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NATIONAL CENTRE  
FOR CLASSIFICATION  
IN HEALTH

# **Proceedings of the HIMAA/NCCH 2016 National Conference**

***Health Information Management:  
At the Heart of Healthcare***



**8–10 November 2016  
Crown Conference Centre, Melbourne  
33rd Annual National Conference**

**Health Information Management: At the Heart of Healthcare.**

**HIMAA NCCH National Conference,**

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*Proceedings of the HIMAA NCCH 2016 National Conference, Health Information Management: At the Heart of Healthcare*

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# Preface

## Health Information Management: At the Heart of Healthcare

Communication of health information is at the heart of healthcare and how, where and why this communication occurs has changed dramatically over the last five years. It is important for those interested in the management of health information to pose critical questions. What challenges lie ahead? What is needed in the management of health information to improve the quality of patient care? How can we support improvements in healthcare delivery and cost efficiencies? How can we evaluate whether health information systems are delivering the outcomes promised? How can health information professionals provide leadership into the future and provide input into: health policy, quality health information, health services management, health classifications and improved health outcomes for patients?

Ehealth has brought challenges and opportunities to how health information is managed and communicated. Patients and clinicians access health information, both patient and knowledge-based, on-line. Information can be generated and accessed outside hospitals. Consumers and patients are no longer passive recipients of health care delivery but are actively engaged in their diagnosis, treatment and in monitoring their health status. This participation by consumers has been facilitated by electronic health information. Ehealth information is vital for integrated care. Patients move across health sectors and between clinicians and therefore it is essential that their information should also be able to move easily and securely across sectors.

The HIMAA and NCCH National Conference is an annual event which allows the sharing of knowledge and experiences gained from health information related projects and research. A number of current ehealth topic areas are covered in these proceedings, including: health information as a strategic asset; workforce issues; information governance; data quality; coding quality; consumer participation in the management of test results; eReferrals; clinical coder code of ethics; activity based funding; ICD-10-AM; ICD-11; personal health records including My HR; writing research proposals; clinical coding updates; and clinical coder education.

The management of health information has always been an integral part of health care delivery, research and planning for health services. With health information now increasingly documented, accessed, aggregated, mined and shared electronically, the value and uses of health information have broadened. Our national conference brings together leading research, opinions and case studies relating to the value and use of quality health information and clinical classification systems. These proceedings present the peer reviewed abstracts and research papers from our annual key face to face communication forum.

**Joanne Callen,**  
*Chair, Academic Panel*

**Linda Westbrook**  
*(Conference Chair)*

**Vera Dimitropoulos**  
*(Conference Deputy Chair)*

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# Peer-reviewed papers

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# A multi-perspective approach to auditing the quality of coded clinical data

Beth Reid – Pavilion Health

**Introduction:** *This paper is a report of using multiple methods to obtain different perspectives of the quality of ICD-10-AM/ACHI coded clinical data.*

**Aim:** *The aim was to conduct an audit of coded clinical data in the Republic of Ireland. **Methods:** The perspectives included desk-top audits of the data (an Adjacent Diagnosis Related Group Benchmark comparison and PICQ® analysis), and a field-based audit consisting of a re-coding study.*

**Results:** *The overall conclusion was that the coded clinical data are sufficient to underpin Activity Based Funding with the net cost variation between audited data and international comparisons being less than 2% of total activity. Generally however, the hospitals are under representing true clinical complexity and there is a need to reduce the inter hospital variation.*

**Conclusion:** *The use of multiple perspectives for assessing the quality of coded clinical data produces more robust results than using a single method.*

## Introduction

This paper reports on part of year-long project to assess the validity of the data underpinning the Republic of Ireland Health Service Executive (HSE) Activity Based Funding (ABF) model. ABF represents a major change in the way Irish hospitals are funded. ABF means that hospitals are paid for the quantity and quality of care they deliver to patients, thereby enabling the hospitals to see clearly the link between funding and the work they do. The inpatient and day case data that underpin ABF include the disease and procedure (clinical) codes collected by the Hospital Inpatient Enquiry (HIPE) system. In 2015 the HSE engaged Pavilion Health Australia Pty Ltd., by competitive tender, to undertake a review of the quality of HIPE data, to assess whether the quality of the HIPE data is sufficient to support the introduction of ABF. The study was completed in May 2016.

Pavilion Health is a specialist technology and services business focusing on the quality and integrity of coded clinical data, particularly as it pertains to ABF in the public and private health sectors operating under the International Classification of Diseases 10th Revision Australian Modification (ICD-10-AM), Australian Classification of Health Interventions (ACHI), classification systems, and the Australian Coding Standards (ACS).

The project included assessing the validity of the HIPE data, identifying best practice in the management of the coding service and evaluating the coder training and auditor resources needed under ABF. This paper includes the insights gained from auditing the quality of coded clinical data. Details of the other parts of the project are included in the Final Report which will be available through the HSE.

## Aim

The aim of this part of the project was to audit the quality of coded clinical data.

## Data and Methods

### Data

All three methods used 2014 separations data coded using ICD-10-AM/ACHI/ACS 6th Edition and grouped using Australian Refined Diagnosis Related Groups (AR-DRGs) version 6. The Adjacent DRG (ADRG) Benchmark Comparison

and the PICQ<sup>®</sup> analysis used the full year of data. The medical record audit included data for the period July to December, because these were the most recently coded and finalised data available at the time of the audit.

### Summary of the methods

Three different methods were used to audit the quality of the coded clinical data. The methods deliberately examine the coding data different

perspectives to provide a robust review of the data quality. Table 1 shows an overview of the three methods used for this part of the project.

**Table 1: Overview of the methods used to audit the data quality**

Method	Focus of analysis	Brief description
Adjacent DRG (ADRG) Benchmark Comparison	DRGs (DRG at the three-character level e.g. I10) that have a complexity split.	Measures the average complexity of discharges grouped to an ADRG and compares this average to the average for a group of peer hospitals, outputs those which are statistically different.
PICQ <sup>®</sup> analysis	Clinical codes (ICD-10-AM/ACHI/ACS 6th Edition).	PICQ <sup>®</sup> is a set of indicators or coding rules which identify records with inconsistencies in code combinations, sequencing, presence or absence of codes or lack of specificity.
Medical record based audit	Clinical codes (ICD-10-AM/ACHI/ACS 6th Edition).	Re-abstraction and re-coding of medical records.

Each of the methods used a different focus of analysis and this provided one of the strengths of this multi-perspective approach. The ADRG Benchmark Comparison and PICQ<sup>®</sup> analysis

are both desk top audits. These desk top audits were conducted for all 56 Irish hospitals and the medical record based audit was carried out in 10 of the 38 hospitals included in the ABF system.

### ADRG Benchmark Comparison

The ADRG Benchmark Comparison method was developed by Steve Gillette and used previously to analyse data from Hong Kong. The objective of the ADRG Benchmark Comparison was to find where a hospital routinely reported a particular event more or less frequently than expected when compared to its peer hospitals. The comparison focused on ADRGs that have a complexity split, that is, those where the capture,

or not, of additional diagnoses has the potential to impact on the measure of complexity assigned to individual cases.

First, the peer groups were established statistically based on the casemix of each hospital and taking into account issues such as specialty, day or inpatient case, emergency or elective, complex or non-complex level of care.

The peer groups were reviewed and modified by the HPO to reflect local knowledge of services provided by hospitals particularly regarding maternity, paediatric, and orthopaedic care.

Second, the average complexity level for each hospital was calculated and compared to the peer group average and the output called the CMI difference. The CMI difference equals the hospital average complexity minus the peer group average. Only the CMI differences that were significantly different ( $p < 0.05$ ) were examined further.

### **PICQ<sup>®</sup> analysis**

PICQ<sup>®</sup> is a software tool containing a predetermined set of indicators or coding rules which identify records in admitted patient morbidity datasets that may be incorrectly coded.

There are four indicator degrees:

- F, Fatal Indicator – any record found by such an indicator has been coded incorrectly by definition;
- W1, Warning Indicator, 1% threshold – records found by a warning indicator indicates that individual codes or combinations of codes or data items are likely to be incorrect;
- W2, Warning Indicator, other – records found by a warning indicator indicates that individual codes or combinations of codes or data items are likely to be incorrect (although the record is possibly correct) and;
- R, Relative Indicator – records found by such an indicator are counted and expressed as a ratio of a larger (usually) group of episodes. These indicators would generally be used to assess the overall quality of coded data rather than identify individual problem records.

When an indicator examines a record, it analyses diagnosis and procedure codes:

- in combination with other codes;
- in combination with National Health Data Dictionary (NHDD) data items;

In the results presented below, where the CMI difference was positive (the average at the hospital is greater than at the peer group) it is labelled as ‘above average’. Where the CMI difference is negative (the average at the hospital is less than at the peer group) it is labelled as ‘below average’.

With the agreement of NSW Health, an international comparison was made using NSW data, where NSW was treated as one hospital. The NSW data were coded and grouped using the same systems as the HIPE data.

- in a sequence;
- for their presence or absence and;
- for their specificity.

Denominator records are the cases in the dataset under analysis in which the numerator records (problem records) could occur. Numerator records are those that triggered an indicator. When the PICQ<sup>®</sup> program processes indicators against a dataset the results are expressed as a ratio of numerator to denominator, expressed as a percentage. The higher the figure the more times a PICQ<sup>®</sup> indicator has been triggered.

Three PICQ<sup>®</sup> analyses were included in the project, namely the total quality ratio, a measure of data specificity and a quality ratio for fatal and W1 indications. For reasons of space, only the total quality ratio results are included here and the full results are available in the Final Report.

The total quality ratio is a comparison by hospital, of the total number of times PICQ<sup>®</sup> indicators triggered over the total number of times the indicator could have triggered expressed as a percentage. The ratio measures relative data quality between hospitals as measured by PICQ<sup>®</sup>. The major driver of this ratio is usually the number of times the Relative indicators are triggered. The ratio is used to assess overall quality of coded data rather than identify individual problem records.

