On completion of this module, the participant will have an understanding of:

- The basic building blocks of Activity Based Funding
- How classification is linked to clinical costing
- Why clinical costing is important in healthcare, including its aims and various uses
- The basics of the clinical costing process
Background
In 2011, the Council of Australian Governments (COAG) committed to a National Health Reform Agreement, for a national unified and locally controlled health system with the aim of delivering better health care for Australians, including securing a sustainable health system for the future.

The following agencies were established as part of this reform to aid in delivering its objectives:

- National Health Funding Body (NHFB)
- Independent Hospital Pricing Authority (IHPA)
- National Health Performance Authority (NHPA)
- Australian Commission on Safety and Quality in Health Care (ACSQHC)

(Council of Australian Governments, 2016)
“IHPA is an independent government agency established under Commonwealth legislation...as part of the national Health Reform Agreement (NHRA).

IHPA is charged with determining the National Efficient Price (NEP) for public hospital services, allowing for the national introduction of activity based funding (ABF).

Each year IHPA receives cost data from jurisdictions via the National Hospital Cost Data Collection (NHCDC). This data underpins the NEP Determination.”

(Independent Hospital Pricing Authority, 2014b)
The objective of IHPA is to promote improved efficiency in, and access to, public hospital services by:

• Providing independent advice to governments in relation to the efficient costs of public hospital services
• Developing and implementing robust systems to support activity based funding for public hospital services

Ultimately, IHPA’s key role is to manage the Activity Based Funding (ABF) model, which funds health units based on the number and (case-)mix of patients they treat.

(Independent Hospital Pricing Authority, 2016c)
IHPA maintain the Australian Hospital Patient Costing Standards to provide guidance to Health Units undertaking the costing process and to facilitate robust results. Health Units participate in an annual National Hospital Data Collection (NHCDC) to cost the classified Activity Based Funding (ABF) activity.

To read further about the 37 patient costing standards on costing patient products in the broad categories of admitted, non-admitted and Emergency Department patients, follow the link to the Australian Hospital Patient Costing Standards v3.1

Building Blocks of ABF

There are 4 main building blocks for ABF (and an overarching block being governance) – these are:

- **Classifications**
  - Provide the health care sector with a nationally consistent method of classifying all types of patients, their treatment and associated costs in order to provide better management, measurement and funding.

- **Data (counting)**
  - Each patient episode needs to be counted. This includes inpatient admissions, emergency department presentations and outpatient appointments as well as a range of mental health and rehabilitation.

- **Costing**
  - A representative number of patient episodes are costed. This information is used for developing the classification system and for the pricing model.

- **Pricing**
  - Pricing models determine how much is paid for an average patient while recognizing those factors which increase the cost of care which may not be picked up in the classification system.

- **Governance**
  - This includes the rules (i.e. admission policy), the standards (i.e. costing standards, coding etc.) and the accountability framework (i.e. the process for measuring activity against target and outcomes of over/under activity). ABF cannot work without this element that essentially brings all of the building blocks together.

(Independent Hospital Pricing Authority, 2016c)
How is classification linked to clinical costing?
“Classifications are comprised of codes that provide clinically meaningful ways of relating the types of patients treated by a hospital to the resources required. They enable hospital and health service provider performances to be measured by creating a link between the patients treated and the resources consumed for providing those treatments. This allows hospital and health service provider output to be measured, which forms the crucial data for policies on funding, budgeting and setting costs.”

(Independent Hospital Pricing Authority, 2016a)

- There are also classifications that are not related to resources. ICD-AM, for example is designed to be clinically meaningful, but not just for funding, budgeting and setting costs. Other classifications exists to describe clinical or psycho-social measure. This package will cover the classifications used in ABF and how they relate to costing.
IHPA Classification System

IHPA defines in-scope public health care services and classification systems with price weights National Weighted Activity Unit (NWAU) for the following encounter types:

• Admitted Acute (inpatient) care
• Emergency care
• Non-admitted (outpatient) care
• Sub-acute and non-acute care
• Mental health care (under development)
• Teaching, training and research (under development)

(Independent Hospital Pricing Authority, 2016a)
Admitted Acute (Inpatient) Care

All Australian public and private hospitals group admitted acute (inpatient) episodes of care to the Australian Refined Diagnosis Related Groups (AR-DRG) classification system, which is based on the International Classification of Diseases (ICD-10-AM) diagnosis codes and the Australian Classification of Health Interventions (ACHI) procedure codes.

(Independent Hospital Pricing Authority, 2016e)
Emergency Care

Australian hospitals group patient presentations to emergency care to the:
• Urgency Related Groups (URG) (with diagnosis, used in medium to large Emergency Departments)
• Urgency Disposition Groups (UDG) (without diagnosis, used in small health services)

The classification system is mainly determined by:
• Departure Status
  • Admitted / Non-admitted
  • Transferred
  • Did not wait to be seen
• Triage category
• Diagnosis

(Independent Hospital Pricing Authority, 2016b)
Non-Admitted (Outpatient) Care

Tier 2 non-admitted care services is the classification for non-admitted (outpatient) care. This classification is based on the specialty or clinical service performing the consultation or service.

- 10* - Procedures
- 20* - Medical consultation services (20.05 – General Medicine)
- 30* - Diagnostic services
- 40* Allied Health and/or clinical nurse specialist intervention services

(Independent Hospital Pricing Authority, 2016f)
Sub-Acute and Non-Acute Care

The Australian National Sub-Acute and Non-Acute Patient (AN-SNAP) classification system is used for sub-acute and non-acute care.

Care types for sub-acute care include rehabilitation, psychogeriatric, and geriatric evaluation and management (GEM), while care types for non-acute care includes maintenance.

(Independent Hospital Pricing Authority, 2016d)
This diagram is an example of IHPA’s 2015/16 pricing model for funding Health Units for different activities.

