What is Clinical Costing?

- The process of determining the resource costs of hospital (intermediate) products consumed by patients on their clinical journey and linking those products back to patients to derive a total patient cost.

- Comprises direct (direct patient care) and indirect (health service overhead) costs.

Allocates a cost when a patient consumes a cost.
Clinical Costing provides a systemic means of collecting, identifying and applying all costs to all types of treated patients.

The capture of activity data across the health service and the linking of the activity each patient receives makes the clinical costing system the most comprehensive and only database that captures the activity (services) offered to patients during their stay.
How do we cost?

Costing uses existing datasets within the health service:

• General Ledger / VAED / VEMD / ESIS / VINAH
• Imaging, Pathology, Pharmacy, Theatre extracts

• The primary purpose of these datasets or feeders are not for costing purposes, but for Executive, Managers to support management of their respective Departments.

• It’s a model dependent upon the quality of ingredients. It’s not a science, it’s a model.

• Costing can only occur where activities are recorded (electronically) which costing staff can access.

• Standards sit behind the cost allocation process – Australian Hospital Costing Standards (AHPCS)
How do we know what it costs to treat a patient?

Patient enters as unplanned or planned - LOS

Leaves with a diagnosis and assigned a DRG

Resources, documentation, coding for DRG, WIES and finally funding

Source: Bill Kricker
How do we know what it costs to treat a patient?

The patient consumes a number of intermediate products over their LOS:

- Operating Theatre minutes – represents staff time
- Operating theatre goods and services
- Nursing represents ward time (weighted to adjust for acuity)
- Radiology represents the various x-ray types
- Pathology represents the various tests, such as histology, FBE

Source: Bill Kricker
Types of Costing

Cost modelling

Cost modelling with some patient level costing

As with cost modelling + some patient level consumption.  E.g. patient drug utilisation type aggregated to DRG

The production is summarised at DRG level.  E.g. No of Seps & days by DRG

Patient level costing with some cost modelling

Patient level activity modelling across most business units, but some modelling due to extract unavailability E.g. Medical costs modelled by day, or fractional bed day

Full patient level costing

All activity is captured at patient level E.g. Bar code click on, click off.
The Costing Recipe: Ingredients & Method

Step 1: General Ledger of the organisation
Step 2: Organising feeder data, loading those into the costing software and the linking of activity
Step 3: The build of the intermediate product
Step 4: Assign weights
Step 5: The unit cost calculation for each intermediate product
Step 6: The sum of the intermediate product to patient level
Step 7: Internal cost review, likely re-costing, then finalisation
Step 8: Internal reporting
Step 9: VCDC – Reporting Requirement DHHS / IHPA
What Information is used in costing?

**Allied Health**
- Audiology
- Dietetics
- Physiotherapy
- Social Work
- Optometry

**Clinical Services**
- General Medical, Surgical, Paediatric & Wards
- Cardiology, Renal, Transplant, Dental, Obstetrics & Gynaecology

**Critical Care**
- Adult Intensive Care Unit (ICU)
- Neonatal & Paediatric Intensive Care (NICU)
- Coronary Care Units

**Emergency Department**
- General emergency Services in Emergency Observation Beds

**Pathology**
- Specimen Collection Services
- Haematology
- Autopsy
- Microbiology
- Clinical Biochemistry

**Overheads**
- Cleaning, Linen & Laundry
- Food Services
- Patient Transport
- Medical Records
- CEO, Insurance, Legal, Finance
- Electricity, Fuel, Gas, Coal & Water, Capital Works

**Imaging**
- General Radiology (Xray)
- Magnetic Resonance Imaging (MRI)
- CT Scans
- Mammography
- Ultra Sounds

**OR & Special Procedure Suites**
- Anaesthesia
- Day Surgery
- General Surgery
- Recovery Room

**Pharmacy**
- General Pharmacy
- Dispense
- Manufacture
- High Cost Drugs (Section 100) Intake

**Other Services**
- Teaching & Research
- Rehabilitation
- Palliative Care
- Outpatient / Non Acute
- Outreach / Community
The Cost Allocation Process

Costing uses existing datasets within the health service. Primary purpose of these feeders is not for costing purposes.