## Medical record based audit

The medical record based audit consisted of the re-coding of medical records by an independent auditor to determine if there was a difference between the original codes and the codes abstracted by the auditor. The auditor's codes were regrouped and any difference in DRG and cost weight impact, measured by weighted unit (WU) was noted. These sample results were then extrapolated across the most recent six months of data to obtain an estimate of the total WU effect of coding practice.

A representative sample of 10 hospitals was selected from the 38 ABF funded hospitals, stratified by regional group and hospital size. A random sample of 150 records was selected for each hospital. The sample was biased towards more complex cases to maximize the effectiveness of this resource-intensive type of audit. This bias was adjusted for during analysis to extrapolate the sample findings to all ABF hospitals.

The auditor reviewed the record for coding without reference to the original codes. The audit tool used at the HPO (HCAT<sup>®</sup>) was used to enter the data. The AR-DRG was reallocated where there were differences between the original and audited codes. The reasons for the mismatched codes were categorised using the HCAT<sup>®</sup> Discrepancy Reason Codes modified for this study. AR-DRG mismatches were discussed between the auditor and the local coding manager. Any disputed mismatches were referred to an HPO Gold Standard Arbiter (the Coding Manager at HPO). On completion of each audit the results were agreed and signed off

by the hospital.

The audit data were exported from the HCAT<sup>®</sup> to Pavilion Health for analysis. The first statistics produced were a rate of DRG change and the number of errors per record for each sample hospital adjusted for the biased sample. These statistics were then used to estimate a DRG change rate.

The WU were then used to calculate the cost implications of the DRG changes for each hospital over the six months reviewed. The data from the results of the 10 audited hospitals were used to calculate an estimated DRG change rate and cost implications that were then extrapolated across all ABF hospitals annual discharges for the same six month period.

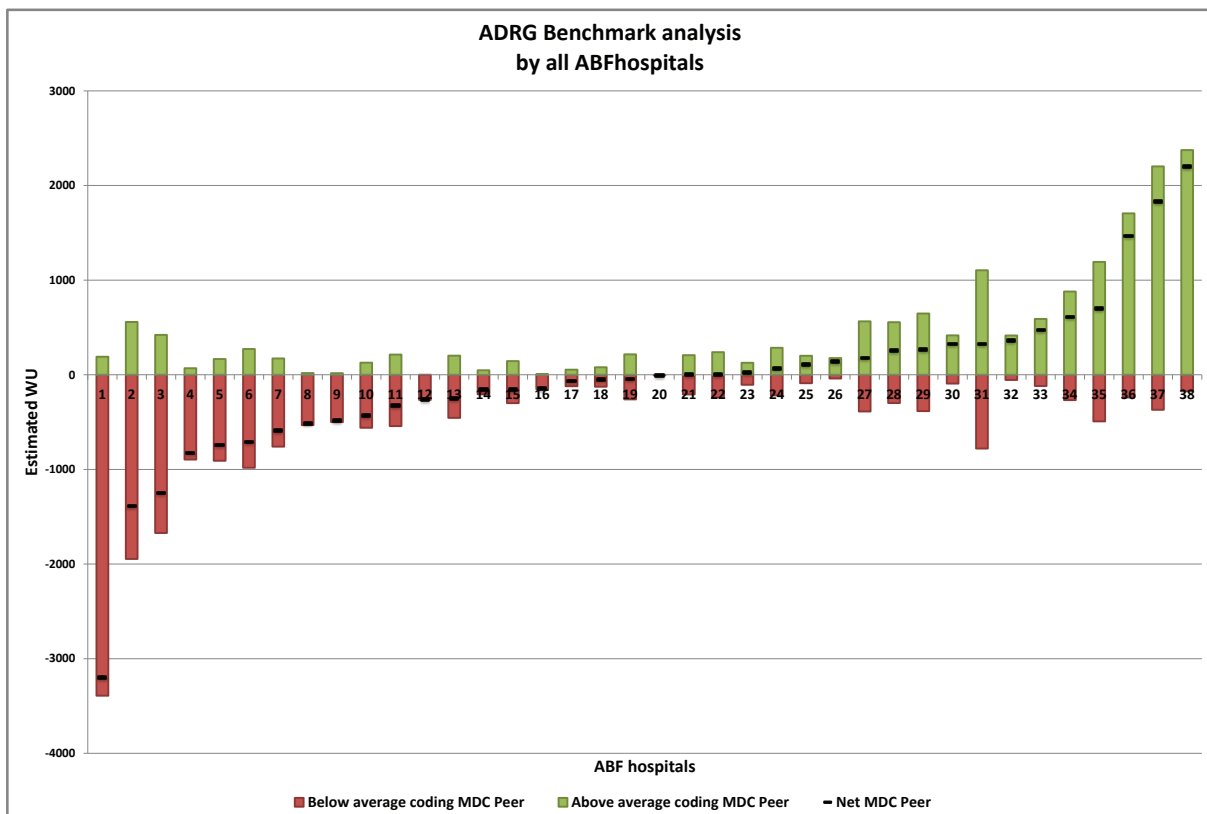
The last step in the project was the dissemination of the results for all the methods relevant to each hospital. Individual draft hospital level reports were produced for all 38 ABF funded hospitals. These draft reports were sent to the hospitals for review in early February 2016. A follow-up presentation and workshop was organised between 32 hospitals, Pavilion Health and representatives from the HPO in late February 2016. The workshops were conducted to expand on the methods used in the analysis, obtain hospital comments on the draft reports, and provide a framework to review and support the hospitals to develop action plans to improve data quality. Hospitals provided action plans to the HPO and these were incorporated with any amendments into final hospital reports with the insights from the action plans incorporated into the results section of the project Final Report.

## Results

The ADRG Benchmark Comparison provided an indication of where the average complexity at a hospital differed from comparable peers and attempted to quantify this difference. Care should be exercised in the interpretation of these results because this analysis cannot (and does not attempt to) distinguish between real differences in clinical complexity and differences due to different coding practices, however it does provide a starting point for further investigation.

The analysis for the 38 ABF funded hospitals identified that the Irish data appeared to be under representing clinical complexity by an estimated 9,310 WU. This represents less than 2% of the total Irish WU activity. However, there was wide variation (5,399 WU) between hospitals that have the largest below average coding compared to those that have the largest above average coding (Figure 1).

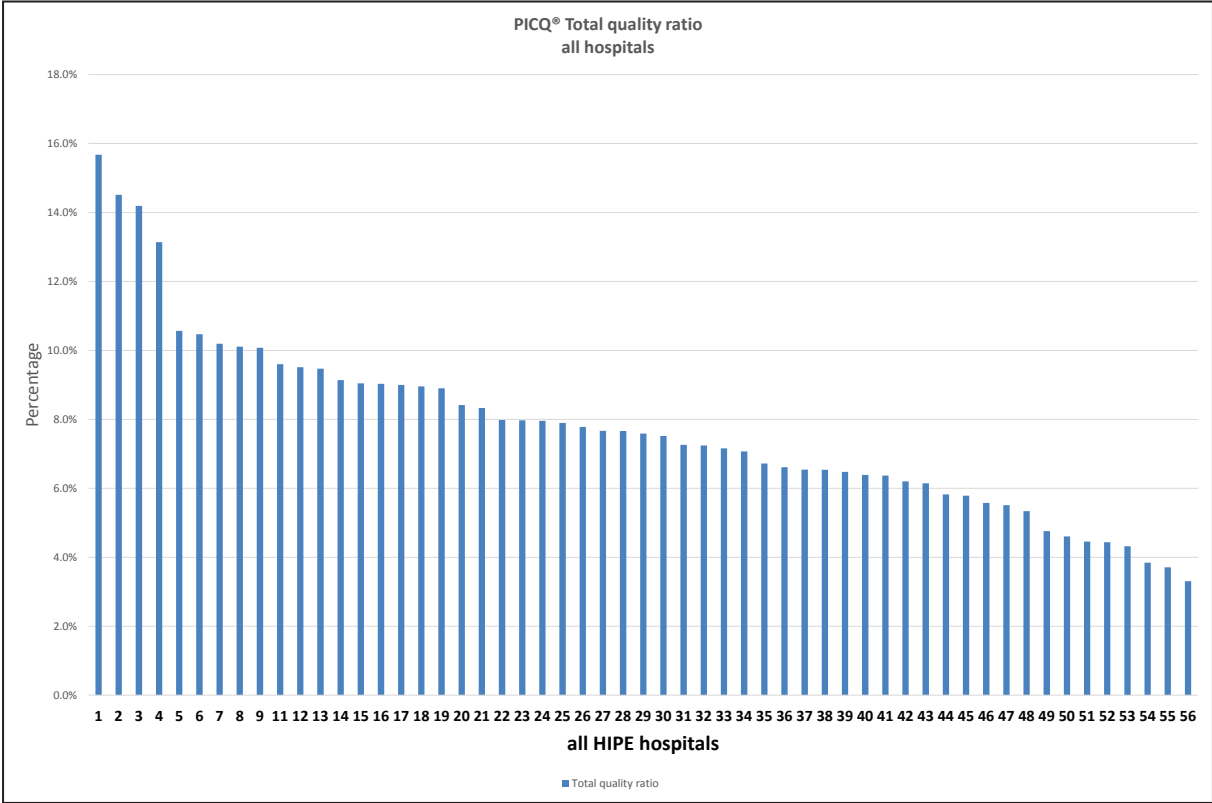
**Figure 1: ADRG benchmark analysis by all ABF hospitals**



Wide variation between hospitals was also evident in the results for the PICQ® quality ratios across all hospitals in the Republic of Ireland (Figure 2). The higher the percentage, the more times a PICQ® indicator has been

triggered. It should be borne in mind that not all the triggered indicators are considered incorrect; rather the quality ratio is a relative measure of data quality.

