Use of the CRABEL Score for improving surgical case-note quality

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ABSTRACT

INTRODUCTION Quality assurance of medical record keeping in general surgery is facilitated by use of the CRABEL Score. Critical appraisal and constant feedback to staff plays an important part in improving case-note quality.

MATERIALS AND METHODS For each case-note audit, a house officer reviewed two sets of case notes for each of six consultant surgeons. Scores were awarded according to initial clerking, subsequent entries, consent, and discharge summary. Overall scores were derived by subtracting deductions for omissions in each category from a starting score of 100. A larger number of points deducted due to absent data leads to a lower overall score and indicates poorer quality case notes. After four audits, a clerking proforma specifically designed to address some of the common areas of weakness identified in our record keeping was introduced and a further audit was performed in March 2004 to assess its impact.

RESULTS The mean score was lowest in the September 2001 audit and improved over the next two audits. However, there was a small reduction in September 2003 compared to September 2002. When the individual sections of the score were looked at separately, the greatest contribution to a poor score comes from the 'subsequent entries' section since there are five entries scored individually leading to a cumulative effect on the overall score. Within both the 'initial clerking' and 'subsequent entries' sections, early audits showed poor performance across a range of areas but consistent poor implementation of the guidelines was seen in a small number of specific areas as record keeping improved. The quality of medical notes improved over the first three cycles but the improvement was not maintained subsequently.

DISCUSSION The CRABEL score has been shown to be a useful, reproducible and easy-to-perform objective assessment of the quality of medical record keeping. Repeated audit cycles have ensured that case-note quality remains a high priority and have also led to the development of standardised admission documentation. Introduction of the latter has led to a measurable improvement in medical record keeping.

KEYWORDS

CRABEL Score – Medical records – Audit

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Contemporaneous medical records often play a critical role in establishing the facts associated with complaints and medicolegal actions. Frequently completed by junior doctors in training, the importance of accurate and high-quality notes is appreciated later in a typical career. A number of authors have demonstrated the need for constant vigilance if the highest standards of note keeping are to be maintained.^{1–3}

The CRABEL Score was described in *Annals of the Royal College of Surgeons of England*⁴ as a method of grading the quality of individual case notes against a set of objective criteria, themselves derived from the guidelines published by The Royal College of Surgeons.⁵ When used repeatedly, this Score has the potential to identify areas of strength and

weakness in this most important administrative function. Presentation of the results of audit has also been shown to improve subsequent quality of case notes.^{6–8}

A practical financial incentive for trusts is the importance the Clinical Negligence Scheme for Trusts (CNST) places on quality of medical records. Good quality records, supported by regular audits is a cornerstone of CNST level-3 accreditation, which in turn leads to lower financial costs than trusts with only level-2 accreditation.

The aim of this study was to perform case note audit every 6 months, to present the results to each new team of junior staff at the start of their attachments and to collate the data over four audit cycles to identify areas of persistently good and poor performance.

Figure 1 Mean score for each audit cycle.

Materials and Methods

Case-note audit based on the CRABEL score forms a recurrent part of our departmental audit programme. The audits are set to run in March and September – 1 month after the arrival of a new team of junior staff. In this study, we have not included the March 2003 audit as it covered consultants in another hospital within the merged trust. Results are presented to the monthly audit meeting and discussed by the entire clinical team.

For each audit, a house officer reviewed two sets of case notes for each of six consultant surgeons. Scores were awarded as described by Crawford *et al.*⁴ relating to initial clerking, subsequent entries, consent, and discharge summary. The overall scores were derived by subtracting deductions for omissions in each category from a starting score of 100. A larger number of points deducted due to absent data leads to a lower overall score and indicates poorer quality case notes.

After four audits, a clerking proforma specifically designed to address some of the common areas of weakness identified in our record keeping was introduced and a further audit was performed in March 2004 to assess its impact.

Results

The mean score was lowest in the September 2001 audit and improved over the next two audits (Fig. 1). However, there was a small reduction in September 2003 compared to September 2002. When the individual sections of the score were looked at separately, the greatest contribution to a poor score comes from the 'subsequent entries' section since there are five entries scored individually leading to a cumulative effect on the overall score. Within both the 'initial clerking' and 'subsequent entries' sections, early audits showed poor performance across a range of areas but consistent poor implementation of the guidelines was seen in a small number of specific areas as record keeping improved. The quality of medical notes improved over the first three cycles but the improvement was not maintained subsequently. The average scores obtained were 68–89%.

