final NHCDC costs**	**$**	**123,478,626**
					National Blood Authority	$	(1,848,224)			
C Allocation of Costs					*Tier 2 clinics - out of scope*	$	(16,146,589)			
Post Allocation Direct amount	$	165,358,329			*Mental Health excluded*	$	(44,115,182)			
Post Allocation Overhead amount	$	30,230,381			*Other non-admitted activity*	$	(8,950,619)			
Total hospital expenditure	**$**	**195,588,710**	*95.12%*		**Total costs submitted to IHPA**	**$**	**115,540,260**			
Variance	*$*	*0*	*0.00%*							
D Post Allocation Adjustments										
WIP patients not discharged	$	(2,182,031)								
Special purpose funds - not patient related	$	(6,695,316)								
*WIP from prior years**	$	2,181,984								
Total expenditure allocated to patients	**$**	**188,893,347**	*90.81%*	*						
E Costed products submitted to jurisdiction					**H** Costed products submitted to IHPA			**K** Final NHCDC costed products		
Acute and Newborns	$	100,554,873			*Acute and Newborns*	$	85,317,729	*Acute^ and Newborns*	$	93,200,608
Non-admitted	$	16,146,589			*Non-admitted*	$	-	*Non-admitted*	$	-
Emergency	$	19,126,068			*Emergency*	$	18,240,448	*Emergency*	$	18,240,448
Sub Acute	$	-			*Sub Acute*	$	11,975,093	*Sub Acute^*	$	12,030,670
Mental Health	$	44,115,182			*Mental Health*	$	-	*Mental Health*	$	-
Other	$	8,950,619			*Other*	$	6,900	*Other*	$	6,900
Research	$	-			*Research*	$	-	*Research*	$	-
Teaching & Training	$	-			*Teaching & Training*	$	-	*Teaching & Training*	$	-
	$	**188,893,331**	*90.81%*	*		**$**	**115,540,170**		**$**	**123,478,626**
Variance	*$*	*(16)*			*Variance*	*$*	*(89)*	*Variance*	*$*	*-*

Source: KPMG based on data supplied by Latrobe Regional Hospital, jurisdiction and IHPA

** As WIP from prior years expenditure relates to prior year costs, this percentage excludes the $2.18 million from the calculation*

^ These figures include admitted emergency costs.

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Explanation of reconciliation items

This section discusses each of the reconciliation items including adjustments, inclusions and exclusions to the GL. The information is based on the Latrobe Regional Hospital templates and review discussions.

Item A – General Ledger

The final GL extracted from Latrobe Regional Hospital's financial systems includes expenditure of $205.61 million. There was no variance between the expenditure reported in the financial statements (as per the F1 Victorian Financial Return provided to VIC Health) and the GL used for costing.

Item B – Adjustments to the GL

Latrobe Regional Hospital included additional expenditure items in the GL for costing purposes. Expenditure items included totalled $2.09 million and related to:

- National Blood allocation from VIC Health - $1.85 million
- Health Purchasing Victoria form VIC Health - $244,457.

Latrobe Regional Hospital also excluded expenditure items from the GL for costing purposes. Expenditure excluded totalled $12.12 million and related to:

- Depreciation and amortisation - $8.86 million
- Capital related costs incurred on behalf of another organisation - $272,500
- Salary recoveries from shared resources with other organisations - $2.98 million.

The basis of these adjustments appears reasonable, with the exception of Depreciation and amortisation. This expenditure should be costed in accordance with the AHPCS Version 3.1. This expenditure is deemed out of scope by the VCDC Business Rules and is therefore, not included in the costs submitted to VIC Health by the hospitals.

These adjustments established an expenditure base for costing of $195.59 million. This was approximately 95.1 percent of total expenditure reported in the GL.

Item C – Allocation of costs

Latrobe Regional Hospital undertakes a process of reclass/transfers between direct and overhead cost centres. The net effect of these reclass/transfers was zero.

- It was observed that the total of all direct cost centres of $165.36 million was allocated post allocation.
- It was observed through the templates that all overheads of $30.23 million were allocated to direct cost centres, post allocation.

These amounts reconciled to $195.59 million and reflected the total hospital expenditure for Latrobe Regional Hospital.

Item D – Post Allocation Adjustments

A range of costs were excluded after the allocation of costs in Item C and related to:

- WIP patients not discharged - $2.18 million

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- Out of scope special purpose funds - $6.70 million

Latrobe Regional Hospital also included WIP from prior years totalling $2.18 million in its post allocation adjustments.

The basis of these adjustments appears reasonable.

The total expenditure allocated to patients for Latrobe Regional Hospital was $188.89 million which represented approximately 90.8 percent of the GL (note this percentage calculation excludes WIP from prior years as it is not part of the current year GL).

Item E - Costed products submitted to jurisdiction

Costs derived by the Latrobe Regional Hospital and reported at product level were equal to $188.89 million. Costs were allocated to the VCDC Program categories. However, when mapped to the NHCDC product types, costs were allocated to Acute, Non-admitted, Emergency, Mental Health and Other. A minor $16 variance between Item D and Item E was identified.

Item F – Costed products received by the jurisdiction

Costed products received by the jurisdiction totalled $188.89 million. A minor variance of $45 was noted between Items E and F.

Item G – Final adjustments

VIC Health made the following exclusions from Latrobe Regional Hospital's cost data before submission to IHPA:

- Cost data that could not be mapped to the Victorian Chart of Accounts - $885,621
- Cost data failing validation tests including linking to the VAED - $1.41 million
- National Blood Authority allocation - $1.85 million
- Out of scope Tier 2 clinics (related to sub acute and mental health activity) - $16.15 million
- Out of scope Mental health activity - $44.12 million
- Other non-admitted activity such as home based aged care services, private patient clinics operated by the health service, services that could not be linked to a patient episode - $8.95 million.

The basis of these exclusions appears reasonable, with the exception of National Blood Authority allocation. The exclusion of these costs may impact on the completeness of the NHCDC. In addition, for future rounds, VIC Health and Latrobe Regional Hospital should investigate the reasons for cost data not mapping to the Victorian Chart of Accounts.

The total NHCDC costs submitted to IHPA by VIC Health was $115.54 million.

Item H – Costed products submitted to IHPA

Costs derived by the jurisdiction and reported at product level reconcile to $115.54 million. A minor variance of $89 was noted between Item G and Item H.

Item I – Total products received by IHPA

Total costed products received by IHPA totalled $115.54 million.

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Item J – IHPA adjustments

- *Admitted emergency*

  Upon receipt of cost data, IHPA allocates the admitted emergency costs back to admitted patients for the purposes of reporting and analysis. Within IHPA's reconciliation, this amount was a duplication of admitted emergency costs and not an additional cost. For Latrobe Regional Hospital, this amounted to $7.94 million.

- *Unqualified Baby Adjustment*

  Upon receipt of cost data, IHPA redistributes the unqualified baby cost to the mother separation to provide a complete delivery cost. Within IHPAs reconciliation, this was not an additional cost but a movement between patients.

Item K – Final NHCDC Costed Outputs

The final NHCDC costed data for Latrobe Regional Hospital that was loaded into the National Round 19 cost data set was $123.48 million, which included the admitted emergency cost of $7.94 million.

9.4.3 Activity data

Table 102 presents patient activity data based on source and costing systems for Latrobe Regional Hospital. This activity data is then compared to Table 103 which highlights the transfer of activity data by NHCDC product from Latrobe Regional Hospital to VIC Health and then through to IHPA submission and finalisation.

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Table 102 – Activity data – Latrobe Regional Hospital

Activity Data	# Records from Source	# Records in costing system	Variance	# Records linked to Admitted	# Records linked to Emergency	# Records linked to Non-admitted	# Records linked to Other	Total Linking Process	# Unlinked records
Patient Admission System	33,663	33,650	(13)	33,650	-	-	8	33,658	-
Emergency	31,967	31,967	-	-	31,967	-	-	31,967	-
TOTAL	**65,630**	**65,617**	**(13)**	**33,650**	**31,967**	**-**	**8**	**65,625**	**-**

Source: KPMG based on data supplied by Latrobe Regional Hospital and VIC Health

The following should be noted about the activity data provided by Latrobe Regional Hospital:

- 13 records were removed from the costing system as they were duplicate records
- The eight additional records created in the PAS and linked to other related to the creation of system-generated records.

Table 103 – Activity data submission – Latrobe Regional Hospital

Product	Activity related to 2014-15 Costs	Adjustments	Activity submitted to jurisdiction	Adjustments	Activity submitted to IHPA	Activity received by IHPA	Adjustments	Total Activity submitted for Round 18 NHCDC
Acute and Newborns	33,534	(49)	33,485	(3,352)	30,133	30,133	(45)	30,088
Non-admitted	2	-	2	(2)	-	-	-	-
Emergency	31,966	-	31,966	-	31,966	31,966	-	31,966
Sub Acute	-	-	-	1,014	1,014	1,014	-	1,014
Mental Health	1	-	1	(1)	-	-	-	-
Other	1	-	1	-	1	1	-	1
Research	-	-	-	-	-	-	-	-
Teaching and Training	-	-	-	-	-	-	-	-
Total	**65,504**	**(49)**	**65,455**	**(2,341)**	**63,114**	**63,114**	**(45)**	**63,069**

Source: KPMG based on data supplied by Latrobe Regional Hospital, VIC Health and IHPA

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The following should be noted about the transfer of activity data for Latrobe Regional Hospital:

- The variance between total records linked detailed in Table 102 (65,625 records) and activity related to 2014-15 costs by NHCDC product in Table 103 (65,504 records) of 121 records was attributable to WIP and zero cost records.
- Adjustments made by Latrobe Regional Hospital related to the activity associated with WIP (discussed at Item D in the reconciliation).
- Adjustments made by VIC Health related to the activity associated with the exclusion of costs (at Item G in the reconciliation) such as unmapped to the Victorian Chart of Accounts, unlinked records, out of scope tier 2 clinics, mental health, research and other admitted and non-admitted activity.
- The adjustment made by IHPA to the Acute and Newborns product related to the UQB adjustment discussed in Item J of the explanation of reconciliation items.
- Adjustments made by IHPA related to admitted emergency reallocations are for reporting and analysis purposes (as discussed in Item J of the explanation of reconciliation items) and have no impact on the reported activity.

9.4.4 Feeder data

Table 104 presents patient feeder data for Latrobe Regional Hospital.

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Table 104 – Feeder data – Latrobe Regional Hospital

Feeder Data	# Records from Source	# Records in costing system	Variance	# Records linked to Admitted	# Records linked to Emergency	# Records linked to Non-admitted	# Records linked to Other	Total Linking Process	# Unlinked records	% Linked
Anaesthetics FFS	13,656	13,656	-	12,538	1,118	-	-	13,656	-	100.00%
Theatre	9,520	9,496	(24)	9,315	7	-	174	9,496	-	100.00%
Prosthetics	6,782	6,674	(108)	6,674	-	-	-	6,674	-	100.00%
Wards	118,637	56,754	(61,883)	43,287	-	-	13,467	56,754	-	100.00%
Pathology	159,539	159,539	-	127,684	16,622	-	7,736	152,042	(7,497)	95.30%
Pharmacy	26,775	26,775	-	18,503	1,985	-	3,463	23,951	(2,824)	89.45%
Pharmacy S100/PBS	42,852	42,852	-	25,173	1,825	-	1,925	28,923	(13,929)	67.50%
Imaging	35,882	35,882	-	11,180	21,394	-	331	32,905	(2,977)	91.70%
Patient Transport	1,598	1,518	(80)	1,016	453	-	49	1,518	-	100.00%

Source: KPMG based on data supplied by Latrobe Regional Hospital and VIC Health

The following should be noted about the feeder data for Latrobe Regional Hospital:

- There are nine feeders reported from hospital source systems and they appear to represent major hospital departments providing resource activity.
- Feeder data is extracted by Latrobe Regional Hospital staff and validated outside of the costing system. Latrobe Regional Hospital staff and SyRis both undertake a reconciliation process to investigate unlinked records on a quarterly basis. Latrobe is implementing the CostPro costing system across all areas of activity from 2015-16 onwards which should minimise unlinked areas in future rounds.
- The number of records linked to admitted, emergency non-admitted and other patients had a greater than 89 percent link or match for eight of the nine feeders. This suggests that there is robustness in the level of feeder activity reported back to episodes driven by the quarterly extraction and review.
- The records linked to other related to mental health activity that was not patient costed in 2014-15. Mental health will be patient costed from 2015-16 onwards.
- The unlinked records in the Pathology, Pharmacy and Imaging feeder systems related to uncosted psychiatric inpatient and outpatients at Latrobe.

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9.4.5 Treatment of WIP

Table 105 demonstrates models for WIP and its treatment in the Latrobe Regional Hospital's Round 19 NHCDC submission.

Table 105 – WIP – Latrobe Regional Hospital

Model	Description	Submitted to Round 19 NHCDC
1	Cost for patients admitted and discharged in 2014-15 only	Submitted to Round 19 of the NHCDC
2	Costs for patients admitted prior to 2014-15 and discharged in 2014-15	Submitted to Round 19 of the NHCDC. Costs are submitted for 2013-14.
3	Costs for patients admitted prior to or in 2014-15 and remain admitted at 30 June 2015	Not submitted to Round 19 of the NHCDC

Source: KPMG, based on the Latrobe Regional Hospital templates and review discussions

In summary, Latrobe Regional Hospital submitted costs for admitted and discharged patients in 2014-15 and WIP costs for those patients admitted in 2013-14 and discharged in 2014-15.

Escalation factor

Neither VIC Health nor Latrobe Regional Hospital applied the escalation factors to the costs associated with WIP from prior years in the Round 19 NHCDC submission for Latrobe Regional Hospital.

9.4.6 Critical care

Latrobe Regional Hospital has a dedicated Intensive Care Unit (ICU). All expenditure for this unit is allocated to cost centres as per the Victorian Chart of Accounts and mapped to the relevant VCDC cost area. All expenditure and activity for the ICU can be identified and separately costed. Critical care costs are captured in accordance with the applicable standard.

9.4.7 Costing public and private patients

Latrobe Regional Hospital does not adjust costing for specific patients based on their financial classification, i.e. whether they are a public or privately insured patient. Applicable costs are allocated to private patients in the same manner as public patients. Actual charges are used in the costing process and are taken directly from the feeder system. Prosthesis are purchased by the health service and reflect the choice of prosthesis according to patient need and clinician choice.

Given its rural location, Latrobe Regional Hospital indicated that ambulance transport costs could be a significant cost. These costs are allocated to private patients where the health service organises the transfer for a direct private patient transfer. Other private patient transport is billed directly to the patient and therefore, not allocated in clinical costing.

Private patient revenue is not offset against any related expenditure within the clinical costing information submitted to Vic Health

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Private practice arrangements for medical officers can be difficult to determine and may differ within the health service. The payments relating to the treatment of private patients paid directly from Private Practice Funds are excluded from the costing process.