**Figure 2: PICQ® Total Quality Ratio**



The overall results for the medical record audit are set out in Table 2.

**Table 2: Medical record based audit summary results**

Number of records reviewed	1421
Number of records with mismatched DRG	204
Number of disputed records referred to gold arbiter	8
Number of records requested for audit	1488
Number of medical records not available to auditor	67

The estimated DRG change rate across all ABF hospitals was 12.9%. This resulted in an estimated net change of 4,378 additional WUs (1.42% of the total) for the six-month period ending December 2014. While the DRG change rate is an important benchmark figure, the WU change as a percentage of total activity provides

an important measure of the impact of current coding practice on WU. An acceptable net range is plus or minus 2%. In several hospitals the absence of supporting documentation caused a high rate of DRG changes. After netting this factor out, the national DRG change rate dropped from 12.9% to 9.5%. There was wide variation between hospitals, with the DRG change rate ranging from 33.7% to 6.1%.

The auditors reported that the national standard for organising the medical record is not conducive to auditing. The records are not separated into admissions, but have dividers for each type of document (for example progress notes) behind which the notes of all admissions are filed, some chronologically and some in reverse chronological order. The main problem for auditing is that paperwork for the admission selected for auditing may be found anywhere within the record, and buried behind new paperwork for subsequent admissions that have not been selected for auditing.

The lack of consistent and orderly organisation of the medical records at a number of hospitals



had a significant impact on the ability to code from the medical records. In particular discharge summaries were lacking or of poor quality in many of the audited hospitals.

Several of the selected sample medical records were not audited because the hospitals could not locate the records. For example, medical records

## Conclusion

The overall conclusion from the analysis and hospital feedback is that HIPE data are sufficient to underpin ABF with the net WU variation between audited data and international comparisons being less than 2 percent of total activity. However, ABF hospitals in general are under representing true clinical complexity in the clinical codes used, and there is a need to reduce the inter hospital variation.

The greatest impact of the project came from the dissemination of the results to the hospitals. The results summarised in this paper tend to obscure the value of reporting and workshopping the results for each hospital.

Three levels of data were targeted by the methods used in this study, the AR-DRG, the clinical codes and their compliance with the coding rules, and the inter-rater reliability of the coding from the medical records. Auditing coded data using re-coding is the most accurate way of determining the accuracy of codes assigned.

## Acknowledgements

Many thanks are owed to the people who have worked on Hospital Inpatient Enquiry (HIPE) over many years, particularly the Clinical Coders. The project would not have been possible without the involvement of the staff members of the HPO of the Health Service Executive (HSE) and hospital staff including coding teams, clinicians and managers for their time and input into the project. The Healthcare Pricing Office HPO HCAT<sup>®</sup> tool was used to collect the auditor's codes for further analysis

were stored in offsite storage and or were in a multi-volume record and the volume required for audit could not be found. It should be noted that the HIPE coding service is not part of the medical record service in Irish hospitals and this may have added to the problems in locating and retaining records needed for the audit.

However, it is expensive to conduct and only a sample of hospitals can be audited each year. The detailed desk top audits provided valuable insights into the reasons for the observed wide variation between hospitals by examining the impact of the coding on the AR-DRGs allocated compared with peer hospitals, and provided indicators of possible errors in the coding.

The quality of the medical records impacted on each of the methods used. Coders cannot use more specific codes if the details needed to support that specificity are not available in the medical records. Further, the coding standards may not appear to make sense if the needed clinical details are not evident in the record. Improvements in the structure and quality of the medical record are critical to improving the quality of clinical coding and to facilitate efficient future audits. The majority of the Irish hospital action plans, developed in response to their draft hospital reports, included actions for improving the quality of the medical records.

in the medical record based audit. Thanks also to the University of Wollongong staff members who provided an independent assessment of the ADRG Benchmark Comparison method.

As a postscript, Pavilion Health acknowledges the tremendous support and mentoring provided by Chris Aisbett who sadly passed away in May 2016. To the end he was providing advice to ensure the success of his friends and colleagues who are involved in the ongoing success of the Irish health system.

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# Peer-reviewed abstracts

*Abstracts appear in order of presentation according to the conference program listing.*

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# MyHR in Primary Health Care: an attitudinal evaluation study

Kerryn Butler-Henderson – University of Tasmania

## Abstract

### Background:

*A review of the literature, including grey literature, revealed that Australia's investment in the national MyHealthRecord (MyHR) has not been successfully communicated to the myriad of stakeholder groups, resulting in negative perceptions about the system and serious consequences for the uptake of the MyHR. Local stakeholder attitudes and perceptions will be crucial in setting the scene for success or failure with MyHR.*

### Aim:

This research aimed to identify the attitudes about the MyHR system from healthcare providers as care providers and consumers of the system, and enablers and barriers to use of MyHR in a primary care setting.

### Method:

Set within a primary health care setting, this study utilised a previously validated survey to identify healthcare provider perceptions of the MyHR system, and captured the perceived enablers and barriers of the MyHR system. Results were compared to a previously reported study.

### Results:

Almost all (89%) of twenty-seven (27) respondents had previously heard of the MyHR system prior to completing the survey. More than half (52%) agreed with the implementation of the national system. Participants indicated a preference for an opt-in system (71%) but there was some support for an opt-out system (41%). The majority (67% strongly agree) of respondents indicated strongly that they wanted to control who had access to their own MyHR.

Enablers included a decrease in duplication of effort and an increase in continuity of care. However concerns about the perceived impact on healthcare provider time as well as privacy, access controls, and the need for full participation will need to be managed if MyHR is to be successfully implemented.

### Discussion:

Findings indicate that healthcare providers were aware of MyHR and supported the Australian implementation. The system will only be perceived trustworthy when there is full participation by hospitals, health agencies, providers and consumers. If Australian consumers become participants in an opt-out approach, it will be a catalyst to participation by healthcare organisations and providers. Therefore incentives for healthcare providers need to be extended to all healthcare providers.

### Conclusion:

Research into the attitudes of the local healthcare provider cohort is valuable in creating a change management strategy for maximising local success.

# Supporting Genetic Health Services in Victoria by using Population-based Cancer Registry Information

Jodi Nicholls & Helen Farrugia – Victorian Cancer Registry

## Introduction

*Cancer reporting is a statutory requirement in all State and Territories of Australia. In Victoria, hospitals and pathology laboratories are required to submit cancer registrations to the Victorian Cancer Registry (VCR) in accordance with the Improving Cancer Outcomes Act 2014. The VCR integrates all data received to produce a consolidated database of all cancers diagnosed in Victoria. This valuable information asset is used to produce annual statistical reports that describe the cancer burden in Victoria as well as monitoring cancer trends over time.*

In addition to routine reporting, the VCR regularly services customised requests for data, many of which support research and health service evaluation planning. In 2002, the VCR commenced a family cancer verification program to support genetic health services provided by Familial Cancer Centres (FCCs). In 2015, the VCR processed 1,955 requests from FCCs based at Melbourne hospitals to validate self-reported history of cancer and deaths in families of clients attending risk assessment clinics. To service these requests more than 38,986 individual family members' records were searched and verified on the VCR.

Since the family cancer verification service

commenced in 2002, over seventeen thousand family histories have been submitted to the VCR for verification with more than 340,000 individuals checked for cancer. A dramatic rise in the number of family cancer verification requests was observed from 2013 to 2014 as a result of Angelina Jolie's announcement of her positive breast cancer gene mutation and decision to undergo prophylactic mastectomy.

Evaluation of the family cancer verification program has demonstrated improved clinical decision making to support risk surveillance advice given to high risk cancer family members.

## Outline

This paper will focus on the importance of mandated cancer reporting from hospitals and pathology laboratories and how this valuable information is being used to support improvements in healthcare delivery. The VCR collaborated with genetic health services to evaluate the family cancer verification program and its impact on clinical decision making. The evaluation focused on families seen over a 12 month period at the Melbourne Health FCC, assessed with breast or bowel family cancer syndromes.

The evaluation included an audit to review the effect on genetic cancer risk assessment, including eligibility for genetic testing, and clinic management advice following verification of cancers by the VCR in families where:

1. An unreported cancer in a family member is confirmed.
2. A reported cancer in a family member is confirmed for a different cancer site.

Three hundred and fifty-six family histories were submitted to the VCR from Melbourne Health FCC for cancer verification over one 12 month period. Of these, 135 families had a one or more cancers confirmed where no cancer was reported and, 89 families had a different cancer confirmed to the one reported by the proband (patient attending for cancer risk assessment). Overall 3% of all individuals with no report of cancer had a cancer confirmed, and 4% had a different diagnosis confirmed to what was reported.

## **Conclusion:**

This presentation summarises implications for cancer risk assessment before and after the cancer verification performed by the VCR for a subgroup of families verified in a 12 month period. The VCR family cancer verification process also informed the subsequent clinical advice provided to patients and families as a result of confirmed cancer information. Individual case studies will be presented.

Historically, a traditional role of population registries was to capture information primarily for public health purposes. The VCR family cancer verification process demonstrates that this is one of many ways the information can also be used to support clinical decision making and other healthcare services in Victoria.

# Information management for aged care provision in Australia: development of an aged care minimum dataset and strategies to improve data quality and continuity of care

Jennifer Davis – Department of Health ACT

## Introduction

*Provision of health and aged care services in Australia is moving towards more holistic and client-focused systems of care (Centre of Excellence in Population Ageing Research, 2014). Effective collection and use of information in both settings supports a variety of organisational processes and purposes, including administrative, financial, regulation and compliance, care delivery and quality improvement (Australian Institute of Health and Welfare (AIHW), 2013).*

While there are several data collection frameworks relevant to community and residential aged care settings, these do not align well across systems and therefore do not adequately address additional information needs to optimise client care. In practice there are multiple requirements, information sources and collections of aged care client data across often poorly integrated information systems.

