Readmission rates and financial penalties after ear, nose and throat surgery: how can we improve?

Introduction: Since April 2011, all patient readmissions within 30 days have resulted in a financial penalty to the hospital trust, and therefore the responsible department. These costs may be substantial and potentially preventable.
Methods: A service evaluation of readmissions within 30 days of discharge, over a 12-month period (January–December 2012), was performed in the ear, nose and throat department of a district general hospital, and findings were used as a basis to suggest areas for potential quality improvement.
Aims: To determine the number of readmissions, causes of readmission and resulting costs, and to explore how these readmissions may be prevented.
Results: The departmental 30-day readmission rate over the study period was 3.12% (81/2606). The commonest causes of readmission (33.3%) were complications following tonsillectomy (27/81) such as pain, infection or bleeding. Over a third of these patients (30/81) were readmitted for less than 24 hours, with the average length of stay being less than 2.5 days.
Financial implications: In 2011 the trust had 7526 emergency readmissions which were eligible for penalty within the 30-day time frame. This resulted in a loss of income of more than £60 000 to the ear, nose and throat department.
Conclusions: Optimizing postoperative care and improving patient understanding of common complications may reduce readmission rates, thus limiting the financial burden on the trust. These areas could serve as a basis for future quality improvement projects.

Readmissions are often indicative of ineffective patient management, questioning the quality of care provided and generating significant costs for the health-care system (Halfon et al, 2006). Although some readmissions are unavoidable as a result of patient frailty or inevitable disease progression, others are preventable if patients receive the right care, at the right time. Reducing unnecessary readmissions is a desirable objective and this is now reflected in government policy (NHS Confederation, 2011). England was unique in the UK in paying its hospitals for each treatment carried out, a system called Payment by Results. It was noted that between 1998 and 2008 readmissions had increased significantly with a corresponding additional payment for each readmission (Blunt et al, 2010).

In April 2011, the Department of Health introduced a policy of non-payment for emergency readmissions, with the intention that financial penalties incentivize hospital trusts to reduce readmissions (Department of Health, 2010). This, potentially, could lead to savings for the government of nearly £600 million per year (Druilhe, 2011). The Payment by Results guidance states that providers will not be paid for most emergency readmissions within 30 days of a prior admission, regardless of the location of the readmission or the clinical reason for readmission (NHS Confederation, 2011).

Given the gravity of these costs, it is important that junior staff are made aware of the financial implications associated with readmissions. With junior staff heavily involved in the discharge process, they are well positioned to effect a reduction in readmission rates. While there is little in the current literature looking at junior doctors' knowledge of health-care economics, they often have little knowledge about the NHS budget and health-care commissioning (Palazzo and Chehab, 2013).

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Aims

The aim of this quality improvement project was to:

1. Determine the number of readmissions to the ear, nose and throat department at a district general hospital over a specific time period (the calendar year of 2012) and the causes of these
2. Determine the resulting financial implications to both the ear, nose and throat department and the trust
3. Raise awareness of these costs and suggest ways in which they could be reduced within the Trust via the quality improvement system.

Methods

A service evaluation was performed of all readmissions to the ear, nose and throat department of the authors' hospital over 12 months (January–December 2012). These occurred within 30 days of a prior admission. Readmitted patients were identified using the hospital archive database. Data were collected on the reason for readmission and subsequent length of stay. Financial implications were estimated as per the Payment by Results guidance.

Results

Number and causes of readmission

A total of 81 patients were identified who met the inclusion criteria. The commonest cause of readmission was complications following tonsillectomy (27/81 or 33.3%), which included infection, bleeding or inadequate pain management. Of the patients returning post-tonsillectomy, four required a return to theatre for a surgical intervention.

Causes of readmission are summarized in *Table 1*. The departmental readmission rate within the 30-day period was 3.12% (81/2606).

Length of stay

The average length of stay was 2.3 days. The majority of patients were readmitted for less than 48 hours (51/81) and a third (30/81) were readmitted for less than 24 hours.

Financial implications

In 2011 the trust had 7526 emergency readmissions which were eligible for penalty within the 30-day timeframe. Calculations using the Payment by Results figures predicted a potential loss of income for the trust of over £5.5 million, equating to 3.28% of the total tariff for the year. The ear, nose and throat department was penalised just over £60 000 during the study period.

Discussion

This study shows that the majority of readmissions related to minor problems requiring only short hospital stays. The significant financial impact to the department and the trust suggest that this is an area where potential savings could be made. Since 2011, NHS trusts have faced financial penalties for emergency readmissions within 30 days of the patient being discharged. The changes to payment arose after the increase in the number of emergency readmissions in England. In the period between 1998–9 and 2007–8 these increased from around 350 000 to nearly 500 000 (Blunt et al, 2010). In addition, readmissions as a percentage of all patient discharges went up marginally, from 8% in 1998–9 to 10.5% in 2007–8.

