Costing A&E Attendances

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Key Points

- The new treatment categories introduced in the 2006/07 reference cost collection (basis for 2009/10 prices) were poorly interpreted/implemented by acute Trusts
- Indeed this is part of a wider issue of adherence to data standards and the unavoidable ambiguity which will always arise at the boundary of any defined group
- It would also appear that both A&E and emergency assessment unit (EAU) costs must be combined to reveal the true average cost of an A&E attendance
- Less efficient Trusts appear to be shifting large amounts of A&E work into EAU's where the higher price paid creates a large profit margin for zero day stay activities
- PCTs are strongly advised to check the total cost implied by the 2006/07 reference costs against the local cost to ensure that cost shifting into EAU is not distorting the price paid by the PCT
- This represents the classic case of unintended consequences of a policy with subsequent knock-on effects

Introduction

In 2006/07 the cost of A&E services amounted to £6.1 billion and accounted for 21% of non-admitted acute costs (2006/07 reference costs data). The 2008/09 national tariff for an A&E attendance is £102 for a high cost attendance, £75 for a standard attendance and £56 for a minor attendance, however, there does not appear to be any national norm for the proportion of activity in each category of A&E treatment and hence on the average cost for an A&E attendance.

The 2006/07 reference cost collection (the basis for 2009/10 tariff) introduced additional treatment categories and in theory provides greater detail behind the costs – provided that the treatment categories are accurately reported.

Figure 1: Change in proportion of triage categories at a medium sized A&E department. Data was collected every Sunday over a four year period.

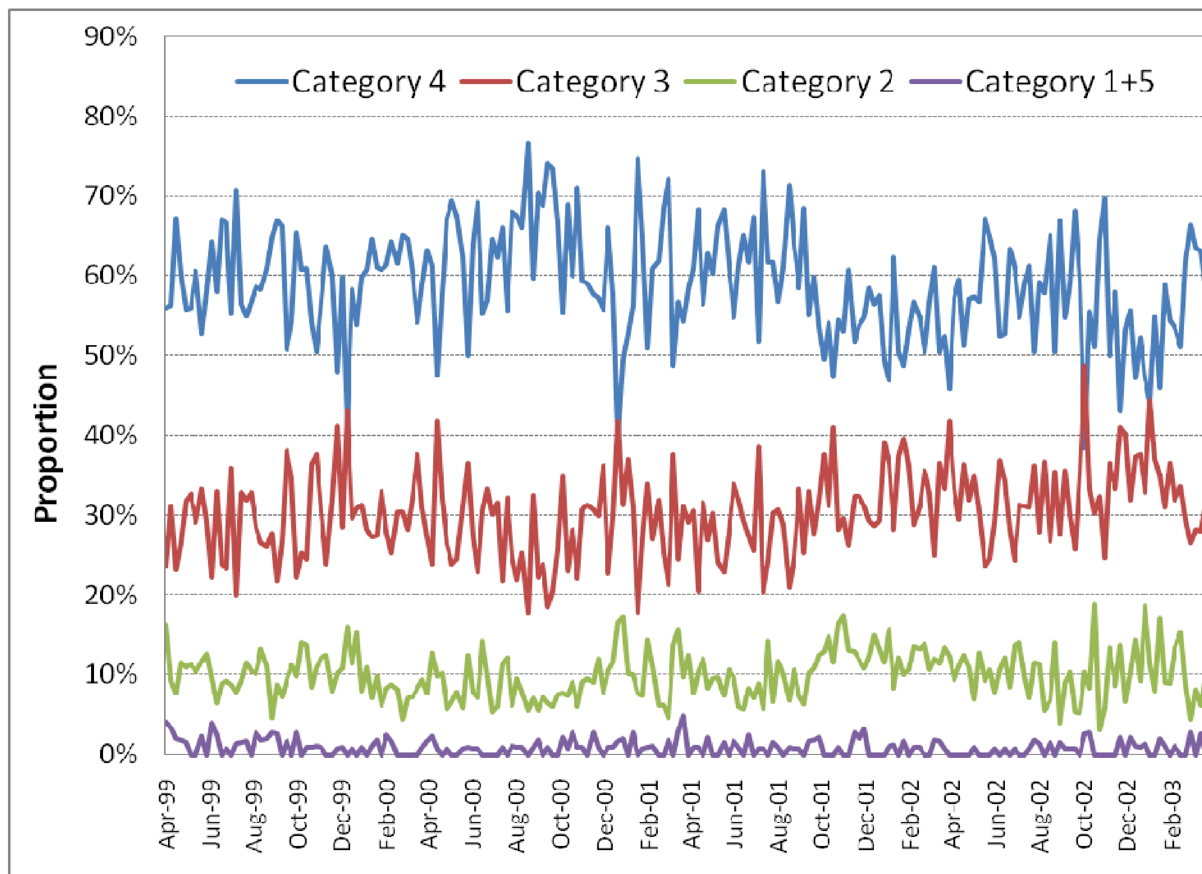

Figure 1 shows the drift in the use of A&E triage categories at a medium sized A&E unit over a number of years prior to the introduction of payment by results (PbR). The point of this figure is to show that even in the absence of a financial incentive to skew the collection of treatment categories or change due to the introduction of nearby minor injury units the allocation of patients into different categories is subject to ambiguity of interpretation.