In the context of increasing co-morbidity and complex care needs in an ageing population, timely access to and communication of comprehensive client information improves

continuity and coordination of care and minimises the risk of adverse outcomes for older people across multiple settings (Allen et al, 2013).

This paper presents the methods, outcomes and learnings from a project that examined existing data collection frameworks to determine key information needs in aged care settings with the aim of improving information quality, information transfer, safety, quality and continuity of care to meet the complex needs of aged care clients.

## Professional practice/case study description

Modified Delphi methods were employed by a large not-for-profit aged care provider in Victoria, Australia to establish stakeholder consensus for a derived minimum data set and to address barriers to data quality. The process was informed by a previously validated data development framework (Wood and Pennebaker, 2001) and implemented across five key stages outlined as follows.

Stage 1: Review of existing aged care related data collection frameworks

Stage 2: Validation of data items – need, tradition, professional judgement, empiricism

Stage 3: Assessment of data quality within and across internal systems

Stage 4: Information quality improvement plan including education and training

Stage 5: Sustainability plan

The project team actively engaged with internal ‘information system champions’ to determine key information needs across the organisation and these also reflected broader aged care sector requirements. The information system experts represented key roles within the organisation, including nursing, customer service advisor, information technology, quality manager, risk and governance manager, finance and administration, and community services manager.



An internal systems review identified 7 different information systems, comprising various combinations of paper and electronic systems (commercial and in-house), and 170 different data items that were inconsistently collected and stored across the organisation. Externally, inconsistent data requirements and data definitions were identified across 11 different aged care programs, 5 data

dictionaries, 3 minimum datasets, 5 program standards and quality frameworks, and 9 related ABS classification standards and systems. Multi-level factors were identified as barriers to data quality within existing information systems across the organisation primarily related to inconsistencies in data items, staff knowledge, workflow, system access and configuration.

## Implementation/experiences

The methods used in this study enabled identification of key data requirements, gaps and limitations of data capture, storage, retrieval and communication of client related information within the organisation. More broadly, this study facilitated a review of organisation wide data management processes, structures, systems capacity, and development of an information improvement strategy plan. Improved staff knowledge and understanding of information

systems, their roles and responsibilities and importance of data quality through targeted initial and ongoing education has demonstrated improvement in completeness and accuracy of client data. Identification of the barriers and enablers impacting on data quality within existing organisational systems and the strategies developed to address these have enabled more efficient data collection with reduced duplication of effort and more efficient use of staff time.

## Conclusion

The strategies and techniques used to improve aged care related data capture, information quality, and continuity of care are relevant to other aged care settings. Importantly, providers

can educate and provide feedback to staff on the critical role of data in the cycle of client information impacting delivery, quality, funding, communication and continuity of care.

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# Functioning properties in ICD-11: new opportunities for casemix systems

Richard Madden – NCCH/ACCD

## *Introduction*

*Patient characteristics in casemix systems are generally described by the use of diagnoses and interventions. Complexity is described in acute casemix systems using the range of diagnoses (principal and/or additional) recorded for the patient episode. However, the WHO's International Classification of Functioning (ICF) has not been included in casemix systems for acute patients.*

## **Outline**

A new feature of ICD-11 is the inclusion of Functioning Properties. This provides a mechanism for identifying functioning domains in ICF that might be expected to give a fuller

description of the patient's need for care and support than is provided by the ICD alone. Once a functioning domain is identified, it can be described more fully using the ICF.

## **Conclusion**

Functioning properties provide a potential new set of domains to assist in the explanation of the cost of an episode and provide a path to future use of the full WHO Family of International

Classifications in designing clinically meaningful and efficient health financing systems.

# Building a Classification: more than coding

Anne Elsworthy – IHPA

*Working in classification development over a number of years I have become acutely aware that being able to code does not necessarily mean you can build or develop a classification; both students and new staff who come to work in classification development have often made comments like, “I never realized how difficult or complex it would be!”*

Knowing how to code is one thing and a highly desirable skill if one plans to move into classification development; but more is required than just knowing how to code, there is a need to go back to the basic purpose, structure and conventions upon which classifications are built and then be diligent and consistent in upholding them.

To build classifications such as ICD-10-AM and ACHI there is first a need to understand what classifications are and how they differ from other clinical information sources such as clinical terminologies, both in structure and purpose. This presentation proposes to draw out the similarities and differences and focus on the primary purpose of ICD-10-AM and ACHI as well as some of its other purposes that have gained significance in recent years.

It is vital to understand the key characteristics of classifications and the taxonomic principles upon which classifications are built. Understanding the structure, axes, and having an intimate knowledge of the conventions used in the Tabular Lists and Indices is crucial to maintaining the integrity and consistency of the classifications and critical to building a

classification. It is normally the first thing taught to a clinical coder but increasingly we have found that the conventions are not always well understood by clinical coders and data users. This presentation will seek to explore why this has occurred.

If these principles and conventions are not well understood ambiguity and inconsistency may occur and the classifications may be difficult to apply and use. Allowing development to be driven by those without knowledge of the underpinning structure and principles is fraught and can lead to many years of refinement. This presentation will draw out examples where this has occurred both in ICD-10-AM and ICD-11 and how it can be avoided.

There have been many lessons learnt in developing ICD-10-AM and ACHI since their beginnings in the 90s and we need to continue to bring that knowledge and expertise forward to further updating ICD-10-AM and ACHI and more importantly bring that knowledge and the lessons learnt to the development of other classifications in Australia and internationally moving forward.

# WA Health – ABM Reform – Coding and Classification Project

Kathleen Alloway – Department of Health WA

## Summary

*Coding and classification are major building blocks to activity based funding and management and as such they are the subject of review being undertaken within the WA health reform program. The project has taken a very comprehensive approach extending the review beyond workforce to cover a range of issues influencing the management and quality of clinical coding. The project outcomes will transition into business as usual and inform the future growth and importance of activity classification.*

## Introduction

WA Health has established a wide ranging and ambitious program of reform. We are too large and complex to operate under a centralised model, with legal and administrative authority vested in a single individual. Health Services are responsible for managing hospital and health service delivery for their assigned population to specific performance standards. The Department of Health (DoH) is the system manager, providing policy setting, system-wide planning, service purchasing and management of health service performance.

Within scope for the Reform program are a range of projects including Revenue, Budget,

ICT, procurement, performance management, shared services and Activity Based Management (ABM).

An external review commissioned by the Department of Treasury in 2013 has found that ABM has not yet fully realised the anticipated benefits, that ABM is misunderstood by clinicians and health service managers and had minimal impact on front line practices. The ABM Reform project will focus on increased clinical engagement, classification and data quality, provision of business intelligence tools, and education and training.

## Objective

The Coding and Classification project objective is to ensure quality counting, classification and coding of activity to inform ABF/ABM. The project was established in March 2015 and has undertaken a number of activities to achieve this objective. This paper will focus mainly on the Clinical Coding component of the project. In this context the objective is defined as ensuring that valid admitted care activity is accurately abstracted from the medical record and coded to an expected level of accuracy and complexity with compliance to established policy, coding standards and practices.

The project has been supported and informed through significant stakeholder engagement. It has specifically sought to strengthen relationships and communication with coding

managers, coders, health information managers and data management staff. This engagement has been pivotal in progressing the project and maintaining communication is essential to achieving reform in this area.

On commencing the project it was recognised there were previous reviews local and national undertaken to address coding workforce issues. The focus of these reviews has been on coding backlog and staffing levels with lesser reference to coding skills, knowledge and experience, improving business processes and structures, clinical documentation and quality management.

The project has produced a series of Current State Assessment reports identifying key risks and issues impacting upon the quality of clinical coding. Stakeholder workshops and surveys,

audit and data analysis were utilised to gather information on:

- The characteristics and demographics of the workforce.
- The work flow, demand pressures and management of the workforce.
- The workforce capacity, capability and competency.
- Governance and strategy – management and leadership.
- Quality and Performance – functions, systems and processes in place.
- Current and Potential ICT systems to facilitate management, quality and performance.
- Clinical Documentation – clinician engagement and education.

The current state assessment has identified a number of significant clinical coding issues that need to be addressed. The process of defining the future state is almost complete and we are about to commence development of solutions.

To achieve this we have established a WA Coding Executive

The Clinical Coding Executive Committee will coordinate the system level activities and products required for the strategic management of Clinical Coding in WA Health. The Group will oversee the delivery of a system level clinical coding strategy and has responsibility for meeting its objectives.

Also restructuring within the DoH will include the establishment of defined clinical information and classification management functions within which the project work will continue.

# Integrating Health Data Management Systems: An experience from revised Health Management Information System 2015 in Nepal

Mukti Nath Khanal & Pushkar Raj Silwal – Philippines

## Introduction

*Health information system is one of the six key building blocks in health system strengthening (World Health Organization, 2016). An effective and efficient health information system supports health system by providing evidences in decision making process.*

There are nine different Management Information Systems (MIS) under Ministry of Health (MoH) in Nepal (Department of Health Services, 2015). Health Sector Information System (HSIS) – a national strategy – of MoH in Nepal aims to link all the different MIS using uniform coding systems. It also focuses on health service utilization data from

private sectors as well. An operational research conducted in 2010 suggested that it is imperative to revise the indicators, tools and reporting process, and develop a master Information Technology (IT) framework in the existing HMIS system in Nepal (Ministry of Health, 2010a).

## Professional practice

The HMIS, developed in 1990s, provides service statistics related to the health programmes in Nepal. It has been one of the key data sources for monitoring and evaluation of health programmes, and health policy formulations (Ministry of Health, 2010b).

