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Short communication

Impact of coding errors on departmental income: an audit of coding of microvascular free tissue transfer cases using OPCS-4 in UK

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Abstract

Since the introduction of "Payment by Results", departmental income has been linked to clinical activity, and the coding of theatre activity (Office of Population, Censuses and Surveys Classification of Surgical Operations and Procedures (4th revision), OPCS-4) must be accurate and timely. We assess the accuracy of OPCS-4 coding for patients having microvascular free tissue transfer for head and neck cancer, and evaluate the impact it has on departmental income. Codes for a consecutive cohort of patients were checked to identify inaccuracies and the tariffs were recalculated. Incorrect coding in 11/21 cases resulted in a financial loss of £77 449.00 because reconstruction had not been recorded as F39.1, which would automatically place it in the maximum income group, CZ04. If funding is to be optimised surgeons must be cognisant of the importance to code procedures accurately with respect to financial reimbursement. Regular monitoring of coding is suggested, including that of coexisting morbidities.

Keywords: Tariff; Reconstruction; Head and neck cancer; Payment by Results; Coding; OPCS4

Introduction

In July 2000 the government introduced the NHS Plan,[1] which linked hospital activity to funding, and by 2008–2009 "Payment by Results"[2–4] was being used widely. Theatre activity is quantified by the Office for Population Censuses and Surveys, version 4 (OPCS-4) coding system.[5] Using Department of Health software, codes are allocated to an appropriate healthcare resource group (HRG version 4), which generates the tariff. Accuracy requires personnel to be familiar with medical terminology, surgical techniques, and the complex coding systems. [3,6–8] A tight timetable for charging (six weeks after the end of the month of discharge) provides timely information for commissioning and payment, but errors cannot be rectified later.

Clinical coding is fraught with inaccuracy.[3,4,6,7,9] Previous studies have shown mistakes in coding in 7–16%[3,4,10] of procedures, resulting in a considerable financial impact.

In April 2009 the HRG4 tariffs for OMFS were changed from a single tariff (around £13 000) for a patient undergoing a free flap procedure, to a stepped tariff of up to £15 441 to account for coexisting morbidities.[1,2,5]

Methods

We assessed the accuracy of OPCS-4 coding for microvascular free-tissue transfer for head and neck cancer in 21

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Table 1A
OPCS-4 (Office of Population, Censuses and Surveys Classification of Surgical Operations and Procedures, 4th revision) codes entered accurately.

	OPCS-4 code	Incidence
Temporary tracheostomy	E42.3	20/20
Harvest of radial forearm free flap	Y58.9	13/13
Block dissection of neck:	T85.1	
Unilateral (15/16)		15/16
Bilateral (3/3)		3/3
Partial glossectomy	F22.2	11/12

Table 1B
Common missing codes.

	OPCS-4 code	Incidence
Excision of submandibular gland	F44.4	14/17
Reconstruction of mouth using flap	F39.1	11/21
Harvest of skin for graft	S35.9	9/14
Unspecified split autograft of skin	Y58.9	7/11

consecutive patients for a 16-week period from April 2009, and evaluated the impact on departmental income.

Typed operating notes and OPCS-4 coding (Medway PAS, System C Healthcare plc, Maidstone, UK) were compared directly by a single clinician. Inaccuracies and changes were discussed with coding staff, and loss of income and HRG4 tariffs were recalculated after checking they met the guidelines. Ways to improve the accuracy of coding were identified and discussed.

Results

There were inaccuracies in coding for the procedures in all 21 patients (Tables 1A and 1B), but only 11 changes were made to the HRG tariff (Table 2), which resulted in undercharging of £77 449.00. All changes were associated with the code F39.1, "Reconstruction of mouth using flap" because reconstructions of the tongue had been coded as F26.8, "Other specified operations on tongue" instead of F39.1.

Discussion

The current system for the coding of major head and neck operations results in a loss of income. Accurate coding requires understanding of the current OPCS-4 system,[5] HRG tariff,[10] and operative procedure. Staff who record the codes are not familiar with surgical technicalities and clinical staff are not familiar with coding protocols. We did not compare these two groups but aimed to establish where the inaccuracies occurred and to put forward strategies to avoid them.