Initial clerking

Total points deducted in this section decreased from 36 to 31. The name of the admitting consultant was frequently omitted in all audit periods. Adequate identification of the doctor completing the clerking improved considerably in later audit cycles but deteriorated in the final audit (Fig. 2). It appears that junior doctors do not appreciate the importance of recording their name, bleep number and post held in order to identify them in later years. This needs to be emphasised repeatedly.

Full identification of patients (including the hospital number) and the name of the admitting consultant were completed more reliably in later audit cycles but there was a deterioration in the recording of date/time.

Subsequent entries

There was an overall improvement in quality as shown by a reduction in the points deducted from 117 to 63. Completion of date and time, recording the results of investigations and

Figure 2 Initial clerking.

Audit cycle	Percentage
Sep 01	50
Mar 02	50
Sep 02	50
Sep 03	60

Figure 4 Score for consent category.

The Mid Yorkshire Hospitals NHS Trust - Surgery									
Patient Name :			Consultant			Date Time			
Hospital Number :			DOB			F / M			
Referral Source		A & E	GP	Clinic	Elective	Transferred :			
History					Medications				
					Insulin : Y / N Warfarin : Y / N Steroid : Y / N				
					Allergies :				
Past Medical Hx / Past Surgical Hx (PLEASE TICK FOR YES)									
☐ CVA ☐ TIA ☐ COAD ☐ Asthma ☐ RH Fever ☐ DVT / PE ☐ Hypertension ☐ DM ☐ Pacemaker ☐ TB ☐ Angina ☐ MI									
Social History									
Smoker / Non - smoker / Ex - smoker			Cigs :		/ Day		Alcohol :		
Lives : Spouse / Partner / Alone / Children / Nursing H. / Residential H.									
System Review									

Temp :	Pulse :	Regular / Irregular	BP	RR	
Dehydration / Jaundice / Anaemic / Cyanosis / Lymphadenopathy					
Chest :			CVS HS : I II Murmur Carotid Bruit : R / L / NO JVP : Pitting Oedema :		
Breast :					
ABDO : Liver : AAA : Spleen : Kidney (s) : Hernia Orifices : PR			PVS : Ankle Pressure Right DP : PT : Left DP : PT :		
Differential Diagnosis			Signature		
			Name		
			Post & Bleep		
Plan					
INVS. & RESULTS (Please tick box for test requested)				☐ XRAY	☐ US
☐ FBC :	☐ Electrolytes	☐ LFT	☐ COAG	☐ ABG : pH	☐ Amylase
HB	NA+	ALK PO4	INR	PO ₂	☐ Glucose
WBC	K+	ALT	APTT	PCO ₂	☐ Grp & Save
PLT	Urea	Bilirubin	☐ CRP	HCO ₃	☐ x - match _____ unit
MCV	Creat	Albumin	☐ Ca2+	BE	☐ CK ☐ ECG
Urinalysis					Pregnancy test
Others :					

Figure 6 The 2-page admissions proforma.

Consent

The quality of information regarding the consent process was excellent (Fig. 4). This, in part, reflects the high priority given to obtaining informed consent within the department, the close involvement of consultant staff and the regular review of consent documentation.

Discharge letter

The striking feature was particularly poor compliance with the standard regarding recording admission and discharge dates in the hand-written discharge letter which is given to patients. This must be unacceptable (Fig. 5). In the September 2002 audit, details of follow-up plans were frequently absent.

Discussion

It is disappointing to see that basic information such as the admitting consultant's name, the date/time/bleep number and signature of junior doctor entries in the notes is not reliably present. Communication with GP colleagues in the form of a standard hand-written discharge note often did not include basic information such as admission and discharge dates or follow-up arrangements.

It is re-assuring that the standard of note keeping can be shown to improve with repeated audit and presentation of results to junior staff. However, there is a tendency for previous problems to recur, such as the omission of date/time, admitting consultant and full identification of the admitting doctor. To address this, a 2-page admissions proforma was designed that specifies the information required to improve the quality of record keeping (Fig. 6).

After the proforma was introduced, the March 2004 audit (Fig. 7) showed marked improvements in recording of doctor identification details and admitting consultant name in the 'initial clerking' section. The audit loop has, therefore, been closed.

In our department, the CRABEL score has been shown to be a useful, reproducible and easy-to-perform objective assessment of the quality of medical record keeping. Repeated audit cycles have ensured that case-note quality remains a high priority and have also led to the development of standardised admission documentation. Introduction of the latter has led to a measurable improvement in medical record keeping.

We would recommend the CRABEL score to colleagues as a useful tool for case-note audit combined with regular feedback to junior staff. Systematic audit of this type can lead to the development of improved documentation supporting the clinical process within a busy general surgical department with benefits for patient care, clinical governance, CNST accreditation and interspecialty communication.

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