

Intensive Care Unit and Activity Based Funding



Neville Onley, Director, ABF Taskforce

Susan Dunn, Manager, ABF Workstreams, ABF Taskforce

Activity Based Funding Models

- Implementation of a nationally consistent Activity based funding system for:
 - admitted acute services, emergency department services and non-admitted patient services from July 2012
 - mental health and sub and non-acute services from July 2013; and
- Teaching Training and Research no later than **30 June 2018**
- Commonwealth will fund **45%** of **efficient growth** from July 2014, increasing to **50%** from July 2017.
- Block Funded hospitals: Commonwealth will fund 45% of growth in **efficient cost** from July 2014, increasing to 50% from July 2017.

Acute Admitted Activity

Acute Service ABF Stream Includes

- Acute Admitted patients
- **Intensive Care Unit (ICU) and Paediatric Intensive Care Unit (PICU)**
- High Dependency Care
- Chemotherapy and Dialysis Patients (admitted)
- Mental Health Patients in general acute wards
- Hospital in the home patients(admitted)

ICU and ABF Scope

In Scope

- Payment **incorporated** into AR-DRG
 - 56 Specified DRGs where >50% of patients go to ICU/PICU
 - a linear regression to estimate an average cost per ICU hour
 - costs are included in the NWAU weights for those DRGs
- ICU adjustment for ICUs and PICUs with a role level 5 or 6
 - for any patient outside of the 56 AR-DRGs where ICU is not considered part of the normal care pattern
 - hourly payment based on submitted ICU Hours
 - NWAU adjustment * the number of hours spent in the ICU/PICU
 - NWAU adjustment is 0.0394

Incorporated within the acute admitted model

- High Dependency Units (HDUs) - funded same as general acute activity (ie costs incorporated into the NWAU for these AR-DRGs)
- Once the patient's dependency changes to high dependency as opposed to an intensive care then their Bed Type needs to change to High Dependency to accurately reflect the activity and cost.
- The costing standard required that Bed Types 15 ICU and 34 HDU be used to inform the allocation of costs out of the critical care costs centres to the patient in a combined ICU/HDU
- Auditing will occur

NWAU

National Weighted Activity Unit

- The NWAU is the ‘currency’ used to express the price weights for all services funded on an activity basis.
- Does not replace classifications that are used to describe activity (eg AR-DRGs, URGs, UDGs) and serves a different purpose to these classifications
 - an NWAU allows for direct comparison, transferability and net funding
- NWAU enables LHDs/SHNs to see the price received for providing similar services in different modes or settings
- Enables models of care to evolve and for services to shift from hospitals to community-based settings where clinically appropriate

Additional Adjustments

- Paediatric Specialist Hospitals
- Indigenous Patients
- Outer Regional and Remote Patients
- Private Patients
- ICU Adjustment (ICU Bundled DRGs are excluded)

Eligible Hospitals for ICU Adjustments

Children's Hospital Westmead	Gosford
Sydney Children's Hospital	Hornsby
Royal Prince Alfred	Manly
Concord	Sutherland
St Vincent's	Blacktown
St George	Campbelltown
Price of Wales	Bankstown
Royal North Shore	6Wollongong
Liverpool	Coffs Harbour
Nepean	Port Macquarie
Westmead	Lismore
John Hunter	Tweed Heads
Orange	Tamworth
Wagga Wagga	Calvary Mater

DRGs with ICU Costs Bundled in NWAU Weights, 2012/13 (Non Neonate DRGs)

DRG v6.x	Description	Inlier NWAU
A01Z	LIVER TRANSPLANT	31.8927
A03Z	LUNG OR HEART/LUNG TRANSPLANT	24.5406
A05Z	HEART TRANSPLANT	31.0846
A06A	TRACHEOSTOMY W VENT>95 +CCC	43.5174
A06B	TRCH&VNT-CCC OR TRCH/VNT+CCC	19.7016
A06C	VENTILATION>95 - CCC	11.6731
A10Z	INSERTION OF VAD	60.2985
A40Z	ECMO	46.5130
B42A	NERV SYS DX W VENT SUPPORT+CCC	7.5269
B42B	NERV SYS DX W VENT SUPPORT-CCC	4.4950
E40A	RESP DX W VENTILATOR SUPPT+CCC	7.1407
E40B	RESP DX W VENTILATOR SUPPT-CCC	5.2310
F03A	CRDC VALV PR+PMP+INV INVES+CCC	14.3461
F03B	CRDC VALV PR+PMP+INV INVES-CCC	8.9134
F04A	CRD VLV PR+PMP-INV INVES+CCC	10.5345
F04B	CRD VLV PR+PMP-INV INVES-CCC	7.4017

