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Original research

The Payment by Results (PbR) national tariff severely penalises efficiency and early hospital discharge

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Abstract

The system of Payment by Results (PbR) was instituted in 2005 to reimburse secondary care for its activity. One of the features of PbR is the short stay tariff (SST), in which only 20-50% of the national tariff is paid if patients have a length of stay (LoS) of less than 2 days in hospital for certain Healthcare Resource Groups (HRGs) – or conditions. We analysed the admissions under Acute Medicine at Bradford Teaching Hospitals over a period of one year and identified the HRGs to which the SST applied. We used the 2007 PbR national tariff to calculate the additional income that would have been generated if these patients were kept in hospital for at least 2 days in order to avoid SST. We calculated an extra theoretical income of approximately £5 million if all these patients had a length of stay (LoS) more than 2 days to avoid the SST. Sixteen additional beds (assuming 85% occupancy) would have been required at a cost of around £1million per year to accommodate these patients. We show that the current PbR system is flawed and penalises hospitals with a higher turnover of patients.

Key words

Payment by results; national tariff; short stay tariff; Healthcare Resource Groups; length of stay; cost analysis; bed occupancy.

Background

The concept of a new and more efficient payment method to hospital trusts in the UK was introduced in the NHS Plan in July 2000 and rolled out in April 2005 in a few Foundation Trusts. In 2006/07 this new system, called Payment by Results (PbR) became the method of payment for elective, accident & emergency, outpatient and emergency admissions for all trusts. This is now the payment basis for work done in secondary care, replacing the old system in which money was paid in a block contract negotiated at local level, based on case mix and activity.[1] The underlying principle of PbR was that it would reward efficiency and provide a transparent rules-based system for paying Trusts.[2]

The key elements of the PbR system are the Healthcare Resource Groups (HRGs) and the national tariff. HRGs is a tool for classifying patient activity and is a function of primary medical diagnosis, co-morbidity and inpatient complications (based on ICD-10 codes), as well as any procedure undertaken (based on OPCS-4 codes) and the patient's age and length of stay. Payment is based on an average of all hospital costs ('reference costs'). Providers allocate their costs to each HRG according to a national manual.

One of the features of PbR is the Short Stay Tariff (SST). This applies to emergency admissions where the length of stay is less than 2 days for patients with a national average length of stay more than 2 days. The level of reduction depends on how the actual length of stay compares with the average national length of stay (Table 1).[3]

This means that up to 80% of the national tariff would be deducted if a patient stays for less than 2 days when the national average is 5 or more days. Thus the system appears to penalise efficient Acute Medical Units, including those who promote ambulatory care. We therefore set out to study the potential impact of the short stay tariff (SST) on early discharge.

Method

For the calendar year 2007 we obtained the following from our Trust's information services and our coding department: a list of all coded hospital discharges under Acute Medicine for all patients

Selected HRGs with average national length of stay	Short stay tariff (% of tariff applied)
0-1	100% ie full tariff applies
2 days	50%
3-4 days	35%
5 or more days	20%

Table 1. Percent reduction in short stay tariff

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The Payment by Results (PbR) national tariff

HRG	Description of HRG code	Length of Stay (LoS) - days			Extra income generated if patients with LoS of 0 or 1 day stayed an extra 2 or 1 nights respectively		Average LoS days	
		0	1	≥2	2 extra nights £	1 extra night £	BTH	Nati onal
E11	Acute Myocardial Infarction w cc	6	10	87	22,980	38,300	6.7	5+
E12	Acute Myocardial Infarction w/o cc	8	36	183	19,312	86,904	3.8	5+
E18	Heart Failure or Shock >69 or w cc	16	43	294	33,824	90,902	7.5	5+
E22	Ischemic Heart Disease without Intervention >69 or w cc	77	203	143	106,568	280,952	2.1	5+
E23	Ischemic Heart Disease without Intervention <70 or w cc	127	193	79	106,426	161,734	1.3	3-4
E29	Arrhythmia or Conduction Disorders >69 or w cc	54	95	111	76,356	134,330	2.8	5+
E30	Arrhythmia or Conduction Disorders <70 or w cc	104	66	40	46,696	29,634	1.2	2
E31	Syncope or Collapse >69 or w cc	46	230	141	58,052	290,250	3.3	5+
E32	Syncope or Collapse <70 or w cc	81	82	44	26,730	27,060	1.4	2
E35	Chest Pain >69 or w cc	117	247	100	53,820	113,620	1.6	2
E37	Other Cardiac Diagnoses	13	27	31	20,215	41,985	3.8	5+
Total		649	1232	1,246	570,979	1,295,681		