9.4.8 Treatment of specific items

A number of items were discussed during the review to understand their treatment in the costing process as the cost data is used to inform the NEP and specific funding model adjustments for particular patient cohorts. Latrobe Regional Hospital's treatment of each of the items is summarised below.

Table 106 – Treatment of specific items – Latrobe Regional Hospital

Item	Treatment
Research	VCDC Business Rules were applied. Research expenditure embedded within operational cost centres is spread across patients and not assigned to the Research product. Where research expenditure is allocated within special purpose funds, it is separately identified and not submitted to the NHCDC.
Teaching and Training	Direct Teaching and Training expenditure is treated as an overhead and spread across patients. This expenditure is not assigned to the Teaching and Training product.
Shared/Other commercial entities	Latrobe Regional Hospital has no commercial entities. As a rural health service, shared services exist in radiotherapy, ophthalmology and renal dialysis. • The provision of radiotherapy follows the Victorian Hub and Spoke model. For Latrobe Regional Hospital 100 percent of the costs are attributed via the hub. • Latrobe Regional Hospital utilises a contracted ophthalmology service. All patients consuming the service have activity registered and their costs charged back to the health service. These patients are fully costed. • The provision of renal dialysis also follows the Victorian hub and spoke model. Other than administration costs, all costs consumed at Latrobe Regional Hospital are allocated to activity.

Source: KPMG, based on IFR discussions

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9.4.9 Sample patient data

IHPA selected a sample of five patients from Latrobe Regional Hospital for the purposes of testing the data flow from jurisdictions to IHPA at the patient level. VIC Health provided the patient level costs for all five patients and these reconciled to IHPA records. The results are summarised in Table 107.

Table 107 – Sample patients – Latrobe Regional Hospital

#	Product	Jurisdiction Records	Received by IHPA	Variance
1	Acute	$287.52	$287.52	-
2	Acute	$2,680.03	$2,680.03	-
3	Acute	$5,744.78	$5,744.78	-
4	Rehab	$898.72	$898.72	-
5	Admitted ED	$562.08	$562.08	-

Source: KPMG, based on Latrobe Regional Hospital and IHPA data

9.5 Application of AHPCS Version 3.1

The following section summarises VIC Health's application of selected standards from Version 3.1 of the AHPCS (outlined in Appendix B) to the Round 19 NHCDC submission of Ballarat Health Service, Eastern Health and Latrobe Regional Hospital.

9.5.1 SCP 1.004 – Hospital Products in Scope

The three Victorian health services reviewed report against all products, with the exception of Teaching, Training and Research which is costed but not identified by product. This was demonstrated through the templates submitted and interview process. It was noted that health services cost according to the VCDC Business Rules.

System-generated records are created from unlinked feeder data and are allocated costs. The generation of system-generated records is specific to the feeder. These system-generated records with costs are not submitted to the NHCDC.

9.5.2 SCP 2.003 – Product Costs in Scope

The health services and VIC Health representatives demonstrated the reconciliation process for financial data used for costing purposes. Discussions indicated that all products are costed, including costs assigned to products in scope for the NHCDC, unlinked activity and costs assigned to system-generated patients where there is no activity. Unlinked activity and system-generated patients are not submitted to the NHCDC.

Teaching, Training and Research costs that can be identified as direct costs and identifiable in dedicated costs centres are spread across all costed activity. Health service representatives in all interviews stated they are guided by the VCDC Business Rules. These costs are submitted to the NHCDC, but are not identified by product.

Blood products are costed by the hospitals, however, are removed by VIC Health prior to NHCDC submission.

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Depreciation and other capital related expenditure is not costed in accordance with the VCDC Business Rules.

9.5.3 SCP 2B.002 - Research Costs

Victorian health services cannot explicitly identify patients relating to research activity therefore do not comply with this standard. VIC Health representatives stated during the interview process that the Victorian Chart of Accounts have dedicated research cost centres, and are waiting on further advice from IHPA on how these expenditures should be allocated.

Currently embedded research costs are spread to patients and submitted to the NHCDC, but are not identifiable by product.

9.5.4 SCP 3.001 - Matching Production and Cost

All three health services provided reclass and transfer detail in the templates. The application of this standard was demonstrated during the interview process including discussion of examples.

9.5.5 SCP 3A.001 - Matching Production and Cost – Overhead Cost Allocation

All three health services were able to demonstrate that overhead costs were fully allocated to direct patient care areas via the pre allocation and post allocation data included in the templates.

9.5.6 SCP 3B.001 - Matching Production and Cost – Costing all Products

The application of this standard was demonstrated in the templates for each of the three health services. VIC Health also provided an overview of their internal reconciliation process, which demonstrated the allocation of costs to products.

Again, it should be noted that Victorian health services cost to the VCDC Business Rules and whilst costs for teaching, training and research were not reported by product, these costs are spread across other products.

9.5.7 SCP 3C.001 - Matching Production and Cost – Commercial Business Entities

Commercial entities exist at Ballarat Health and Eastern Health. These costs were excluded from the costing system or costed as a system-generated patient. Ballarat Health and Latrobe Regional Hospital have shared entities or services. Each health service's share of the costs were appropriately reflected in the GL and costed to activity. Costs in relation to commercial and shared entities were treated in accordance with the standard.

9.5.8 SCP 3E.001 - Matching Production and Cost – Offsets and Recoveries

VIC Health indicated that Victorian health services are advised not to offset revenue against costs as per the applicable standard. All three health services indicated that they did not offset revenue.

9.5.9 SCP 3G.001 – Matching Production and Cost – Reconciliation to Source Data

VIC Health representatives outlined the reconciliation process for financial and activity data used for costing purposes. All three health services were able to produce statements that reconcile the activity and cost data outputs used in their patient level costing processes. These statements are submitted to Vic Health as part of the VCDC in a form of reconciliation templates. The process appears robust.

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VIC Health will provide health services with the internal reconciliation process from VCDC submission to IHPA submission from Round 20 onwards.

9.5.10 GL 2.004 – Account Code Mapping to Line Items

The purpose of this standard is to ensure that all cost data can be mapped to standardised line items for both NHCDC collection and comparative purposes.

All three Victorian health services indicated that they costed according to the VCDC Business Rules and specifications, including associated cost centre mappings and account codes. VIC Health representatives indicated that these cost centres and account codes enabled mapping to both the VCDC and NHCDC requirements.

VIC Health undertook the mapping of the cost data submitted by participating health services. This mapping demonstrated that total costs were mapped to the standard specified line items and reconciled.

9.5.11 GL 4A.002 – Critical Care Definition

The three hospitals reviewed had dedicated ICU's in their facilities as well as a range of observation units including High Dependency Units, Special Care Nurseries and Coronary Care Units.

VIC Health indicated that all expenditure for these areas are reported in cost centres as per the Victorian Chart of Accounts and mapped to the VCDC cost areas. Where there are both dedicated intensive care units and observation units (whether collocated or not), this mapping enables the identification of all relevant expenditures. However, the activity for each area (in some Victorian health services) cannot be isolated given the information captured in some health service systems. Costs are derived using the total expenditure for all areas with total activity.

Upon review, these areas are mapped as critical care in accordance with the applicable standard.

9.5.12 COST 3A.002 – Allocation of Medical Costs for Private and Public Patients

The three health services indicated that medical costs are allocated to public and private patients in the same manner.

Where possible medical expenditure is handled in a similar way for both public and private patients. VIC Health indicated that it is difficult to determine and may differ within the health service. The payments relating to the treatment of private patients paid directly from Private Practice Funds are excluded from the costing process. Clinician billing direct to the patient is not included in the total patient cost.

Private patient revenue is not offset against the expenditure.

9.5.13 COST 5.002 - Treatment of Work-In-Progress Costs

Patients are allocated costs based on their consumption of resources for that reporting period. Where costs are incurred in prior years, only the costs for 2013-14 are included in the final costed data and NHCDC submission. These costs were not escalated in the Round 19 NHCDC submission.

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9.6 Conclusion

The findings of the VIC Round 19 IFR are summarised below:

- VIC Health has improved its NHCDC reconciliation processes since Round 18, by implementing an end-to-end reconciliation process from VCDC submission through to final submission. The outputs of this reconciliation process will be provided back to health services from Round 20 onwards.
- The financial reconciliation demonstrates the transformation of cost data from the original GL extract through to the final NHCDC submission for the respective hospitals. Major inclusions to the original GL data include National Blood Authority costs, Health Purchasing Victoria costs and WIP. Major exclusions from the original GL data include the removal of Depreciation and amortisation and salary recoveries between services.
- There was a variance of $994,181 between the audited statements and final GL amount entered into the respective costing system for Ballarat Health, which related to the sale of fixed assets ($1.03 million) and a rounding error of $39,343. The variance equated to 0.24 percent of the audited expenditure.
- VIC Health adjusts the submission including removal of unlinked records; out of scope tier 2 clinics, mental health activity, other non-admitted activity and other admitted activity before submission to the NHCDC.
- The basis of the adjustments made by hospitals and VIC Health appears reasonable, with the exception of:
    - Depreciation, amortisation and other capital related expenditure (all hospitals). This expenditure is deemed out of scope by the VCDC Business Rules and is therefore, not included in the costs submitted by hospitals to VIC Health. The exclusion of this expenditure may impact on the completeness of the NHCDC.
    - National Blood Authority allocation (all hospitals). The exclusion of these costs may impact on the completeness of the NHCDC.
    - VIC Health and Latrobe Regional Hospital should investigate the reasons for cost data not mapping to the Victorian Chart of Accounts for future rounds.
- The hospitals reviewed have a strong focus on cleansing activity and ensuring episodes link appropriately. At hospital level, the number of records linked from source to product was significant with the majority of feeders having a greater than 89 percent link or match. This suggests that there is robustness in the level of feeder activity reported back to episodes.
- WIP was treated in accordance with COST 5.002 of the AHPCS Version 3.1. WIP from prior years was included for 2013-14 only. Neither VIC Health nor the sampled hospitals applied any escalation factors to the costs associated with WIP for prior years as part of the Round 19 submission to the NHCDC.
- The five sample patients selected for review for Ballarat Health, Eastern Health and Latrobe Regional Hospital reconciled to IHPA records.

Based on discussions held during the site visits, and a review of the financial reconciliations provided, VIC Health has robust reconciliation processes in place. As such, nothing was identified to suggest that the financial data is not fit for NHCDC submission. Furthermore, the data flow from the jurisdiction to IHPA demonstrated no unexplained variances.

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10. Western Australia

10.1 Jurisdictional overview

10.1.1 Management of NHCDC process

Each Area Health Service (AHS) in Western Australia is responsible for the preparation of their own NHCDC submission based on the Accrued Operating Expenditure data contained in the Audited Financial Statements. The WA Department of Health (WA Health), through the Health System Economic Modelling Directorate, Purchasing and System Performance, is responsible for the review and final submission of all NHCDC data to IHPA.

AHSs use Power Performance Manager 2 (PPM2) software to prepare the NHCDC submission. The software was first used for the Round 17 submission. There is executive level sign off for the NHCDC data at the AHS level prior to submission to WA Health.

Once the respective AHS has submitted its data to WA Health, a number of adjustments are made by the jurisdiction prior to the final submission to IHPA. The jurisdictional adjustments include allocating the data to NHCDC product types, removing teaching, training and research (TTR) costs and aggregate outpatient activity costs, and incorporating Work in Progress. Finally, a quality assurance process is undertaken and all critical warnings are addressed before the data is regarded as fit for submission to IHPA. WA Health addresses any further checks or queries that may arise from the IHPA data validation process.

For the Round 19 Independent Financial Review (IFR), WA Health nominated Armadale Kelmscott Memorial Hospital, Kununurra Hospital and Sir Charles Gairdner Hospital. These hospitals are members of South Metropolitan AHS, WA Country Health Service and North Metropolitan AHS respectively.

Key initiatives since Round 18 NHCDC

WA Health indicated that there had been minor changes to the NHCDC process and submission since Round 18, including:

- Minor cost centre changes.
- WIP costs are now more appropriately captured (Round 18 was challenging as the new software was implemented in Round 17).
- Improved costing of Western Australia Country Health Service sites. These sites have moved away from cost modelling and increased the use of feeder and clinical costing systems.

10.2 Armadale Kelmscott Memorial Hospital

10.2.1 Overview

Armadale Kelmscott Memorial Hospital (Armadale Hospital) is located approximately 34 kilometres southeast of the Perth CBD and is part of the South Metropolitan AHS. Armadale Hospital is equipped with a modern Emergency Department having been redeveloped in 2009 and an Intensive Care Unit (ICU) that was opened in 2010. The hospital provides a range of services including:

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- Aged care
- General medicine
- General surgery
- Obstetrics and gynaecology
- Intensive care
- Mental health (adult and older adult)
- Paediatrics and neonates
- Renal dialysis
- Rehabilitation and subacute care.

Armadale Hospital employs over 1,600 staff and has a total bed count of approximately 290.[20]

The South Metropolitan AHS undertakes costing on a quarterly basis and publishes results via its Business Intelligence (BI) tool, to which all sites in the AHS have access. The BI tool presents data mapped to NHCDC product types. The NHCDC data is reviewed and signed off by the Executive Director of Finance before being submitted to WA Health.

10.2.2 Financial data

Representatives from South Metropolitan AHS completed the IFR templates, with assistance from a representative of the Health System Economic Modelling Directorate from WA Health. These representatives attended and participated in consultations for the Round 19 IFR.

Table 108 presents a summary of Armadale Hospital's costs, from the original General Ledger (GL) extract for the South Metropolitan AHS through to Armadale Hospital's final NHCDC submission for Round 19.

