Activity Based Funding

&

Clinical Costing

with some

Benchmarking

thrown in

October 2017

Activity Based Funding & Clinical Costing

March 2014

Grattan Institute releases: "**Controlling costly care"**

Authors: Stephen Duckett and Peter Breadon

". . . hospital funding is improving. Soon all states will use **activity-based funding**, which pays hospitals based on an established price for each treatment. It replaces other forms of funding that **rewarded inefficiency**.

"…….. data about costs has improved a lot. The data can now reveal how much cost is legitimate and how much is **avoidable"**.

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History – ABF & Clinical Costing at Western Health

Prior to 2012 Clinical costing was outsourced and only done to satisfy Dept. of Health requirements – it was not used internally

- In 2012 WH appointed its first dedicated resource to clinical costing – 1 FTE
- In 2013 upgraded, purchased, new costing software
- In 2015 added a second resource – now 2 FTE

This is all relatively recent.

There is no funding to pay for this.

The FTE have to be squeezed out of the operating budget.

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The Indexation Squeeze

Wage increases (75% of cost base)	3.5%
Revenue increase (indexation)	1.5%
Net funding reduction	(2.0%)

On **$730M** x 2.0% = **($14.6M)**

Been going on for many years

Little more to find in terms of cost savings

Remember 75% of cost is in labour

Huge operating result pressure

Many Victorian health services looking at deficit budgets

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Closing the Indexation Gap

For Western clinical costing includes revenue allocation

The revenue allocation model is what tipped clinical costing from being data for the Dept. Health into data for internal consumption.

Because – it focussed attention on **profitability** by DRG

Profitability by DRG looked hopeful as a way to improve the operating result.

A lot of work was done on improving our model to get a better handle on profitability and then . . . .

DRG version 7 to DRG version 8 - applied for the 16/17 year

This was a major change and required us to go back and check if the relationships still held.

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DRG version 7 to version 8

		FY1516		FY1617 Q1		Variation	
DRG	Description	Eps	Profit/Loss per Episode ($)	Eps	Profit/Loss per Episode ($)	Profit/Loss per Episode ($)	%
E41B	Respiratory W Non-Invasive Ventilation, Minor Comp.	90	6,443	87	3,525	(2,918)	**(45%)**
A06C	Tracheostomy and/or Ventilation >=96hours, Minor Complexity	89	(10,892)	29	3,264	14,156	**130%**
G01A	Rectal Resection, Major Complexity	77	(7,329)	4	(10,109)	(2,781)	**(38%)**
T01A	Infectious and Parasitic Diseases W OR Procedures, Major Complexity	142	(3,516)	20	1,701	5,217	**148%**
I13A	Humerus, Tibia, Fibula and Ankle Procedures, Major Complexity	104	(4,607)	23	(932)	3,675	**80%**

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DRG version 7 to version 8

A06C Tracheostomy and/or Ventilation >=96hours, Minor Complexity

A06C's profit per episode improved by $14,156 – **130%**

Its rise to profit was largely driven by a drop in ALOS from **16 to 13** days.

This was a clinical change – not grouping from version change.

T01A Infectious and Parasitic Diseases W OR Procedures, Major Complexity

T01A's profit per episode improved by $5,217 – 148%

Average cost and average revenue for T01A increased.

The cost rise was driven by the version change but was minor.

The revenue rise was driven by an increase in WIES weight and was major.

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DRG version 7 to version 8

Shifts in DRG profitability can be driven by:

- Changes in the model
- Changes in allocations driven by changes in volume
- Changes in the grouping by DRG
- Changes in WEIS weights that may or may not reflect changes in the DRG groupings
- Changes in prices including labour

Revisited our profitability by DRG results and refocusing the DRGs we are targeting – but that needs to be an annual event anyway

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Net Loss - by DRG (DRG 7)

Net operating losses for 2014/15 by DRG 331 / 696 48%

Eliminate those with less than 10 separations – 58 DRGs

Of the 273 DRGs remaining

115 (42%)	loss of	< 10%
76 (28%)	loss of	10% - 20%
41 (15%)	loss of	20% - 30%
41 (15%)	loss of	> 30%