Table 2. HRGs for Cardiovascular and Related Conditions, their length of stay, extra income generated if patients with a LoS of 0 day stayed 2 extra nights and patients with LoS 1 day stayed 1 extra night.. Also shown in this table is the national average LoS4 as compared to average LoS for our institution (BHT).
LoS: *Length of Stay;* w cc: *with complication ;* w/o cc: *without complication.* BTH*, Bradford Teaching Hospitals NHS Trust*

aged ≥ 16 years. Elective admissions were excluded. Discharges coded under HRGs where the Short Stay Tariff (SST) applied were identified. Data were analysed in relation to the length of stay (LoS) and the potential loss of income as a result of early discharge (LoS 0 and 1 day) was calculated. The 2007 PbR national tariff was used to calculate the additional income that would be generated if these patients were kept in hospital for 2 days (2 nights for patients with a LoS of 0 day, 1 additional night for a LoS of 1 day). The number of additional beds required to sustain this additional length of stay was estimated. In addition, our hospital's length of stay was compared with the national average obtained from the Department of Health PbR Guidance 2007.[4]

Results

There were 20,660 non-elective spells, of which 11,383 (55%) had a length of stay (LoS) of 0 and 1 day. 6,787 (32.8%) of these met the criteria for the reduced short stay tariff (SST). We chose the most frequent HRGs and analysed the data from 4,748 patients who met the criteria for SST across 45 different HRGs.

Tables 2-3 show average LOS for cardiovascular and respiratory HRG classes.The tables show the HRG code, its corresponding diagnosis and the number of patients for each HRG code with a LoS of 0, 1 and ≥2 days. Each table also shows our average length of stay for that HRG compared to the published corresponding national average as detailed in Department of Health PbR Guidance 2007.[4]

Table 4 shows the outcome of the patients who had LoS of 0 or 1 day. Most were discharged. A few died in hospital and the rest were transferred to another hospital, mainly for primary cardiac intervention or to a neurosurgery Tertiary centre.

Table 5 summarises our data and shows the additional income that could have been generated if all our patients stayed a minimum of 2 nights in hospital. The calculations were carried out on the HRGs with the highest cost reduction, which accounted for an average of 70% of all admissions where the SST applies.

To accommodate these additional bed nights we calculated that, based on occupancy of 85%, we would require an additional 16 beds as follows:

- For the 2,002 patients with a LoS of 0 day, an additional 9.3 beds would be required for them to stay a total of 2 nights.
- For the 2,746 patients with a LoS of 1 day, an additional 6.4 beds would be required for them to stay a total of 2 nights.
- We therefore calculated that 16 additional beds would have been required at a cost of around £1,000,000 per year.

Discussion

Activity in Acute Medicine is increasing year on year[5] and the pattern of work has changed in the past five years. Patients who would previously have been admitted to hospital for investigation and treatment are now frequently discharged directly from an Acute Medical Unit following a relatively short stay. Innovations such as the concentration of staffing and resources, along with the development of ambulatory care services have enabled shorter hospital length of stay. However the Short Stay Tariff (SST) appears to penalize this practice, which may threaten further developments and discourage hospitals