<table>
<thead>
<tr>
<th>Classification</th>
<th>Type</th>
<th>Description</th>
<th>NW AU</th>
<th>Funding</th>
</tr>
</thead>
<tbody>
<tr>
<td>A05Z</td>
<td>Admitted Acute</td>
<td>Heart Transplant</td>
<td>26.3576</td>
<td>$131,024</td>
</tr>
<tr>
<td>L29Z</td>
<td>Admitted Acute</td>
<td>Knee Reconstruction</td>
<td>1.6245</td>
<td>$ 8,075</td>
</tr>
<tr>
<td>L61Z</td>
<td>Admitted Acute</td>
<td>Haemodialysis</td>
<td>0.1086</td>
<td>$  540</td>
</tr>
<tr>
<td>3-237</td>
<td>Admitted Sub Acute</td>
<td>Rehabilitation Cardiac</td>
<td>3.2651</td>
<td>$16,231</td>
</tr>
<tr>
<td>20.19</td>
<td>Non-Admitted</td>
<td>Respiratory Medical</td>
<td>0.0668</td>
<td>$  332</td>
</tr>
<tr>
<td>40.40</td>
<td>Non-Admitted</td>
<td>Respiratory Nursing</td>
<td>0.0314</td>
<td>$  156</td>
</tr>
<tr>
<td>3</td>
<td>Emergency</td>
<td>Admitted Triage 1 Injury</td>
<td>0.4439</td>
<td>$ 2,207</td>
</tr>
<tr>
<td>70</td>
<td>Emergency</td>
<td>Non-Admitted Triage 5 Injury</td>
<td>0.0540</td>
<td>$   268</td>
</tr>
</tbody>
</table>
It is important to understand the relationship between classification (determined by medical documentation and coding) and price weights or NWAU’s (formulated using patient costing), which play a role in determining both current and future funding on an activity basis.
To read further about IHPA Classifications, follow the link:
Counting – what does it involve?
Patient Episodes

Clinical costing attempts to allocate costs to an individual patient episode. The type of patient episode being costed often differs between healthcare settings, and generally reflects the type of patient classification system that are being used. It is important if reviewing ‘the total costs for a patient episode’ to understand what the episode of care refers to.

- For admitted patients, the patient episode usually relates to the period of time the patient was formally admitted to hospital.
- An Emergency Department episode will refer to the time spent by the patient within the Emergency Department.
- For non-admitted patients, a patient episode may relate to an attendance on a single day at an outpatient clinic.
Episodes vs. Interventions

As outlined, a patient episode is usually a designated period of time during which a patient receives healthcare interventions (e.g. Nursing case, medications, imaging, medical consultations).

It is important to differentiate between the patient episode and the interventions received during the episode.

The overall patient episode will end up being ‘costed’ (having an overall cost attached to it), but it is the individual interventions that the costs are determined for during the clinical costing process.
Other Terminology

The patient episode may also be called an ‘encounter.’
The interventions received during an episode can also be referred to as:

- Services
- Inputs
- Resources
- Intermediate Products
- Patient Care Activities

The patient episode can be conceptualized as the overall container to which all the individual services / interventions belong.
Episodes Consist of Multiple Services

Emergency Department Episode
- Consumables & Dressings
- Pathology Tests
- Doctor consult
- Nurse time
- Hip X-Ray
- Lung function test

Inpatient Episode
- Surgeon time
- Medical ward rounds
- MRI
- Pathology tests
- Joint prostheses
- Medication
- Theatre consumables
- Theatre nurse time
- Ward nursing
- Anaesthetist time

Outpatient Episode
- Nursing consult
- X-ray
- Wound dressing
- Admin time
- Doctor consult

EPISODES
SERVICES
Why is clinical costing important in healthcare?
Activity Based Costing

When people talk about clinical costing, they usually mean Activity Based Costing. The current National Standards stipulate that full-absorption reciprocal activity based costing is the method that should be used.

(Independent Hospital Pricing Authority, 2014b)

- Reciprocal allocation refers to overheads being allocated to other overhead departments prior to product allocation
- Full-absorption means that all of the health services’ operating expenses are allocated to patient products.
Aims of Clinical Costing

The main aims of costing within the Health Sector include:

• Episode Cost Analysis – includes attribution of both patient specific costs (i.e. blood test, ward bed day, etc.) and overhead costs (i.e. administrative staff, human resources, financial services, etc.) to understand the cost of service provision across an episode of care.

• Reporting – meet both internal and external (often mandatory) requirements.

• Utilisation Review – understand the cost and components of service provision.

• Service Evaluation – evaluation of current service provision, often benchmarked against peers (either internally or externally).

• Service Planning – support informed decision making on future service provision.

• Revenue Modelling – identifying and understanding variances in costs to revenue (i.e. funding)
Influences on Detail of Clinical Costing

The methods and type of data used during the clinical costing process will influence the detail available when the costing process has been completed.
Outputs of Clinical Costing

Generally when the clinical costing process is complete, the following are available:

- The cost of the individual patient episodes
- The costs of the individual services/inputs that occurred during each patient episode
- The type of expenses involved during each episode
- The types and quantities of services the patient received during their episode
- The overall allocation of all expenses to patient episode types
- The type/amount of indirect costs associated with services and episodes
Costs for a given episode