Table 1. Causes of readmission

Reason for readmission		Number
Throat	Post-tonsillectomy bleed	20
	Post-tonsillectomy infection	7
	Acute tonsillitis recurrence	5
	Throat pain	2
Nose	Epistaxis	7
	Infection post-nasal surgery	3
Ear	Otitis externa or media	5
	Postoperative infection	6
	Postoperative haematoma or bleed	6
Head and neck	Cancer-related issue	5
	Tracheostomy complication	6
	Postoperative haemorrhage	4
	Postoperative infection	3
	Wound problem	2

Under the 2011 Payment by Results Reforms, all trusts receive funding for the first hospital stay, plus treatment for the patient's first 30 days after discharge. Although the majority (77%) of eligible emergency readmissions follow an unplanned stay, owing to the structure of the penalty, the financial loss is split equally between readmissions following an elective stay or following an unplanned stay (NHS Confederation, 2011).

In the UK, the number of patients that fell into the criteria of a 30-day emergency readmission was approximately 650 000 in a year – an average readmission rate of around 5.5% (Blunt et al, 2010). This results in potential financial penalties to acute service NHS trusts in England of up to £583.7 million per year (Druilhe, 2011). The potential income lost for individual trusts ranged from £900 000 to £10 million (Sg2, 2011).

The UK is not the only country implementing similar policies on penalties or curtailed payments. There are now many national governments and health-care providers which are also scrutinizing readmissions and considering the introduction of partial tariffs; for example Medicare in the USA already withholds payment for readmissions within 24 hours of discharge for the same diagnosis (Druilhe, 2011).

Nearly 50% of readmissions occur within 7 days of hospital discharge (with 15% of readmissions within 24 hours of discharge). Readmissions within a short timeframe from discharge can reveal suboptimal hospital care, inappropriate discharge or shortcomings in the process of discharging patients. Readmissions within a longer timeframe may be more likely related to underlying pathology and need for ongoing medical care (Schneider et al, 2015).

Readmissions within a 7-day period should be a focus of trusts' improvement initiatives (Hansen et al, 2011). Effective trust-driven interventions that reduced 7-day readmissions focused on improving the initial medical management and the discharge of patients to the appropriate environment (Hansen et al, 2011).

How can we improve?

There are several generic interventions which, when implemented by hospital trusts, may be effective in reducing emergency readmissions post-surgery. These could form the basis for future quality improvement projects. These interventions include:

Patient education

Ensure the patient has full understanding of normal postoperative expectations and common complications. If the patient understands the 'normal' postoperative course, this may go some way to reassuring him/her about what can be expected following an operation or procedure. Likewise, educating patients to understand which complications require urgent attention and which may be dealt with by a GP may reduce the likelihood that the patient will re-present to the department following discharge.

Written information

Written information could be provided on discharge with contact details and common postoperative symptoms and complaints. Giving patients contact information for the departmental ward may provide readily accessible telephone reassurance and advice from nurses who are familiar with ear, nose and throat disease. This could act as a 'triage' system which identifies patients who may or may not require urgent review.

Verbal communication with a patient is not always effective when discussing medical issues (Kessels, 2003), and so providing written advice may allow patients to be better informed.

Medication

Providing adequate analgesia and antibiotics (if required) on discharge is important. While pain in isolation only contributed to a small number of readmissions, providing adequate analgesia is vital for high quality patient care. Following tonsillectomy, there could be an argument that pain will limit a patient's oral intake, which may result in readmission for a different reason, such as infection. Where indicated, appropriate antibiotic choice, duration and patient education to improve compliance may reduce readmission rates resulting from infection.

Postoperative follow-up telephone call
A routine follow-up telephone call would not be too resource intensive and may reassure patients, improve patient satisfaction and reduce the likelihood of readmission.

Patient review within departmental emergency clinic for postoperative complications
Provision of written information to patients on discharge with post-procedure advice and telephone numbers may allow queries to be addressed via telephone, preventing the need for re-attendance, and potentially readmission, at the hospital. This would open up the possibility of managing all non-emergency complications on an outpatient basis in ear, nose and throat clinic.

Training for emergency department doctors
In the event that a patient does present to the emergency department following discharge, adequate training for emergency department practitioners could allow common postoperative complications to be managed without the need for admission. This would require good communication between the ear, nose and throat team and the emergency department. Swift review by an on-call ear, nose and throat surgeon (where possible) in the emergency department may also reduce the need for readmission.

Reviewing management of common ear, nose and throat conditions
This is an extremely broad category for improvement, but it is important that patients are treated in accordance with best practice and up-to-date evidence.