30% of loss making DRGs have a loss margin > 20%

Cumulative losses from all loss making DRGs = **$32.9M**

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Net Loss - by DRG (DRG 8)

Net operating losses for 2016/17 by DRG 376 / 723 52%

Eliminate those with less than 10 separations - 77 DRGs

Of the 299 remaining

105 (35%)	loss of	< 10%
96 (32%)	loss of	10% - 20%
52 (17%)	loss of	20% - 30%
46 (16%)	loss of	> 30%

33% of loss making DRGs have a loss margin > 20%

Cumulative losses from all loss making DRGs = **$32.2M**

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Net Profit - by DRG (DRG 8)

Net operating profit for 2016/17 by DRG 347 / 723 48%

Eliminate those with less than 10 separations - 78 DRGs

Of the 269 remaining

148 (55%)	profit of	< 10%
69 (26%)	profit of	10% - 20%
30 (11%)	profit of	20% - 30%
22 (8%)	profit of	> 30%

19% of profit making DRGs have a profit margin > 20%

Cumulative profit from all profit making DRGs = **$31.7M**

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Net Profit - by DRG (DRG 8)

DRG	Description (version 8 FY16/17)	No.	Revenue per sep.	Cost per sep	Profit per sep	Margin	Total Profit
R04B	Other Neoplastic Disorders W Other OR Procedures, Minor Complexity	21	$4,976	($2,527)	$2,449	**49%**	$51,423
M06A	Other Male Reproductive System OR Procedures, Major Complexity	11	$21,049	($10,840)	$10,209	**49%**	$112,302
F14C	Vascular Procedures, W/O CPB Pump, Minor Complexity	98	$5,768	($3,231)	$2,538	**44%**	$248,687
F01A	Implantation and Replacement of AICD, Total System, Major Complexity	12	$58,190	($32,645)	$25,545	**44%**	$306,536
R60B	Acute Leukaemia, Minor Complexity	39	$1,957	($1,120)	$837	**43%**	$32,645

DRG	Description (version 8 FY16/17)	No.	Total Revenue	Total Cost	Total Profit
F42B	Circulatory Dsrds, Not Adm for AMI W Invasive Cardiac Inves Proc, Minor Comp	860	$3,571,986	($2,700,211)	**$871,775**
F10B	Interventional Coronary Procedures, Admitted for AMI, Minor Complexity	405	$4,734,880	($3,890,218)	**$844,662**
Q61B	Red Blood Cell Disorders, Intermediate Complexity	1,302	$2,093,769	($1,309,410)	**$784,360**
F15B	Interventional Coronary Procs, Not Adm for AMI, W Stent Implant, Minor Comp	347	$2,944,645	($2,176,565)	**$768,079**

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Net Profit - by DRG (DRG 8)

Our modelling shows a profitability advantage for day cases
Items such as chemotherapy, endoscopy, dialysis, drug infusions,

This makes sense when you consider it is in-hours, no meals, the work is predictable, routine but . . . .

You cannot take that on trust. You need to look at the revenue and prove that it is profitable.

(We know, anecdotally that one of the other metros believe they do better out of multi-day stays and prefer to do that)

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Length of Stay < 1 day

Net operating result for 2016/17 by DRG 156 / 723 22%

Eliminate those with less than 10 separations - 20 DRGs

Of the remaining 136 DRGs with a LOS < 1

95 made a profit and 41 made a loss

In total the profit makers made $**15.3M**

In total the loss makers lost **$1.5M**

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Length of Stay < 1 day

Top five profitable by average profit

DRG	Description	Episodes	LOS	Av. Profit
F17B	Insertion and Replacement of Pacemaker Generator Minor Complexity	23	0.9	$6,743
R04B	Other Neoplastic Disorders W Other OR Procedures Minor Complexity	21	0.5	$2,449
M03B	Penis Procedures, Minor Complexity	18	0.3	$1,666
C60B	Acute and Major Eye Infections, Minor Complexity	11	0.9	$1,208
D40Z	Dental Extractions and Restorations	375	0.3	$958