- Direct: $16,756.62
- Indirect: $3,432.08
- Total Costs: $20,188.70

Average Cost per DRG

<p>| Table 19: Top 20 DRGs ranked by highest average cost per separation, Round 15 and Round 16 |</p>
<table>
<thead>
<tr>
<th>DRG</th>
<th>Description</th>
<th>Separations</th>
<th>ALOS</th>
<th>Total cost Round 16</th>
<th>Average cost per separation</th>
</tr>
</thead>
<tbody>
<tr>
<td>A102</td>
<td>Insertion Of VAD</td>
<td>41</td>
<td>47</td>
<td>$14,232.15</td>
<td>$325.749</td>
</tr>
<tr>
<td>A064</td>
<td>Tracheotomy W/Fracture 95+Occ</td>
<td>2,117</td>
<td>1,839</td>
<td>$703,824.17</td>
<td>$350.13</td>
</tr>
<tr>
<td>P012</td>
<td>Neonate Admission W/750 G</td>
<td>247.250</td>
<td>78.76.7</td>
<td>$58,810.594</td>
<td>$177,778</td>
</tr>
<tr>
<td>A052</td>
<td>Heart Transplant</td>
<td>56.58</td>
<td>26.40.2</td>
<td>$10,877.065</td>
<td>$206,840</td>
</tr>
<tr>
<td>Y017</td>
<td>Vent Rand/Sl/Half Thick Rum</td>
<td>114.142</td>
<td>30.33.7</td>
<td>$21,320.146</td>
<td>$13,033</td>
</tr>
<tr>
<td>P062</td>
<td>Neonate Admission W/750-899G</td>
<td>473.496</td>
<td>64.61.0</td>
<td>$71,985.362</td>
<td>$131,305</td>
</tr>
<tr>
<td>A047</td>
<td>Fomo</td>
<td>184.187</td>
<td>76.7</td>
<td>$15,813.23</td>
<td>$15,813.23</td>
</tr>
<tr>
<td>A032</td>
<td>Long Or Heart Lung Transplant</td>
<td>139.137</td>
<td>76.6</td>
<td>$7,448.354</td>
<td>$7,448.354</td>
</tr>
<tr>
<td>A012</td>
<td>Liver Transplant</td>
<td>169.180</td>
<td>31.25.5</td>
<td>$22,423.80</td>
<td>$22,423.80</td>
</tr>
<tr>
<td>P022</td>
<td>Neo, Cardiopulmonary Vascular Pr</td>
<td>157.158</td>
<td>29.3</td>
<td>$17,789.037</td>
<td>$20,764.7</td>
</tr>
<tr>
<td>P032</td>
<td>Neo,Admit 1000-1599G-Sig Or Pr</td>
<td>624.779</td>
<td>37.47.4</td>
<td>$23,848.299</td>
<td>$23,848.299</td>
</tr>
<tr>
<td>A068</td>
<td>Tracheotomy-Csc Or Trache/Csc</td>
<td>6,313.6,282</td>
<td>24.0.27</td>
<td>$26,893.068</td>
<td>$26,893.068</td>
</tr>
<tr>
<td>A077</td>
<td>Allog Bone Marrow Transplant</td>
<td>485.413</td>
<td>30.25.2</td>
<td>$1,090,054</td>
<td>$1,090,054</td>
</tr>
<tr>
<td>A116</td>
<td>Int. Impant Sp Intra Deca-Done</td>
<td>17.18</td>
<td>21.25</td>
<td>$1,340.465</td>
<td>$1,340.465</td>
</tr>
<tr>
<td>P064</td>
<td>Neo,Admit 2-999G-Sig Or Pr Mmp</td>
<td>441.530</td>
<td>25.26.2</td>
<td>$5,209.092</td>
<td>$5,209.092</td>
</tr>
<tr>
<td>P049</td>
<td>Caravan V/h Pm/Mmp +Pr Mmp</td>
<td>360.363</td>
<td>30.25.2</td>
<td>$2,425.765</td>
<td>$2,425.765</td>
</tr>
<tr>
<td>V002</td>
<td>Vent/Recta Mal Sig Trauma</td>
<td>18.18</td>
<td>35.3</td>
<td>$25,170.31</td>
<td>$25,170.31</td>
</tr>
<tr>
<td>P052</td>
<td>Neo,Admit 2000-2499G-Sig Or Pr</td>
<td>226.227</td>
<td>25.26.2</td>
<td>$14,480.13</td>
<td>$14,480.13</td>
</tr>
<tr>
<td>A048</td>
<td>Neo,Admit 2500-2999G-Sig Or Pr</td>
<td>318.319</td>
<td>32.47.4</td>
<td>$30,672.17</td>
<td>$30,672.17</td>
</tr>
<tr>
<td>A080</td>
<td>Ventilation=95+Occ</td>
<td>4,384.867</td>
<td>3.2</td>
<td>$1,394,654.345</td>
<td>$1,394,654.345</td>
</tr>
</tbody>
</table>

(Independent Hospital Pricing Authority, 2014c)
There are a number of users of clinical costing data, both internal and external to a health service, including the government, health service executive, finance staff, clinical managers and other hospital staff.

Currently the major use for clinical costing data is submission to government for use in funding models. Other uses can include:

- Performance reporting – brings finance and activity together
- Benchmarking - across peer hospitals to understand variations in work practices and savings opportunities
- Profitability – cost v revenue to understand good and poor performing activities
- Patient level review - patient pathway journey
- Identify, track and monitor service redesign, and productivity improvements
- Business case assessments
- Activity based budgeting
- Assist research studies
## Benchmarking Example

