ICD-10 - A STRATEGY FOR HOSPITAL IMPLEMENTATION

Nicole Mair
St Andrew’s War Memorial Hospital, Brisbane, Australia
E Mail nmair@sawmh.org.au

ABSTRACT
St Andrew’s War Memorial Hospital is a 220 bed acute care, private facility situated in Brisbane, Australia. This hospital developed a strategic plan for implementation of ICD-10-AM. This plan included appropriate education strategies, information system reviews, and a program to gradually introduce monitored coding using ICD-10-AM some considerable time prior to the designated implementation date of 1 July 1999. The project is divided into four phases, as well as a pre-study phase. Milestones and flags were established to monitor study progress and critical risks, as well as permit acceleration if milestones were met early. At completion of Phase 1 of the project, coding productivity was shown to have decreased by 32%, however this had improved to an 8% decrease in productivity by the end of Phase 2.

KEYWORDS: Classification, casemix, diagnosis related groups

INTRODUCTION
Complete implementation of morbidity coding with ICD-10-AM will be mandatory throughout Australia by July 1, 1999. ICD-10-AM (International Classification of Diseases, 10th Revision, Australian Modification) is a substantially different clinical classification (coding) system to it’s predecessor ICD-9-CM (International Classification of Diseases, 9th Revision, Clinical Modification), and it was anticipated that its introduction would considerably reduce coding turn-around over the first six months. This had been confirmed by reports from the National Centre in Classification in Health (NCCH) regarding the coding status in Victoria, where ICD-10-AM was introduced on 1 July 1998. This state demonstrated up to a 50% decrease in coding productivity within the first 6 weeks of ICD-10-AM implementation (Strauch, P., 1998).

St Andrew’s War Memorial Hospital is a 220 bed acute care, private facility situated in Brisbane, Australia. Coding at St Andrew’s Hospital is performed by qualified personnel who have university degrees in Health Information Management, and has
been maintained at a one week end-of-month turnaround for well over two years. Hospital management was anxious to avoid the coding backlogs experienced by our southern counterparts, as this would impact the budgetary function of the hospital and government reporting requirements. It is evident that the limited coding workforce available in Queensland would preclude the possibility of hiring additional temporary qualified staff, and there was no doubt that those who were available would be under huge demand by both public and private sector hospitals.

In preparation for this, the Health Information Systems Department at St Andrew’s Hospital developed a strategic plan for implementation of ICD-10-AM. This plan included appropriate education strategies, information system reviews, and a program to gradually introduce monitored coding with ICD-10-AM some considerable time prior to 1 July 1999. We currently in the third Phase of the project.

TRIAL PROJECT PLAN

Health Information Systems commenced the ICD-10-AM coding project in December 1998. The project was designed to gradually introduce our Health Information Managers to coding using ICD-10-AM over the ensuing 6 months, which, assuming all milestones were met, would result in the total clinical classification workload being completed in ICD-10-AM by June 1999. Should program milestones have been met without difficulty, the project could also be accelerated, which would provide a buffer zone for any potential problems encountered.

The project incorporates a form of dual coding in ICD-10-AM and ICD-9-CM, utilising mapping features available on the 3M Encoder software. On allocated weeks, the coding process was conducted using ICD-10-AM, and utilising Encoder, electronically mapped back to ICD-9-CM for indexing purposes. Both ICD-9-CM and ICD-10-AM codes are retained in the medical record for auditing purposes.

PRE-STUDY

The project was divided into 4 phases, plus a pre-study phase. The pre-study phase consisted of performing coding measurements to provide a baseline for comparison of the ICD-10-AM impact. In the eight (8) weeks prior to 1 December 1998, measurements were taken on a weekly basis of:

- total charts coded (all coders)/total discharges
- total coding time (all coders)/total charts coded
- total charts coded (individual coders)/total coding time (individual coders).
- Outstanding morbidity coding 1 week post end-of-month.

A 2.5% random audit of all charts coded in this period was conducted as a base-line comparison for coding accuracy. This will be compared with a later audit of charts coded using the ICD-10-AM classification system.
STUDY PHASES

The 4 study phases extended from December 1998 to June 1999. Phase 1 commenced in the second week in December 1998, where all coders utilised ICD-10-AM for one week. This rationale provided for the previous end-of-month data to be completed at the usual schedule of one-week post end of month. It also allowed for time in the remaining weeks to catch up on any coding delays created in ICD-10-AM coding period. The number of weeks coding in ICD-10-AM increased to two per month during Phase 2, three per month during Phase 3, while Phase 4 will see all coding performed using the ICD-10-AM classification system.

MILESTONES AND FLAGS

Similar measurements as those taken in the pre-study period were documented throughout the entire project to monitor individual coder productivity, measurement of milestones, and subsequent progression of the project phases. Individual coders require monitoring to ensure they are managing the study protocol, and not reducing their productivity to critical levels. Coding productivity levels were monitored in terms of number of charts coded / total coding time, in relation to individual coders, and the department as a whole. These were collated monthly on an individual and departmental basis.