[20] Armadale Kelmscott Memorial Hospital - *Accessed 15 June 2016*

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Table 108 – Round 19 NHCDC Reconciliation – Armadale Kelmscott Memorial Hospital

Hospital				Jurisdiction			IHPA		
Item		**Amount**	**% of GL**	**Item**		**Amount**	**Item**		**Amount**
A General Ledger (GL)	$	2,628,980,067		**F** Costed Products received by jurisidction	$	215,079,068	**I** Total costed products received by IHPA	$	202,117,630
				Variance	*$*	*-*	*Variance*	*$*	*-*
B Adjustments to the GL									
Inclusions	$	59,727,136		**G** Final Adjustments			**J** IHPA Adjustments		
Exclusions	$	(2,457,238,113)		*WIP from prior years - Round 18*	$	2,917,553	*Admitted ED reallocations*	$	102,212
Total hospital expenditure	**$**	**231,469,090**	*8.80%*	*Remove system-generated patients*	$	(1,668,362)	*Admitted ED virtual patients*	$	7,219,064
				WIP adjustments - Round 18 and Errors	$	(57,659)	**Final NHCDC costs**	**$**	**209,438,906**
C Allocation of Costs				*WIP from current year*	$	(2,487,354)			
Post Allocation Direct amount	$	178,704,502		*Unmatched records*	$	(694,655)			
Post Allocation Overhead amount	$	52,746,654		*Teaching and Research*	$	(10,970,961)			
Total hospital expenditure	**$**	**231,451,156**	*8.80%*	**Total costs submitted to IHPA**	**$**	**202,117,630**			
Variance	*$*	*(17,934)*	*0.00%*						
D Post Allocation Adjustments									
Commissioning and Transitional costs	$	(228,013)							
Non-hospital programs	$	(16,144,076)							
Total expenditure allocated to patients	**$**	**215,079,067**	*8.18%*						
E Costed products submitted to jurisdiction				**H** Costed products submitted to IHPA			**K** Final NHCDC costed products		
Acute and Newborns	$	138,960,989		*Acute and Newborns*	$	139,027,789	*Acute^ and Newborns*	$	139,130,002
Non-admitted	$	11,924,326		*Non-admitted*	$	11,497,384	*Non-admitted*	$	11,497,384
Emergency	$	30,557,156		*Emergency*	$	30,369,391	*Emergency*	$	37,588,455
Sub Acute	$	20,446,055		*Sub Acute*	$	20,730,068	*Sub Acute^*	$	20,730,068
Mental Health	$	-		*Mental Health*	$	-	*Mental Health*	$	-
Other	$	2,202,639		*Other*	$	492,997	*Other*	$	492,997
Research	$	1,615,655		*Research*	$	-	*Research*	$	-
Teaching & Training	$	9,372,248		*Teaching & Training*	$	-	*Teaching & Training*	$	-
	$	**215,079,068**	*92.92%* *		**$**	**202,117,630**		**$**	**209,438,906**
Variance	*$*	*1*		*Variance*	*$*	*-*	*Variance*	*$*	*-*

Source: KPMG based on data supplied by Armadale Hospital, jurisdiction and IHPA

** This percentage is based on the Armadale Hospital only expenditure calculated in Item B of the reconciliation*

^ These figures include admitted emergency and virtual patients costs.

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Explanation of reconciliation items

This section discusses each of the reconciliation items including adjustments, inclusions and exclusions to the GL. The information is based on the templates submitted by Armadale Hospital and review discussions.

Item A – General Ledger

The final GL extracted from the financial system was for the South Metropolitan AHS, of which Armadale Hospital is a part. This expenditure totalled $2.629 billion. This amount reconciled to the expenditure reported in the audited financial statements.

Item B – Adjustments to the GL

South Metropolitan AHS included additional items in the GL for costing purposes, prior to excluding other facilities within the health service. Included expenditure totalled $59.73 million and related to services provided to the AHS and funded centrally by WA Health including the Health Corporate Network, Health Information Network, software licensing fees, HR Services and parking.

South Metropolitan AHS offsets certain revenue items against the related expenditure amounts in the GL by applying both internal and external service recoups. Furthermore, expenditure items that are deemed unrelated to the cost of service delivery are also excluded, prior to adjusting for costs associated with other health facilities. These exclusions totalled $31.10 million and related to:

- External purchasing recoups - $12.41 million
- Internal purchasing recoups within South Metropolitan AHS - $5.78 million
- Special Purpose Accounts which are negative costs in the cost centre - $6.64 million
- South Metropolitan AHS Commissioning and Transitional costs - $4.42 million
- Services to external health organisations - $1.83 million.

South Metropolitan AHS then excluded other facilities and health services costs totalling $2.43 billion.

The basis of these adjustments appears reasonable.

Blood products are not costed in WA hospitals as the expenditure is held in WA Health cost centres. The exclusion of this expenditure may impact on the completeness of the NHCDC.

These adjustments established an expenditure base for costing of $231.47 million. This expenditure related to Armadale Hospital only and was approximately 8.18 percent of total expenditure reported in the GL for South Metropolitan AHS.

A variance of $17,934 was noted in the reconciliation of South Metropolitan AHS. This variance was 0.0007 percent of the total GL for South Metropolitan AHS. This variance is carried to Item C below.

Item C – Allocation of costs

Armadale Hospital undertakes a process of reclass/transfers between direct and overhead cost centres.

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- It was observed that the total of all direct cost centres of $178.70 million was allocated post allocation.
- It was observed through the templates that all overheads of $52.75 million were allocated to direct cost centres, post allocation.

These amounts reconciled to $231.45 million. The variance of $17,934 discussed in Item B, carried through to Item C.

Item D – Post Allocation Adjustments

A range of costs were excluded after the allocation of costs in Item C and related to:

- Commissioning and Transitional costs related to the Fiona Stanley Hospital - $228,013
- Community mental health excluded - $10.99 million. This is classified as a non-hospital product across all WA sites. The costs fall outside of the Inpatient, Emergency Department and Outpatient hospital based products and can encompass a wide range of services such as school services and health promotion and education, which cannot be attributed to an individual patient
- Out of scope programs including:
    - Community health - $4.22 million
    - Non ABF programs (Home Care Packages) - $993,311.

The basis of these exclusions appears reasonable.

The total expenditure allocated to patients for Armadale Hospital was $215.08 million, which represented approximately 8.18 percent of the total expenditure for South Metropolitan AHS. The variance identified in Item B and C was corrected during post allocation adjustments.

Item E - Costed products submitted to jurisdiction

Costs derived by Armadale Hospital and reported at product level were equal to $215.08 million. This represents approximately 92.9 percent of the total GL expenditure (note this percentage is based on the Armadale Hospital component of South Metropolitan AHS as calculated in Item B of the financial reconciliation). Costs were allocated to Acute, Non-admitted, Emergency, Sub-Acute, Other, Research and Teaching and Training by the jurisdiction, but have been presented here for comparative purposes. A minor $1 variance between Item D and Item E was identified.

Item F – Costed products received by the jurisdiction

Costed products received by the jurisdiction totalled $215.08 million.

Item G – Final adjustments

WA Health made the following exclusions from Armadale Hospitals cost data before submission to IHPA:

- Costs that could not be allocated to a specific patient episode and were allocated to a system-generated episode - $1.67 million
- WIP patients not discharged in 2014-15 - $2.49 million
- WIP adjustments related to Round 18 and Round 19 errors - $57,659
- Cost records that could not be linked to a specific patient episode - $694,655 ($442,086 for non-admitted, $110,068 for admitted and $142,501 for non-admitted emergency)

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- Teaching, Training and Research - $10.97 million.

WA Health also included WIP from Round 18 totalling $2.92 million in the final adjustments.

The basis of these adjustments appears reasonable. However, the exclusion of Teaching, Training and Research (TTR) costs may impact on the NHCDC. WA Health is awaiting the outcome of the TTR project undertaken by IHPA to provide sufficient guidance on how to cost TTR.

The total NHCDC costs submitted to IHPA by WA Health was $202.12 million.

Item H – Costed products submitted to IHPA

Costs derived by the jurisdiction and reported at product level reconcile to $202.12 million.

Item I – Total products received by IHPA

Total costed products received by IHPA totalled $202.12 million. There was no variance between costs submitted by the jurisdiction and costs received by IHPA.

Item J – IHPA adjustments

- *Admitted emergency*

  Upon receipt of cost data, IHPA allocates the admitted emergency costs back to admitted patients for the purposes of reporting and analysis. Within IHPA's reconciliation, this amount was a duplication of admitted emergency costs and not an additional cost. For Armadale Hospital, this amounted to $102,212.

- *Unqualified Baby Adjustment*

  Upon receipt of cost data, IHPA redistributes the unqualified baby cost to the mother separation to provide a complete delivery cost. Within IHPAs reconciliation, this was not an additional cost but a movement between patients.

- *Virtual Patients*

  For most WA hospitals, the admitted emergency presentation is not captured separately within the PAS and is included with the admitted acute episode. To maintain the NHCDC classification streams, IHPA (with the consent of WA) duplicated the emergency costs and created virtual patients to be in line with the admitted emergency stream. For Armadale Hospital, this amounted to $7.22 million.

Item K – Final NHCDC Costed Outputs

The final NHCDC costed data for Armadale Hospital that was loaded into the National Round 19 cost data set was $209.44 million, which included the virtual patient cost of $7.22 million and the admitted emergency cost of $102,212. A minor variance of $1 was noted between Item J and Item K.

10.2.3 Activity data

Table 109 presents patient activity data based on source and costing systems for Armadale Hospital. This activity data is then compared to Table 110 which highlights the transfer of activity data by NHCDC product from Armadale Hospital to WA Health and then through to IHPA submission and finalisation.

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Table 109 – Activity data – Armadale Kelmscott Memorial Hospital

Activity Data	# Records from Source	# Records in costing system	Variance	# Records linked to Admitted	# Records linked to Emergency	# Records linked to Non-admitted	# Records linked to Other	Total Linking Process	# Unlinked records
Encounters	183,524	183,524	-	30,926	53,290	98,653	655	-	183,524
TOTAL	**183,524**	**183,524**	**-**	**30,926**	**53,290**	**98,653**	**655**	**-**	**183,524**

Source: KPMG based on data supplied by Armadale Hospital and WA Health

Table 110 – Activity data submission – Armadale Kelmscott Memorial Hospital

Product	Activity related to 2014-15 Costs	Adjustments	Activity submitted to jurisdiction	Adjustments	Activity submitted to IHPA	Activity received by IHPA	Adjustments	Total Activity submitted for Round 18 NHCDC
Acute and Newborns	28,592	-	28,592	(172)	28,420	28,420	(2,308)	26,112
Non-admitted	98,982	-	98,982	(10,037)	88,945	88,945	-	88,945
Emergency	53,351	-	53,351	(599)	52,752	52,752	8,261	61,013
Sub Acute	1,160	-	1,160	(46)	1,114	1,114	-	1,114
Mental Health	-	-	-	-	-	-	-	-
Other	1,401	-	1,401	(18)	1,383	1,383	-	1,383
Research	-	-	-	-	-	-	-	-
Teaching and Training	-	-	-	-	-	-	-	-
Total	**183,486**	**-**	**183,486**	**(10,872)**	**172,614**	**172,614**	**5,953**	**178,567**

Source: KPMG based on data supplied by Armadale Hospital, WA Health and IHPA

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The following should be noted about the transfer of activity data for Armadale Hospital:

- The variance of 38 records between the records from source detailed in Table 109 (183,524 records) and activity related to 2014-15 costs by NHCDC product in Table 110 (183,486 records) related to timing differences, whereby, the encounter data entered into the review templates was extracted at a later date compared to the original submission to the jurisdiction. This means that additional records existed in the PAS and were recorded in the review templates.
- Armadale Hospital made no further adjustments to activity.
- Adjustments made by WA Health related to the activity associated with the exclusion of costs (at Item G in the reconciliation) such as WIP, system-generated patients and unmatched records.
- Adjustments made by IHPA related to the reallocation of patients for the unqualified baby adjustment and virtual patients (as discussed in Item J of the explanation of reconciliation items).
- Adjustments made by IHPA related to admitted emergency reallocations are for reporting and analysis purposes (as discussed in Item J of the explanation of reconciliation items) and have no impact on the reported activity.

10.2.4 Feeder data

Table 111 presents patient feeder data for Armadale Hospital.

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Table 111 – Feeder data – Armadale Kelmscott Memorial Hospital

Feeder Data	# Records from Source	# Records in costing system	Variance	# Records linked to Admitted	# Records linked to Emergency	# Records linked to Non-admitted	# Records linked to Other	Total Linking Process	# Unlinked records	% Linked
Radiology	45,746	45,746	-	17,621	20,056	4,346	748	42,771	2,975	93.50%
Pharmacy	31,241	31,241	-	21,022	808	685	8,655	31,170	71	99.77%
Pathology	197,429	197,429	-	128,871	63,115	2,865	2,486	197,337	92	99.95%
Allied Health	228,324	228,324	-	137,136	16,250	68,030	3,081	224,497	3,827	98.32%
Visiting Medical Practitioners	21,085	21,085	-	20,413	-	672	-	21,085	-	100.00%
Theatre	20,304	20,304	-	20,260	27	1	-	20,288	16	99.92%
Theatre Prosthesis	2,683	2,683	-	2,680	3	-	-	2,683	-	100.00%

Source: KPMG based on data supplied by Armadale Hospital

The following should be noted about the feeder data for Armadale Hospital:

- There are seven feeders reported from hospital source systems and they appear to represent major hospital departments providing resource activity.
- The number of records linked to admitted patients, emergency, non-admitted or other patients had a greater than 93 percent link or match. This suggests that there is robustness in the level of feeder activity reported back to episodes.
- The records linked to other were related to the creation of system-generated records.
- The unlinked records in the Radiology, Pharmacy and Pathology feeder systems related to the provision of these services in a different financial year to Round 19.
- The unlinked records in the Allied Health feeder system related to data not matching a specific episode number.
- The unlinked records in the Theatre feeder system related to unmatched data from poor data entry. The encounter numbers in the theatre system did not exist in the PAS.

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10.2.5 Treatment of WIP

Table 112 demonstrates models for WIP and its treatment in the Armadale Hospital's Round 19 NHCDC submission.

Table 112 – WIP – Armadale Kelmscott Memorial Hospital

Model	Description	Submitted to Round 19 NHCDC
1	Cost for patients admitted and discharged in 2014-15 only	Submitted to Round 19 of the NHCDC.
2	Costs for patients admitted prior to 2014-15 and discharged in 2014-15	Submitted to Round 19 of the NHCDC. Costs are submitted for 2013-14 only as WIP was not captured for years prior to this due to a change in costing system.
3	Costs for patients admitted prior to or in 2014-15 and remain admitted at 30 June 2015	Not submitted to Round 19 of the NHCDC

Source: KPMG, based on the Armadale Hospital templates and review discussions

In summary, the Armadale Hospital submitted costs for admitted and discharged patients in 2014-15 and WIP costs for those patients admitted in 2013-14, but discharged in 2014-15.

Escalation factor

WA Health did not apply the escalation factors to the costs associated with WIP from prior years as part of the Round 19 submission of the NHCDC.

10.2.6 Critical care

Armadale Hospital operates one standalone Intensive Care Unit (ICU). All direct costs associated with the ICU are recorded in a dedicated cost centre. For costing purposes, these costs are applied to the ICU activity. The hospital does not have any dedicated close observation units. Critical care costs are captured in accordance with the applicable standard.

10.2.7 Costing public and private patients

Armadale Hospital does not make any specific adjustments to the way private patients are costed compared to public patients. Applicable costs are allocated to both public and private patients, including pathology, medical imaging and prosthesis, in the same manner. Private patient revenue is not offset against any related expenditure.

Costs associated with diagnostic services, pathology and medical imaging, for public patients are reflected in the AHS GL. These costs are distributed to all patients (public and private), based on the MBS item number which is used as a relativity to drive the cost of the related activity area down to the unique service utilised by the patient. This is consistent with the principles of the applicable standard which indicates that the true patient level data cost incurred for public and private patients treated by the AHS should be reflected.

The majority of medical officers at Armadale Hospital are paid an allowance in-lieu of private practice arrangements, i.e. there is limited use of private practice funds to supplement the employment costs. These employment costs are allocated to public and private patients.