Benchmarking example of different Chest Pain practices

<table>
<thead>
<tr>
<th>Hospital</th>
<th>Division</th>
<th>Clinic</th>
<th>DRG</th>
<th>DRG Description</th>
<th>Hosp Cases</th>
<th>Metro Cases</th>
<th>Hosp ALOS</th>
<th>Metro AVE LOS</th>
<th>Var LOS</th>
<th>Hosp 75%</th>
<th>Var 75%</th>
<th>Hosp Avg Cost</th>
<th>Metro Avg Cost</th>
<th>Hosp Var Cost</th>
<th>Metro Var Cost</th>
<th>Hosp Tot Cost</th>
<th>Var Tot Cost</th>
<th>Var F/U</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hosp A</td>
<td>Medicine</td>
<td>Acute Assessment</td>
<td>F742</td>
<td>Chest Pain</td>
<td>20 6583 1.7 1.0 0.3 21 9 F</td>
<td>$ 856 2,072 1,174</td>
<td>$ 24,034 $ 34,060 F</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hosp A</td>
<td>Medicine</td>
<td>Cardiology</td>
<td>F742</td>
<td>Chest Pain</td>
<td>130 6583 1.0 1.0 0.6 211 78 U</td>
<td>$ 1,583 2,072 509</td>
<td>$ 201,184 $ 86,214 F</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hosp A</td>
<td>Critical Care</td>
<td>Emergency</td>
<td>F742</td>
<td>Chest Pain</td>
<td>408 6583 0.3 1.0 -0.7 113 -300 F</td>
<td>$ 1,226 2,072 847</td>
<td>$ 500,018 $ 345,474 F</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hosp A</td>
<td>Medicine</td>
<td>General Medicine</td>
<td>F742</td>
<td>Chest Pain</td>
<td>258 6583 1.7 1.0 0.6 427 165 U</td>
<td>$ 2,201 2,072 129</td>
<td>$ 587,892 $ 31,382 U</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hosp A</td>
<td>Surgery</td>
<td>General Surgery</td>
<td>F742</td>
<td>Chest Pain</td>
<td>2 6583 0.6 1.0 -0.2 2 0 F</td>
<td>$ 1,455 2,072 617</td>
<td>$ 2,911 1,234 F</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hosp A</td>
<td>Sub-Acute</td>
<td>Gastroenterology</td>
<td>F742</td>
<td>Chest Pain</td>
<td>2 6583 4.2 1.0 1.2 8 6 U</td>
<td>$ 5,285 2,072 3,213</td>
<td>$ 10,571 6,429 U</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hosp A</td>
<td>Medicine</td>
<td>Medical Assessment</td>
<td>F742</td>
<td>Chest Pain</td>
<td>88 6583 0.9 1.0 -0.1 85 -5 F</td>
<td>$ 1,286 2,072 836</td>
<td>$ 46,960 81,787 F</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hosp A</td>
<td>Womens</td>
<td>Paediatric</td>
<td>F742</td>
<td>Chest Pain</td>
<td>2 6583 0.6 1.0 -0.4 1 -1 F</td>
<td>$ 2,294 2,072 221</td>
<td>$ 4,587 443 U</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hosp B</td>
<td>Medicine</td>
<td>Acute Care Elderly</td>
<td>F742</td>
<td>Chest Pain</td>
<td>92 6583 1.8 1.0 0.8 4 2 U</td>
<td>$ 3,550 2,072 1,278</td>
<td>$ 6,700 2,555 U</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hosp B</td>
<td>Medicine</td>
<td>Acute Medical Unit</td>
<td>F742</td>
<td>Chest Pain</td>
<td>34 6583 2.6 1.0 1.6 141 68 U</td>
<td>$ 3,244 2,072 1,172</td>
<td>$ 175,198 63,292 U</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hosp B</td>
<td>Medicine</td>
<td>Cardiology</td>
<td>F742</td>
<td>Chest Pain</td>
<td>463 6583 3.2 1.0 1.2 1,013 543 F</td>
<td>$ 3,040 2,072 548</td>
<td>$ 1,413,811 452,197 U</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hosp B</td>
<td>Medicine</td>
<td>Diabetes</td>
<td>F742</td>
<td>Chest Pain</td>
<td>1 6583 1.8 1.0 0.8 2 1 U</td>
<td>$ 3,970 2,072 1,898</td>
<td>$ 3,970 1,898 U</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hosp B</td>
<td>Critical Care</td>
<td>Emergency</td>
<td>F742</td>
<td>Chest Pain</td>
<td>924 6583 0.5 1.0 -0.5 470 -405 F</td>
<td>$ 1,784 2,072 324</td>
<td>$ 1,615,148 299,548 F</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hosp B</td>
<td>Medicine</td>
<td>General Medicine A</td>
<td>F742</td>
<td>Chest Pain</td>
<td>4 6583 2.6 1.0 1.5 19 6 U</td>
<td>$ 3,546 2,072 1,474</td>
<td>$ 14,186 5,897 U</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hosp B</td>
<td>Medicine</td>
<td>General Medicine B</td>
<td>F742</td>
<td>Chest Pain</td>
<td>11 6583 3.2 1.0 1.2 30 24 U</td>
<td>$ 4,665 2,072 2,613</td>
<td>$ 51,530 26,740 U</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hosp B</td>
<td>Medicine</td>
<td>General Medicine C</td>
<td>F742</td>
<td>Chest Pain</td>
<td>4 6583 1.7 1.0 0.7 7 3 U</td>
<td>$ 2,505 2,072 433</td>
<td>$ 10,021 1,782 U</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hosp B</td>
<td>Medicine</td>
<td>General Medicine D</td>
<td>F742</td>
<td>Chest Pain</td>
<td>2 6583 4.1 1.0 3.1 8 6 U</td>
<td>$ 3,000 2,072 977</td>
<td>$ 6,098 1,950 U</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hosp B</td>
<td>Medicine</td>
<td>General Medicine E</td>
<td>F742</td>
<td>Chest Pain</td>
<td>9 6583 2.1 1.0 1.1 19 10 U</td>
<td>$ 2,786 2,072 714</td>
<td>$ 25,075 6,428 U</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hosp B</td>
<td>Medicine</td>
<td>General Medicine F</td>
<td>F742</td>
<td>Chest Pain</td>
<td>5 6583 2.1 1.0 1.1 12 7 U</td>
<td>$ 3,727 2,072 1,651</td>
<td>$ 18,618 6,254 U</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hosp B</td>
<td>Medicine</td>
<td>Gynaecology</td>
<td>F742</td>
<td>Chest Pain</td>
<td>1 6583 1.4 1.0 0.4 4 1 U</td>
<td>$ 1,428 2,072 645</td>
<td>$ 4,138 645 U</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hosp B</td>
<td>Medicine</td>
<td>Oncology</td>
<td>F742</td>
<td>Chest Pain</td>
<td>2 6583 1.9 1.0 0.9 4 2 U</td>
<td>$ 3,088 2,072 1,015</td>
<td>$ 6,175 2,080 U</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
What does the clinical costing process involve?
Overview of the Clinical Costing Process

FINANCE:
Identify the expenses for a specific area of patient care

ACTIVITY:
Identify the activity that occurred within that patient care area

MATHEMATICAL PROCESS:
Divide the total expenses by the volume of activity to obtain a cost per activity unit

ALLOCATION OF COST TO EPISODE:
Identify how many of these activity units the individual patient used
Finance
Sourcing and Organising Financial Data

• Clinical costing uses the General Ledger for financial information
• Journals and transaction level data are not used - expenses grouped at the cost centre and account level are used instead.
• All operating costs that have been incurred need to be included
Creating a Costing Ledger

• Creating a costing ledger involves reorganisation of the general ledger (GL).
• The way that costs in the GL are allocated during costing will depend on the activity that is available for the allocation of costs.
• The way that costs have been reported in the GL may reflect how budgets are managed within the organisation, but not necessarily closely relate to how expenses are aligned to particular activities.
• As a result, it is usually necessary to reorganise the GL data to improve its alignment with the clinical costing process.
Re-Organising the General Ledger

Re-organisation of the GL data usually includes:

- Applying ‘Reclassification Rules’
- Grouping individual accounts and cost centres to account/cost centre groups
- Excluding costs from being included in the costing process
  - Some expenses are out of scope for hospital costing and are removed from the GL data before costing is undertaken. For example, Capital, Special Purpose Funds, Trusts and other non-operating costs are excluded. In Victoria, depreciation is also excluded.
- Allocating overhead/indirect costs to patient care areas
Applying Reclassification Rules

Reclassification rules reclassify the cost centre or account code for an expense amount, and might either group together expenses, or split expenses apart.