General Ledger
Determine the Overhead or Patient Care (or Direct) cost centres

• **Overheads**: Do not provide services directly to patients
  • Finance, HR, Payroll, Environmental Services
  • *Allocated using statistics such as weighted floor space*

• **Patient Care**: Services provided directly related to patients
  • Medical, nursing, pathology, radiology, allied health
  • *Allocated using feeder data such as time*

• **Dead Ended**: Some services offered within the health service are not included in the costing process, such as Special Purpose Funds, residential care
Loading, Linking, IP Build with Links to the Patient

Feeder data:

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 ....
The sum of service codes give us the total patient cost.

<table>
<thead>
<tr>
<th>episode number</th>
<th>date of service</th>
<th>area mapping</th>
<th>service code</th>
<th>quantity</th>
<th>duration</th>
<th>indirect cost</th>
<th>direct cost</th>
<th>total cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>25-Aug-05</td>
<td>Endocrinology</td>
<td>ENDO CONS-CARD</td>
<td>1</td>
<td>0</td>
<td></td>
<td>$8</td>
<td>$30</td>
<td>$38</td>
</tr>
<tr>
<td>25-Aug-05</td>
<td>Infectious Diseases</td>
<td>INFECT DIS CONS-CARD</td>
<td>1</td>
<td>0</td>
<td></td>
<td>$12</td>
<td>$38</td>
<td>$50</td>
</tr>
<tr>
<td>25-Aug-05</td>
<td>Cardiac Cath Lab Stents</td>
<td>CATH LAB-ANG.35310.NH</td>
<td>1</td>
<td>15</td>
<td></td>
<td>$12</td>
<td>$543</td>
<td>$555</td>
</tr>
<tr>
<td>25-Aug-05</td>
<td>Cardiac Cath Lab Stents</td>
<td>CATH LAB-ANG.38218.NH</td>
<td>1</td>
<td>15</td>
<td></td>
<td>$10</td>
<td>$474</td>
<td>$484</td>
</tr>
<tr>
<td>25-Aug-05</td>
<td>Cardiac Cath Lab Stents</td>
<td>CATH LAB-ANG.59912.NH</td>
<td>1</td>
<td>15</td>
<td></td>
<td>$6</td>
<td>$282</td>
<td>$288</td>
</tr>
<tr>
<td>25-Aug-05</td>
<td>Cardiology</td>
<td>MED ADM-CARD0</td>
<td>1</td>
<td>0</td>
<td></td>
<td>$15</td>
<td>$87</td>
<td>$102</td>
</tr>
<tr>
<td>25-Aug-05</td>
<td>Coronary Care Unit Ward 5E</td>
<td>NRS WDS-A0160CCU.AM.Z</td>
<td>1</td>
<td>346</td>
<td></td>
<td>$52</td>
<td>$265</td>
<td>$317</td>
</tr>
<tr>
<td>25-Aug-05</td>
<td>Coronary Care Unit Ward 5E</td>
<td>NRS WDS-A0160CCU.EV.3</td>
<td>1</td>
<td>600</td>
<td></td>
<td>$90</td>
<td>$473</td>
<td>$563</td>
</tr>
<tr>
<td>25-Aug-05</td>
<td>Coronary Care Unit Ward 5E</td>
<td>NRS WDS-A0160CCU.PM.3</td>
<td>1</td>
<td>360</td>
<td></td>
<td>$54</td>
<td>$322</td>
<td>$378</td>
</tr>
<tr>
<td>25-Aug-05</td>
<td>Path - Core 1 and 2</td>
<td>PATH-E2600FBE</td>
<td>1</td>
<td>0</td>
<td></td>
<td>$1</td>
<td>$1</td>
<td>$2</td>
</tr>
<tr>
<td>25-Aug-05</td>
<td>Path - Core 1 and 2</td>
<td>PATH-E2600UE</td>
<td>1</td>
<td>0</td>
<td></td>
<td>$1</td>
<td>$0</td>
<td>$1</td>
</tr>
<tr>
<td>25-Aug-05</td>
<td>Catering</td>
<td>CATRG-CCU</td>
<td>1</td>
<td>0</td>
<td></td>
<td>$3</td>
<td>$21</td>
<td>$24</td>
</tr>
<tr>
<td>25-Aug-05</td>
<td>Neurology</td>
<td>NEURO IP CONS-CARD</td>
<td>1</td>
<td>0</td>
<td></td>
<td>$8</td>
<td>$30</td>
<td>$38</td>
</tr>
<tr>
<td>25-Aug-05</td>
<td>Respiratory Medicine</td>
<td>RESP CONS-CARD</td>
<td>1</td>
<td>0</td>
<td></td>
<td>$9</td>
<td>$27</td>
<td>$36</td>
</tr>
<tr>
<td>25-Aug-05</td>
<td>Appliances</td>
<td>STOMAL TH-CCU</td>
<td>1</td>
<td>0</td>
<td></td>
<td>$8</td>
<td>$27</td>
<td>$35</td>
</tr>
<tr>
<td>26-Aug-05</td>
<td>Coronary Care Unit Ward 5E</td>
<td>NRS WDS-A0160CCU.AM.3</td>
<td>1</td>
<td>137</td>
<td></td>
<td>$21</td>
<td>$122</td>
<td>$143</td>
</tr>
<tr>
<td>26-Aug-05</td>
<td>Catering</td>
<td>CATRG-CCU</td>
<td>1</td>
<td>0</td>
<td></td>
<td>$3</td>
<td>$21</td>
<td>$24</td>
</tr>
<tr>
<td>26-Aug-05</td>
<td>Pharmacy</td>
<td>PHARM-CLOP2</td>
<td>28</td>
<td>0</td>
<td></td>
<td>$3</td>
<td>$62</td>
<td>$65</td>
</tr>
<tr>
<td>26-Aug-05</td>
<td>Pharmacy</td>
<td>PHARM-SIMV/14</td>
<td>30</td>
<td>0</td>
<td></td>
<td>$3</td>
<td>$68</td>
<td>$71</td>
</tr>
<tr>
<td>26-Aug-05</td>
<td>Cardiology</td>
<td>MED DAYS-CARD0</td>
<td>1</td>
<td>0</td>
<td></td>
<td>$15</td>
<td>$87</td>
<td>$102</td>
</tr>
</tbody>
</table>