DRG v6.x	Description	Inlier NWAU
F05A	CRNRY BYPSS+INV INVES+REOP/CCC	10.8010
F05B	CRNRY BYPSS+INV INVES-REOP-CCC	8.0700
F06A	CRNRY BYPSS-INV INVS+REOP/CSCC	7.2805
F06B	CRNRY BYPSS-INV INVS-REOP-CSCC	5.7483
F07A	OTHER CARDTHOR/VASC PR+PMP+CCC	10.4102
F07B	OTH CARDTHOR/VASC PR+PMP+SMCC	7.1180
F07C	OTHER CARDTHOR/VASC PR+PMP-CC	5.9793
F09A	OTH CARDIOTHOR PR-PMP+CCC	6.2680
F40A	CIRC SYS DX+VENTILTR SUPPT+CCC	6.9963
F40B	CIRC SYS DX+VENTILTR SUPPT-CCC	4.6031
T40Z	INFECT&PARAS DIS+VENT SUPPORT	7.3078
W01Z	VENTILN/CRANIA MULT SIG TRAUMA	13.8963
X40Z	INJ,POIS,TOX EFF DRUG W VENT	4.3064
Y01Z	VENT BURN&SEV FULL THICK BURN	44.5872

DRGs with ICU Costs Bundled in NWAU Weights, 2012/13 – Neonate DRGs

DRG v6.x	Description	Inlier NWAU
P01Z	NEONATE,D/T<5DAY ADM+SIG OR PR	1.1243
P02Z	NEO,CARDIOTHORACIC/VASCULAR PR	22.3084
P03Z	NEO,ADMWT 1000-1499G+SIG OR PR	19.9776
P04Z	NEO,ADMWT 1500-1999G+SIG OR PR	11.1824
P05Z	NEO,ADMWT 2000-2499G+SIG OR PR	10.5999
P06A	NEO,ADMWT >2499G+SIG OR PR+MMP	12.5866
P06B	NEO,ADMWT >2499G+SIG OR PR-MMP	6.4378
P60A	NEO,D/TR<5D ADM-SIG PR+NEWBORN	0.5735
P60B	NEO,D/TR<5D ADM-SIG PR-NEWBORN	0.5735
P61Z	NEONATE, ADMISSION WT <750 G	48.7502
P62Z	NEONATE, ADMISSION WT 750-999G	32.3839
P63Z	NEO,ADMWT 1000-1249G-SIG OR PR	10.3647
P64Z	NEO,ADMWT 1250-1499G-SIG OR PR	7.6146
P65A	NEO,ADMWT 1500-1999G-SG OR+MMP	7.6554
P65B	NEO,ADMWT 1500-1999G-SG OR+MJP	5.9776
P65C	NEO,ADMWT 1500-1999G-SG OR+OTP	4.5694
P65D	NEO,ADMWT 1500-1999G-SG OR-PRB	3.9759
P66A	NEO,ADMWT 2000-2499G-SG OR+MMP	5.0816
P66B	NEO,ADMWT 2000-2499G-SG OR+MJP	3.7932
P66C	NEO,ADMWT 2000-2499G-SG OR+OTP	2.7282
P66D	NEO,ADMWT 2000-2499G-SG OR-PRB	1.0374
P67A	NEO,ADMWT >2499G-SIG OR PR+MMP	3.2403
P67B	NEO,ADMWT >2499G-SIG OR PR+MJP	2.1091
P67C	NEO,ADMWT >2499G-SIG OR PR+OTP	1.1333
P67D	NEO,ADMWT >2499G-SIG OR PR-PRB	0.5973

ICU Costs are INCLUDED in AR-DRG

ADRG F07 Other Cardiothoracic/Vascular Procedures with CPB Pump

Principle Diagnosis: I30.9 Acute pericarditis, unspecified

Principle Procedure: 38450-00 [643] Transthoracic drainage of pericardium
Additional procedures: 38600-00 [642] Cardiopulmonary bypass, central cannulation
92514-49 [1910] General Anaesthesia, ASA 4, non-emergency