The first Nepal Health Sector Programme (NHSP-1) (2004–09) envisioned strengthening and integration of routine information systems (Ministry of Health, 2004) and MoH developed

Health Sector Information System (HSIS) as a pilot intervention. Unfortunately, the piloting resulted in two incompatible systems that ran simultaneously: HMIS in 72 districts and HSIS in 3 districts. Private sectors, on the other hand, are using their own data management system and are not linked with the government HMIS. Realizing that HMIS should be one system within a linked HSIS (Ministry of Health, 2010a), HMIS was revised addressing the needs of national policy and programs.

## Implementation/Experiences

Revision of HMIS was started in 2012 with the objective to mainstream HMIS in line with HSIS national strategy viz. enabling indicators (selected) to be disaggregated by caste/ethnicity, revising the reporting process to enable facility level data reporting, and ensuring data from all health facilities across the country, both public and non-public, are collected.

The process was started with revision of the indicators and corresponding recording and reporting forms. The revised indicators and tools were field tested and a consolidated HMIS database was developed. The locally developed HMIS database is being implemented since

2014 and it will be ported to DHIS 2 platform from July 2016. Information Technology (IT) supports have been strengthened nationwide. Comprehensive guidelines and manuals have been developed, and modular training provided to health facility staffs at all levels across 75 districts. The revised tools were printed and supplied, and the programme rolled out nationwide.

Key features of the revised HMIS comprises of: A total of 290 indicators that cover 12 different public health programs of MoH, selected indicators disaggregated by caste/ethnicity, health facility level data reporting, integration

of vertical reporting systems of priority national programs, electronic data entry at district and hospital level and web-based reporting to central level, all public as well as non-public health facilities report to HMIS, a uniform coding system among different MISs, and use of DHIS2 for the first time.

As of April 2016, all the public health facilities (99%+ reporting) and 75%+ of private sector

service centres are reporting service statistics through the revised HMIS system. In addition to the public sector health facilities working under MoH, other public hospitals (e.g. Police, Army), private and non-governmental hospitals are also reporting through the same system for the first time. It has been accepted well and owned properly. This system addresses health sector data requirement of all policies, programs and strategies of GoN, Nepal.

## Conclusions/lessons learnt

Overall, the current revision has been successful in bringing health service utilization data from public as well as private health facilities/hospitals under a single information management system. The vertical/parallel reporting system for many key national programs have been

integrated into the HMIS. It has created a strong network from community to central level with better ease of access, accuracy, better quality, and timely reporting of health service utilization data in Nepal.

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# Information is of Strategic Importance

Sallyanne Wissmann – Mater Health Services

## Introduction

*In early 2015 the Mater Health Services Executive and Board confirmed Mater’s strategic direction and need to re-focus the organisation on the achievement of that future state. Six key focus areas were identified for action, which included, for the first time, an information focus as follows “Deliver a comprehensive information strategy that ensures its data converts to useful, accessible information that can be used to inform decision making.”*

In April–June 2015, the Director Information Management, was tasked with authoring the Information Strategy for the organisation on behalf of and in collaboration with the Mater Executive.

This presentation will describe the content of the Information Strategy and how it is being implemented.

## Information Strategy

The vision of the Information Strategy is that “The right information will be available to inform the right person at the right time for the best outcome enabling the achievement of Mater’s mission, vision and strategic objectives”

The Information Strategy applies to all corporate, business and clinical information captured and required across all business units within Health, Education, Research and Philanthropy.

The Information Strategy contains a set of principles that guide the purpose and use

of information at the Mater with the lead principle being that “information is of strategic importance and is a strategic enabler”.

The Information Strategy then explains how information is a strategic enabler to each of the strategic priorities of the Mater.

Three enablers are identified that underpin the implementation of the Information Strategy – information governance, data excellence, and the ICT Strategic Plan which focuses on information systems and infrastructure.

## Phase 1 Implementation

During September 2015 to February 2016 the following have been achieved:

- Development of Mater’s Information Governance Framework
- Development of Mater’s Data Excellence Framework

- Development of a Vision document relating to Mater’s Information Architecture, and
- Drafting of Mater’s ICT Strategic Plan

The Director Information Management together with the IM management team have authored the first three documents which have been endorsed by Mater Executive.



## **Current Focus**

The current focus is on implementing the Information Architecture approach with particular focus on a data lake, re-engineering Mater's approach to data analytics and

commencing the implementation of the Information Governance Framework and Data Excellence Framework.

## **Conclusion**

The development of an organisational Information Strategy, that is broader than just health information, has been a fantastic opportunity to apply my knowledge and skills as a Health Information Manager within a broader and more strategic focus. I would encourage

all Health Information Managers to think about what role information plays in enabling your organisation's strategic objectives to be achieved and to initiate conversation within your organisation about how well that is occurring.

# Australian Consortium for Classification Development: Automating the Classification Publishing Process

Michael Tran – Western Sydney University/ACCD

## Introduction

*The Australian Consortium for Classification Development (ACCD) is a consortium consisting of a partnership between the National Centre for Classification in Health (NCCH), The University of Sydney, Western Sydney University and KPMG. ACCD has been tasked to develop and refine the AR-DRG, and ICD-10-AM/ACHI/ACS classification system.*

Within ACCD, Western Sydney University provides supportive IT-based expertise to aid NCCH with their ongoing work as an integral component in the management and development of their assigned standards and classifications.

Western Sydney University was tasked to establish an improved publication workflow, and develop a solution for ACCD to export the data to a publish-ready format.

## Professional Practice/Case Study Description

The ICD-10-AM and ACHI volumes were exported from the ACCD database as a word processed documents (i.e. Microsoft Word). It was found that a word processor does not offer the same flexibility and features as a desktop publisher, thus it did not meet the requirements for ACCD publication.

The fundamental difference between a word processor and desktop publisher (e.g. InDesign) is that the desktop publisher provides more control over how the document would be printed, which is required for the ACCD publication process. As such, the exported documents were required to be converted to desktop published documents, utilising a significant portion of

ACCD resources for further reviewing and manual adjustments to safeguard against any inconsistencies introduced during the conversion process.

The ACS volume has been handled by sharing files under an internal file network. The ACS files are created and manually maintained by ACCD staff. As there are no enforced rules that prevent ACCD staff from entering content incorrectly, it does not guarantee a level of efficiency and consistency. There is also the issue of concurrency. When multiple users access the same file simultaneously, data loss can occur due to a user overwriting other user changes.

## Implementation

To automate the process and improve the publication workflow, Western Sydney University migrated the ACS to a database and through it, provided an internal web-interface to manage the ACS and export the data to a publication-ready document. Through the publication-related data residing in a database, it was possible for the following benefits/features to be provided to the ICD-10-AM/ACHI/ACS volume publication process:

- Automated Export
- Concurrency Management
- History Tracking
- Improved Content Management Workflow

As the ICD-10-AM/ACHI/ACS volumes were generated from a database directly to desktop publishing format, it reduced the number of human-errors and inconsistencies resulting from the conversion process from word processor to desktop publishing.

In the case of the ACS, the movement to a database provides more flexibility and control of centralized data, thus providing the opportunity to add additional features. For instance, using database transactions, resources can be locked or unlocked to accommodate multiple users accessing the same resource simultaneously. In addition, a history tracking feature is beneficial to manage different editions of the ACS. It is particularly valuable for the content editors and reviewers to work collaboratively.

Through a centralized database and web-interface, it was possible to restrict or allow users to perform certain actions depending on their set of permissions. For example, an ACS content editor can modify and create new content, however they are restricted from signing off the ACS edition to indicate it is ready for publication which disallows further content editing. It is only the ACS content manager who would be allowed to sign off an ACS edition. The benefit of controlling access is it assures that content editing follows an established and organized workflow.

## Conclusion

This paper highlights the various issues encountered within a health organisation with publications, and the benefits obtained with shifting towards a more automated workflow.

With large publications, it can be a time-

consuming and error-prone process, especially if the publications have a high level of manual involvement. However, with ACCD publications moving towards database and web technology, it was possible to automate the publication process, thus making the process less-resource intensive.

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# Information Technology Supporting Inter-Classification Communication

Aaron O'Donnell – Western Sydney University/ACCD

## Background

*The Australian Consortium for Classification Development (ACCD) is a consortium consisting of a partnership between the National Centre for Classification in Health (NCCH), The University of Sydney and Western Sydney University and KPMG.*

ACCD has been tasked to develop and refine the Australian-Refined Diagnosis Related Groups (AR-DRG) classification system, the International Classification of Diseases and Health Problems; Australian Modification (ICD-10-AM), the Australian Coding Standards (ACS) and the Australian Classification of Health Interventions (ACHI).

Within ACCD, Western Sydney University provides supportive IT-based expertise to aid NCCH with their ongoing work as an integral component in the management and development of their assigned standards and classifications.

## Objective

The AR-DRG Toolkit used to support the management of the AR-DRG Classification is currently undergoing redevelopment by ACCD as a component of the work plan; due to the outdated and increasingly unsupported technologies currently being used by the system.

As part of the redevelopment undertaken for the evolving ICD-10-AM/ACHI and AR-DRG

classifications, the opportunity for automated data updates between related systems has been identified. The benefits of this automated communication between the classifications lie in the improved data integrity between the systems, the seamless transition between released ICD Versions, and improved process awareness; identifying the outputs from ICD as associated AR-DRG inputs.

## Conclusion

This poster outlines the systematic and technological approach that will be utilized by ACCD to provide this inter-classification communication.

# Clinical coder code of ethics and ethical coding practice

Fillipa Pretty – NCCH/ACCD

## Background:

*A discussion was initiated during an ICD-10-AM Technical Group (ITG) meeting regarding the issue of coding queries, ethics in coding and a review of the existing 'Code of Ethics' on a national platform. It was also identified that the National Centre for Classification in Health (NCCH) Clinical Coder Code of Ethics and the HIMAA Principles of Professional Practice should be complementary to each other. To this end the NCCH through the Australian Consortium for Classification Development (ACCD) has embarked on a review of the 'Code of Ethics' which will also inform the HIMAA National Practice Guidelines.*

## Professional practice/case study description:

At one of the ACCD's recent ITG meetings, concern was expressed that in order to achieve a 'better DRG', clinical coders were being pressured to and/or asking clinicians 'targeted' or 'leading' questions for perceived improvement in financial reimbursements. This is not surprising given the repercussions of an Activity Based Funding (ABF) environment within Australia.