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10.2.8 Treatment of specific items

A number of items were discussed during the review to understand their treatment in the costing process as the cost data is used to inform the NEP and specific funding model adjustments for particular patient cohorts. Armadale Hospital's treatment of each of the items is summarised below.

Table 113 – Treatment of specific items – Armadale Kelmscott Memorial Hospital

Item	Treatment
Research	Research costs are assigned to a product and excluded by the jurisdiction prior to submission of the NHCDC to IHPA.
Teaching and Training	Teaching and Training costs are assigned to a product and excluded by the jurisdiction prior to submission of the NHCDC to IHPA.
Shared/Other commercial entities	Armadale Hospital does not have shared services or commercial entities.

Source: KPMG, based on IFR discussions

10.2.9 Sample patient data

IHPA selected a sample of five patients from Armadale Hospital for the purposes of testing the data flow from jurisdictions to IHPA at the patient level. WA Health provided the patient level costs for all five patients and these reconciled to IHPA records. The results are summarised in Table 114.

Table 114 – Sample patients – Armadale Kelmscott Memorial Hospital

#	Product	Jurisdiction Records	Received by IHPA	Variance
1	Acute	$4,551.74	$4,551.74	-
2	Border	$633.94	$633.94	-
3	Acute	$3,017.83	$3,017.83	-
4	Non-Admitted ED	$436.33	$436.33	-
5	Non-Admitted	$119.50	$119.50	-

Source: KPMG, based on Armadale Hospital and IHPA data

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10.3 Kununurra Hospital

10.3.1 Overview

Kununurra District Hospital (Kununurra Hospital) is a rural hospital, located in the Kimberly region and is a part of the Western Australian Country Health Service, which has seven regions. It is a 42-bed facility, with 32 acute care beds and 10 residential aged care beds. Kununurra Hospital offers a range of services including:

- Surgical Services
- Specialist Services
- Emergency Medicine
- Telehealth Services
- Paediatrics
- X-Ray Services[21].

The Western Australia Country Health Service (WACHS) utilises the PPM2 costing system, however, relies on product fractions to allocate costs due to the limited number of patient level feeders. The Kimberley region operates a significant amount of outreach and satellite services, which makes collection of patient level data difficult. Financial data is captured for each site at multiple levels including WA Health, WACHS, the region and individual hospitals. At present, medical costs are held in the Kimberley Hospital and are then allocated to Kununurra Hospital.

Costing is undertaken on an annual basis and each facility reviews its data. \Facilities also participate in a mid-year review. Each region submits data that is signed off by the regional Director of Finance. The NHCDC submission for WACHS is reviewed and signed off by the Chief Executive Officer.

10.3.2 Financial data

Representatives from WACHS completed the IFR templates, with assistance from a representative of the Health System Economic Modelling Directorate from WA Health. These representatives attended and participated in consultations for the Round 19 IFR.

Table 115 presents a summary of Kununurra Hospital's costs, from the original GL extract for the WACHS through to Kununurra Hospital's final NHCDC submission for Round 19.

[21] Kununurra District Hospital - *Accessed 15 June 2016*

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Table 115 – Round 19 NHCDC Reconciliation – Kununurra District Hospital

Hospital				Jurisdiction			IHPA		
Item		**Amount**	**% of GL**	**Item**		**Amount**	**Item**		**Amount**
A General Ledger (GL)	$	1,555,768,604		**F** Costed Products received by jurisidction	$	38,188,929	**I** Total costed products received by IHPA	$	35,414,180
				Variance	***$***	*-*	***Variance***	***$***	***1***
B Adjustments to the GL									
Inclusions	$	11,652,604		**G** Final Adjustments			**J** IHPA Adjustments		
Exclusions	$	(1,523,067,561)		*WIP from prior years - Round 17*	$	88,253	*Admitted ED reallocations*	$	5,493
Total hospital expenditure	**$**	**44,353,647**	*2.85%*	*WIP adjustments - Round 18 and Errors*	$	(1,857)	*Virtual patients*	$	1,830,635
				WIP from current year	$	(286,718)	**Final NHCDC costs**	**$**	**37,250,308**
C Allocation of Costs				*Unmatched records*	$	(1,569,879)			
Post Allocation Direct amount	$	35,849,455		*Teaching and Research*	$	(1,004,549)			
Post Allocation Overhead amount	$	9,728,296		**Total costs submitted to IHPA**	**$**	**35,414,179**			
Total hospital expenditure	**$**	**45,577,751**	*2.93%*						
Variance	***$***	***1,224,104***	*0.08%*						
D Post Allocation Adjustments									
Dialysis centres not related to Kununurra	$	(5,720,382)							
Interest on treasury loans	$	(444,336)							
Bureau service - Royal Darwin	$	(1,224,104)							
Total expenditure allocated to patients	**$**	**38,188,929**	*2.56%*						
E Costed products submitted to jurisdiction				**H** Costed products submitted to IHPA			**K** Final NHCDC costed products		
Acute and Newborns	$	21,426,656		*Acute and Newborns*	$	21,230,543	*Acute^ and Newborns*	$	21,236,036
Non-admitted	$	8,200,584		*Non-admitted*	$	6,951,590	*Non-admitted*	$	6,951,590
Emergency	$	6,835,824		*Emergency*	$	6,834,045	*Emergency*	$	8,664,680
Sub Acute	$	360,936		*Sub Acute*	$	360,936	*Sub Acute^*	$	360,936
Mental Health	$	-		*Mental Health*	$	-	*Mental Health*	$	-
Other	$	320,281		*Other*	$	37,066	*Other*	$	37,066
Research	$	143,628		*Research*	$	-	*Research*	$	-
Teaching & Training	$	901,020		*Teaching & Training*	$	-	*Teaching & Training*	$	-
	$	**38,188,929**	*86.10%* *		**$**	**35,414,180**		**$**	**37,250,309**
Variance	***$***	***0***		***Variance***	***$***	***1***	***Variance***	***$***	***1***

Source: KPMG based on data supplied by Kununurra Hospital, jurisdiction and IHPA

** This percentage is based on the Kununurra Hospital only expenditure calculated in Item B of the reconciliation*

^ These figures include virtual patient and admitted emergency costs.

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Explanation of reconciliation items

This section discusses each of the reconciliation items including adjustments, inclusions and exclusions to the GL. The information is based on the Kununurra Hospital's templates and review discussions.

Item A – General Ledger

The final GL extracted from the financial system was for the WACHS, of which Kununurra Hospital is a part. This expenditure totalled $1.556 billion. A variance of $2.47 million was noted between the expenditure reported in the financial statements and the final GL (0.16 percent of the total expenditure). This amount related to a reclassification to other revenue of $2.48 million and a reclass of sale proceeds to revenue of $3,766. An unexplained variance of ($5,740) was noted.

Item B – Adjustments to the GL

WACHS included additional expenditure items in the GL for costing purposes, prior to excluding other facilities within the health service. Included expenditure totalled $11.65 million and related to the WA Health overheads such as Health Corporate Network, Licensing fees, HR Service etc.

WACHS also excluded expenditure items in the GL, prior to adjusting for other health facilities. These exclusions totalled $6.85 million and related to:

- Internal recharges of WACHS IT expenses - $1.05 million
- Salary recoups within WACHS as staff are shared between a number of facilities - $5.81 million.

WACHS then excluded other facilities and health services costs totalling $1.516 billion.

The basis of these adjustments appears reasonable.

Blood products are not costed in WA hospitals as the expenditure is held in WA Health cost centres. The exclusion of this expenditure may impact on the completeness of the NHCDC.

These adjustments established an expenditure base for costing of $44.35 million. This expenditure related to Kununurra Hospital only and was approximately 2.9 percent of total expenditure reported in the GL for WACHS.

Item C – Allocation of costs

Kununurra Hospital undertakes a process of reclass/transfers between direct and overhead cost centres.

- It was observed that the total of all direct cost centres of $35.85 million was allocated post allocation.
- It was observed through the templates that all overheads of $9.73 million were allocated to direct cost centres, post allocation.

These amounts reconciled to $45.58 million. A variance of $1.22 million was identified and related to a bureau service provided by Royal Darwin Hospital. The costs of this bureau service related to a range of Kimberly facilities (where the activity is recorded). The costs are removed in post allocation adjustments at Item D.

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Item D – Post Allocation Adjustments

A range of costs were excluded after the allocation of costs in Item C and related to:

- Cost centre mapping error related to Dialysis services not provided at Kununurra Hospital - $5.72 million
- Interest on treasury loan - $444,336
- Bureau services costs allocated to Kununurra Hospital, but related to other facilities in the Kimberly - $1.22 million.

The basis of these exclusions appears reasonable, with the exception of interest on treasury loan. The exclusion of these costs may impact on the completeness of the NHCDC.

The total expenditure allocated to patients for Kununurra Hospital was $38.19 million, which represented approximately 2.56 percent of the GL for WACHS.

Item E - Costed products submitted to jurisdiction

Costs derived by Kununurra Hospital and reported at product level were equal to $38.19 million. This represents approximately 86.1 percent of the total GL expenditure (note this percentage is based on the Kununurra Hospital component of WACHS as calculated in Item B of the financial reconciliation). Costs were allocated to Acute, Non-admitted, Emergency, Sub-Acute, Other, Research and Teaching and Training by the jurisdiction, but have been presented here for comparative purposes.

Item F – Costed products received by the jurisdiction

Costed products received by the jurisdiction totalled $38.19 million.

Item G – Final adjustments

WA Health made the following exclusions from Kununurra Hospitals cost data before submission to IHPA:

- WIP patients not discharged in 2014-15 - $286,718
- WIP adjustments related to Round 18 and Round 19 errors - $1,857
- Cost records that could not be linked to a specific patient episode- $1.60 million ($1.29 million for non-admitted and $283,664 for admitted)
- Teaching, Training and Research - $1.00 million.

WA Health also included WIP from Round 18 totalling $88,253 in the final adjustments.

The basis of these adjustments appears reasonable. However, the exclusion of Teaching, Training and Research (TTR) costs may impact on the NHCDC. WA Health is awaiting the outcome of the TTR project undertaken by IHPA to provide sufficient guidance on how to cost TTR.

The total NHCDC costs submitted to IHPA by WA Health was $35.41 million.

Item H – Costed products submitted to IHPA

Costs derived by the jurisdiction and reported at product level reconcile to $35.41 million. A minor $1 variance was noted between Item G and Item H.

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Item I – Total products received by IHPA

Total costed products received by IHPA totalled $35.41 million. There was a minor $1 variance between costs submitted by the jurisdiction and costs received by IHPA.

Item J – IHPA adjustments

- *Admitted emergency*

  Upon receipt of cost data, IHPA allocates the admitted emergency costs back to admitted patients for the purposes of reporting and analysis. Within IHPA's reconciliation, this amount was a duplication of admitted emergency costs and not an additional cost. For Kununurra Hospital, this amounted to $5,493.

- *Unqualified Baby Adjustment*

  Upon receipt of cost data, IHPA redistributes the unqualified baby cost to the mother separation to provide a complete delivery cost. Within IHPAs reconciliation, this was not an additional cost but a movement between patients.

- *Virtual Patients*

  For most WA hospitals, the admitted emergency presentation is not captured separately within the PAS and is included with the admitted acute episode. To maintain the NHCDC classification streams, IHPA (with the consent of WA) duplicated the emergency costs and created virtual patients to be in line with the admitted emergency stream. For Kununurra Hospital, this amounted to $1.83 million.

Item K – Final NHCDC Costed Outputs

The final NHCDC costed data for Kununurra Hospital that was loaded into the National Round 19 cost data set was $37.25 million, which included the virtual patient cost of $1.84 million and the admitted emergency cost of $5,493. A minor variance of $1 was noted between Item J and Item K.

10.3.3 Activity data

Table 116 presents patient activity data based on source and costing systems for Kununurra Hospital. This activity data is then compared to Table 117 which highlights the transfer of activity data by NHCDC product from Kununurra Hospital to WA Health and then through to IHPA submission and finalisation.

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Table 116 – Activity data – Kununurra District Hospital

Activity Data	# Records from Source	# Records in costing system	Variance	# Records linked to Admitted	# Records linked to Emergency	# Records linked to Non-admitted	# Records linked to Other	Total Linking Process	# Unlinked records
Inpatients	5,921	5,921	-	5,921	-	-	-	5,921	-
Emergency	11,905	11,905	-	-	11,905	-	-	11,905	-
Outpatients	17,763	17,763	-	-	-	17,763	-	17,763	-
TOTAL	**35,589**	**35,589**	**-**	**5,921**	**11,905**	**17,763**	**-**	**35,589**	**-**

Source: KPMG based on data supplied by Kununurra Hospital and WA Health

Table 117 – Activity data submission – Kununurra District Hospital

Product	Activity related to 2014-15 Costs	Adjustments	Activity submitted to jurisdiction	Adjustments	Activity submitted to IHPA	Activity received by IHPA	Adjustments	Total Activity submitted for Round 18 NHCDC
Acute and Newborns	5,045	-	5,045	(24)	5,168	5,168	(140)	5,028
Non-admitted	13,804	-	13,804	(2,074)	11,730	11,730	-	11,730
Emergency	11,889	-	11,889	(2)	11,887	11,887	1,863	13,750
Sub Acute	23	-	23	-	23	23	-	23
Mental Health	-	-	-	-	-	-	-	-
Other	648	-	648	(8)	493	493	-	493
Research	-	-	-	-	-	-	-	-
Teaching and Training	-	-	-	-	-	-	-	-
Total	**31,409**	**-**	**31,409**	**(2,108)**	**29,301**	**29,301**	**1,723**	**31,024**

Source: KPMG based on data supplied by Kununurra Hospital, WA Health and IHPA

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The following should be noted about the transfer of activity data for Kununurra Hospital:

- The variance between records from source detailed in Table 116 (35,589 records) and activity related to 2014-15 costs by NHCDC product in Table 96Table 117 (31,409 records) related to exclusion of non-admitted patients and timing differences.
    - Kununurra Hospital excluded non-admitted patients treated in a community setting (2,461 records) and inpatients treated in an outpatient setting (1,134 records). The latter exclusion is an error and will need to be corrected in future rounds.
    - The remaining variances related to timing differences, whereby, the encounter data entered into the review templates was extracted later compared to the original submission to the jurisdiction. This means that additional records existed in the PAS and were recorded in the review templates.
- Kununurra Hospital made no further adjustments to activity.
- Adjustments made by WA Health related to the activity associated with the exclusion of costs (at Item G in the reconciliation) such as WIP and unmatched records.
- Adjustments made by IHPA related to the reallocation of patients for the unqualified baby adjustment and virtual patients (as discussed in Item J of the explanation of reconciliation items).
- Adjustments made by IHPA related to admitted emergency reallocations are for reporting and analysis purposes (as discussed in Item J of the explanation of reconciliation items) and have no impact on the reported activity.

10.3.4 Feeder data

Kununurra Hospital does not have feeder systems providing patient level data. As a result, radiology and pathology service costs are allocated on a percentage basis to admitted, emergency and non-admitted products based on an expected level of utilisation of the respective service.