Additional Diagnosis

Scenario 1:

E11.72 NIDDM with features of insulin resistance
I48 Atrial Fibrillation
E87.6 Hypokalaemia

DRG F07A

With Catastrophic CC

Scenario 2

E11.72 NIDDM with features of insulin resistance
I48 Atrial Fibrillation

DRG F07B

With Severe or Moderate CC

Scenario 3

K59.0 Constipation
E83.4 Disorders of magnesium metabolism

DRG F07C

Without CC

ICU Bundled DRG

Patient Journey

ARDRG F07A Other Cardiothoracic/Vascular
Procedures with CPB Pump w CC

Aboriginal,

Very Remote Patient

LOS 15 days,

49 Hours in ICU

NWAU Example of ICU patient – Bundled DRG

- Hospital type = Not specialist paediatric
- **DRG F07A Other Cardiothoracic/Vascular Procedures with CPB Pump w CC = 10.41**
- Episode length of stay = 15 days; inlier
- Indigenous status = **aboriginal**
- Patient postcode = 2836 Wilcannia (very remote)
- Patient type = Public

$$\text{NWAU} = 10.41 * (1 + 0.05 + 0.194) = 12.95$$

$$\text{LHD Funding} = \$4,471 * 12.95 = \$57,899$$

NWAU Example of ICU patient – Bundled \drg

- Hospital type = Not specialist paediatric
- DRG F07A Other Cardiothoracic/Vascular Procedures with CPB Pump w CC = **10.41**
- Episode length of stay = 15 days; inlier
- Indigenous status = **aboriginal**
- Patient postcode = 2836 Wilcannia (very remote)
- Patient type = Private

$$\text{NWAU} = 0.71 * (\mathbf{10.41} * (1 + 0.194 + \mathbf{0.05}) - (15 * 0.069)) = 8.459$$

$$\text{Funding} = \$4,471 * 8.459 = \$37,823$$

ICU Costs are NOT Included In Specified DRG

Example: ADRG E62 Respiratory Infections/Inflammations

Principle Diagnosis: J18.9 Pneumonia, unspecified

Principle Procedure 92209-00 [570] Management of noninvasive ventilatory support, <=24 hours
Additional procedure: 95550-03 [1916] Allied health intervention, physiotherapy

Additional Diagnosis

Scenario 1

J96.0 Acute respiratory failure
I50.1 Left ventricular failure

DRG E62A

With Catastrophic CC

Scenario 2

J96.0 Acute respiratory failure

DRG E62B

With Severe or Moderate CC

Scenario 3

I44.0 Atrioventricular block, first degree

DRG E62C

Without CC

ICU Adjustment

Patient Journey

ADRG E62A Respiratory Infections/Inflammations

Aboriginal,

Very Remote Patient

LOS 11 days,

4 Hours in Level 6 ICU

NWAU Example of ICU patient – ICU adjustment

- Hospital type = Not specialist paediatric
- **ADRG E62A Respiratory Infections/Inflammations =2.41**
- Episode length of stay = 11 days; inlier
- ICU length of stay = 4 hours
- Indigenous status = aboriginal
- Patient postcode = 2836 Wilcannia (very remote)
- Patient type = Public
- **NWAU = 2.41 * ((1 + 0.05 + 0.194) + (4*0.0394)) = 3.15**