The general consensus at the ITG meeting was that a clinician query should be appropriate to optimise knowledge, education and demonstrate the full clinical picture of the patient's episode of care and that to query for increased reimbursement is unethical. Moreover, it was agreed that guidelines around this issue were required to ensure that clinical coders had the necessary backup to demonstrate appropriate lines of communication to achieve consistent and quality coding.

The ITG reached agreement that there should be guidelines/standards for clinician queries. These guidelines should cover the appropriateness of questions, as well as the format and processing of queries. Although, it was noted that guidelines should not be restrictive or prohibitive in order to obtaining accurate information.

The Code of Ethics for clinical coders was also discussed. It was noted that professional bodies

such as HIMAA and CCSA had developed codes of practice/ethics in addition to the existing Code of Ethics in ICD-10-AM

What do we aim to do?

- Revise and update the clinical coder code of ethics.
- Develop guidelines and a template for clinician queries.
- All to be implemented at a national level for Tenth Edition of ICD-10-AM, via the jurisdictions.
- Provide education as to the role clinician queries play in the coding process, and hopefully alleviate the pressure being placed on coders.

Where did we start?

- Review of the existing code of ethics in ICD-10-AM.
- Review of code of ethics/professional practice document from professional bodies in Australia and from around the world (UK, Canada and USA).
- Review of existing 'clinician query forms' from various jurisdictions.

## **Conclusion**

It is envisaged that this presentation will provide the final outcomes of the review for implementation on July 1 2017.

## **Implementation/experiences**

The review of the ICD-10-AM Clinical Coder Code of Ethics and guidelines/template for clinician queries will be a task undertaken for implementation in the Tenth Edition of ICD-10-AM and will inform the HIMAA National Practice Guidelines. Our implementation experiences in 2017 will inform a presentation at a future National HIMAA/NCCH National Conference.

# Implementation of the Australian Mental Health Care Classification

Joanne Fitzgerald – Independent Hospital Pricing Authority

*The conference theme describes communication of health information management being at the heart of healthcare. For many years, Health Information Managers, clinicians, and health system managers have been able to communicate in a common language of Diagnosis Related Groups to describe the characteristics of patients treated linked with the resources consumed in treating those patients. Diagnosis Related Groups, however, have not been effective in describing the characteristics of patients and resources consumed in the mental health care sector.*

The first version of the new Australian Mental Health Care Classification (AMHCC) was approved in February 2016, and provides a casemix classification for the mental health sector which enables a consistent method of classifying mental health consumers, their treatment and associated costs. The classification will be used to support activity based funding however it can also assist in better management and measurement of mental health care services.

The AMHCC Version 1.0 is a consumer level classification that avoids the use of administrative and input oriented variables, with a simple structure which allows flexibility for further refinement. The classification has six major splitting variables:

- setting
- mental health phase of care
- age group
- Health of the Nation Outcomes Scale (HoNOS)
- mental health legal status (admitted acute phase adult age group only)
- Abbreviated Life Skills Profile (community moderate HoNOS complexity group only).

The AMHCC Version 1.0 was implemented on a 'best endeavours' basis from 1 July 2016, and the Independent Hospital Pricing Authority (IHPA) is investigating approaches to pricing in-scope admitted mental health services using the AMHCC from 1 July 2017.

A number of system components have been developed to support the implementation of the AMHCC Version 1.0, including:

- an activity based funding data collection (the Activity Based Funding Mental Health Care Data Set Specification)
- updates to the National Hospital Cost Data Collection to incorporate costing by mental health phase of care
- the AMHCC User Manual and Mental Health Phase of Care Guide
- an AMHCC grouper.

IHPA has commenced work to refine the AMHCC and has commissioned an inter-rater reliability study to take place in late 2016 to further refine the definitions and business rules of the new data concept of mental health phase of care. IHPA is also undertaking a clinical review of the child and adolescent branch of the classification. IHPA is working closely with stakeholders to develop a longer term strategy to align the needs of data collection for the AMHCC and the National Outcomes and Casemix Collection.

The ongoing refinement of the AMHCC will consider the residential and older persons mental health care branches of the classification and explore the potential for incorporating clinical complexity and comorbidities.

# A structural review of the AR-DRG classification - moving towards version 9.0

Carol Loggie – NCCH/ACCD

## Introduction

*Following the completion and release of AR-DRG Version 8.0 in 2015, the development of Version 9.0 is now underway. Leaving the classification structure largely unchanged, major refinements in Version 8.0 focused on the end class, or Diagnosis Related Group (DRG) level, with the implementation of the Episode Clinical Complexity (ECC) Model which simplified and improved the ADRG splitting logic. The major piece of work for Version 9.0 is a review of the Adjacent DRGs (ADRGs), utilising the enhanced performance of the new ECC methodology. Areas that had been highlighted by various stakeholders were selected as part of a systematic approach to the work program for this classification development cycle.*

## Method – Description

The principles for construction of AR-DRGs developed for Version 8.0 have been maintained, and the review has been undertaken with significant input and advice from the Classifications Clinical Advisory Group (CCAG) to ensure that classification development is driven by patient clinical attributes. The DRG Technical Group (DTG) also continues to consider and advise on all proposed changes.

The review of ADRGs is incorporating:

- Pre Major Diagnostic Category (MDC) processing
- ADRGs in the ‘Other’ Partition
- ADRGs using administrative variables, such as length of stay, in their definitions
- ADRGs lacking clinical distinctiveness.

There are currently eleven Pre MDCs that are assigned independently of the MDC, primarily due to the very high cost of the care provided. This can result in patient groups that are homogenous in the care provided, but clinically heterogeneous. Pre MDC processing is being investigated to determine if the structure remains relevant or whether it is more appropriate in the context of the ECC Model to move or disaggregate some or all of the Pre MDCs across the MDCs.

Pre MDC processing also changes MDCs where the MDC is not defined exclusively on the basis

of the principal diagnosis (PDx). Of these, the paraplegia/quadriplegia and HIV ADRGs were selected for review, to determine if it was still appropriate to separate these episodes from their native MDC given the changes in treatment and management of these conditions.

Partitioning of ADRGs into ‘Surgical’, ‘Other’ and ‘Medical’ is also being investigated, as the boundaries between the partitions are not clear cut. There are no specific guidelines around the type of interventions that define ADRGs in the ‘Other’ partition, with some interventions increasingly being performed outside of an operating room.

Additionally, given the significant reduction in the use of administrative variables for splitting in Version 8.0, the ADRGs using such variables are being reviewed to consider if they can be removed from the definitions.

The remainder of the ADRGs that are under review are the hip replacement and chronic obstructive airways disease ADRGs, highlighted by CCAG and through the public submission process as lacking clinical distinctiveness.

Proposals received through the Public Submission process are also being assessed, and due to the synchronous development of the AR-DRG Classification System within the ACCD, revision tasks are often initiated as an outcome of the ICD-10-AM/ACHI/ACS Classification development work.



## **Conclusion**

The development process for AR-DRG V9.0 is well underway and will be submitted to the Pricing Authority for approval 31st October 2016.

# How eReferrals are Transforming Specialist Clinics at Monash Health, Victoria, Australia

Kate Horkings & Jasmine Souki – Monash Health

*The Department of Health as part of its Specialist Clinics in Victorian Public Hospitals Access Policy has introduced data reporting requirements that require the referral process to be managed effectively. Monash Health has embarked upon an electronic referral process (eReferrals) utilising their scanned medical record technology. The objectives of the pilot implementation shall be presented. The pilot also involved the trial of initial referrals being made at the clinical unit. In addition the full implementation to 33 outpatient specialities and over 500 clinics shall be discussed. The implementation involves the use of Lean Management principles to remove unnecessary process steps, increase clinician engagement and decrease the delay inherent in the paper triage system that was in operation.*

As way of background the current structure and model of care in the Monash Health Specialist Clinics has undergone little change over the last 25 years. As models of care and clinician engagement have undergone significant transformation in the inpatient setting the Specialist Clinics model continues to rely on patients and clinicians coming together at a designated time in a designated area with little flexibility to support the patient in between those visits. Our primary care providers continue the care during that time often in isolation of the

specialist clinicians. This model of care has not involved primary care clinicians and it has not recognized needs of patients with chronic and complex conditions who frequently require outpatient care and experience inefficiencies in the delivery of care. To be capable of taking specialised care to the patient, rather than the patient always needing to come to the hospital, Monash Health is restructuring the way it operates its Specialist Clinics in a more specialty led service model. A case study shall be presented from the Haematology Speciality.

# Patient participation in the management of their clinical information: Enhancing consumer engagement in the test result management process to build safe and quality person-centred pathology and medical imaging practice

Maria Dahm – Macquarie University

## Introduction

*Failure to follow-up test results is a critical safety issue which can have a major impact on patient safety with significant medico-legal implications (Callen et al. 2011, Berlin 2009). Health information technologies (IT) for clinicians and patients can play a key role in the communication and safe follow-up of test results. Additionally, health IT can promote a person-centred approach to healthcare delivery to underpin efforts towards doing with patients rather than just doing for patients (Rigby et al. 2015, Georgiou et al. 2014).*

This study describes the contribution of consumer representatives in a stakeholder forum to enhance their contribution to the making the pathology and medical imaging test result management process more effective, sustainable, safe and person-centred. The stakeholder forum launched an important National Health and Medical Research Council (NHMRC) partnership grant between the Australian Institute of Health Innovation, the Australian Commission

on Safety and Quality in Healthcare and South Eastern Area Laboratory Services (SEALS) Pathology which aims to establish effective, sustainable and safe test result management systems utilising evidence-based practice, health IT, consumer engagement and enhanced clinical governance processes. Here we describe the participation of consumer representatives in a stakeholder forum focused on the communication of test results.