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Length of Stay < 1 day

Top five loss makers by average loss

DRG	Description	Episodes	LOS	Av. Loss
M04Z	Testes Procedures	116	0.7	($930)
F20Z	Vein Ligation and Stripping	41	0.9	($1,101)
E74B	Interstitial Lung Disease, Minor Complexity	28	0.6	($1,359)
D06Z	Sinus and Complex Middle Ear Procedures	108	0.9	($1,461)
L42Z	ESW Lithotripsy	88	0.3	($1,552)

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Length of Stay - long

Heavily populated with low episode numbers

Defined “Long stay” as > 10 days 51 / 723 7%

The number that were profitable – 20 39%

Top five profitable by average profit

DRG	Description	Episodes	LOS	Av. Profit
F01A	Implantation and Replacement of AICD, Total System, Major Complexity	12	11.5	$25,545
P64A	Neonate, AdmWt 1250-1499g W/O Significant OR Proc/Vent>=96hrs, Major Complexity	12	34.5	$11,728
I02B	Microvascular Tissue Transfers or Skin Grafts, Excluding Hand, Intermediate Comp	15	11.1	$8,058
F43A	Circulatory Disorders W Non-Invasive Ventilation, Major Complexity	28	10.6	$6,840
H06A	Other Hepatobiliary and Pancreas OR Procedures, Major Complexity	19	12.7	$6,238

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Length of Stay - long

Defined “Long stay” as > 10 days 51 / 723 7%

The number that made losses – 31 61%

Top five loss makers by average loss

DRG	Description	Episodes	LOS	Av. Loss
I12A	Misc Musculoskeletal Procs for Infect/Inflam of Bone/Joint, Major Complexity	31	21.0	($6,114)
A06A	Tracheostomy and/or Ventilation >=96hours, Major Complexity	16	36.6	($8,096)
G03A	Stomach, Oesophageal and Duodenal Procedures, Major Complexity	21	19.8	($8,665)
F08A	Major Reconstructive Vascular Procedures W/O CPB Pump, Major Complexity	22	21.4	($9,509)
G04A	Peritoneal Adhesiolysis, Major Complexity	33	18.0	($10,977)

Average length of stay - not individual

E76A	Respiratory Tuberculosis, Major Complexity	16	43.9	**$755**

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Length of Stay

If **LOS** is seen as the main cost driver reducing LOS can be seen as the main cost saving - **It isn't.**

It will reduce the cost for a specific DRG but overall costs remain much the same – most labour is short term fixed

Reducing LOS increases churn, (patients through beds)
Theoretically this increases funding – it is activity based
But ABF is capped – the funding is not unlimited and you can run into outlier issues

Ultimately if your focus on is cost cutting then take a reduced LOS and convert it into **closing beds**

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The Difference to Cost Benchmarking

Comparative data for Lap Cholie(2013/14 data)

H08A	LOS	Seps	Revenue	Cost	Net	
A	2.9	46	8,478	($7,636)	$842	
B	4.7	161	8,709	($9,368)	($659)	
E	4.2	498	8,477	($9,725)	($1,248)	
D	5.0	111	8,478	($10,270)	($1,792)	
Western	3.7	347	8,710	($10,625)	($1,915)	
C	4.0	141	8,709	($10,653)	($1,944)	
F	5.1	168	8,478	($13,025)	($4,547)	($764K)
G	4.9	127	8,478	($14,362)	($5,884)	($747K)

H08 A+B	Ave. LOS	Seps	Ave Revenue	Ave. Cost	Net per Sep	Total Result
Total	3.50	713	$7,692	($9,542)	($1,850)	**($1,319,116)**

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An example of action taken

DRG: H08 Laparoscopic Cholecystectomy (gall bladder)

Investigated:	Were patients admitted through the ED already on the elective list?
Answer:	None were.
Investigated:	Were they on the Outpatient wait list?
Answer:	Many were, and, many had had multiple ED presentations
Solution:	A “Fast Track” gall bladder clinic was created. Automatic appointment within 2 weeks if they presented to the ED
Outcome:	Reduced length of stay = reduced cost

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Activity Based Funding

In theory it shouldn't matter what work you do because the funding model should pay you according to what it is worth.