LHD Funding = \$4,471 * 3.15 = \$14,102

NWAU Example of ICU patient – ICU adjustment

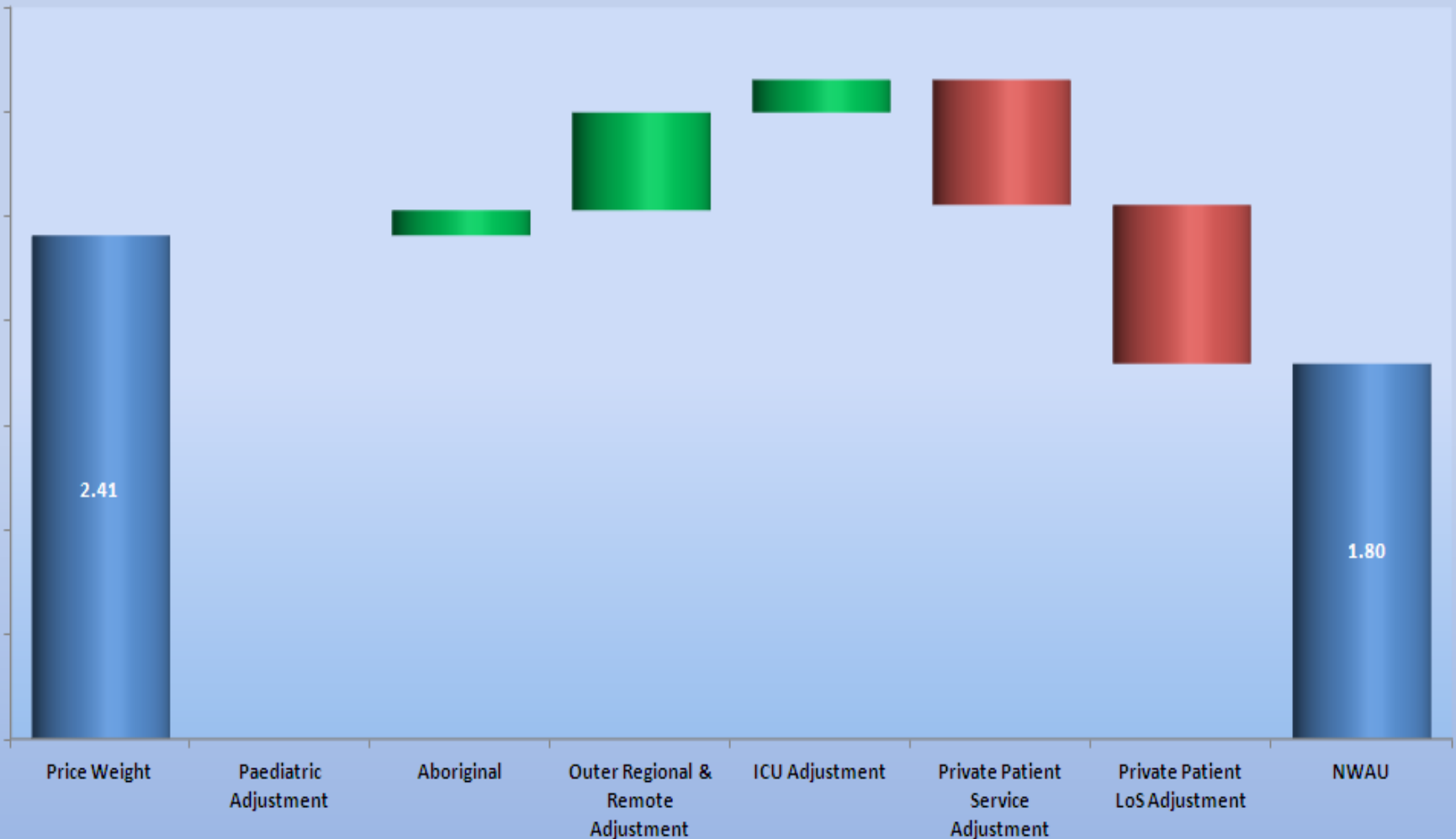
- Hospital type = Not specialist paediatric
- **ADRG E62A Respiratory Infections/Inflammations =2.41**
- Episode length of stay = 11 days; inlier
- ICU length of stay = 4 hours
- Indigenous status = aboriginal
- Patient postcode = 2836 Wilcannia (very remote)
- Patient type = Private

$$\text{NWAU} = 0.81 * (2.41 * (1 + 0.05 + 0.0194) + (4 * 0.0394)) - (11 * 0.069) = 1.80$$

$$\text{LHD Funding} = \$4,471 * 1.80 = \$8,027$$

NWAU Calculator

How is my final NWAU calculated from the base price weight?



Issues to consider

- Other ICU work – eg procedures for non ICU patients
 - Need to ensure patient is transferred into the ICU ward on PAS and into an ICU bed type
- Work external to ICU done by Intensivists
 - Costs incorporated but absorbed by ICU patients
 - Unless a consultation database is kept, then absorbed by actual patients
 - Not in scope for either ICU payment
- Future direction: Payment based on Mechanical ventilation

Further ABF Information

Email: abf@doh.health.nsw.gov.au