Provisional coding practices: are they really a waste of time?

Matthew Krypuy and Lena McCormack

Abstract
In order to facilitate effective clinical coding and hence the precise financial reimbursement of acute services, in 2005 Western District Health Service (WDHS) (located in regional Victoria, Australia) undertook a provisional coding trial for inpatient medical episodes to determine the magnitude and accuracy of clinical documentation. Utilising clinical coding software installed on a laptop computer, provisional coding was undertaken for all current overnight inpatient episodes under each physician one day prior to attending their daily ward round. The provisionally coded episodes were re-coded upon the completion of the discharge summary and the final Diagnostic Related Group (DRG) allocation and weight were compared to the provisional DRG assignment. A total of 54 out of 220 inpatient medical episodes were provisionally coded. This represented approximately a 25% cross section of the population selected for observation. Approximately 67.6% of the provisionally allocated DRGs were accurate in contrast to 32.4% which were subject to change once the discharge summary was completed. The DRG changes were primarily due to: disease progression of a patient during their care episode which could not be identified by clinical coding staff due to discharge prior to the following scheduled ward round; the discharge destination of particular patients; and the accuracy of clinical documentation on the discharge summary. The information gathered from the provisional coding trial supported the hypothesis that clinical documentation standards were sufficient and adequate to support precise clinical coding and DRG assignment at WDHS. The trial further highlighted the importance of a complete and accurate discharge summary available during the coding process of acute inpatient episodes.

Keywords (MeSH):
Clinical Coding; ICD-10-AM; Clinical Documentation Standards; Diagnostic Related Group; Financial Reimbursement, Provisional

Introduction
Clinical coding utilising International Statistical Classification of Diseases 10th Revision Australian Modification (ICD-10-AM) and Australian Classification of Healthcare Interventions (ACHI) is a process that is performed by all public and private acute hospitals in Australia. Diagnoses and medical/surgical interventions documented in the medical record are coded and grouped to a Diagnostic Related Group (DRG) for each inpatient episode. Each DRG attracts a unique weight which aims to reflect the various resources utilised within an episode of care. This is the key activity that forms the foundation of the financial funding models for hospitals within the acute health sector. Although financial funding models vary between the public and private sectors, clinical coding is of great importance as it provides critical information to facilitate direct reimbursement for the provision of acute services by hospitals and also aids in financial contract negotiations between hospitals, the government and various other stakeholders.

Given the importance of clinically coded information from a financial viewpoint, there is a great need for hospitals to maintain high quality...
Professional practice and innovation

clinical coding processes to ensure that financial reimbursement for acute services are accurate and precise. Failure to do so would result in hospitals not realising the full potential of their revenue collection processes. There is general concern amongst the health information management profession about whether provisional coding practices produce significant benefits to outweigh the human resources that are consumed in performing them. Regardless of the methodology used in executing these practices, allocating provisional ICD-10-AM codes and DRGs are time consuming and resource intensive.

So how does one justify undertaking provisional coding practices? The Western District Health Service (WDHS) approached this problem from a continuous quality improvement perspective, where surveyors commended this initiative during the Accreditation of WDHS by the Australian council of Healthcare Standards (ACHS) in mid 2005.

To date there has not been any formal systematic reviews of provisional coding practices. This paper will provide an overview of the methodology used and highlight the significance of the results in relation to clinical documentation standards and the financial reimbursements of acute health services provided by hospitals.

Provisional Coding with ICD-10-AM at Western District Health Service

WDHS is located in the southwest region of Victoria approximately 300 kilometres from Melbourne. Hamilton Base Hospital is one of three campuses of WDHS and plays an integral role in the provision of acute healthcare services to the surrounding community. Facing an ageing population within its service delivery area, the provision of acute general medical services by WDHS is one of several key services. In 2004-5, acute general medical episodes accounted for approximately 27% of WDHS’s total separations. In early 2005, a provisional coding trial was undertaken for acute general medical patients at WDHS Hamilton campus to determine the magnitude and accuracy of clinical documentation required to facilitate effective clinical coding resulting in the precise financial reimbursement of acute services.