Table 1 gives the national average for A&E attendance by type at a variety of acute and PCT run units.

Table 1: Proportion of A&E attendances by category and costs

Treatment Type	Teaching[1]	Large Acute	Medium Acute	Small Acute	All Acute	Large PCT	Medium PCT	Small PCT
Any category 5 treatment	0.1%	0.1%	0.1%	0.0%	0.1%	7.2%	8.1%	14.3%
Category 1 (category 1-2 treatment)	28.7%	19.4%	22.4%	22.5%	22.4%	38.8%	18.2%	26.2%
Category 1 (category 3-4 treatment)	1.5%	2.4%	2.3%	1.8%	2.1%	2.3%	1.8%	0.0%
Category 2 (category 1 treatment)	16.6%	28.5%	27.0%	26.9%	25.7%	1.6%	6.6%	4.7%
Category 2 (category 2 treatment)	4.4%	4.7%	4.2%	8.0%	4.9%	3.8%	0.6%	5.8%
Category 2 (category 3 treatment)	2.7%	1.5%	2.1%	1.4%	1.9%	2.7%	0.0%	0.2%
Category 2 (category 4 treatment)	4.7%	1.1%	1.7%	0.8%	1.9%	0.0%	0.0%	0.0%
Category 3 (category 1-3 treatment)	1.0%	0.7%	1.9%	3.8%	1.5%	0.0%	3.7%	2.4%
Category 3 (category 4 treatment)	0.1%	0.1%	0.2%	0.0%	0.1%	0.0%	1.7%	0.0%
Dental Care	0.4%	1.1%	0.2%	0.0%	0.6%	0.3%	0.2%	0.0%
Dead On Arrival	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%
No significant treatment	39.9%	40.4%	38.0%	34.6%	38.8%	43.4%	59.2%	46.4%

Treatment Type	Teaching	Large Acute	Medium Acute	Small Acute	All Acute	Large PCT	Medium PCT	Small PCT
Any category 5 treatment	£408	£440	£216	£264	£339	£31	£34	£43
Category 1 (category 1-2 treatment)	£87	£88	£100	£103	£94	£35	£29	£35
Category 1 (category 3-4 treatment)	£131	£137	£121	£120	£128	£27	£28	£56
Category 2 (category 1 treatment)	£139	£118	£132	£137	£131	£42	£33	£39
Category 2 (category 2 treatment)	£154	£143	£136	£127	£138	£23	£24	£49
Category 2 (category 3 treatment)	£180	£165	£150	£207	£174	£30	£26	£47
Category 2 (category 4 treatment)	£109	£271	£156	£168	£145	£23	£103	£57
Category 3 (category 1-3 treatment)	£172	£226	£163	£111	£143		£43	£44
Category 3 (category 4 treatment)	£322	£330	£331	£295	£328		£19	£46
Dental Care	£63	£54	£118	£126	£62	£21	£168	
Dead On Arrival	£180	£28	£95	£93	£86			
No significant treatment	£84	£65	£80	£79	£77	£34	£43	£34
Average All Treatments	£103	£95	£107	£108	£104	£34	£39	£37

Several points emerge:

1. Costs at PCT units are typically less than half that of an acute setting.
2. PCT costs show very little discrimination between treatment types.
3. Attendance category at PCT units seems to have no relationship with acute A&E attendance category.
4. Costs are generally higher in the small acute and small vs. large PCT units reflecting the loss of economy of scale in smaller units.
5. There is broad consensus on the proportion of different attendance types for acute hospitals.
6. The average cost per A&E attendance is a good indicator of overall case mix and should lie in the range £95 to £108.
7. This figure of £95 to £108 appears to indicate that the 2008/09 and the 2009/10 tariff is too low as the weighted average of £102, £75 and £56 will be much lower than £95.

One is left with the conclusion that the costs from PCT run units should be excluded from the tariff calculation for prices applicable to acute Trusts and that economy of scale plays a significant part in determining overall costs. Having established the wider cost issues it is now useful to look at the detail behind the overall national averages from the reference cost submissions of a random selection of acute Trusts.