## Case study

We invited consumer representatives, clinicians, researchers, policy makers, and IT specialists to participate in a half-day stakeholder forum designed to spark an exchange of ideas between the different stakeholders. The forum included a stakeholder panel and workshop group discussions. Groups exchanged ideas about how to 1) improve the effectiveness and safety of test result management through the establishment of clear processes of information communication, responsibility and accountability, 2) harness

health IT to inform and monitor test result management, and 3) enhance the contribution of consumers to the establishment of safe and effective test result management systems. We conducted ethnography of the forum activities including: observations of discussions and interactions; field notes of stakeholder views, areas of agreement and disagreement, and suggestions for consumer participation in the test result process; and, document analysis of materials produced by the forum.

## Implementation experiences

Thirty-two representatives from 14 different stakeholder organisations, including consumer representatives, IT vendors, clinicians, quality and safety organisations and researchers attended

the stakeholder forum. Four discussion groups were formed for the workshop with one consumer representative present in each of the four groups. A key emergent theme was that

collaboration between consumers and clinicians was considered important for improved clinical outcomes, e.g. through increased compliance. However, consumer engagement is currently inconsistent across different health services. Consumers are not yet part of a partnership in test results management. Furthermore, consumers

pointed out that ideas regarding consumers' wishes differ widely among clinicians and that considerable individual differences exist among consumers themselves, e.g. the desire of some consumer to have direct access to their test results and reports.

## Conclusion

There are diverse views, among and across, consumers and clinicians regarding test result management. While collaboration is considered important, what it looks like and what it practically means has yet to be defined. The distinction between doing for and doing with may depend on the particular people involved at each clinical interaction. Partnering with consumers to gain knowledge of how they conceptualise key aspects of the test management process, particularly how information about test results is communicated to patients, can help to positively shape the direction of the research study. This initial workshop has provided the groundwork for the NHMRC research project and continued consumer engagement.

Further investigations will gather first hand experiences from frontline patients and consumer representatives about the test result management process. Their insights will impact on the translation of results to drive practice change and contribute to the establishment of person-centred, safe and effective test result management systems. In this way, we envisage that consumer voices will form a foundation of a translational research study promoting person-centred pathology and medical imaging practices. It is essential that patients are involved in how their clinical patient information is managed to ensure optimum care outcomes.

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# A “Fair Go” for whom? Skilled migration and the need for educational standards in the HIM Profession.

Jenny Gilder, President – HIMAA

## Introduction

*When members in Health Information Management Association of Australia (HIMAA)’s Victorian Branch feared role substitution through the admission of skilled migrants not qualified to HIMAA standards, lobbying state migration authorities in 2013 yielded recognition of HIMAA-accredited qualifications as a gateway for state sponsorship of skilled migration in the Health Information Manager (HIM) occupational category. The Queensland state government followed suit in the same year.*

Consequently HIMAA began to receive enquiries from overseas skilled migration aspirants for HIMAA accreditation of their qualifications. These aspirants volunteered not only copies of their qualifications and curriculum vitae, but also a positive assessment by the National Assessor of qualifications and skills for the Australian Government in the HIM category, VETASSESS. Not only were the qualifications of these aspirants non-HIMAA accredited, they were not even in health information management.

Only 2 of the 29 enquiries for HIMAA accreditation from skilled migration aspirants

received by HIMAA between 2014 and 2015 were from HIMs, and these volunteered no VETASSESS assessment. Qualifications of the remaining 27 are most commonly degrees and masters in clinical research, science (biotechnology and biochemistry), pharmacy and, to a lesser extent, medicine or nursing. In general the experience of skilled migration aspirants receiving positive assessments from VETASSESS in the HIM category was in clinical research or clinical data management, usually with pharmaceutical companies.

Positive VETASSESS assessments submitted to HIMAA were not assessed by a HIM.

## HIMAA’s Response

HIMAA decided that assumption of this National Assessor role would ensure HIMAA’s Entry Level HIM Competency Standards was the barrier criteria for positive assessment. HIMAA’s aim was to preserve the industry standard for local graduates.

In April 2015 HIMAA submitted its application to the Australian Government Department of Education (DoE). A positive assessment by the DoE would lead to submission of HIMAA to

the Minister for Immigration in July 2015 for the role of National Assessor in the occupational categories of HIM and Clinical Coder.

HIMAA formed a Qualifications Equivalence Review Panel (QERP) to develop a process for assessing overseas qualifications in anticipation of achieving National Assessor status.

HIMAA also raised its concerns with the Department of Education about the current quality of VETASSESS assessments.

## Implementation

While HIMAA received positive feedback from the Department, personnel asked how HIMAA would assess the contribution of skills gained from experience to complement qualifications

assessment. HIMAA’s QERP undertook two reviews of non-HIM qualifications from two applicants with Australian qualifications related to HIM in addition to original overseas degrees.

The QERP adapted the HIM Competency Standards skills matrix used in HIM degree accreditation, with which individual applicants could detail their qualifications against HIMAA standards. The panel was unable to accept skills gained from experience as standards-based in either instance, and found the lack of match with standards relating specifically to HIM to be the greatest barrier to success..

DoE responded to HIMAA's concern with VETASSESS assessments by brokering two teleconferences with VETASSESS. In the second of these, VETASSESS disclosed an assay of adverts for HIMs and Clinical Coders in which employers did not require HIMAA-accredited qualifications, and so did not recognise these as the industry standard. The DoE supported VETASSESS's view.

## Conclusions

HIMAA determined not undermine its accreditation of local HIM education by retrofitting individual non-HIM degrees, particularly with skills assessment from inadequate documentation. Meanwhile, VETASSESS will continue to issue HIM positive assessments for non-HIM qualifications and experience marginal to HIM.

As a result, in April 2016 HIMAA withdrew its National Assessor application and published a policy calling for an end to Australian

Government practice of undermining the standard of local HIM graduates by importing non-HIMs for HIM roles. HIMAA's migration policy preference is by reciprocal recognition with fellow IFHIMA member countries, such as HIMAA has commenced negotiations for with the Canadian and American Health Information Management Associations.

Skilled migration that leads to role substitution of HIMs qualified to HIMAA standards is unacceptable government practice.

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# Home grown workforce solution in health information

Tony Kalathil Jose – Orange Health Service

## Introduction

*The home grown workforce solution in health information program aimed to meet the workforce deficit in clinical coding through providing a local solution and opportunity for local staff to undertake training in clinical coding. This has resulted in staff from Orange Health Service undertaking training in medical terminology and clinical coding. Trained clinical coders are in shortage in the NSW health workforce. This has been identified in the coding workforce shortfall report (Australian Institute of Health and Welfare 2010) and also in Health Information Workforce report (Health Workforce Australia, 2013). In 2014, we came to know that Orange Health Service will lose one of its senior clinical coder by 2016. As we are located in a rural area and the scarcity of clinical coders as mentioned above, we anticipated that it will be a challenging task to recruit to this position. So we looked at other options to see how we can better manage the situation. This has led us to developing a home grown workforce solution within health information.*

## Stages of workforce solution

Research has been completed on how to train a candidate to become clinical coder which included finding out a training program that suits to the service, cost involved for one candidate to finish the course, and also the duration of training to analyse a scalable outcome. An expression of interest was provided to all Orange Health Service staff to train in clinical coding. Three staff members were successful in their application to study medical terminology followed by introductory clinical coding course.

This was offered through HIMAA coding course. This was the first time this had occurred at Orange Hospital. All three staff members have completed and passed all training components, two of these staff members have commenced on the job training in clinical coding; the other has been seconded to a district role while carrying out the studies. This strategy also linked to local decision making for local solutions and achieved CORE values of NSW Health (NSW Health, 2011).

## Sustainable and scalable implementation

In 2014, the first EOI opportunity was provided to staff at Orange Hospital for training in clinical coding. In 2016, this strategy has been realised as we have successfully recruited to the vacant position with a home grown clinical coder. In 2015, again an opportunity was provided for a further 3 staff who are currently completing

the training program. By 2017, this workforce will be available to assist the organisation in the continuation of our ABF strategy. This workforce strategy could be a district wide strategy as all facilities are required to code clinical activity.

## Collaboration and partnerships

With the implementation of this program, health information services department has been opened up to other members of the health workforce as a career opportunity. A pharmacy assistant has been the first staff member to complete the training in full and commence training in clinical coding. This has meant increased partnership and workforce sharing between these two departments. The Current

clinical coders are aware of the importance of their profession and the value the organisation places on ensuring a workforce plan is in place. This strategy also links to NSW Health Strategic planning framework in terms of Activity Based Funding to ensure activity is captured and coded accurately with agreed key performance indicators.

## Conclusion

The workforce solution has delivered its intended outcome, meeting immediate needs, in terms of replacing a senior clinical coder successfully and in time. The strategy also has shown organisation's commitment towards

investing in people and provided an opportunity to interested staff for their career advancement. In 2016, a further 3 more expression of interest will be provided to staff in order to maintain the workforce.

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# HIMAA's inaugural workforce summit – what did it achieve?

Richard Lawrance – HIMAA

## Introduction

*On 30 October 2015 HIMAA, in association with the Australasian College of Health Informatics (ACHI) and the Health Informatics Society of Australia (HISA), presented HIMAA's first health information workforce (HIW) Summit in conjunction with the HIMAA NCCH Conference in Sydney.*

HIMAA initiated the Summit in response to concerns with the Health Workforce Australia (HWA) Health information workforce report 2013 (HWA 2013), and the lack of government action in relation to the report since the dismantling of HWA in 2014. HIMAA noted that the report, while recognising the frontline role of the health information management (HIM) profession failed to acknowledge the profession in any of its recommendations. Its

six recommendations were correspondingly inconsistent, and would orphan the HIM profession from future configuration of HIW.