Reclassification rules move either a certain percentage, or a set amount from one part of the general ledger to another.
3 Examples of Reclassification Rules

1. Medical doctors may be paid from the one cost centre (CC), but work in both the inpatient setting and in outpatient clinics. Reclass rules would split these medical expenses into an inpatient and outpatient component. (These IP/OP expenses would be allocated using different types of activity data)

2. A nurse who works on both the Endocrinology and General Medicine wards is paid only from the Endocrinology ward cost centre. Reclass rules will move a portion of her wages and on-costs from Endocrinology to the General Medicine Cost Centre.

3. Pathology costs may exist in all patient-care cost centres, but be allocated out in costing using a single source of activity data. Reclass rules would move the pathology costs from all the cost-centres onto one single cost centre.
Examples of Grouping Accounts to Line Items

This is an example of nursing salaries and wages (multiple accounts group to the line item ‘Salary&Wages Nursing’ (SWNurs))

<table>
<thead>
<tr>
<th>Account</th>
<th>Account Description</th>
<th>Account Type</th>
<th>Line Item</th>
</tr>
</thead>
<tbody>
<tr>
<td>10010</td>
<td>Basic Pay-Nursing</td>
<td>Expense</td>
<td>SWNurs</td>
</tr>
<tr>
<td>10110</td>
<td>Sick Leave-Nursing</td>
<td>Expense</td>
<td>SWNurs</td>
</tr>
<tr>
<td>10210</td>
<td>Overtime/Recall-Unrostered-Nursing</td>
<td>Expense</td>
<td>SWNurs</td>
</tr>
<tr>
<td>10310</td>
<td>Overtime-Rostered-Nursing</td>
<td>Expense</td>
<td>SWNurs</td>
</tr>
<tr>
<td>10410</td>
<td>Penalties-Nursing</td>
<td>Expense</td>
<td>SWNurs</td>
</tr>
<tr>
<td>10510</td>
<td>Pub Hol Penalties-Nursing</td>
<td>Expense</td>
<td>SWNurs</td>
</tr>
</tbody>
</table>
Grouping of Accounts and Cost Centers

• Accounts and Cost Centres can be classified and aggregated into groups.
• Accounts can be aggregated into Line Items. Line items are groups of GL expenditure account codes that describe the input type, which define the resources being used by a cost centre. Line items may also be known as Cost Outputs, Account Type or ER item depending upon the jurisdiction and/or Software.
• More than one cost centre may be grouped together for costing purposes, if the expenses within them relate to the same activity (and are to be allocated using the same activity data).
• As per account codes, Cost Centres can also be grouped into a standard set of Cost Centre names. The Australian Hospital Patient Costing Standards contain a list of standard cost centre names, whilst jurisdictions may also have standard ways of grouping cost centres.
• Ultimately, all cost centres must be classified as either Overhead or Final (Patient Care)

(Independent Hospital Pricing Authority, 2014a)
Overhead vs. Final Cost Centers

All Cost Centres must be defined as either Overhead or Final (Patient Care). Final or Patient Care cost centres accumulate costs that are directly related to the treatment of patients, or can be attributable to a patient episode as an input.

Eg. Pathology, Radiology, Ward cost centres

Overhead cost centres accumulate costs that have an incidental rather than a direct relationship to patient care. They typically provide services to organisational units within a hospital rather than directly to patient care.

Eg. Human Resources, Library, Finance cost centres

(Independent Hospital Pricing Authority, 2014b)
Allocation Statistics for Overhead Cost Centers

Overhead cost centres are first allocated to final cost centres (before the final cost centres are allocated using patient activity data). Overhead cost centres are allocated to final cost centres using an ‘Allocation Statistic’.

Allocation Statistics are measures that dictate
- Which final cost centres the overhead should be allocated to
- How the overhead should be apportioned when being allocated to its recipient final cost centres

In addition to the expenses within each final cost centre, these final cost centres also need a value for each type of allocation statistic to apportion allocation of overheads.
Examples of Allocation Statistics

Payroll or Human Resources might be allocated out using FTE as an allocation statistic. The FTE of staff working in the final cost centres would be listed; Payroll or Human resource expenses would then be passed on to the final cost centres proportionate to the amount of FTE within each final cost centre.

Other examples of allocation statistics include using *floorspace* for utilities, cleaning and security, or *Patient Episodes* to allocate health information expenses. *Total Expense* is often used as an allocation statistic when better information is unavailable as it can be a simple proxy for the level of activity generated by a cost centre.
Activity
In activity based costing, available patient activity data is used to determine how the costs from a cost centre (and/or line item) are allocated to each patient. The patient activity data contains the ‘cost driver’ – the factor that effects the costs associated with an activity.

The most common cost driver in clinical costing is service duration. Duration is used, as a high proportion of costs are labour-related, and because the intensity of a service is both difficult to measure and rarely recorded.

The other two most common cost drivers are quantity, and actual charge (where the cost of a service or product is known eg. Prostheses cost).
The patient activity data used for allocating expenses in clinical costing is diverse. Most of the patient care activities occurring within a health service are recorded electronically. Patient activity data is obtained from multiple sources and IT systems within a health service. As outlined earlier, patient care activities occurring during an episode of care are also referred to as intermediate products, services, inputs or resources.
Examples of Patient Services

Examples of services include:
• Operating theatre minutes representing staff time
• Operating theatre consumables and prostheses
• Nursing represented by ward time
• Radiology represented by the different types of x-rays or imaging performed
• Pathology represented by the different types of test performed (e.g. Full Blood Examination)

Costing is limited by the availability and detail of activity data.
Feeders

Patient activity data that is uploaded into a costing system are known as ‘feeders’. Given the diversity of patient activity data within a health service, feeder data can vary considerably. For example, feeders may be theatre schedules, outpatient appointments, or a list of patients that received a lung function test. For feeders that are providing service data, they must include:

• A patient identifier
• The date the service occurred
• The type of service that occurred

Ideally, service feeders also contain the detail of the episode to which the service belongs, as well as service volume data (eg. Quantity, duration or actual charges)
Feeders Example

Feeder data examples:
- Inpatient PMI,
- Outpatient,
- Emergency,
- Cath lab,
- ICD Diagnosis Codes,
- ICD Procedure Codes,
- Imaging,
- Nuclear Medicine,
- Orthotics & Prosthetics,
- Pathology,
- Pharmacy,
- Theatre,
- Anaesthetics,
- Prosthetics,
- Transfers,
- Allied Health,
- Ward Patient Classification,
- Interpreters
- Others ….