10.3.5 Treatment of WIP

Table 118 demonstrates models for WIP and its treatment in the Kununurra Hospital's Round 19 NHCDC submission.

Table 118 – WIP – Kununurra District Hospital

Model	Description	Submitted to Round 19 NHCDC
1	Cost for patients admitted and discharged in 2014-15 only	Submitted to Round 19 of the NHCDC
2	Costs for patients admitted prior to 2014-15 and discharged in 2014-15	Submitted to Round 19 of the NHCDC. Costs are submitted for 2013-14 only, as WIP was not captured for years prior to this due to a change in costing system.
3	Costs for patients admitted prior to or in 2014-15 and remain admitted at 30 June 2015	Not submitted to Round 19 of the NHCDC

Source: KPMG, based on the Kununurra Hospital templates and review discussions

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In summary, Kununurra Hospital submitted costs for admitted and discharged patients in 2014-15 and WIP costs for those patients admitted in 2013-14, but discharged in 2014-15.

Escalation factor

WA Health did not apply the escalation factors to the costs associated with WIP from prior years as part of the Round 19 submission of the NHCDC.

10.3.6 Critical care

Kununurra Hospital does not operate any Intensive Care Units or Close Observation Units.

10.3.7 Costing public and private patients

Kununurra Hospital does not make any specific adjustments to the way private patients are costed compared to public patients. Applicable costs are allocated to private patients, including pathology, medical imaging and prosthesis, in the same manner as public patients. Private patient revenue is not offset against any related expenditure.

Costs associated with diagnostic services, pathology and medical imaging, for public and private patients are reflected in the AHS general ledger. These costs are distributed to all patients (public and private), based on the MBS item number for the service utilised by the patient. This is consistent with the principles of the AHPCS Version 3.1which indicates that the true patient level data cost incurred for public and private patients treated by the AHS should be reflected.

10.3.8 Treatment of specific items

A number of items were discussed during the review to understand their treatment in the costing process as the cost data is used to inform the NEP and specific funding model adjustments for particular patient cohorts. Kununurra Hospital's treatment of each of the items is summarised below.

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Table 119 – Treatment of specific items – Kununurra District Hospital

Item	Treatment
Research	Research costs are assigned to a product and excluded by the jurisdiction prior to submission of the NHCDC to IHPA.
Teaching and Training	Teaching and Training costs are assigned to a product and excluded by the jurisdiction prior to submission of the NHCDC to IHPA.
Shared/Other commercial entities	Kununurra Hospital does not have shared services or commercial entities.
External contract	Kununurra Hospital has a contract with the Royal Darwin Hospital for the treatment of selected patients. Patients are transferred to Royal Darwin Hospital for treatment. The activity and cost associated with these patients is included in the costing data for Kununurra Hospital.

Source: KPMG, based on IFR discussions

10.3.9 Sample patient data

IHPA selected a sample of five patients from Kununurra Hospital for the purposes of testing the data flow from jurisdictions to IHPA at the patient level. WA Health provided the patient level costs for all five patients and these reconciled to IHPA records. The results are summarised in Table 120.

Table 120 – Sample patients – Kununurra District Hospital

#	Product	Jurisdiction Records	Received by IHPA	Variance
1	Acute	$529.90	$529.90	-
2	Border	$58.17	$58.17	-
3	Acute	$1,296.66	$1,296.66	-
4	Acute	$1,041.07	$1,041.07	-
5	Non-Admitted	$560.89	$560.89	-

Source: KPMG, based on Kununurra Hospital and IHPA data

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10.4 Sir Charles Gairdner Hospital

10.4.1 Overview

Sir Charles Gairdner Hospital is part of the North Metropolitan AHS and is located at the Queen Elizabeth II Medical Centre, four kilometres from the Perth city centre. It encompasses over 600 beds and employs over 5,500 staff. Sir Charles Gairdner Hospital is a major tertiary hospital, which offers a comprehensive range of clinical services including:

- Trauma
- Emergency and Critical Care
- Orthopaedics
- General Medicine and General Surgery
- Cardiac Care.

Further to this, Sir Charles Gairdner Hospital is the home to WA's only comprehensive cancer centre and is the WA's principal hospital for neurosurgery and liver transplants.

Sir Charles Gairdner Hospital has an international reputation for ground-breaking medical research and is a leading teaching hospital with a reputation for providing high quality learning experiences and educational opportunities for staff and students.[22]

North Metropolitan AHS undertakes costing three times per year, being the six months to December, nine months to March and the annual process. Costing is undertaken in accordance with the business rules set by WA Health. North Metropolitan AHS has a tool to compare funding and costs at patient level, however, its use as a management tool has not been successful. At present the NHCDC submission is reviewed and signed off by the Executive Director of Finance, however, this is likely to become the responsibility of the Chief Executive Officer in the future.

10.4.2 Financial data

Representatives from North Metropolitan AHS completed the IFR templates, with assistance from a representative of the Health System Economic Modelling Directorate from WA Health. These representatives attended and participated in consultations for the Round 19 IFR.

Table 121 presents a summary of Sir Charles Gairdner Hospital's costs, from the original GL extract for the North Metropolitan AHS through to Sir Charles Gairdner Hospital's final NHCDC submission for Round 19.

[22] Sir Charles Gairdner Hospital - *Accessed 15 June 2016*

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Table 121 – Round 19 NHCDC Reconciliation – Sir Charles Gairdner Hospital

Hospital			
Item		**Amount**	**% of GL**
A General Ledger (GL)	$	2,519,651,035	
B Adjustments to the GL			
Inclusions	$	47,126,298	
Exclusions	$	(1,770,158,725)	
Total hospital expenditure	**$**	**796,618,608**	*31.62%*
C Allocation of Costs			
Post Allocation Direct amount	$	592,094,201	
Post Allocation Overhead amount	$	204,524,409	
Total hospital expenditure	**$**	**796,618,609**	*31.62%*
Variance	*$*	*1*	*0.00%*
D Post Allocation Adjustments			
Non-hospital programs	$	(15,247,419)	
Total expenditure allocated to patients	**$**	**781,371,191**	*31.01%*
E Costed products submitted to jurisdiction			
Acute and Newborns	$	555,474,108	
Non-admitted	$	129,503,805	
Emergency	$	22,697,106	
Sub Acute	$	16,585,816	
Mental Health	$	-	
Other	$	13,491,522	
Research	$	7,489,337	
Teaching & Training	$	36,129,508	
	$	**781,371,202**	*98.09%* *
Variance	*$*	*11*	

Jurisdiction		
Item		**Amount**
F Costed Products received by jurisidction	$	781,371,203
Variance	*$*	*1*
G Final Adjustments		
Outpatients	$	(14,835,100)
WIP - Round 17	$	13,627,147
Remove system-generated patients	$	(12,751,435)
WIP adjustments - Round 18 and Errors	$	(19,148)
WIP from current year	$	(10,743,732)
Unmatched records	$	(5,621,198)
Negative cost records	$	43
Teaching and Research	$	(43,405,155)
Total costs submitted to IHPA	**$**	**707,622,626**
H Costed products submitted to IHPA		
Acute and Newborns	$	557,371,202
Non-admitted	$	110,336,732
Emergency	$	22,645,531
Sub Acute	$	16,796,586
Mental Health	$	-
Other	$	472,573
Research	$	-
Teaching & Training	$	-
	$	**707,622,624**
Variance	*$*	*(2)*

IHPA		
Item		**Amount**
I Total costed products received by IHPA	$	707,622,624
Variance	*$*	*0*
J IHPA Adjustments		
Admitted ED reallocations	$	4,392,978
Virtual patients	$	16,039,240
UQB Adjustments	$	(1,232)
Final NHCDC costs	**$**	**728,053,610**
K Final NHCDC costed products		
Acute^ and Newborns	$	561,770,438
Non-admitted	$	110,336,732
Emergency	$	38,684,771
*Sub Acute^*	$	16,789,097
Mental Health	$	-
Other	$	472,573
Research	$	-
Teaching & Training	$	-
	$	**728,053,611**
Variance	*$*	*1*

Source: KPMG based on data supplied by Sir Charles Gairdner Hospital, jurisdiction and IHPA

** This percentage is based on the Sir Charles Gairdner Hospital only expenditure calculated in Item B of the reconciliation*

^ These figures include admitted emergency and virtual patients costs.

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Explanation of reconciliation items

This section discusses each of the reconciliation items including adjustments, inclusions and exclusions to the GL. The information is based on the Sir Charles Gairdner Hospital's templates and review discussions.

Item A – General Ledger

The final GL extracted from the financial system was for the North Metropolitan AHS, of which Sir Charles Gairdner Hospital is a part. This expenditure totalled $2.520 billion. A variance of $1.11 million was noted between the expenditure reported in the financial statements and the final GL (0.04 percent of the total audited expenditure). This amount related to additional transactions posted in the GL. The representation from North Metropolitan AHS advised that these amounts would have been excluded items as part of the financial reconciliation.

Item B – Adjustments to the GL

North Metropolitan AHS included additional items in the GL for costing purposes, prior to excluding other facilities within the health service. Included expenditure totalled $47.13 million and related to the WA Health overheads such as Health Corporate Network, Health Information Network, Licensing fees, HR Service etc.

North Metropolitan AHS also excluded expenditure items in the GL, prior to adjusting for other health facilities. These exclusions totalled $532.17 million and related to:

- Internal recoups within North Metropolitan AHS - $54.52 million
- The net impact of the AHS's Special Purpose Funds - ($183.67 million)
- South Metropolitan AHS parking costs - $2.38 million
- Expenditure related to North Metropolitan AHS that did not relate to Sir Charles Gairdner Hospital- $633.56 million
- Public health expenditure not patient costed - $25.21 million
- Patient Assisted Travel (related to Sir Charles Gairdner Hospital only) - $167,719

North Metropolitan AHS then excluded other facilities and health services costs totalling $1.238 billion.

The basis of these adjustments appears reasonable.

Blood products are not costed in WA hospitals as the expenditure is held in WA Health cost centres. The exclusion of this expenditure may impact on the completeness of the NHCDC.

These adjustments established an expenditure base for costing of $796.62 million. This expenditure related to Sir Charles Gairdner Hospital only and was approximately 31.6 percent of total expenditure reported in the GL for North Metropolitan AHS.

Item C – Allocation of costs

Sir Charles Gairdner Hospital undertakes a process of reclass/transfers between direct and overhead cost centres. The net effect of these reclass/transfers was zero.

- It was observed that the total of all direct cost centres of $592.09 million was allocated post allocation.

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- It was observed through the templates that all overheads of $204.52 million were allocated to direct cost centres, post allocation.

These amounts reconciled to $796.62 million and reflected the total hospital expenditure for Sir Charles Gairdner Hospital. A minor $1 variance was noted between Item B and Item C.

Item D – Post Allocation Adjustments

Costs totalling $15.25 million were excluded after the allocation of costs in Item C and related to non-hospital products. Non-hospital products included public health, domiciliary care services, continuing care program, services to other organisations, commercial operations, special purpose funds, teaching, training and research.

The basis of these adjustments appears reasonable. However, the exclusion of Teaching, Training and Research (TTR) costs may impact on the NHCDC.

The total expenditure allocated to patients for Sir Charles Gairdner Hospital was $781.37 million, which represented approximately 31.01 percent of the GL for North Metropolitan AHS.

Item E - Costed products submitted to jurisdiction

Costs derived by Sir Charles Gairdner Hospital and reported at product level were equal to $781.37 million. This represents approximately 98.1 percent of the total GL expenditure (note this percentage is based on the Sir Charles Gairdner Hospital component of North Metropolitan AHS as calculated in Item B of the financial reconciliation). Costs were allocated to Acute, Non-admitted, Emergency, Sub-Acute, Other, Research and Teaching and Training by the jurisdiction, but have been presented here for comparative purposes. A minor $11 variance was noted between Item D and Item E.

Item F – Costed products received by the jurisdiction

Costed products received by the jurisdiction totalled $781.37 million. A minor $1 variance was noted between Item E and Item F.

Item G – Final adjustments

WA Health made the following exclusions from Sir Charles Gairdner Hospitals cost data before submission to IHPA:

- Outpatients activity that is not in correct format for NHCDC reporting- $14.84 million
- System-generated patients - $12.75 million
- WIP patients not discharged in 2014-15 - $10.74 million
- WIP adjustments related to Round 18 and Round 19 errors - $19,148
- Cost records that did not match patient level activity data - $5.62 million ($4.49 million for non-admitted, $1.09 million for admitted and $35,475 for Non-admitted emergency)
- Teaching, Training and Research - $43.41 million.

WA Health also included WIP from Round 18 totalling $13.63 million and negative cost records of $43 in the final adjustments.

The basis of these adjustments appears reasonable. However, the exclusion of Teaching, Training and Research (TTR) costs may impact on the NHCDC. WA Health is awaiting the outcome of the TTR project undertaken by IHPA to provide sufficient guidance on how to cost

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TTR. In addition, the reasons for outpatient activity not being in the correct format for NHCDC reporting should be investigated by Sir Charles Gairdner Hospital and WA Health in future rounds.

The total NHCDC costs submitted to IHPA by WA Health was $707.62 million.

Item H – Costed products submitted to IHPA

Costs derived by the jurisdiction and reported at product level reconcile to $707.62 million. A minor $2 variance was noted between Item G and Item H.

Item I – Total products received by IHPA

Total costed products received by IHPA totalled $707.62 million. There was no variance between costs submitted by the jurisdiction and costs received by IHPA.

Item J – IHPA adjustments

- *Admitted emergency*

  Upon receipt of cost data, IHPA allocates the admitted emergency costs back to admitted patients for the purposes of reporting and analysis. Within IHPA's reconciliation, this amount was a duplication of admitted emergency costs and not an additional cost. For Sir Charles Gairdner Hospital, this amounted to $4.39 million.

- *Unqualified Baby Adjustment*

  Upon receipt of cost data, IHPA redistributes the unqualified baby (UQB) cost to the mother DRG to provide a complete delivery DRG cost. The activity adjustment for UQB separations will not ordinarily have an associated impact on cost. However, for Sir Charles Gairdner Hospital, the UQB adjustment was a complete removal of activity rather than a reallocation. This was due to the UQB separation linking to a prior year or future year mother separation. For Sir Charles Gairdner this amounted to $1,232.

- *Virtual Patients*

  For most WA hospitals, the admitted emergency presentation is not captured separately within the PAS and is included with the admitted acute episode. To maintain the NHCDC classification streams, IHPA (with the consent of WA) duplicated the emergency costs and created virtual patients to be in line with the admitted emergency stream. For Sir Charles Gairdner Hospital, this amounted to $16.04 million.

Item K – Final NHCDC Costed Outputs

The final NHCDC costed data for Sir Charles Gairdner Hospital that was loaded into the National Round 19 cost data set was $728.05 million, which included the admitted emergency cost of $4.39 million and virtual patients cost of $16.04 million.