For the purposes of the trial, provisional coding was defined as the coding of an inpatient episode using the ICD-10-AM and ACHI classification systems prior to discharge and without the completion of a discharge summary.

Method

The trial for provisionally coding inpatient medical episodes commenced on the 17 January 2005 and concluded on the 25 March 2005. The trial focused on patients who were admitted under the four medical physicians practising at WDHS Hamilton campus. Thus all medical patients admitted under general practitioners were excluded in the provisional coding trial. Physician involvement in the trial was identified as a key requirement as the strategy had to have sufficient clinical support and endorsement. Once adequate clinical support was acquired from the Director of Medical Services, a Health Information Manager accompanied each physician on a ward round once per week.

Utilising clinical coding software installed on a portable laptop computer, provisional coding was undertaken for all current overnight inpatient episodes under each physician one day prior to the ward round. This process provided a mechanism whereby the Health Information Manager could discuss the most accurate ICD-10-AM and ACHI code allocation and clarify potential diagnoses reflected in the clinical documentation and diagnostic evidence with the medical team.

Following the ward round, each provisionally coded episode was refined to include the clinical input and the DRG and associated weight was recorded. The provisionally coded information was then inserted into patients’ files on the wards to assist resident medical staff when completing the discharge summary upon patient discharge. The provisionally coded episodes were re-coded upon the completion of the discharge summary and the final DRG allocation and weight was compared to the provisional DRG assignment.

Quantitative analysis was undertaken to determine if there was any variation in DRG and DRG weight allocation between provisional and final coding in relation to the accuracy of clinical documentation versus the clinical input obtained during the ward rounds.
Results and discussion
During the period of the trial, a total of 54 out of 220 inpatient medical episodes were provisionally coded. This represented approximately a 25% cross section of the population for observation. The sample size was further reduced by 17 episodes, as the discharge summary was not completed for these episodes whilst undertaking the quantitative analysis. Thus the sample size was n=37, representing approximately 17% of the total inpatient medical episodes admitted for all physicians.

Figure 1 represents the number of provisional DRG changes that occurred once the episodes were re-coded with the discharge summary available. Approximately 67.6% (n=25) of the provisionally allocated DRGs were accurate in contrast to 32.4 (n=12) which were subject to change once the discharge summary was completed.

DRG assignment for inpatient medical episodes is primarily influenced by the principal diagnosis. A change in principal diagnosis would result in a different DRG being assigned. Additionally, complicating diagnoses, comorbidities and diagnoses requiring mechanical ventilation that arise during an episode contribute to higher resource consumption and further influence DRG assignment. Further factors such as the age, weight and discharge status of the patient impact on DRG assignment.

Figure 2 provides a drill down analysis on the provisional DRG assignment changes after final coding. In 58% (n=7) of the episodes, the DRG weight had increased with the allocation of different DRGs. Alternatively, 42% (n=5) of the episodes decreased in DRG weight with the assignment of different DRGs.

In some instances the patient’s presenting problem was initially coded provisionally, reflecting the prognosis at the time of admission. In such a case, during the episode of care the patient’s condition progressed and evolved, which ultimately required higher resource consumption and resulted in a different DRG being assigned. This information could not be captured by the Health Information Manager as the patient had already been discharged prior to the next scheduled ward round with the medical team.

In Episode 2 of Figure 2, a provisional diagnosis was made of abnormal weight loss on admission. During the episode of care, it was established that the weight loss was a result of malnutrition requiring different DRG assignment with a substantially higher weight. Similarly, in episode three an oesophageal mass was provi-
sionally diagnosed and coded. Upon discharge, evidence based medicine established that the mass was an oesophageal carcinoma resulting in a different DRG assignment with a higher weight.