The failure to use F39.1, "Reconstruction of mouth using flap" has serious financial implications as its use places the episode into the HRG category "Complex major mouth procedure", which generates the maximum tariff (£7757.00 with no complications and no coexisting morbidities [HRGCZ04Q]; £9530.00 [HRGCZ04P] for intermediate; or £15 441.00 [HRGCZ04O] for major complications).

In 2008–2009 we received an income of £13 000/patient. HRG4 tariffs are now considerably lower and only two patients' operations were placed in the HRG CZ04O category. Such loss of income will be made worse if procedures are coded incorrectly and miss being placed in the HRG CZ04

Table 2
HRG (healthcare resource group) tariff by patient and change in income with new coding.

Case no.	Tumour resected	Type of free flap	Initial HRG code	Initial HRG tariff (£)	Correct HRG code	Correct HRG tariff (£)	Difference /loss (£)
1	Partial glossectomy	Anterolateral thigh	CZ03Y	2078.00	CZ04Q	7757.00	5679.00
2	Right maxillary tuberosity	Radial forearm	CZ17Y	2852.00	CZ04Q	7757.00	4905.00
3	Commisure	ALT	CZ18R	3334.00	CZ04P	9530.00	6196.00
4	Floor of mouth/mandibulectomy	Fibula	CZ18R	3334.00	CZ04P	9530.00	6196.00
5	Hemiglossectomy	Radial forearm	CZ03V	2469.00	CZ04P	9530.00	7061.00
6	Hemiglossectomy	Radial forearm	CZ03V	2469.00	CZ04P	9530.00	7061.00
7	Hemiglossectomy	Radial forearm	CZ03V	2469.00	CZ04P	9530.00	7061.00
8	Left mandible	Fibula	CZ18R	3334.00	CZ04P	9530.00	6196.00
9	Partial glossectomy	Radial forearm	CZ03V	2469.00	CZ04P	9530.00	7061.00
10	Soft palate	Latissimus dorsi	CZ03V	2469.00	CZ04P	9530.00	7061.00
11	Retromolar/oropharynx	Scapula	CZ03V	2469.00	CZ040	15441.00	12 972.00
	Total			29 746.00		107 195.00	77 449.00

Coexisting morbidities or complications: minor CZ04Q; intermediate CZ04P; major CZ04O. Each patient's treatment in this group lost income. All had been coded as tongue or palate resection rather than mouth or buccal.

Table 3
Procedures and codes in the CZ04 (maximum tariff) group.

Procedures in the CZ04 (maximum tariff) group	
E191	Total pharyngectomy
E192	Partial pharyngectomy
E291	Total laryngectomy
E292	Partial horizontal laryngectomy
E293	Partial vertical laryngectomy
E294	Partial laryngectomy NEC
E295	Laryngofissure and chordectomy of vocal chord
E296	Laryngectomy NEC
E298	Other specified excision of larynx
E299	Unspecified excision of larynx
E311	Laryngotracheal reconstruction using cartilage graft
E312	Laryngotracheoplasty NEC
E313	Division of stenosis of larynx and insertion of prosthesis into larynx
E356	Endoscopic partial laryngectomy
F221	Total glossectomy
F243	Glossotomy
F391	Reconstruction of mouth using flap NEC
T961	Excision of cystic hygroma
V074	Excision of lesion of infratemporal fossa
V141	Hemimandibulectomy

NEC: not elsewhere classified.

(maximum tariff) group. Table 3 shows the 20 procedures that are automatically placed in this group.

Clinicians are no better at providing accurate codes than administrative staff,[3,4,8,10] but operating notes that use a proforma allow the most appropriate codes for maximum income to be selected, with F39.1 as the default code. Coding should be checked in a timely fashion to allow changes to be made, and at the end of the financial year alterations to the HRG tariff system should be identified.

Clear documentation of coexisting morbidities and complications is essential to obtain the high level tariff. They must be recorded using medical terminology—for example, pneumonia, not chest infection. Coding could be linked to existing oncology databases to enable easier data capture and retrospective audit.

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