Data loaded into the costing system includes:
- Episode information
  - Eg. Admission & Separation date
- Service information
  - Eg. Date and time of service
- Patient information
  - Eg. Demographics such as age, sex, indigenous status
Linking Patient Services to Episodes

During the period of time that costing is being completed, a single patient may have multiple episodes, during which they receive multiple services. It is necessary to be able to link services to the correct episode (where the service information doesn’t specify the episode it relates to, only the patient it relates to). For example, if all of the services in the above diagram are Pathology tests, the date of service would need to be known, as well as the episode start and end dates, in order to link the correct pathology tests to the right episode.
Linking Feeder Data

The image below shows how service/intermediate product data is linked to episode data, as well as how services are linked to the episode based on the patient number, date/location of order or date of service.
Allocation of cost to episode
This is a basic example of allocating pathology cost to pathology services.

<table>
<thead>
<tr>
<th>Finance</th>
<th>+</th>
<th>Activity</th>
<th>=</th>
<th>Output</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pathology</td>
<td>$100</td>
<td>Pathology Tests</td>
<td>List Price</td>
<td>Qty</td>
</tr>
<tr>
<td></td>
<td></td>
<td>65070</td>
<td>$11.45</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td></td>
<td>65126</td>
<td>$18.80</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>66512</td>
<td>$11.95</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>69333</td>
<td>$13.90</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>66752</td>
<td>$16.65</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Total</td>
<td>$84.20</td>
<td></td>
</tr>
</tbody>
</table>

This will likely consist of expenditures other than just the pathology invoice (stationery, account management charges, etc), so these other costs must be shared amongst the activities.

In this case we have the actual charge from a third-party provider to use as a Cost Driver. For most other activities we use quantity or duration to distribute the costs.

The total expense ($100) is allocated to each activity based on the List Price as a proportion of the Total Invoiced Amount ($84.20). The costed price is therefore inflated proportionally for each item. In this case the List Price becomes a Relative Value Unit.
A Relative Value Unit (RVU) is a measure of the relative resource intensity that is used to weight intermediate products between themselves. RVUs are generally applied to distinguish between sub-classes of an intermediate product.

Some examples:
- MRI neck vs. Chest X-ray
- Different procedures in the Catheter Laboratory
- Services performed in-hours vs. out-of-hours services
- Different pathology tests

These RVUs might be applied during data ETL or in the costing system. The rationale behind any RVU should be documented and reviewed on a regular schedule.
Applying the Weights of RVUs

A good example of applying the weights of RVUs is related to nursing, where a weighting is applied to the cost centre depending on the intensity (time spent and services applied) of treatment for a patient. The following is a particular health service example of how the weights may be applied – this example may not be relevant to all health services.

Nursing: The intermediate product for nursing is usually minutes on a particular ward; aka bed-days

We can assign a weight to each patient bed-day based on a simple measure of nursing intensity

The Nursing Intensity classification is:

- Patient is independent = 1
- Patient needs assistance = 2
- Patient needs full assistance = 3
- Patient needs continuous care = 4
- Category not indicated = Z

Weighting used is:

1 1.5 2 3.5 1.75

Patient who is classified as 4 - needs continuous care is said to consume 3.5 times the resources as a patient classified as 1 - independent.
Types of RVUs

- Costing allocates the GL amounts to the services or intermediate products provided by the patient care area
- GL amounts are distributed to services using a relative value unit (RVU) or cost driver
- RVU used will depend on the nature of the patient care area and the hospital data load information available
- Typical RVU’s and examples are:
  - Duration – used to allocate allied health, theatre and ward areas
  - Actual Charge – used to allocate pharmacy, imaging, pathology and prosthetics areas
  - Internally Developed RVU’s – from a time and motion/costing study undertaken for services provided by an area such as Catheter laboratory
An example of allocating 3 line items to 3 types or radiology procedures.

### Activity

<table>
<thead>
<tr>
<th>Patient Care Area</th>
<th>Service Code</th>
<th>Qty</th>
<th>Actual Charge</th>
</tr>
</thead>
<tbody>
<tr>
<td>Radiology</td>
<td>RAD-123</td>
<td>1</td>
<td>$50</td>
</tr>
<tr>
<td></td>
<td>RAD-456</td>
<td>1</td>
<td>$25</td>
</tr>
<tr>
<td></td>
<td>RAD-789</td>
<td>2</td>
<td>$12.50</td>
</tr>
</tbody>
</table>

### GL side

<table>
<thead>
<tr>
<th>Patient Care Area</th>
<th>Cost Output</th>
<th>GL Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Radiology</td>
<td>S&amp;W</td>
<td>$100</td>
</tr>
<tr>
<td>Med Surg</td>
<td></td>
<td>$100</td>
</tr>
<tr>
<td>Gen Overhead</td>
<td></td>
<td>$50</td>
</tr>
</tbody>
</table>

### Allocation Setup

- Allocate by Detailed Definition
  - Radiology >> Med Surg
  - Qty * Constant 1

- Allocate by Patient Care Area
  - Radiology
  - Qty * Actual Charge

### S&W Allocation - Patient Care Area

<table>
<thead>
<tr>
<th>Patient Care Area</th>
<th>Service Code</th>
<th>Qty * Actual Charge</th>
<th>Amt</th>
</tr>
</thead>
<tbody>
<tr>
<td>Radiology</td>
<td>RAD-123</td>
<td>1 * $50</td>
<td>$50</td>
</tr>
<tr>
<td></td>
<td>RAD-456</td>
<td>1 * $25</td>
<td>$25</td>
</tr>
<tr>
<td></td>
<td>RAD-789</td>
<td>2 * $12.50</td>
<td>$25</td>
</tr>
</tbody>
</table>