A relevant example to these findings would be the high number of readmissions pertaining to post-tonsillectomy bleeding. Many tonsillectomies are performed by trainees, whose secondary haemorrhage rates may be higher than those of an experienced consultant. The National Prospective Tonsillectomy Audit showed that cold steel tonsillectomy using ties and/or packs was the technique with by far the lowest risk of postoperative haemorrhage (Royal College of Surgeons Clinical Effectiveness Unit, 2005). There is also evidence that bipolar diathermy power relates to increased risk of haemorrhage following cold steel dissection, and therefore is a modifiable factor which may reduce the incidence of post-tonsillectomy bleeding (Lowe et al, 2009).

Conclusions

The 2011 Payment by Results policy around non-payment for eligible emergency readmission created a clear sense of urgency around the need to reduce readmissions. All readmitted patients are associated with greater resource use and increased costs. All departmental costs are now further magnified by the penalty imposed on them as a result of readmission. Overall, there is a large volume of readmissions that could be prevented with appropriate action. This would not only reduce the financial loss faced by trusts, but ultimately improve patient outcomes and quality of care.

The above points may serve as the basis for future quality improvement projects which aim to reduce readmission rates, thus reducing the financial implication of such an eventuality. There are still many changes ongoing for the provision of emergency and follow-up care for patients recently discharged from hospital after an elective procedure. It is vital that junior staff, as well as consultants and managers, stay up-to-date with care provision and costs as, often, they are well placed to effect positive change. **BJHM**

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Blunt I, Bardsley M, Dixon J (2010) Trends in emergency admissions in England 2004–2009: is greater efficiency breeding inefficiency? www.nuffieldtrust.org.uk/publications/trends-emergency-admissions-england-2004-2009 (accessed 16 October 2015)

Department of Health (2010) Payment by Results Guidance for 2010-11. http://webarchive.nationalarchives.gov.uk/20130107105354/http://www.dh.gov.uk/prod_consum_dh/groups/dh_digitalassets/@dh/@en/@ps/documents/digitalasset/dh_112970.pdf (accessed 16 October 2015)

Druilhe C (2011) Reducing readmissions could save more than £600m in PBR penalties. Sg2 explains how. *Health Service Journal* www.hsj.co.uk/resource-centre/data-tools/change-forecast/reducing-readmissions-could-save-more-than-600m-in-pbr-penalties-sg2-explains-how/5031166.article (accessed 6 May 2015)

Halfon P, Eggli Y, Prêtre-Rohrbach I, Meylan D, Marazzi A, Burnand B (2006) Validation of the potentially avoidable hospital readmission rate as a routine indicator of the quality of hospital care. *Medical Care* **44**(11): 972–81

Hansen LO, Young RS, Hinami K, Leung A, Williams MV (2011) Interventions to reduce 30-day rehospitalization: a systematic review. *Ann Intern Med* **155**(8): 520–8

Kessels R (2003) Patients' memory for medical information. *J R Soc Med* **96**(5): 219–22

Lowe D, Cromwell DA, Lewsey JD, Copley LP, Brown P, Yung M, van der Meulen JH (2009) Diathermy power settings as a risk factor for hemorrhage after tonsillectomy. *Otolaryngol Head Neck Surg* **140**(1): 23–8 (doi: 10.1016/j.otohns.2008.08.025)

NHS Confederation (2011) The impact of non-payment for acute readmissions. www.chks.co.uk/userfiles/files/The%20impact%20of%20non-payment%20for%20acute%20readmissions%20FINAL%20FOR%20WEB.pdf (accessed 6 May 2015)

Palazzo S, Chehab O (2013) Junior doctors and healthcare reforms: are they ready? A questionnaire study. *JRSM Short Reports* **4**(5): 32 (doi: 10.1177/2042533313476695)

Royal College of Surgeons Clinical Effectiveness Unit (2005) National Prospective Tonsillectomy Audit. www.rcseng.ac.uk/publications/docs/national_prospective.html (accessed 16 October 2015)

Schneider EB, Canner JK, Gani F, Kim Y, Ejaz A, Spolverato G, Pawlik TM (2015) Early versus late hospital readmission after pancreaticoduodenectomy. *J Surg Res* (doi: 10.1016/j.jss.2015.02.043)

Sg2 (2011) Sg2 Service Kit: Reducing 30 day emergency readmissions. www.hsj.co.uk/Journals/2/Files/2011/6/15/Sg2_Service%20Kit_Reducing%2030-Day%20Readmissions.pdf (accessed 6 May 2015)

LEARNING POINTS

- Readmissions in ear, nose and throat surgery are potentially expensive, with post-tonsillectomy problems the most common.
- The majority of admissions are with relatively minor problems which do not require significant intervention.
- Readmissions may be prevented with better patient education, provision of written information and postoperative advice, and adequate analgesia.