Audit of clinical coding of major head and neck operations

INDU MITRA, TASS MALIK, JARROD J HOMER, SEAN LOUGHRAN

University Department of Head and Neck Surgery, Manchester Royal Infirmary, Central Manchester and Manchester Children's Hospital NHS Trust, Manchester, UK

ABSTRACT

INTRODUCTION Within the NHS, operations are coded using the Office of Population Censuses and Surveys (OPCS) classification system. These codes, together with diagnostic codes, are used to generate Healthcare Resource Group (HRG) codes, which correlate to a payment bracket. The aim of this study was to determine whether allocated procedure codes for major head and neck operations were correct and reflective of the work undertaken. HRG codes generated were assessed to determine accuracy of remuneration.

PATIENTS AND METHODS The coding of consecutive major head and neck operations undertaken in a tertiary referral centre over a retrospective 3-month period were assessed. Procedure codes were initially ascribed by professional hospital coders. Operations were then recoded by the surgical trainee in liaison with the head of clinical coding. The initial and revised procedure codes were compared and used to generate HRG codes, to determine whether the payment banding had altered.

RESULTS A total of 34 cases were reviewed. The number of procedure codes generated initially by the clinical coders was 99, whereas the revised codes generated 146. Of the original codes, 47 of 99 (47.4%) were incorrect. In 19 of the 34 cases reviewed (55.9%), the HRG code remained unchanged, thus resulting in the correct payment. Six cases were never coded, equating to £15,300 loss of payment.

CONCLUSIONS These results highlight the inadequacy of this system to reward hospitals for the work carried out within the NHS in a fair and consistent manner. The current coding system was found to be complicated, ambiguous and inaccurate, resulting in loss of remuneration.

KEYWORDS

Coding – Head and neck surgery – Operations

CORRESPONDENCE TO

Indu Mitra, 11 Iver Lodge, Iver, Bucks SL0 0AW, UK

E: indu_mitra@hotmail.com

In April 2002, the UK Department of Health outlined plans to reform the NHS financial flow by introducing *Payment by Results*.¹ The NHS plan moved away from a top-down centralised approach of funding (*i.e.* block contracts) towards a more devolved health system with payment by results (*i.e.* hospitals being paid for the activity undertaken). This change stemmed from the 2002 budget announcement of a sustained increase in NHS funding, hence the need to secure and demonstrate value for money. In order to set *Payment by Results* into practice, activity within the NHS has to be classified.

Statistical classification of surgical operations was first introduced in the UK in 1944 as a basis for recording of clinical procedures. Since then the classification system has been periodically revised culminating in the Office of Population Censuses and Surveys (OPCS) classification system.²

This system is used to classify surgical activity within the NHS in order to receive *Payment by Results*. Each patient's case is evaluated separately in order to generate a unit of payment (Fig. 1). When a patient attends hospital to undergo an operation, the diagnosed disease and significant other co-morbidities are allocated codes via the International Statistical Classification of Diseases.³ The OPCS coding system is used to code each procedure undertaken during the operation. These codes are amalgamated and entered into a computer system, which is continuous nation-wide, to generate a Healthcare Resource Group (HRG), *i.e.* the unit of payment.⁴

A HRG is a standard grouping of clinically similar treatments. These groups enable standardisation of costs aiming to achieve a fair and equal payment for the work undertaken.⁵ The price of each HRG procedure or treatment is fixed in relation to a national tariff based on its average costs

across the NHS.⁶ Each of these groups can then be weighted according to whether the case was elective or emergency, a paediatric case, required ITU admission, the length of stay, etc.

The aim of *Payment by Results* is to form a more efficient and productive NHS undertaking more operations and treatments. Evidence from other countries with similar systems demonstrates shorter waiting times (as in Australia)

and shorter lengths of stay in hospital (as in Sweden).⁶ In England, head and neck oncology is not yet affected by *Payment by Results*.

The aims of this study were to determine whether the allocated procedure codes for major head and neck operations were correct and reflective of the work undertaken. We also proposed to assess the HRG codes generated in order to determine accuracy of remuneration and identify the implication to NHS trust finances if HRG codes for major head and neck operations were to become part of *Payment by Results*.