### Med Surg Allocation - Detailed Definition

<table>
<thead>
<tr>
<th>Patient Care Area</th>
<th>Service Code</th>
<th>Qty * Constant 1</th>
<th>Amt</th>
</tr>
</thead>
<tbody>
<tr>
<td>Radiology</td>
<td>RAD-123</td>
<td>1 * 1</td>
<td>$25</td>
</tr>
<tr>
<td></td>
<td>RAD-456</td>
<td>1 * 1</td>
<td>$25</td>
</tr>
<tr>
<td></td>
<td>RAD-789</td>
<td>2 * 1</td>
<td>$50</td>
</tr>
</tbody>
</table>

### Gen Overhead Allocation - Patient Care Area

<table>
<thead>
<tr>
<th>Patient Care Area</th>
<th>Service Code</th>
<th>Qty * Actual Charge</th>
<th>Amt</th>
</tr>
</thead>
<tbody>
<tr>
<td>Radiology</td>
<td>RAD-123</td>
<td>1 * $50</td>
<td>$25</td>
</tr>
<tr>
<td></td>
<td>RAD-456</td>
<td>1 * $25</td>
<td>$12.50</td>
</tr>
<tr>
<td></td>
<td>RAD-789</td>
<td>2 * $12.50</td>
<td>$12.50</td>
</tr>
</tbody>
</table>
PDF Clinical Costing Process

Process for allocating ward costs for ‘ward 7’

1. Identify the expenses for Ward 7
All costs for Ward 7 are within a single cost centre ‘A0452’
Expenses within this cost centre include the nursing staff costs and consumables used on the ward.

<table>
<thead>
<tr>
<th>Cost Centre A0452</th>
<th>S&amp;W - Basic - Nursing</th>
<th>$1,780,455</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>S&amp;W - Basic - Admin</td>
<td>$80,000</td>
</tr>
<tr>
<td></td>
<td>S&amp;W - Penalties - Nursing</td>
<td>$211,348</td>
</tr>
<tr>
<td></td>
<td>Total CC A0452</td>
<td>$2,987,872</td>
</tr>
</tbody>
</table>

2. Identify the activity that occurred within this area
Detail such as ‘actual nurse time with patient’ or ‘actual consumables used per patient’ not available
Activity that can be sourced for this area includes the patients who were admitted to the ward, and the time each spent on the ward
An activity extract from the Patient Administration System lists the patients who spent time on Ward 7, and how long each patient spent on the ward

<table>
<thead>
<tr>
<th>Ward</th>
<th>Patient Episode</th>
<th>Hours on ward</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ward 7</td>
<td>M3456799</td>
<td>48</td>
</tr>
<tr>
<td>Ward 7</td>
<td>M3456809</td>
<td>72</td>
</tr>
<tr>
<td>Ward 7</td>
<td>M3456925</td>
<td>12</td>
</tr>
<tr>
<td></td>
<td>Total Ward 7 Hours (Annual Total)</td>
<td>22412</td>
</tr>
</tbody>
</table>

3. Activity costs determined
Total expenses for Ward 7 need to be allocated to all activity which occurred - the total number of hours patients were on ward 7
Total expenses within Cost Centre A0452 divided by total hours all patients spent on ward 7

<table>
<thead>
<tr>
<th>Ward</th>
<th>Patient Episode</th>
<th>Hours on ward</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ward 7</td>
<td>M3456799</td>
<td>48</td>
</tr>
<tr>
<td>Ward 7</td>
<td>M3456809</td>
<td>72</td>
</tr>
<tr>
<td>Ward 7</td>
<td>M3456925</td>
<td>12</td>
</tr>
<tr>
<td></td>
<td>Total Ward 7 Hours (Annual Total)</td>
<td>22412</td>
</tr>
</tbody>
</table>

Total ward 7 costs ($) 2987872
Total ward 7 activity (Hrs) 113680
Ward cost per patient hour: $26.28

4. Patient-specific costs for activity determined
Total cost per activity unit allocated to individual patients proportionally
eg. Patient M3456799 spent 48 hours on Ward 7
Their ward 7 costs will represent their proportionate share of the total ward costs

<table>
<thead>
<tr>
<th>Patient M3456799</th>
</tr>
</thead>
<tbody>
<tr>
<td>Time on ward - 48 hours</td>
</tr>
<tr>
<td>Ward 7 cost per patient hour - $26.28</td>
</tr>
<tr>
<td>Patient M3456799 Ward 7 costs = $26.28 x 48</td>
</tr>
<tr>
<td>= $1261.44</td>
</tr>
</tbody>
</table>
Costing Within a Period of Time

The proceeding examples highlight the maths for allocating the cost of each service.

The costing software does this for each service within each episode to create a cost for each patient episode, within a period of time.
Reporting of Costs

With this high level of data granularity, costs can be grouped together in many ways for reporting, with the most common way being to group by classification.

For ease of understanding, costs are also often reported by ‘bucket’. These are groupings of similar cost centres (eg Nursing wards) or definitive items (eg Pharmacy) that enable easier interpretation and analysis of the data.
This table shows an example of Acute Inpatient Cost Comparison by DRG for five health services.

<table>
<thead>
<tr>
<th>DRG</th>
<th>DRG Description</th>
<th>Health Service</th>
<th>Episodes</th>
<th>Total Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>H08A</td>
<td>Laparoscopic Cholecystectomy W Closed CDE or W Cat or Sev CC</td>
<td>A</td>
<td>155</td>
<td>$11,460.45</td>
</tr>
<tr>
<td>H08A</td>
<td>Laparoscopic Cholecystectomy W Closed CDE or W Cat or Sev CC</td>
<td>B</td>
<td>138</td>
<td>$10,058.84</td>
</tr>
<tr>
<td>H08A</td>
<td>Laparoscopic Cholecystectomy W Closed CDE or W Cat or Sev CC</td>
<td>C</td>
<td>480</td>
<td>$9,078.63</td>
</tr>
<tr>
<td>H08A</td>
<td>Laparoscopic Cholecystectomy W Closed CDE or W Cat or Sev CC</td>
<td>D</td>
<td>153</td>
<td>$8,084.11</td>
</tr>
<tr>
<td>H08A</td>
<td>Laparoscopic Cholecystectomy W Closed CDE or W Cat or Sev CC</td>
<td>E</td>
<td>337</td>
<td>$10,043.22</td>
</tr>
<tr>
<td>H08B</td>
<td>Laparoscopic Cholecystectomy W/O Closed CDE W/O Cat or Sev CC</td>
<td>A</td>
<td>378</td>
<td>$6,601.12</td>
</tr>
<tr>
<td>H08B</td>
<td>Laparoscopic Cholecystectomy W/O Closed CDE W/O Cat or Sev CC</td>
<td>B</td>
<td>522</td>
<td>$5,962.01</td>
</tr>
<tr>
<td>H08B</td>
<td>Laparoscopic Cholecystectomy W/O Closed CDE W/O Cat or Sev CC</td>
<td>C</td>
<td>560</td>
<td>$6,067.89</td>
</tr>
<tr>
<td>H08B</td>
<td>Laparoscopic Cholecystectomy W/O Closed CDE W/O Cat or Sev CC</td>
<td>D</td>
<td>418</td>
<td>$4,952.08</td>
</tr>
<tr>
<td>H08B</td>
<td>Laparoscopic Cholecystectomy W/O Closed CDE W/O Cat or Sev CC</td>
<td>E</td>
<td>338</td>
<td>$6,978.65</td>
</tr>
</tbody>
</table>
This table shows Acute Inpatient Cost Comparison by DRG for five health services using cost buckets for added detail.