[1] Excludes one Teaching hospital where all A&E activity was reported as low cost category 5 activity

Table 2: Local counting by category (as a proportion) and average price per A&E attendance

Treatment Categroy	All Acute	Small Acute	Teaching	Acute A	Acute B	Acute C	Acute D	Minor Injury Only	Acute F
Any Cat 5 treatment	0.1%	0.1%	0.6%	0.4%	0.0%	0.2%	0.1%	0.3%	0.1%
Cat 1 (Cat 1-2 treatment)	22.4%	29.3%	24.2%	20.3%	12.1%	12.7%	38.1%	35.2%	7.6%
Cat 1 (Cat 3-4 treatment)	2.1%	1.8%		2.2%	16.7%	3.3%	4.4%	2.4%	0.3%
Cat 2 (Cat 1 treatment)	25.7%	35.9%	32.7%	14.1%	12.1%	43.2%	12.5%	23.1%	34.1%
Cat 2 (Cat 2 treatment)	4.9%	1.0%	0.9%	14.1%	12.1%	1.7%	3.3%	17.3%	1.2%
Cat 2 (Cat 3 treatment)	1.9%	0.6%		14.1%	4.6%	1.0%	4.2%	1.0%	0.1%
Cat 2 (Cat 4 treatment)	1.9%			14.1%	4.6%	1.6%	2.6%	0.3%	0.0%
Cat 3 (Cat 1-3 treatment)	1.5%	0.2%	0.5%	1.7%	0.7%	1.1%	0.2%	0.6%	
Cat 3 (categ 4 treatment)	0.1%			0.6%	12.9%				
Dental Care	0.6%				12.1%				
Dead On Arrival	0.0%						0.2%		
No significant treatment)	38.8%	31.1%	41.0%	18.5%	12.1%	35.1%	34.3%	19.9%	56.5%
Any Cat 5 treatment)	£339	£164	£389	£146		£469	£700	£311	£141
Cat 1 (Cat 1-2 treatment)	£94	£187	£106	£117	£105	£88	£87	£29	£39
Cat 1 (Cat 3-4 treatment)	£128	£181	£212	£117	£109	£151	£143	£50	£55
Cat 2 (Cat 1 treatment)	£131	£219	£312	£151	£105	£151	£110	£50	£55
Cat 2 (Cat 2 treatment)	£138	£244	£177	£151	£105	£201	£150	£67	£68
Cat 2 (Cat 3 treatment)	£174	£232	£248	£151	£109	£252	£223	£83	£82
Cat 2 (Cat 4 treatment)	£145	£186	£283	£151	£109	£352	£300	£116	£109
Cat 3 (Cat 1-3 treatment)	£143	£251	£319	£262	£109	£235	£360	£78	
Cat 3 (Cat 4 treatment)	£328	£315		£262	£354	£411	£500	£136	
Dental Care	£62				£105		£46		
Dead On Arrival	£86						£34		
No significant treatment	£77	£208	£78	£93	£105	£34	£50	£11	£23
Average attendance cost	**£103**	**£206**	**£165**	**£135**	**£138**	**£109**	**£94**	**£39**	**£36**

Table 2 gives examples of local counting compared to the national average. It is clear that local definitions of the A&E categories vary enormously. Data for the small acute Trust is included for two reasons.

1. This particular Trust adheres to national definitions very closely and does indeed fall very close to the national average in terms of proportions in each category, i.e. it is possible to count correctly.
2. This Trust has one of the smallest A&E departments and as a result has higher costs due to a lack of economy of scale.
3. There is no local PCT run minor injury unit to complicate the issue of counting in particular categories.

The next Trust in the table is a large Teaching Hospital where costs are typically higher although counting discrimination is not as good. This is followed by a series of acute Trusts exhibiting considerable differences in category selection. The acute Trust labeled 'Minor Injury Unit' diverts any non-minor work to its emergency assessment unit (EAU) and so this is effectively an acute run minor injury unit. This is then followed by a series of Trusts who chose to lump all attendances into a single category.

In spite of wide differences in counting the average price remains the most reliable indicator of the correct value of costs to be paid to the respective Trusts and this avoids the gaming being practiced by some Trusts who are diverting large volumes of otherwise A&E work to emergency assessment units. The issue of gaming is pursued in Figure 2 where the combined cost of A&E attendances and so-called emergency assessment unit 'admissions' is shown for a wide range of Trusts. The spread in costs for the combined data is far less than the A&E data alone (as per Table 2) and this suggests that Trusts which divert higher volumes of A&E via an emergency assessment unit will gain in two ways, namely, shifting higher cost work into an assessment unit allows the Trust to make a profit from the A&E tariff and then make an even higher profit from the short stay tariff for emergency admissions.

In conclusion, the PbR team eventually gave up in their attempt to set a tariff based on this somewhat patchy collection of so-called costing data. Considerable national effort is needed to ensure that categories are appropriately applied. However it is clear that the 2008/09 tariff for A&E is too low and that the costs associated with size play an important role. The PbR team will need to allow considerable scope for a locally agreed average price for both A&E and assessment unit activities as this route appears to be the only reliable source of costing information which ensures that a fair price is paid for 'real' A&E attendances.

Figure 2: Revised average cost for 'real' A&E attendances