Patients and Methods

Consecutive patients undergoing major head and neck operations retrospectively over a 3-month period (February–April 2006) in a tertiary referral centre were identified from a prospectively updated database and reviewed. Patients undergoing rigid upper endoscopy or panendoscopy alone were excluded, unless these procedures were part of a major operation. Procedure codes for the major operations were initially ascribed by professional

Table 1 Example of cases including initial and revised procedure codes (PC) and Healthcare Resource Group (HRG) codes

PC and HRG code allocated	Operation	Initial PC	Revised PC	Initial HRG	Revised HRG
Same PC and HRG	Total thyroidectomy	B08.1 Total thyroidectomy	B08.1 Total thyroidectomy	K01 (£2,284)	K01 (£2,284)
Different PC and same HRG	Pharyngolaryngectomy, bilateral neck dissection, hemithyroidectomy, pec major flap reconstruction	E29.9 Excision of larynx T85.1 Block dissection of cervical lymph nodes B08.3 Hemithyroidectomy E25.9 Diagnostic endoscopic examination	E19.2 Excision of pharynx – partial E29.1 Excision of larynx – total T85.1 Block dissection of cervical lymph nodes B08.3 Hemithyroidectomy E21.9 Repair of pharynx Y61.2 Harvest of flap of skin and pec major flap E25.9 Diagnostic endoscopic examination	C54 (£3,590)	C54 (£3,590)
Different PC and HRG	Mandibulotomy, excision tonsil/tongue-base tumour, neck dissection and radial forearm free flap reconstruction	T85.1 Block dissection of cervical lymph nodes V14.9 Excision mandible Y59.2 Harvest of radial artery flap of skin and fascia	F22.9 Excision of tongue – unspecified F38.2 Excision of lesion of mouth V16.9 Division of mandible T85.8 Block dissection of lymph nodes E21.9 Repair of pharynx Y59.2 Harvest of radial artery flap of skin and fascia S17.1 Distant myocutaneous subcutaneous pedicle flap to head or neck	C45 (£5,208)	C57 (£1,611)

hospital coders (initial codes) using OPCS v.4.2. The procedure codes were then re-coded by a senior surgical trainee in liaison with the head of clinical coding to provide procedure codes which were taken as the gold standard (revised codes). The initial and revised procedure codes were used to generate HRG codes which were compared to determine whether the pay banding had altered.

Results

A total of 34 major head and neck cases were identified, initially generating 99 procedure codes. However, when recoded by the senior surgical trainee with the head of clinical coding, 146 revised procedure codes were generated. Comparison of these revealed that 47 of the initial 99 were inaccurate (47.4%).

Of all 34 cases reviewed, 11 cases (32.3%) had the same procedure code and HRG code allocated, both initially and when re-coded (Fig. 2). These cases comprised of hemithyroidectomies, total thyroidectomies, parotidectomies and neck dissections (Table 1).

In 8 cases (23.5%), although different procedure codes had been allocated, both the initial and revised codes generated the same payment band (HRG code). These cases mainly comprised of pharyngolaryngectomy with flap reconstruction. This category also included thyroplasty, which initially was repeatedly incorrectly coded as a thyroid procedure. However, it still generated the same payment when correctly coded.

The procedure codes and HRG codes differed in 9 cases (26.4%). These cases comprised of complicated major head and neck operations, such as pinnectomy, temporal bone resection and free flap reconstructions, mandibulotomy and oropharyngeal tumour excision, parotidectomy with mandibulotomy and rectus abdominis free flap. The discrepancy

was mainly due to initial inaccurate coding. However, the initial inaccurate codes often (7 out of 9 cases) resulted in a higher payment band, *i.e.* the initial HRG codes equated to a higher payment band than the revised payment band. In only two cases did the revised HRG code result in a higher payment band than the initial HRG code (Fig. 2). When comparing the monetary values of the HRG codes allocated, the cases where the revised HRG codes were in a higher payment band than the initial HRG codes, the total difference was £1,692 – a theoretical monetary gain by accurate coding. The cases where the revised HRG codes resulted in lower payment bands than the initial codes (7 of the 9 cases), the difference was £11,576 – a theoretical monetary net loss by accurate coding.

Unfortunately, six cases were never initially coded. The reasons for this were: (i) the notes had not been delivered to the clinical coding department ($n = 3$); (ii) the patient had no episode on the computer system ($n = 1$); or (iii) no reason was found ($n = 2$). When coded by the surgical trainee and head of clinical coding, the combined total for the HRG codes generated was £15,300.

Discussion

The UK Department of Health proposed a system of payment that would be fair and representative of the work undertaken in hospital – a consistent basis for hospital funding. The results from our study highlight that this is not possible with major head and neck procedures with the current coding system.