<table>
<thead>
<tr>
<th>DRG</th>
<th>Health Service</th>
<th>Episodes</th>
<th>Total Cost</th>
<th>Allied Health</th>
<th>Coronary Care</th>
<th>Emergency</th>
<th>Intensive Care</th>
<th>Imaging</th>
<th>Medical - Non Surgical</th>
<th>Medical - Surgical</th>
<th>Nursing</th>
<th>Pathology</th>
<th>Pharmacy</th>
<th>Theatre - Operating Room</th>
<th>Theatre - Non Operating Room</th>
</tr>
</thead>
<tbody>
<tr>
<td>H08A A</td>
<td>155</td>
<td>$11,460</td>
<td>$125</td>
<td>$0</td>
<td>$513</td>
<td>$40</td>
<td>$460</td>
<td>$1,225</td>
<td>$118</td>
<td>$2,292</td>
<td>$390</td>
<td>$387</td>
<td>$5,185</td>
<td>$725</td>
<td></td>
</tr>
<tr>
<td>H08A B</td>
<td>138</td>
<td>$10,059</td>
<td>$105</td>
<td>$98</td>
<td>$306</td>
<td>$1,004</td>
<td>$313</td>
<td>$857</td>
<td>$1,514</td>
<td>$1,944</td>
<td>$318</td>
<td>$62</td>
<td>$3,538</td>
<td>$0</td>
<td></td>
</tr>
<tr>
<td>H08A C</td>
<td>480</td>
<td>$9,079</td>
<td>$58</td>
<td>$12</td>
<td>$433</td>
<td>$210</td>
<td>$328</td>
<td>$1,287</td>
<td>$862</td>
<td>$2,156</td>
<td>$380</td>
<td>$127</td>
<td>$3,151</td>
<td>$74</td>
<td></td>
</tr>
<tr>
<td>H08A D</td>
<td>153</td>
<td>$8,084</td>
<td>$71</td>
<td>$13</td>
<td>$652</td>
<td>$321</td>
<td>$368</td>
<td>$1,223</td>
<td>$0</td>
<td>$2,411</td>
<td>$140</td>
<td>$203</td>
<td>$2,682</td>
<td>$0</td>
<td></td>
</tr>
<tr>
<td>H08A E</td>
<td>337</td>
<td>$10,043</td>
<td>$30</td>
<td>$15</td>
<td>$456</td>
<td>$117</td>
<td>$397</td>
<td>$545</td>
<td>$1,377</td>
<td>$2,039</td>
<td>$169</td>
<td>$224</td>
<td>$4,648</td>
<td>$25</td>
<td></td>
</tr>
<tr>
<td>H08B A</td>
<td>378</td>
<td>$6,601</td>
<td>$11</td>
<td>$0</td>
<td>$249</td>
<td>$6</td>
<td>$193</td>
<td>$624</td>
<td>$43</td>
<td>$622</td>
<td>$254</td>
<td>$198</td>
<td>$3,944</td>
<td>$456</td>
<td></td>
</tr>
<tr>
<td>H08B B</td>
<td>522</td>
<td>$5,962</td>
<td>$15</td>
<td>$13</td>
<td>$102</td>
<td>$47</td>
<td>$118</td>
<td>$286</td>
<td>$1,475</td>
<td>$889</td>
<td>$124</td>
<td>$22</td>
<td>$2,871</td>
<td>$0</td>
<td></td>
</tr>
<tr>
<td>H08B C</td>
<td>560</td>
<td>$6,068</td>
<td>$6</td>
<td>$1</td>
<td>$349</td>
<td>$9</td>
<td>$178</td>
<td>$971</td>
<td>$596</td>
<td>$1,023</td>
<td>$212</td>
<td>$72</td>
<td>$2,649</td>
<td>$2</td>
<td></td>
</tr>
<tr>
<td>H08B D</td>
<td>418</td>
<td>$4,952</td>
<td>$19</td>
<td>$0</td>
<td>$360</td>
<td>$15</td>
<td>$177</td>
<td>$543</td>
<td>$0</td>
<td>$1,093</td>
<td>$67</td>
<td>$116</td>
<td>$2,562</td>
<td>$0</td>
<td></td>
</tr>
<tr>
<td>H08B E</td>
<td>338</td>
<td>$6,979</td>
<td>$8</td>
<td>$0</td>
<td>$359</td>
<td>$0</td>
<td>$184</td>
<td>$290</td>
<td>$1,050</td>
<td>$1,094</td>
<td>$93</td>
<td>$138</td>
<td>$3,763</td>
<td>$0</td>
<td></td>
</tr>
</tbody>
</table>
Assumptions

It is important to be aware of the assumptions made in producing clinical costing data.

There are both implicit and explicit assumptions taken at various stages during the process:

- By undertaking activity based costing you are assuming that the activity data you use is of sufficient quality and fit-for-purpose
- Your choice of cost driver for each activity is an assumption
- Reclass rules in the creation of a ‘costing ledger’ will involve assumptions about how much and where to move expenses

Plenty of other assumptions will be made regarding cost centre closures, splitting costs between admitted and non-admitted activities, incompatible data, and so on.