Total Cost: $334 $2,992 $3,326
How cost data is collected by DHHS

Victorian Cost Data Collection (VCDC)

• Clinical costing is a key building block of activity based funding – Commonwealth (IHPA)

• Victorian public hospitals are required to report costs for all operational funding activity, and are expected to maintain activity and costing systems as part of good hospital management practice (see Victorian P&F Guidelines)

• Reconciliation Template – confirms to DHHS the source data used to create the VCDC and reconciles back to GL

• DHHS conducts an annual collection of cost data from all hospital (no matter what size or location) via the Victorian Cost Data Collection (VCDC)
What funding models does the cost data support?

**Victorian Cost Weight Formulation**
- Acute Admitted (WIES)
- Subacute care (AN-SNAP)
- Non Admitted Specialist Consultations (SoC) – VINAH
- Mental Health – Weighted Occupancy Targets (WOTs)

**National Cost Weight Formulation**
- Acute Admitted (NWAU)
- Admitted Mental Health (modified DRGs)
- Admitted Subacute – (AN-SNAP)
- Non-Admitted – (Tier 2 Clinics)
- Emergency Departments (URGs)
How You Can Use It

• To assist with decision making within your health service setting
• Understanding your costing performance – cost benchmarking
• Understanding the cost of specific cohorts vs funding models
• Specified Grant Reviews
• New technology submissions
• Informing funding models
• Improving Clinical Practice
• The cost of new business
Questions?

- Thanks (previous presentations)
  - Richard Bolitho, Manager Funding Systems Development DHHS
  - David De Bono, Costing Consultant