10.4.3 Activity data

Table 122 presents patient activity data based on source and costing systems for Sir Charles Gairdner Hospital. This activity data is then compared to Table 123 which highlights the transfer of activity data by NHCDC product from Sir Charles Gairdner Hospital to WA Health and then through to IHPA submission and finalisation.

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Table 122 – Activity data – Sir Charles Gairdner Hospital

Activity Data	# Records from Source	# Records in costing system	Variance	# Records linked to Admitted	# Records linked to Emergency	# Records linked to Non-admitted	# Records linked to Other	Total Linking Process	# Unlinked records
TOPAS	447,777	447,777	-	94,585	39,613	264,652	-	398,850	48,927
ARIA	50,601	50,601	-	-	-	50,601	-	50,601	-
TOTAL	**498,378**	**498,378**	**-**	**94,585**	**39,613**	**315,253**	**-**	**449,451**	**48,927**

Source: KPMG based on data supplied by Sir Charles Gairdner Hospital and WA Health

The unlinked records in the TOPAS data related to non-admitted patients with Did Not Attend, Did Not Wait, Non Client Event or Not Specified status (33,362 records), Allied Health service activity with a description of "other activity" (10,602 records) and non-admitted patients with nil value (4,963 records).

Table 123 – Activity data submission – Sir Charles Gairdner Hospital

Product	Activity related to 2014-15 Costs	Adjustments	Activity submitted to jurisdiction	Adjustments	Activity submitted to IHPA	Activity received by IHPA	Adjustments	Total Activity submitted for Round 18 NHCDC
Acute and Newborns	92,305	-	92,305	(532)	91,773	91,773	(2)	91,771
Non-admitted	315,253	-	315,253	(15,130)	300,123	300,123	-	300,123
Emergency	39,624	-	39,624	(61)	39,563	39,563	29,417	68,980
Sub Acute	1,315	-	1,315	(24)	1,291	1,291	(1)	1,290
Mental Health	-	-	-	-	-	-	-	-
Other	955	-	955	(217)	738	738	-	738
Research	-	-	-	-	-	-	-	-
Teaching and Training	-	-	-	-	-	-	-	-
Total	**449,452**	**-**	**449,452**	**(15,964)**	**433,488**	**433,488**	**29,414**	**462,902**

Source: KPMG based on data supplied by Sir Charles Gairdner Hospital, WA Health and IHPA

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The following should be noted about the transfer of activity data for Sir Charles Gairdner Hospital:

- Total linked records detailed in Table 122 (449,451 records) and activity related to 2014-15 costs by NHCDC product in Table 123 (449,452 records) reconciled (a minor variance of one record was noted which was related to all system-generated patients being consolidated into one record).
- Sir Charles Gairdner Hospital made no further adjustments to activity.
- Adjustments made by WA Health related to the activity associated with the exclusion of costs (at Item G in the reconciliation) such as WIP, outpatients, system-generated patients, negative cost records and unmatched records.
- Adjustments made by IHPA related to the reallocation of patients for the unqualified baby adjustment and virtual patients (as discussed in Item J of the explanation of reconciliation items). One record was also reallocated from sub acute to acute.
- Adjustments made by IHPA related to admitted emergency reallocations are for reporting and analysis purposes (as discussed in Item J of the explanation of reconciliation items) and have no impact on the reported activity.

10.4.4 Feeder data

Table 124 presents patient feeder data for Sir Charles Gairdner Hospital.

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Table 124 – Feeder data – Sir Charles Gairdner Hospital

Feeder Data	# Records from Source	# Records in costing system	Variance	# Records linked to Admitted	# Records linked to Emergency	# Records linked to Non-admitted	# Records linked to Other	Total Linking Process	# Unlinked records	% Linked
Anaesthetics	11,446	11,446	-	11,444	-	-	-	11,444	2	99.98%
Theatre	12,436	12,436	-	12,433	-	-	-	12,433	3	99.98%
Prosthetics	19,419	19,419	-	19,357	-	-	-	19,357	62	99.68%
Recovery Ward	11,385	11,385	-	11,374	-	-	-	11,374	11	99.90%
Theatre Consumables	24,197	24,197	-	24,186	-	-	-	24,186	11	99.95%
Pathology	640,538	640,538	-	442,964	52,758	142,923	26,144	664,789	(24,251)	103.79%
Pharmacy	166,342	166,342	-	121,845	1,028	33,271	10,198	166,342	-	100.00%
Imaging	213,805	213,805	-	127,565	39,538	43,183	3,519	213,805	-	100.00%
Allied Health	582,458	582,458	-	263,259	7,685	40,516	6,846	318,306	264,152	54.65%
Cardiology	1,412	1,412	-	1,394	-	-	18	1,412	-	100.00%

Source: KPMG based on data supplied by Sir Charles Gairdner Hospital and WA Health

The following should be noted about the feeder data for Sir Charles Gairdner Hospital:

- There are ten feeders reported from hospital source systems and they appear to represent major hospital departments providing resource activity.
- The number of records linked to admitted patients, emergency, non-admitted or other patients had a greater than 99 percent link or match for nine of the ten feeders. This suggests that there is robustness in the level of feeder activity reported back to episodes.
- The pathology feeder had a greater than 100 percent linking ratio as records from other hospitals linked to Sir Charles Gairdner Hospital encounters.
- The unlinked records in the Allied Health feeder systems related predominantly to activity when the patient is not in attendance such as reviewing test results etc. The impact of not linking this activity to patients means the costs of completing these tasks is spread across all patients, rather than directly linked to the patient for which the service occurred.
- The unlinked records in the Anaesthetics, Theatre, Prosthetics and Recovery ward feeders related to record within incorrect date or episode data.

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10.4.5 Treatment of WIP

Table 125 demonstrates models for WIP and its treatment in the Sir Charles Gairdner Hospital's Round 19 NHCDC submission.

Table 125 – WIP – Sir Charles Gairdner Hospital

Model	Description	Submitted to Round 19 NHCDC
1	Cost for patients admitted and discharged in 2014-15 only	Submitted to Round 19 of the NHCDC
2	Costs for patients admitted prior to 2014-15 and discharged in 2014-15	Submitted to Round 19 of the NHCDC. Costs are submitted for 2013-14 only, as WIP was not captured for years prior to this due to a change in costing system.
3	Costs for patients admitted prior to or in 2014-15 and remain admitted at 30 June 2015	Not submitted to Round 19 of the NHCDC

Source: KPMG, based on the Sir Charles Gairdner Hospital templates and review discussions

In summary, Sir Charles Gairdner Hospital submitted costs for admitted and discharged patients in 2014-15 and WIP costs for those patients admitted in 2013-14, but discharged in 2014-15.

Escalation factor

WA Health did not apply the escalation factors to the costs associated with WIP from prior years as part of the Round 19 submission of the NHCDC.

10.4.6 Critical care

Sir Charles Gairdner Hospital operates a standalone adult Intensive Care Unit (ICU), a Coronary Care Unit (CCU) and a High Dependency Unit (HDU). The HDU is attached to the ICU. All direct costs associated with each of these critical care areas are recorded in dedicated cost centres. The hospital does not have any dedicated close observation units. Critical care costs are captured in accordance with the applicable standard.

10.4.7 Costing public and private patients

Sir Charles Gairdner Hospital does not make any specific adjustments to the way private patients are costed compared to public patients. Applicable costs are allocated to private patients, including pathology, medical imaging and prosthesis, in the same manner as public patients. Private patient revenue is not offset against any related expenditure.

Costs associated with diagnostic services, pathology and medical imaging, for public and private patients are reflected in the AHS general ledger. These costs are distributed to all patients (public and private), based on the MBS item number for the service utilised by the patient. This is consistent with the principles of the AHPCS Version 3.1 which indicates that the true patient level data cost incurred for public and private patients treated by the AHS should be reflected.

The majority of medical officers at Sir Charles Gairdner Hospital are paid an allowance in-lieu of private practice arrangements, i.e. there is limited use of private practice funds to supplement the employment costs. These employment costs are allocated to public and private patients.

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10.4.8 Treatment of specific items

A number of items were discussed during the review to understand their treatment in the costing process as the cost data is used to inform the NEP and specific funding model adjustments for particular patient cohorts. Sir Charles Gairdner Hospital's treatment of each of the items is summarised below.

Table 126 – Treatment of specific items – Sir Charles Gairdner

Item	Treatment
Research	Research costs are assigned to a product and excluded by the jurisdiction prior to submission of the NHCDC to IHPA.
Teaching and Training	Teaching and Training costs are assigned to a product and excluded by the jurisdiction prior to submission of the NHCDC to IHPA.
Shared/Other commercial entities	The North Metropolitan AHS representative indicated that shared services and commercial entity costs are excluded by the hospital. This is confirmed in post allocation adjustments at Item D of the financial reconciliation.

Source: KPMG, based on IFR discussions

10.4.9 Sample patient data

IHPA selected a sample of five patients from Sir Charles Gairdner Hospital for the purposes of testing the data flow from jurisdictions to IHPA at the patient level. WA Health provided the patient level costs for all five patients and four reconciled to IHPA records. One acute record did not reconcile to the jurisdiction records, which was due to the admitted emergency reallocation not attaching to the episode number for that patient. The results are summarised in Table 127.

Table 127 – Sample patients – Sir Charles Gairdner Hospital

#	Product	Jurisdiction Records	Received by IHPA	Variance
1	Acute	$4,079.55	$3,476.67	$602.88
2	Acute	$581.05	$581.05	-
3	Maintenance	$5,157.56	$5,157.56	-
4	Admitted ED	$460.23	$460.23	-
5	Non-Admitted	$123.90	$123.90	-

Source: KPMG, based on Sir Charles Gairdner Hospital and IHPA data

10.5 Application of AHPCS Version 3.1

The following section summarises WA Health's application of selected standards from Version 3.1 of the AHPCS (outlined in Appendix B) to the selected hospitals Round 19 NHCDC submission.

10.5.1 SCP 1.004 – Hospital Products in Scope

The selected hospitals demonstrated through the templates and interview process that costs are reported against admitted acute, emergency, sub-acute, non-admitted, and other products.

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It was noted that costs are also created for non-patient products (such as unlinked records) and TTR products. These additional records with costs are not submitted to the NHCDC.

10.5.2 SCP 2.003 – Product Costs in Scope

The WA reconciliation process for financial data used for costing purposes was demonstrated through the interview process. It was also demonstrated that all products are costed, which includes costs assigned to products in scope for the NHCDC, unlinked activity, and costs assigned to system-generated patients where there is no activity.

Blood products are not included in the costing process, as they are centrally held by WA Health and not allocated to AHSs.

10.5.3 SCP 2B.002 - Research Costs

Research costs are assigned to a product and excluded by the jurisdiction prior to submission of the NHCDC to IHPA.

10.5.4 SCP 3.001 - Matching Production and Cost

The application of this standard was demonstrated during the interview and an excel file was produced from the costing system which outlined all transfers and offsets utilised.

10.5.5 SCP 3A.001 - Matching Production and Cost – Overhead Cost Allocation

The selected hospitals were able to demonstrate that overhead costs were fully allocated to direct patient care areas via the pre allocation and post allocation data included in the templates.

10.5.6 SCP 3B.001 - Matching Production and Cost – Costing all Products

The application of this standard was demonstrated in the template. Both WA Health and the selected hospitals provided an overview and documentation of their internal reconciliation process, which demonstrated the allocation of costs to products.

10.5.7 SCP 3C.001 - Matching Production and Cost – Commercial Business Entities

Discussions with representatives from the selected hospitals demonstrated that commercial business entities and shared services did not exist or were treated in accordance with the standard.

10.5.8 SCP 3E.001 - Matching Production and Cost – Offsets and Recoveries

There was no offsetting of costs with revenue with the exception of salaries and wages recoups from internal and external clients.

10.5.9 SCP 3G.001 – Matching Production and Cost – Reconciliation to Source Data

Based on discussions during the review, WA Health and the selected hospitals complete a final reconciliation of its costing system to source documentation. The process appears robust.

10.5.10 GL 2.004 - Account Code Mapping to Line Items

WA Health representatives indicated that total costs were mapped to the standard specified line items; this was reflected in the hospital templates submitted

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10.5.11 GL 4A.002 – Critical Care Definition

Armadale Hospital and Sir Charles Gairdner had dedicated ICU's in their facilities. The direct costs associated with ICU are allocated to discrete cost centres and those costs are only applied to patients who used the ICU. Sir Charles Gairdner Hospital also had a HDU and CCU, and the costs of these critical care areas were treated in the same manner as the ICU. Kununurra Hospital did not have any critical care units. There were no examples of close observation units at any of the hospitals reviewed.

10.5.12 COST 3A.002 – Allocation of Medical Costs for Private and Public Patients

Costs are allocated to public and private patients in the same manner. This includes costs associated with pathology, medical imaging and prosthesis. Private patient revenue is not offset against any related expenditure.

Costs associated with diagnostic services, pathology and medical imaging, for public and private patients are reflected in the AHS GL. These costs are distributed to all patients (public and private) based on the MBS item number for the service utilised by the patient. This is consistent with the principles of the standard which indicates that the true patient level data cost incurred for public and private patients treated by the AHS should be reflected.

The majority of medical officers at Armadale Hospital and Sir Charles Gairdner Hospital are paid an allowance in-lieu of private practice arrangements, i.e. there is limited use of private practice funds to supplement the employment costs. These employment costs are allocated to public and private patients.

10.5.13 COST 5.002 - Treatment of Work-In-Progress Costs

Discussions revealed that patients are allocated costs based on their consumption of resources for that reporting period. Where costs are incurred in prior years and the patient is discharged in the current year, these are also included in the final costed data and NHCDC submission. These costs were not escalated in the Round 19 NHCDC submission.

10.6 Conclusion

The findings of the WA Round 19 IFR are summarised below:

- WA Health has improved its NHCDC reconciliation processes since Round 18, with Western Australia Country Health Service sites moving away from cost modelling and increasing the use of feeder and clinical costing systems.
- The financial reconciliation demonstrates the transformation of cost data from the original GL extract for each AHS through to the final NHCDC submission for the respective hospitals. Major inclusions to the original GL include costs related to services provided to the AHS and funded centrally by WA Health (such as shared services, licensing fees, HR services, parking etc.). Major exclusions from the original GL data include the removal of other hospitals and services in the respective AHS, internal and external purchasing recoups, special purpose accounts and expenditure related to other AHS's. Non-hospital programs were excluded by the hospital for Armadale Hospital and Sir Charles Gairdner Hospital.
- There were variances between the audited statements and final GL amount entered into the respective costing system for Kununurra Hospital and Sir Charles Gairdner hospital. These variances were considered insignificant.