For the first month in each phase, the major milestone measurement was to complete all coding by two weeks post end of reference month. The second month of each phase would see that measurement reduced to 1 week post end of month. Only if this were achieved, would the project be advanced to the next phase. When all coding was being performed competently and within time frames, systems will be switched to accommodate ICD-10-AM data entry to eliminate the need for mapping data to ICD-9-AM. Mapping tables within the data extraction system will allow data to be downloaded in ICD-9-AM for casemix and government reporting purposes until 1 July 1999.

AUDITS

Although the need to audit coding throughout the period was recognised, we had to respect the time constraints that would be imposed in utilising a new coding system. This study made the assumption that, for the most part, disease coding accuracy at the rubric level would remain largely consistent regardless of the coding system utilised, and only extension digits may be subject to greater coder error. However, ICD-10-AM procedure codes are considerably different to ICD-9-AM, and would require more thorough audit. Fortunately, the 3M encoding software provides the ability to directly compare codes converted from ICD-10-AM to ICD-9-CM. This
enables the coder to check the accuracy of their work prior to entry onto the hospital mainframe system.

A follow-up audit of 2% of all charts coded in ICD-10-AM will be conducted in the post-study period. The results of this audit will be directly compared with the pre-study audit, and appropriate action taken if necessary.

BENEFITS OF THE PROJECT

We believe our methodology of gradual implementation of ICD-10-AM will demonstrate the following benefits:

- Provides best use of resources and time (this approach avoids dual coding through the use of encoding software or mapping tables);
- It will eliminate the need to hire additional coders;
- Coders will be using the ICD-10-AM system for gradually extended periods of time allowing them to become familiar with the system without significantly impacting on coding turnaround;
- Maintenance of quality and timeliness of coding according to hospital requirements (and remaining prepared for casemix and health fund data requirements);
- While all coding in the same system, coders within the department have the opportunity to informally interact and discuss queries that may arise;
- It provides ample time to determine the true impact of coding in ICD-10-AM to allow the hospital to review its coding workforce, profile, processes and training requirements in advance of 1 July 1999;
- Milestones and flags are in place to identify whether critical risks to the project are occurring. Detection of such risks during the study phases will provide the opportunity to provide additional training and/or reassess the strategy.

EDUCATION

Various educational options for ICD-10-AM were conducted by Queensland Health (State Government), the Health Information Management Association of Australia (HIMAA) and the National Centre for Classification in Health (NCCH). These included publications, introductory sessions, and general courses. In addition to these, our Health Information Managers participated in weekly in-house workshops, working through each chapter of ICD-10-AM at a time, and discussing various issues. As well, one Health Information Manager spent some time at an associated hospital in New South Wales gaining practical experience in live use of ICD-10-AM.

RESULTS TO DATE (as at May 1999)
Figure 1 demonstrates coding results to the end of Phase 2 of the project. On completion of Phase 1, coding in ICD-10-AM had resulted in an overall decrease in coding output (i.e. number of coded discharges) by 15% per week. There was a 32% increase in coding time per individual discharge.

As Health Information Managers at St Andrew’s Hospital are divisionalised by specialty, we were able to identify areas that demonstrated the highest time delays. There was a 17% increase in cardiac surgical and cardiology coding, 90% increase in time spent coding for the HIM responsible for Orthopaedics, Ophthalmology and Neurosurgery (this was attributed mainly to the increased complexity of orthopaedic surgery coding in ICD-10-AM), and all other specialties, including general surgery, plastic surgery, gynaecology, and internal medicine demonstrated an overall increase of 13%.

We have recently completed Phase 2 of the ICD-10-AM implementation program. Coding in ICD-10-AM is now demonstrating an overall decrease in coding output by 8% per week, an improvement of 24%. Cardiac surgical and cardiology has reduced increased time spent coding to 7% (improvement of 10%), Orthopaedics, Ophthalmology and Neurosurgery has reduced increased coding time to 38% (reduction of 52%), and all other specialties actually increased coding time by 1% to a 14% overall increase.

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<tr>
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<th>Phase 1 (Dec - Jan)</th>
<th>Phase 2 (Feb - Mar)</th>
<th>Overall (Dec - Mar)</th>
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<td>Department results</td>
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CONCLUSION

St Andrew’s War Memorial Hospital ICD-10-AM implementation plan includes appropriate education strategies, information system reviews, and a gradual, monitored introduction to coding in ICD-10-AM. The project was divided into four phases, as well as a pre-study phase. Milestones and flags were established to monitor study progress and critical risks, as well as permit acceleration if milestones were met early.

Results to date indicate we are in an excellent position to fully convert to ICD-10-AM well before 1 July 1999, with no significant impact on this hospital’s data completion. Most potential problems in ICD-10-AM implementation have been
encountered and rectified, and skills in coding speed and accuracy have been well established. In addition, the need to recruit additional coding staff to assist with delayed coding activity during the post-implementation period has been eliminated.

REFERENCES