The model talks of the "efficient price" not the average price.

The efficient price should always be lower than average price.

Beyond that - ABF is a method for allocating the available funding.

It is not a promise to pay the true cost of the work done.

It may not pay the full cost but . . shouldn't relativities between DRGs be consistent?

All models are broken - or at least all models are flawed

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All models are broken – this includes your costing model

Of course:

The clinicians will immediately challenge the costing model

“the data must be wrong”

There will be resistance to change

It will be very very hard to translate this work into action

Do not defend the costing model !!!

Gratefully accept their input into how to make it better

Change the costing model and keep changing until they run out of objections

Make sure they understand that shifting the costs doesn’t reduce the costs

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Duckett/Breadon

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Profitability by DRG

Problems with the model

DRG P68D: Neonates – the biggest loss making DRG

Un-qualified babies - those not admitted to special care nursery or NICU.
They are not an admitted patient
Yet many of them receive considerable extra care

The model says the revenue is attached to the mother
(collectively all maternity DRGs at Western operate at a loss)

Year	P68D	No.	Revenue	Cost	Net
14/15	Simple Neonates	4,005	$608,149	($3,850,733)	**($3,242,584)**
15/16	Simple Neonates	4,069	$212,658	($3,951,717)	**($3,739,059)**
16/17	Simple Neonates	4,028	$88,729	($4,040,566)	**($3,951,837)**

In theory the revenue paid for the mother should cover it – it doesn't

To qualify a baby all you need do is send it to SCN for a period

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Women's Healthcare Australasia (WHA)

response to the IHPA's Consultation paper on the

Pricing Framework for Australian Public Hospital Services 2017-18

Unqualified newborns:

The rise in annual birth-rate in Australia, together with advancements in technology making it possible to keep newborns alive from as early as 23 weeks gestation has put increasing pressure on NICU and SCN cots across all jurisdictions.

Major providers of maternity and newborn care **routinely care for many unwell babies on wards** to support breastfeeding, mother/infant attachment and for want of sufficient cots in nurseries. WHA members encourage IHPA to investigate this situation in more detail to determine an **appropriate allocation of funding** within any bundled price to care for these babies.

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Profitability by DRG

Problems with the model

Maternity at Western

On all the metrics such as length of stay or throughput per birthing unit, WH is extremely efficient.

There is absolutely no cost to be taken out of that service.

DRG 7	Birthing in the 2015/16 year	Births	Revenue	Cost	Loss
O60A	Vaginal Delivery W Catastrophic or Severe CC	293	$2,262,470	($2,736,828)	($474,359)
O60B	Vaginal Delivery W/O Catastrophic or Severe CC	583	$3,509,321	($3,772,578)	($263,257)
O60C	Vaginal Delivery Single Uncomplicated W/O Other Condition	2,608	$11,995,777	($12,311,802)	($316,025)

DRG 8	Birthing in the 2016/17 year	Births	Revenue	Cost	Loss
O60A	Vaginal Delivery, Major Complexity	555	$4,354,102	$4,924,959	($570,857)
O60B	Vaginal Delivery, Intermediate Complexity	1,616	$9,084,886	$9,380,995	($296,110)
O60C	Vaginal Delivery, Minor Complexity	1,215	$4,930,310	$4,851,421	$78,889

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- Is Activity Based funding a good pricing system?
- Is Victoria proof that it is?
- Is there a massive amount of fat in the system?
- Does Victoria have significant costs it could avoid?

From a Western Health perspective the answer to these questions is - no.

Over half the DRGs make losses

and over one third, losses of greater than 20%

But - it is the system that we have . . .

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Profitability by DRG – Using the system to advantage

Leave aside all the problems with the system – its many flaws
If you go down the path of revenue allocation
And you know the profitability of each DRG
Then you know where to look

ABF works on averages
So there will always be winners and losers
At a health service level and at a DRG level
Large amount of cross subsidisation
The variations are . . . an opportunity