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- WA Health excluded expenditure related to WIP, system-generated patients, unmatched records and teaching, training and research. The largest exclusion related to teaching, training and research for all hospitals.
- The basis of the adjustments made by the hospitals and WA Health appears reasonable, with the exception of:
    - Teaching, Training and Research (all hospitals). The exclusion of these costs may impact on the completeness of the NHCDC. WA Health is awaiting the outcome of the TTR project undertaken by IHPA to provide sufficient guidance on how to cost TTR.
    - Blood products are not costed at WA sites as the expenditure is held in WA Health cost centres and not allocated to AHSs. The exclusion of this expenditure may impact on the completeness of the NHCDC.
    - Interest on treasury loan was excluded at Kununurra Hospital. The exclusion of Interest incurred for the purchase of assets may impact on the completeness of the NHCDC.
    - The reasons for outpatient activity not being in the correct format for NHCDC reporting should be investigated by Sir Charles Gairdner Hospital and WA Health in future rounds.
- A variance of $17,934 was noted in the reconciliation of South Metropolitan AHS. This variance was 0.0007 percent of the total GL for South Metropolitan AHS.
- Kununurra Hospital removed 1,134 records related to inpatients treated in an outpatient setting from the costing system in error. This exclusion will need to be corrected in future rounds of the NHCDC.
- Allied Health records identified as "other activity" was removed at Sir Charles Gairdner Hospital, as the patient was not in attendance when the service was being performed (an example of "other activity" includes reviewing test results). This means that the costs associated with this type of activity were spread across all patients, rather than being attached to the relevant individual patient.
- WA Health adjusted the total activity data submitted by the selected WA hospitals for WIP, outpatients, system-generated patients, negative cost records and unmatched records prior to submission to the NHCDC.
- The number of records linked from source to product at Armadale Hospital and Sir Charles Gairdner Hospital was significant with all feeders having a greater than 93 percent link or match. This suggests that there is robustness in the level of feeder activity reported back to episodes. Kununurra Hospital did not maintain patient level feeder systems in Round 19.
- WIP was treated in accordance with the COST 5.002 of the AHPCS Version 3.1. WA Health did not apply any escalation factors to the costs associated with WIP for prior years as part of the Round 19 submission to the NHCDC.
- The five sample patients selected for review for Armadale Kelmscott Memorial Hospital and Kununurra Hospital reconciled to IHPA records. One of the five patients sampled at Sir Charles Gairdner Hospital did not reconcile as the admitted emergency reallocation not attaching to the episode number for that patient.

Based on discussions held during the site visits, and a review of the financial reconciliations provided, WA Health has robust reconciliation processes in place. As such, nothing was identified to suggest that the financial data is not fit for NHCDC submission. Furthermore, the data flow from the jurisdiction to IHPA demonstrated no unexplained variances.

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11. Peer Review

11.1 The peer review process

The Round 19 IFR involved a peer review process so that costing representatives could participate in site visits at other jurisdictions. The peer review allowed NHCDC peers to share information, processes, challenges and solutions, and provided a valuable opportunity to have costing staff and costing representatives visit other jurisdictions.

11.1.1 Participation in site visits

Jurisdictions were asked to nominate relevant personnel to participate in the peer review from either the hospital costing level or the jurisdiction level. Jurisdictions in Australian Capital Territory, New South Wales, Northern Territory, Queensland, South Australia and Tasmania nominated peers (all peers were jurisdiction representatives). The remaining jurisdictions were unable to send representatives due to capacity, funding and timing constraints. A peer review participant did not attend the Australian Capital Territory site visit due to timing constraints. Appendix C contains a list of the peer review participants.

The peer review nominees selected their preferred locations and the host site was informed of the peer review selection. The nominees attended the meetings together with the KPMG review team and IHPA representatives, and were encouraged to ask questions and actively participate during the site visits.

11.1.2 Survey

Following the site visits, KPMG sent a survey to peer review participants to gather their feedback on the peer review process. The survey requested feedback on the following three questions:

1 What were your expectations of the peer review before you participated in the site visit?

2 Please provide details and/or examples of key learnings (a minimum of two) that you have taken away from your recent site visit.

3 Please provide any ideas or suggestions for improving the peer review process in future rounds of review.

11.2 Summary of feedback on the peer review process

Overall, the peers who participated reported that they received substantial value from attending the site visits. One costing staff participant reported:

"I was thrilled with the offer of an opportunity to be a peer reviewer as this was an opportunity for me to experience firsthand how another jurisdiction undertakes its costing study. I have only recently commenced in the [Activity Based Funding] environment and am thirsty for any valuable information I can obtain on this to enable me to better perform my role."

11.2.1 Expectations of participation in the peer review

Participants commonly reported that by participating in the peer review, they expected to gain a better understanding of how different jurisdictions managed various costing issues in comparison to how they managed their own. The peer review was seen as an important opportunity to identify ways they could improve their own jurisdiction's processes. There was also an interest in identifying how costing data

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is used by jurisdictions in their reporting and planning, and in how the hospital teams work with the jurisdiction in the costing process.

11.2.2 Key learnings from the peer review

One key learning for most participants was that many of the issues surrounding costing are similar across jurisdictions. For example, issues experienced with rural and remote services (such as patient transport, staff accommodation, economies of scale, and outreach services) were identified as common to a number of jurisdictions. As such, peers recognised that it is important to establish networks with other jurisdictions to regularly discuss, provide support and receive advice on issues experienced.

Other key learnings included the importance of having a skilled costing and analysis team to ensure the effectiveness of Activity Based Funding, and the need for continuous improvement to costing processes. A number of participants also noted that the peer review had provided them with ways to develop improvements to their own costing processes by observing different approaches to calculating costs.

11.2.3 Suggestions for improving the peer review process in future

An improvement noted by a number of participants was to include more information in the review on how costing data is used by clinicians in their reporting, business planning and in developing improvements to hospital practices. Feedback was also received that more input from the full costing team during the review would be beneficial, along with a more in-depth presentation on the costing process in that state or territory.

One participant also noted that including a team member in the review process who understands how the clinical services are managed would be beneficial (such as the Director of Nursing). This would enable valuable input into the clinical questions that impact on how the local clinical and business organisational structures translate into the cost outcomes.

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12. IHPA Process

12.1 Overview

KPMG reviewed IHPA's process for compiling the Round 19 NHCDC and followed the data flow of the 18 participating sites from submission to the jurisdictions, through to the recording of their NHCDC data in the national data set.

The objective of the IHPA NHCDC data submission process review was to:

- understand IHPA's processes for receiving data;
- determine IHPA's processes for validating and performing Quality Assurance (QA) procedures;
- identify and understand any adjustments to the data; and
- reconcile the data against the national data set.

The NHCDC milestones are published in IHPA's Three Year Data Plan. The milestones reflected a process, which involved submission to the NHCDC through the Enterprise Data Warehouse (EDW), validation and quality assurance of submitted data and finalisation of the costing database for the publication of national cost weights by 30 September 2016.

IHPA noted the following improvements to the NHCDC and processes since Round 18:

- Access to the NHCDC drop box was provided to jurisdictions in February 2016 this enabled earlier submissions and response times for validation reports and QA of submitted data.
- Following feedback from jurisdictions post Round 18, a review of the information provided in QA reports was conducted by the NHCDC Advisory Committee. Following that review, IHPA improved and re-developed the QA reports for Round 19. These reports are designed to critically view submitted data in light of learnings from previous rounds and flag known issues at the time of data collection for the development of the National Efficient Price. The outputs provided in the improved QA reports resulted in a number of jurisdictions who identified issues and re-submitted their data for Round 19.
- IHPA highlighted that the number of hospitals submitting to the NHCDC decreased in Round 19, as a number of smaller Queensland hospitals did not submit cost data. However, there was no major change to the number of costed records and the breadth of costed records across product types actually increased.
- There has also been a continued focus on Tier 2 data collection, which has been maturing over recent rounds. IHPA noted that South Australia submitted non-admitted data for the first time in Round 19.
- The Data Request Specifications (DRS) were updated to enable the submission of the Palliative Care Phase of Care.

The KPMG review team met with IHPA representatives to discuss the data management, validation and QA processes that IHPA applied in handling the Round 19 NHCDC submissions. During the meeting, the review team viewed the supporting reconciliations, validation and QA outputs relating to the participating hospital/LHNs. This information was subsequently provided to KPMG, which was used to complete the IHPA component of the NHCDC reconciliations for each participating hospital/LHN. Additional clarification of reconciliation items was sought during and after the meeting with the relevant IHPA representatives.

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12.2 IHPA NHCDC data submission process

Following its introduction in Round 18, the EDW, which is hosted by the Commonwealth Department of Health was again utilised in Round 19. The EDW enables automated validation and linking checks with activity data submitted by Jurisdictions as part of their Activity Based Funding requirements for NHCDC purposes.

IHPA's process can be separated into various phases, with several tasks performed during each phase. Throughout the NHCDC process, IHPA communicated with jurisdictions to keep them informed of the progress of their submission. IHPA published the DRS, which contained the format of data items to be submitted, the validation rules for the CostA (activity) and CostC (cost) files, and validation rules for linking checks to activity files, as well as reference files such as NHCDC hospital identifiers. The DRS is used by jurisdictions to guide data submission for the NHCDC round.

Each phase of the process described below applies to all data submitted by Jurisdictions at either the hospital, Local Health Network or Jurisdictional level.

12.2.1 Phase 1: EDW Data Collection

Phase 1 involved collection of all jurisdictions data submitted via the EDW to IHPA's dropbox. Various automated cross-validation and linking checks occurred. The output of cross validation checks are provided to Jurisdictions and following review, Jurisdictions are able to validate data multiple times, update for critical errors and resubmit.

During this phase, there were various checks undertaken including whether:

- the CostA and CostC files met the data requirements, as set out in the NHCDC DRS.
- all episodes recorded in the CostA file were present in the CostC file and vice versa.
- the CostA data matched against the ABF data submission. Here IHPA encourages "single submission, multiple use[23]".
- Other logical tests, such as whether admitted Emergency Department (ED) patients have a corresponding admitted separation recorded.

During this phase, IHPA received emails detailing the status of each submission in the process of validation. The EDW also contained a number reports for IHPA to monitor the consolidated submission which detailed errors, and summaries of dollars and activity. The EDW data tables were updated every time a data file is resubmitted to the EDW.

12.2.2 Phase 2: Data transformation

Once jurisdictions confirmed that their submitted data was absent of critical errors and they were satisfied with the validation reports, the Extract, Transform and Load (ETL) process was conducted. At this point, costs were grouped in to cost buckets and adjustments for unqualified babies (UQB) and admitted ED were made. These adjustments are described below.

[23] "Single submission multiple use" is the process where data sets submitted for the purpose of reporting are used for other collections to remove the duplication of data submission. This also removes the burden on the stakeholder submitting data and the stakeholder receiving data and generally ensures linking is made to a reconciled source. Data submission through Australian Institute of Health and Welfare (AIHW) allows IHPA to take advantage of AIHW's established data validation and submission management capability and infrastructure See IHPA - What we do.

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Cost Bucket creation

The first step in the ETL process was to create cost buckets using the cost centre and line item information submitted by each hospital. The AHPCS contains the cost bucket matrix, clearly identifying the allocation of cost bucket for each combination of cost centre and line item.

Unqualified baby adjustment

The UQB allocation process followed the creation of cost buckets from line items and cost centres, and the linking of the ABF and NHCDC datasets. UQBs were identified through METeOR definition 327254 or CareType 7.3. Mother separations are those with Care Type 1 and Diagnosis Codes Array (diag01-30) in ("Z37.0","Z37.2","Z37.5","Z37.6","Z37.9").

The UQB adjustment combined the costs of a UQB separation to a mother separation. Within IHPA's reconciliation, this is not an additional cost but a movement of costs between patients. IHPA made this adjustment using the following methodology:

- Where a mother separation was directly linked with a UQB separation (using a Mother episode identifier and establishment identifier), the costs of that UQB separation are allocated to the mother.
- Any unallocated UQB separations are linked to remaining mother separations at the same establishment, using dates to attempt to match the mother and baby record and using a 1:1 ratio (that is, only one UQB separation per mother separation).
- If there are remaining UQB separations after following this process, and all mother separations have been allocated costs from a UQB separation, these remaining UQB costs are excluded from the NHCDC. In Round 19, less than five records from the sampled hospitals/LHNs met this criterion.

Admitted ED costs

If an admitted patient is admitted through the hospital emergency department then the full cost of treatment for that patient includes resources utilised during the patients ED presentation and while subsequently admitted. In order to attribute the full cost, admitted patients who were admitted through ED had their ED costs attached to their admitted separation. These reallocated costs are located in the ED Pro cost bucket of the admitted separation.

It is important to note that:

- These reallocated ED costs are not used in the National Efficient Price or the National Efficient Cost. The ED costs are considered when developing the national weighted activity unit for ED.
- This results in duplication of admitted ED costs in the NHCDC datasets.

IHPA linked ED presentations that were subsequently admitted to the corresponding separation. This enables reporting of admitted separations with the related ED costs. The purpose of this is to identify the cost of treatment from presentation to the hospital admitted separation. IHPA made this adjustment using the following methodology:

- Admitted ED presentations are linked to admitted separations using the admitted episode identifier, which is supplied in the CostA file of the admitted ED record. The total cost of the admitted ED presentation, excluding any costs that are in the exclude cost bucket, is added to the ED pro cost bucket of the admitted separation.
- Remaining costs were evenly distributed across admitted separations, where:

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- The admitted separations did not have a directly linked ED presentation;
- The admitted separations were admitted via ED (i.e. Urgency of admission = 1); and
- The Establishment identifier matches (i.e. the ED presentation and the admitted separation are from the same hospital).

For the majority of WA hospitals, the admitted ED presentation costs are not captured separately to the admitted separation, these costs are only captured within the admitted separation. To enable all jurisdictions to report both the admitted and ED costs separately, IHPA duplicated the ED cost bucket emergency costs and created virtual patients within the ED data set for WA hospitals. These patients do not have presentation status or triage information and it is not possible to group them to an Urgency Related Group.

Product type

The final stage of the ETL process confirmed that the product type submitted in the NHCDC is correct. At this step, neither the total cost nor activity submitted changes however; the distribution by product may change.

12.2.3 Phase 3: Quality assurance reports

Once the ETL process was completed, QA reports were created. For Round 19, this process involved a number of tests on the data to assess for reasonableness, including for high and low patient costs and comparison with prior NHCDC rounds. The QA process produced a set of QA reports that operated as interactive tools to allow jurisdictions to investigate specific areas. These were provided to jurisdictions to review and action should material errors be found.

12.2.4 Phase 4: Retrieve Data from EDW Operational Data Storage

Once jurisdictions were satisfied with their QA reports, IHPA retrieved each jurisdiction data set from the EDW and placed it on the IHPA server ready for preparation of the national dataset.

12.2.5 Phase 5: Reconciliation between submitted data and the national database

IHPA conducted a reconciliation from data submitted to the national dataset. This included all steps listed above from accessing data in its raw form from the ODS in the EDW to the data which is included in the QA reports. The summary of this reconciliation is presented in Table 128.