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HRG	Description of HRG code	Length of Stay (LoS)			Extra income generated if patients with LoS of 0 or 1 days stayed extra 1 or 2 nights		Average Length of stay	
		0	1	≥2	2 extra nights £	1 extra night £	BTH	Nati onal
D13	Lobar, Atypical or Viral Pneumonia w cc	6	20	145	14,622	48,740	10.5	5+
D14	Lobar, Atypical or Viral Pneumonia w/o cc	20	48	187	28,840	69,216	5.1	5+
D21	Asthma w cc	6	17	32	8,814	24,973	4.8	5+
D22	Asthma w/o cc	78	98	136	57,564	72,324	2.3	3-4
D33	Other Respiratory Diagnoses >69 or w cc	18	30	39	22,230	37,050	3.6	5+
D34	Other Respiratory Diagnoses <70 w/o cc	39	29	23	15,834	11,774	1.3	2
D39	COPD or Bronchitis w cc	10	51	143	18,700	95,370	5.7	5+
D40	COPD or Bronchitis w/o cc	64	151	369	87,936	207,47 4	3.5	5+
D41	Unspecified Acute Lower Respiratory Infection	68	128	236	109,072	205,31 2	4.2	5+
D99	Complex Elderly with a Respiratory System Primary Diagnoses	31	62	418	80,786	161,57 2	10.0	5+
total		340	634	1,728	444,398	933,80 5		

Table 3. HRG Codes for Respiratory Conditions. Details as per Table 1.
w cc: *with complication*; w/o cc: *without complication*

No. of patients with LoS 0 or 1 day used in this study	No of patients discharged (%)	No of patients transferred to another hospital (%)	No of patients who died (%)
4,748	4,463 (94%)	190 (4%)	94 (2%)

Table 4. Outcome of patients with length of stay less than 2 days used in this study.

Length of Stay (LoS)	Total number of attendances where the short stay tariff applies	Data used in this study	% used in this study	Income generated if patients with less than 1 night stay , stayed 2 extra nights	Income generated if patients with less than2 nights stay, stayed 1 extra night	Total additional income if all patients stayed a minimum of2 nights
0 day	3,269	2,002	61%	£2,271,021	-	-
1 day	3,518	2,746	78%	-	£3,446,799	-
Total	6,787	4,748	70%	-	-	£5,717,826

Table 5. Breakdown of the data analysed in relation to LoS and loss of income.

from investing in this vital area. For example, a patient with headache will be assessed and have a head CT scan within hours of admission when previously he or she may have waited one or two days for a scan.

We have shown that, even though in 2007 only 32.8% of all our acute admissions qualify for the SST, an analysis of 70% of these yielded a potential loss of income of almost £5million. The saving in costs via bed reduction would only be around £1million. Clearly there are considerable benefits to patients from a shorter hospital stay, with an earlier diagnosis and treatment. However it appears that the improved efficiency that has been created by the developments in Acute Medicine is being penalized by the SST.

The good news for Trusts is that the Department of Health (DH) acknowledges that the HRG system and PbR are still in early stages of development and it welcomes comments.[7] We hope to have demonstrated a major flaw in the system.

We do recognize that HRGs depend on correct coding, which depends on adequate documentation of diagnosis and associated medical conditions of each and every patient by medical staff. We have to assume that there are some inaccuracies in our HRGs. The aim of this

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study is to highlight the flawed methodology of the SST and PbR rather than provide an in-depth analysis of the possible loss of earnings.

PbR aims to achieve a linkage between activity and payment. At present we feel that the system is not working correctly and is penalising efficiency and early hospital discharge. We agree with the Academy of Medical Royal Colleges that there are conflicts in the current system and there is a need to examine how to reward pathways of care rather than rewarding distinct episodes[6]. Efficiency needs to be rewarded.

References

1. http://www.dh.gov.uk/en/Managingyourorganisation/Financeandplanning/NHSFinancialReforms/DH_077259
2. http://www.dh.gov.uk/en/Consultations/Closedconsultations/DH_073103
3. http://www.dh.gov.uk/en/Managingyourorganisation/Financeandplanning/NHSFinancialReforms/DH_081238
4. http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_4097993
5. British Journal of Hospital Medicine 2009; 70(S1): S41
6. Acute health care services. Report of a working party. Academy of Medical Royal Colleges. September 2007
7. http://www.dh.gov.uk/en/Consultations/Closedconsultations/DH_4069462

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