With the current system in place, *Payment by Results* cannot be a transparent rule-based system. The current OPCS coding system would have to be revised. We found concordance of procedure codes in 11 out of the 34 operations reviewed (32.3%). There were too many codes resulting in a range of choices for a single procedure. When each procedure within an operation was coded for, the number of different combinations that could be used was enormous.⁷ Not only was there a wide range of possible codes to use, many of these codes were outdated.⁸ The current coding system has been in use since 1987; hence, newer procedures did not have specific codes and it was left to the coder to find a combination of codes to best describe the operation. This has been shown to be very difficult, especially since the coder has no medical background and can only guess. For example the coding of a 'thyroplasty' was coded as 'other operation on thyroid'. A 'thyroplasty' is an operation designed to improve the voice by manipulating the position of the vocal cords within the larynx. It is not a thyroid operation. Also, the coding system was found to be non-specific. Neck dissections were coded under 'block dissection of cervical lymph nodes' with no difference between selective, modified or radical neck dissections.

Figure 2 The variation of procedure codes (PC) and Healthcare Resource Group (HRG) codes allocated.

Our study also showed that operations could be coded completely differently yet result in the same payment in 8 out of the 34 cases reviewed (23.5%); while fine with regards to financial re-imbursement, the codes are also used for audit, research, data collection and clinical governance.⁹ Since our study, OPCS v.4.3 has been introduced and is currently in use. We feel that the upgraded version appears to have the same flaw. Instead of revising all the codes, more codes have been added to an already sizeable system.

Of more concern was whether the tariffs applied to HRG codes were realistic. Our data demonstrated various cases where remuneration defied clinical common sense. For example, a pharyngolaryngectomy (bilateral neck dissections and pectoralis major flap reconstruction) produced a HRG code which correlated to a lower payment group (£1,611) than the HRG code for a lymph node excision (£1,819). Considering the former operation is technically complicated requiring three theatre sessions and specialised theatre equipment, the remuneration allocated is unjustifiable. The Health and Social Care Information Centre (HSCIC) is currently looking at the 'real cost data' for procedures; under *Payment by Results*, a national tariff for the price of HRGs is being implemented over the next 3 years.¹⁰

As previously mentioned, mistakes in coding were often due to lack of clinical knowledge of the coder. For example, a thyroplasty was mistaken for a thyroid operation. It can be argued that professional coders could be trained to understand complicated surgical operations. However, since at present coders are rotated throughout the clinical coding department to cover different specialities every 3–4 months, it would be time-consuming and not cost-effective to retrain coders this frequently. It has been argued that the operator is the best person to code. However, our study showed that when procedures were correctly coded even with the help of the Head of Coding, ensuring codes were placed in the correct order (*i.e.* therapeutic codes prior to diagnostic codes), the amount of money rewarded fell extremely short compared to the inaccurate coding of the professional hospital coder. The theoretical monetary loss by accurate coding was found to be £11,576, seven times more than the theoretical monetary net gain by accurate coding. This outcome revealed that a greater monetary gain could be obtained by inaccurate coding. If the sole purpose of *Payment by Results* was monetary gain, perhaps coding of procedures should be left to coding clerks.^{11,12} However, *Payment by Results* is meant to be a fair and accurate process of reimbursement.

Even if the OPCS coding system were completely revamped so there were specific codes for each operation, eliminating any ambiguity, the process of *Payment by Results* would still fail to be fair. Current practices in place hinder the efficiency of *Payment by Results* – notes go missing,

coders are unable to read operation notes, operation notes do not outline each step within an operation (for example, panendoscopy during a pharyngolaryngectomy), some notes are never sent to coding and patients can be completely missed off the computer system. There are too many steps, and a break in the chain can result in loss of financial reimbursement to the hospital. The national public spending watchdog, the Audit Commission, recently found a significant proportion of hospital trusts with inaccurate records or, in some cases, no data at all for some of their work.¹⁵ Clinical coding must be given greater priority. Leading clinicians should be involved and review codes attributed to their work, as is in the private sector.¹⁴

Conclusions

These results highlight the inadequacy of this system to reward hospitals for the work carried out within the NHS in a fair and consistent manner. The current coding system was found to be complicated, ambiguous, inaccurate and too poorly equipped to incorporate coding of major head and neck operations as part of *Payment by Results*.

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