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Table 128 – IHPA Round 19 NHCDC reconciliation

State	Hospital	Activity submitted	UQB activity	Virtual Patients activity	Total NHCDC activity	Cost submitted	UQB cost	Virtual Patients cost	Admitted ED reallocations cost	Total NHCDC cost
ACT	The Canberra Hospital	1,128,048	-	-	1,128,048	$880,580,106			$42,238,861	$922,818,967
NSW	Central Coast LHD	810,350	-	-	810,350	$612,232,763			$38,202,288	$650,435,051
NSW	Far West LHD	95,541	-	-	95,541	$59,767,465			$3,359,970	$63,127,435
NSW	Sydney LHD	800,158	(22)	-	800,136	$1,053,822,023			$49,520,271	$1,103,342,294
NT	Alice Springs Hospital	154,299	(735)	-	153,564	$219,785,198			$12,582,760	$232,367,958
QLD	Gold Coast University Hospital	600,535	(3,803)	-	596,732	$709,278,465			$32,776,314	$742,054,779
QLD	Logan Hospital	278,836	(2,618)	-	276,218	$312,191,832			$35,565,432	$347,757,264
QLD	Toowoomba Hospital	217,486	(1,436)	-	216,050	$248,514,950			$16,317,987	$264,832,937
SA	Royal Adelaide Hospital	475,191	-	-	475,191	$833,137,223			$34,487,267	$867,624,490
SA	The Queen Elizabeth Hospital	243,061	-	-	243,061	$370,504,568			$14,905,719	$385,410,288
TAS	Mersey Community Hospital	53,744	(345)	-	53,399	$61,701,798			$5,547,797	$67,249,595
TAS	North West Regional Hospital	76,754	(528)	-	76,226	$99,007,790			$4,584,734	$103,592,524
VIC	Eastern Health	494,213	(3,996)	-	490,217	$659,350,925			$47,129,602	$706,480,527
VIC	Ballarat Health Service	175,187	(1,082)	-	174,105	$234,284,877			$10,699,122	$244,983,999
VIC	Latrobe Regional Hospital	63,114	(45)	-	63,069	$115,540,170			$7,938,456	$123,478,626
WA	Armadale Kelmscott Memorial Hospital	172,614	(2,308)	8,261	178,567	$202,117,630		$7,219,064	$102,212	$209,438,907
WA	Kununurra Hospital	29,301	(140)	1,863	31,024	$35,414,180		$1,830,635	$5,493	$37,250,309
WA	Sir Charles Gairdner Hospital	433,488	(3)	29,417	462,902	$707,622,624	($1,232)	$16,039,240	$4,392,978	$728,053,611

Source: IHPA participating site reconciliation from the national NHCDC dataset.

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The following should be noted about the reconciliation in Table 128:

- Minimal variances were observed between costed products submitted for Queensland sampled hospitals and that received by IHPA (Gold Coast Hospital - $41; Toowoomba Hospital - $8; and Logan Hospital - $12).
- A minimal variance of $34 was observed between costed products submitted for the Canberra Hospital and that received by IHPA.
- In Tasmania, a variance of ($759) was noted for Mersey Community Hospital and $763 was noted for North West Regional Hospital. Tasmania costed these hospitals together in one costing study and the IFR process requested that a reconciliation be undertaken for each hospital separately. As such, when the costing data of both hospitals is combined, the variances offset each other resulting in a minor $4 variance between the costs submitted to IHPA and the costs received by IHPA.
- A variance was observed between the costs submitted by SA and that received by IHPA, due to SA's new submission method containing more decimal places than permitted by IHPA's automated collection portal. IHPA reviewed the impact of this on the jurisdiction-level collection and considered it immaterial and less than 0.02 percent of total expenditure (Royal Adelaide Hospital - $119,567, Queen Elizabeth Hospital - $60,172).

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Appendix A: The NHCDC and patient level costing

A.1. The NHCDC

The cost data submitted to the National Hospital Cost Data Collection (NHCDC) is at the patient level. That is, each admitted, emergency presentation, non-admitted service event and other patient group is submitted with a cost identifying the resources consumed over their stay, appointment or transaction with a hospital or health service.

Where possible, hospitals apply a cost methodology according to the Australian Hospital Patient Costing Standards (AHPCS). These standards provide a guide to costing for NHCDC purposes, as well as providing consistency in interpreting results. For example, they prescribe: the products in scope for costing; how to define and select a preferred methodology for deriving overhead and direct care costs; how to treat teaching, training and research costs; and how to reconcile to source data.

A.2. Patient level costing process

Patient level costing is the process of determining the resource costs of health care products which are consumed by patients on their clinical journey. In the Australian hospital setting, patient level costing is undertaken across all 'streams' such as admitted (acute and subacute), emergency care, non-admitted, mental health and a range of other services at the patient level. Each stream has a series of products identifying its respective output.

A.2.1 Input data

The patient level costing process requires source data across a large range of hospital systems to enable the creation of intermediate products and total patient costs. There are two main input components:

A.2.2 The General Ledger

The general ledger (GL) is used by the hospital to record the level of expenditure by its own departments over a fiscal period, such as a financial year, or a quarter (if undertaking quarterly costing).

A.2.3 Activity and Feeder data

Activity data is used by the hospital to register the type of patient accessing services from their facility (such as admitted patients or emergency department administration systems and non-admitted registration or booking systems).

Feeder data describes the type of service offered to the patient. Examples include: minutes on a ward; minutes in the operating room; minutes the surgical team are in the operating room; or the type and quantity of a drug test, imaging or pathology test. This data is extracted from standalone hospital departmental systems (such as the operating room, pathology and imaging).

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A.3. The costing process

The costing process generally takes the following steps:

A.3.1 Step 1: Extraction of expenditure data and its alignment to hospital areas or departments

During this process, costing staff examine the cost centres and the account codes within the GL and map them to the appropriate NHCDC cost centre line items. Costing staff will also define what areas are in scope to cost and determine if any offsets or expenditure transfers across cost centres are required.

Furthermore, costing staff will assess which cost areas should be deemed an overhead or a direct care cost, and assign the appropriate allocation statistic, activity or cost driver (see Step 3: Allocating costs to patients) to enable costing.

A.3.2 Step 2: Extraction of activity and feeder data

This stage requires costing staff to identify the types of activity to be costed. Data is extracted from the Patient Administration Systems (PAS) for admitted patients, emergency administration systems for emergency department presentations, and non-admitted booking systems for non-admitted presentations (which would become service events). These datasets are reviewed (this review could be against reported activity to jurisdictions or to ensure there are no duplicate records which require merging) and loaded into the costing system. This data only specifies the level of activity undertaken and further data (referred to as intermediate products) is required to attach the type of resources consumed by that activity.

This data (or what is described as feeder data) is obtained from departmental systems within hospitals or health services. It can include: ward data, such as the patient time in the ward; pathology and imaging data, such as the volume and type of tests (such as a full blood evaluation performed in pathology); operating suite data, such as the time a patient is in the operating room; and data reflecting the type of goods and services consumed in the theatre or pharmacy such as the type, quantity and unit, drug or purchase price. Central to these feeders is the episode number and date of service the resource was utilised, which is instrumental in linking these resources back to the relevant activity.

A.3.3 Step 3: Allocating costs to patients

This process maps the relevant expenditure data to the activity and feeder data where costs are derived for each resource (such as a pathology full blood evaluation). This is undertaken for each department.

These costs incorporate both an overhead cost and a direct (or final care) cost. Overhead costs typically accumulate costs for services (e.g. payroll) that are provided to organisational units in the hospital rather than to producing end-products (e.g. patients)[24]. The costing process redistributes all overhead costs across the final cost centres according to the allocation

[24] AHPCS Version 3.1 SCP 3A.001

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methodology defined for each overhead such as floor space for cleaning or the number of medical records for Health Information Services[25].

The direct care costs relate to services that directly relate to patient care. These costs are allocated to patients using the most relevant cost driver such as the number of tests or patient ward time.[26]

These resources are then attached to each patient activity using defined linking criteria. A date and time algorithm is used to attach each relevant episode number in each of the feeders. For example, for admitted patients each feeder is examined to find if there is a matching episode number in the feeder, then the date of service of the resource. If there is an episode number match and the date of service of the resource is between the admission and discharge date of the patient, then this resource is attached to the episode number (or patient). This process also occurs for emergency presentations and non-admitted episodes, with the matching criteria defined for each. Finally, a sum of the resources at each episode number will deliver a total patient cost.

[25] AHPCS Version 3.1 Attachment D; AHPCS Version 3.1 COST 1.002

[26] AHPCS Version 3.1 COST 3.004; AHPCS Version 3.1 Attachment E

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Appendix B: AHPCS Version 3.1 in scope

Table 129 – Application of Costing Standards – Round 19

No.	Title	Standard
SCP 1.004	Hospital Products in Scope	Hospitals will allocate costs to all hospital products grouped into the categories: • Admitted patient products; • Non-Admitted patient products; • Emergency Department patient products; • Teaching, Training and Research products; and • Non-Patient products.
SCP 2.003	Product Costs in Scope	Include, in the product costing process, all costs incurred by, or on behalf of the hospital, that are necessarily incurred in the production of patient and non-patient products, subject to the specific exclusion that the costs of time provided by medical specialists to treat private patients that are not directly met by the hospital, are not to be imputed.
SCP 2B.002	Research Costs	All costs should be allocated to the 'research' sub-product where direct research is clearly the purpose of the cost centre. A portion of the costs of other cost centres should be allocated to the 'research' sub-product where there is a robust and justifiable method of identifying those costs attributable to direct research activities.
SCP 3.001	Matching Production and Cost	For the purposes of product costing, the costs taken from the general ledger and other sources will be manipulated so as to achieve the best match of production to cost measures at the levels of the whole hospital, each product category, each cost centre within a product category, and each end-class within a product category.
SCP 3A.001	Matching Production and Cost – Overhead Cost Allocation	All costs accumulated in overhead cost centres should be allocated to final cost centres before any partitioning of costs into product categories is undertaken.
SCP 3B.001	Matching Production and Cost – Costing all Products	All costs should be accounted for in the costing process and allocated, as appropriate, across all

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No.	Title	Standard
		patient and non-patient products generated by the hospital in the costing (fiscal) period.
SCP 3C.001	Matching Production and Cost – Commercial Business Entities	Commercial business entities should be treated as non-patient products for the purposes of product costing.
SCP 3E.001	Matching Production and Cost – Offsets and Recoveries	Hospitals will not offset revenue against costs but cost recoveries may be offset against cost where appropriate.
SCP 3G.001	Matching Production and Cost – Reconciliation to Source Data	Hospitals will produce a statement that reconciles the activity and cost data outputs of the product costing process to the activity and costs that were captured in the source data.
GL 2.004	Account Code Mapping to Line Items	Hospitals will map all in-scope costs to the standard list of line items.
GL 4A.002	Critical Care Definition	For product costing purposes the following units will be included in critical care: Intensive Care, Coronary Care, Cardiothoracic Intensive Care, Psychiatric Intensive Care, Paediatric Intensive and Neonatal Intensive Care. High dependency, special care nurseries and other close observation units either located within general wards or stand alone will be costed as general wards.
COST 3A.002	Allocation of Medical Costs for Private and Public Patients	All costs that relate to patients are allocated based on consumption regardless which cost centres contain the medical salaries expenses
COST 5.002	Treatment of Work-In-Progress Costs	Each patient is allocated their proportion of costs in the reporting period regardless of whether the service event is completed or commenced and that the cost and activity is reported in each period.

Source: Australian Hospital Patient Costing Standards Version 3.1

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Appendix C: Site visit attendees

Jurisdiction	IHPA Representative	Jurisdictional and hospital / LHN representatives	Peer representative	KPMG
Australian Capital Territory	Myles Cover	Prathima Karri (ACT Health Directorate) David Dowling (ACT Health Directorate)	-	John O'Connor Lisa Strickland Anna Scroope
New South Wales	Julia Hume (Central Coast LHD and Sydney LHD)	Julia Heberle (NSW Health) Alfa D'Amato (NSW Health) Neville Only (NSW Health) Suellen Fletcher (NSW Health) Kylie Hawkins (NSW Health) Jacquie Ferguson (Sydney LHD) Jimmy Chan (Sydney LHD) Elaine Pan (Sydney LHD) Brock Sanchez (Central Coast LHD) Chris Beverstock (Central Coast LHD) Emma Watson (Central Coast LHD) Lindy Harkness (Far West LHD) David Inglis (Far West LHD) Steven Gleeson (Far West LHD) Paul McDonald (Far West LHD) Noni Inglis (Far West LHD) Jian Wang (Far West LHD)	Colin McCrow (QLD)	David Debono Luigi Viscariello
Northern Territory	Cherry Olorenshaw	Christine Kute Garth Barnett (PowerHealth Solutions)	Phillip Battista (SA)	David Debono Anna Scroope

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Jurisdiction	IHPA Representative	Jurisdictional and hospital / LHN representatives	Peer representative	KPMG
Queensland	Iman Mehdi	Colin McCrow (Queensland Health) Leslie Edgerton (Queensland Health) Dominic Flynn (Queensland Health) Erica Cole (Gold Coast Health) Andreas Voogt (Gold Coast Health) Col Roberts (Darling Downs HHS) Bronwyn Bunnik (Darling Downs HHS) Jane Ranger (Darling Downs HHS) Harold Shelton (Darling Downs HHS) Madeleine Matthews (Metro South HHS) Heather Meacham (Metro South HHS) Vladimir Matus (Metro South HHS)	Julia Heberle (NSW) Alfa D'Amato (NSW)	John O'Connor Luigi Viscariello
South Australia	Cherry Olorenshaw	Phillip Battista (SA Health) Silvana Di Ciocco (SA Health) Chris Onderstal (SA Health) David Rawson (Central Adelaide LHN) Anne-Marie Young (Queen Elizabeth Hospital) Rebecca Bergamin (Royal Adelaide Hospital) Garth Barnett (PowerHealth Solutions)	Christine Kute (NT)	John O'Connor Luigi Viscariello
Tasmania	Julia Hume	Ian Jordan (TAS-DHHS) Matt Green (TAS-DHHS) Daniel Davies (TAS-DHHS) Barry Hagan (TAS-DHHS)	Alfa D'Amato (NSW)	David Debono Anna Scroope

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Jurisdiction	IHPA Representative	Jurisdictional and hospital / LHN representatives	Peer representative	KPMG
Victoria	Matt Robinson	Joanne Siviloglou (VIC-DHHS) Caleb Stewart (VIC-DHHS) Gigi Chan (Eastern Health) Paul Basso (Ballarat Health) Kim Lim (Ballarat Health - Visasys) Simon Rush (Latrobe Regional Hospital – Syris) Narelle Grieve (Latrobe Regional Hospital) Julie Fletcher (Latrobe Regional Hospital) Amanda Cameron (Latrobe Regional Hospital)	Prathima Karri (ACT)	David Debono Lisa Strickland
Western Australia	Iman Mehdi	Kevin Frost Rinaldo Lenco (SMAHS) Judy Choi (SMAHS) John Lockwood (NMHS) David Bratovich (WACHS)	Matt Green (TAS)	John O'Connor Lisa Strickland
IHPA Review	Stathi Tsangaris Sheldon Le Julia Hume	-	-	David Debono Anna Scroope

Source: KPMG

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