In Episode 9, ventilation support was required for the patient’s condition. The DRG weight had significantly increased after final coding in this episode as at the time of provisional coding the duration of ventilation was less than 24 hours. Upon discharge, the duration of ventilation increased within the range of 24 to 96 hours resulting in higher resource consumption and affecting the DRG assignment upon final coding.

Although there was a considerable DRG weight difference in the provisional and final DRG assignment for Episode 11, the underlying cause was that the patient died whilst an inpatient resulting in different DRG assignment based on the discharge destination of the patient.

In other instances the completion of the discharge summary had influenced the change in provisional DRG assignment after final coding.

Eighty percent (n=4) of the different DRG assignments resulting in a decrease in DRG weights were attributed to the completion of the discharge summary. The clinical documentation on the discharge summary resulted in the application of different ICD-10-AM codes influencing the DRG assignment. In Episode 12, the documentation of the term ‘grand mal seizure’ on the discharge summary opposed to ‘general seizure’ in the clinical notes resulted in a more accurate DRG being assigned despite a decrease in DRG weight.

Figure 3 displays a relatively positive skew in the distribution and allocation of DRG weights between provisional and final coding for the whole sample, which suggests that there is sufficient documentation to support precise DRG assignment. Sixty-seven point six percent (n=25) of the sample had adequate and accurate documentation on the discharge summary to reflect provisional coding and DRG assignment, as there was no change in DRG assignment after final coding for these cases.

The outliers evident in Figure 3 were primarily due to three factors:
- a disease progression of a patient during their episode which could not be identified by clinical coding staff as they had already been discharged prior to the following scheduled ward round
- the discharge destination of particular patients
- the accuracy of the clinical documentation on the discharge summary.

The total accumulative DRG weight value for all 37 provisionally coded episodes totaled 55.2616. Following final coding of the inpatient episodes, the total accumulative DRG weight value was 56.1194, which amounted to a total DRG weight difference of 0.8578 in favour of coding with a completed discharge summary. This highlighted the effectiveness of a complete and accurate discharge summary to facilitate precise ICD-10-AM allocation and DRG assignment, which in turn would reflect precise financial reimbursement of the provision of acute health services.

Figure 3: Plot of DRG weight for inpatient medical episodes during provisional and final coding (n=37)
Case studies

Conclusion

The information gathered from the provisional coding trial supported the hypothesis that clinical documentation standards were sufficient and adequate to support precise clinical coding and DRG assignment at WDHS. As the trial did not include medical inpatient episodes under the care of general practitioners, the result could only be generalised for episodes admitted under the care of the medical physicians consulting at WDHS. Although outliers which undermined the reliability of the results of the trial were evident, the causes behind the outliers were identified and considered as significant variables associated with ICD-10-AM code allocation and DRG assignment.

The trial further highlighted the importance of a complete and accurate discharge summary. The discharge summary is primarily used for patient care. It has, however, further implications in facilitating effective ICD-10-AM code allocation and DRG assignment for inpatient episodes, and subsequently establishes the extent of financial reimbursement for inpatient services provided by hospitals. Those hospitals that deploy coding processes without readily available, complete discharge summaries run the risk of creating inefficiencies in their revenue collection process for acute hospital services.

From a quality improvement perspective, the provisional coding trial was not seen to be a waste of time. Although a considerable number of human resources were invested in this initiative, the outcomes produced significant benefits in providing a tool for measuring clinical documentation standards, fostering clinician involvement in the clinical coding process and effectively determining the quality and accuracy of one of the key activities in WDHS’s revenue collection process.

Matthew Krypuy BHlthInfoManagement
(formerly of Western District Health Service)
Epworth Hospital
89 Bridge Road
Richmond, Victoria 3121
AUSTRALIA
Phone: (03) 9309 7087
Mobile: 0402 763 343
Email: Matthew.Krypuy@epworth.org.au

Lena McCormack BAppSci(HIM)
Manager, Health Information
Western District Health Service
Foster Street
Hamilton, Victoria 3300
AUSTRALIA