HIMAA was also concerned that HIM workforce shortages identified by Australian Institute Health and Welfare (AIHW) in 2010 (AIHW 2010) have exacerbated rather than improved, based on HIMAA membership research in 2014 (Lawrance 2015).

## Summit Description

The Summit was structured to optimise delegate contribution through discussion predisposed by short 5 minute presentations to set the landscape of current practice, programs and evidence.

Delegates were advised at the outset that the aim of the Summit was not to make decisions but to explore issues, identify challenges and solutions, and actions leading to these.

The day was divided into two sessions, focussing on workforce shortage in the morning and workforce configuration after lunch. The morning session set the workforce shortage scene, focussed supply issues from education and training and workplace perspectives, explored some recent solutions, and structured delegate participation in an open forum.

The afternoon session detailed workforce configuration flaws in the HWA 2013 report, explored adverse workforce configuration practices such as role substitution, showcased HIW configuration trends already apparent such as HIM movement into primary care and upward into the health system executive level, and structured delegate participation through 6 small group discussions on complementary topics relating to HIW configuration.

Summit proceedings were captured by volunteer rapporteurs and a comprehensive report produced through the HIMAA Workforce Working Group to be published on the HIMAA web site.

## Implementation experience

Just over one hundred delegates attended, including presenters. Of these, 75% were HIMAA members, 12.5% HISA or ACHI members, and 12.5% non-members. Government was represented from the Victorian and NSW Health Workforce Branches and the Australian Health Minister's Advisory Council's Health Workforce Principal Committee. Just over half the delegates had attended the HIMAA NCCH Conference immediately preceding the Summit.

Eighty three actions emerged from the Summit for planning consideration in future HIW configuration and addressing workforce shortage, of which sixty two were the direct result of delegate discussion. Actions fall under the themes of:

- A unified voice for the professions
- Workforce data on shortage and configuration
- HIW supply challenges and solutions
- HIW configuration present and future.

Drawing on these actions, the report suggests specific planning activity under each theme to be considered by the HIW professions, by employers and by governments.

The HIW Summit report will be published electronically in June 2016 and distributed to a range of stakeholders, including employers and government.

## Conclusions

Thirty four percent of delegates registered an interest in following up on the Summit, 21% in actively pursuing its actions. There is thus some interest in actively addressing HIW shortage and configuration in the HIW professions.

A follow up summit with employers to discuss implementation of the HIW Summit actions is planned for 11 November 2016, once again in conjunction with the HIMAA NCCH National Conference.

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# Health Information Management: At the heart of pricing for safety and quality

Joanne Fitzgerald – Independent Hospital Pricing Authority

*Health Information Managers and Clinical Coders have long been at the centre of work on monitoring patient safety and quality of care within their health services due to their knowledge and governance of the admitted patient care morbidity data set. They advise clinicians and health service managers on how to identify and quantify hospital complications in the coded data set, explain the purpose and uses of the condition onset flag, collect and report on clinical indicators, carry out audits on the coded data to ensure accuracy and in many cases manage the safety and quality reporting program for their health service.*

With the implementation of national activity based funding, there has been a significant volume of work undertaken to pave the way for consideration of a pricing model which incorporates a safety and quality component. In the Independent Hospital Pricing Authority's (IHPA) inaugural Consultation Paper on the Pricing Framework 2012–13, IHPA identified the international trend towards incorporating quality into payment systems, including the approach adopted by US Medicare, which 'excludes' the diagnoses associated with a limited list of hospital acquired complications in determining the payment made to hospitals. While many stakeholders supported this approach, others were opposed to IHPA applying any quality adjustment to the national efficient price (NEP).

Following this feedback, IHPA committed to recognising the leadership role of the Australian Commission on Safety and Quality in Health Care (ACSQHC), and decided to work in partnership with the ACSQHC to explore options for the inclusion of safety and quality considerations in determining the NEP. Since that time, IHPA has undertaken a body of investigative work with the ACSQHC to consider approaches to best practice pricing, and to develop an Australian list of high priority hospital acquired complications.

Interest in the work on safety and quality in pricing has been further enhanced following the Council of Australian Governments meeting on 1 April 2016 and the subsequent Heads of Agreement on Public Hospital Funding. The Agreement includes a commitment for 'a comprehensive, risk adjusted model to integrate quality and safety into hospital pricing and funding'.

There are significant Health Information Management implications and considerations in integrating safety and quality measures into a national hospital pricing model. For example:

- What data is available nationally to identify safety and quality measures as well as factors which enable risk adjustment?
- How might the coded data be used in safety and quality pricing methods?
- How accurate is any current national data?
- What might be the impact on clinical coding, Clinical Coders and Health Information Managers if coded data were used to implement safety and quality adjustments to a national pricing model?

# Clinical Documentation Improvement – where do I start?

Kylie Holcombe – Ballarat Health Services

## Introduction

*For the last 5 years at Ballarat Health Services we have been growing our coding audit and query program to make it more sustainable and efficient. At the end of the last financial year we realised that in addition to finding an additional \$7.1 million for the budget, we had compiled a rich source of data that would inform our future direction in Clinical Documentation Improvement (CDI).*

## Implementation

The information in our audit and coder query spread sheets was compiled and used to analyse the different areas we needed to target for education. The first target was the coder's application of ACS 0001 Principal diagnosis and how that applies to episodes without a discharge summary or for example a discharge summary which lists multiple principal diagnoses. Education was provided for the coding team on this topic and was also incorporated into education sessions for the junior doctors.

Auditor and coder queries were further analysed to determine what types of things were being

queried most frequently. We were also able to determine which units were most likely to be queried and what particular questions were being asked of that unit.

This data was presented at various forums to highlight the need for clinical engagement at all levels, in particular the completion of discharge summaries. This led to invitations to present to the junior medical workforce. Through trial and error I am learning how to present this information in a way that engages the staff in a conversation rather than me dictating and the clinical staff feeling further burdened.

## Experience

Over the last six months I have spoken to junior medical staff, nursing groups and allied health staff. Nursing and Allied Health staff have been very interested and keen to improve their documentation. The junior medical staff although interested and keen feel that they are not supported enough by their seniors and there is more work to be done here.

While funding has certainly been a key driver

in this program, we are also aiming to improve our performance data through improved clinical documentation resulting in more accurate coded data. We need to ensure that the data we gather through our coding is accurately reflecting the growing complexity of patients that our health service is treating. Mortality and readmission rates as well as length of stay are now the focus of interest at executive, state and national levels.

## Conclusion

The future of CDI lies with ensuring that we can maximize the funding and performance data for our health services while maintaining the overall

integrity of the data. There is much work to be done!

# Establishing a concurrent Clinical Documentation Improvement Program utilising Clinical Documentation Improvement Specialists

Nicole Draper – St Vincent's Private Hospital Sydney

## Introduction

*In hospitals proper and accurate clinical documentation has always been important, but in today's shifting healthcare landscape, it has become even more of a strategic imperative than ever before. Documentation is critical for patient care, not only because it validates the care that was provided, but also because it shares key data with subsequent caregivers and improves hospital revenue. As such, clinical documentation improvement programs are important to any facility that recognises the necessity of complete and accurate patient documentation to aid in the enhancement of patient care (Rosenbaum 2014)*

Our hospital has a broad and complex case mix, however this is not always entirely well demonstrated due to insufficient documentation, resulting in revenue leakage and the complexity of our patients be lost. A key aspect of accurately describing patient complexity depends on the specificity of the language used in clinical documentation. International evidence from the United States shows hospitals with sufficient resources to engage clinical documentation improvement specialists are able to improve the case mix index (Mendez, Harrington et al. 2014).

The importance of accurate clinical documentation has always been recognised as crucial for meeting the expected quality, safety, legal and ethical standards associated with health care (Spellberg, Harrington et al 2013).

A Clinical Documentation Improvement Program (CDIP) was established in January 2016 to address this insufficiency. The CDIP is a pilot focussing on Neurosurgery and General surgery which includes colo-rectal, vascular and upper GI.

## Implementation/experiences

A steering committee was established, membership includes the Manager Length of Stay, Documentation & Revenue Optimisation, Health Information Manager, Clinical Documentation Specialists who are Registered Nurses, Chief Financial Officer, Mission Manager, Quality Manager, Surgeons, Anaesthetists, Physicians, Business Development Manager and Health Informatics.

The Clinical Documentation Specialists underwent a 10 day training program in order to bridge the gap between Clinical Speak and Coding speak. The training included MDC's, utilising the AR-DRG definitions manuals to determine a DRG, CC's and how documentation impacts of ICD codes and DRG assignment. The clinical coders and HIM's attended the training

when possible over the 10 day period.

The primary purpose of CDI is to perform a concurrent review of the medical record to increase accuracy, clarity and specificity of Dr's documentation. Two senior Clinical Nurses are undertaking the role of Clinical Documentation Specialist (CDS). The strength of our program is that it is concurrent, whilst the patient is still an inpatient the opportunities to improve the documentation are sought. This also provides an opportunity to change documentation behaviours for medical staff, nursing staff and allied health.

Due to the language used by clinicians not always matching the coder's language the Clinical Documentation Specialist (CDS) identifies documentation opportunities and collaborates with both the clinical staff and

the coding staff to improve the accuracy of diagnoses and procedures representing the patient's episode of care. The medical record then captures the true complexity of the patient's condition.

Chart reviews are undertaken between 24-48 hours post admission and the CDS continues to review the chart throughout the admission. Queries are generated by the CDS to the admitting Medical officer or treating clinician whilst the patient is an inpatient and included as

part of the medical record reducing the need for queries to be generated post discharge. This has a positive impact on revenue cycle management as the invoice can be submitted immediately rather than waiting for queries to be answered. Following the chart reviews, rounding with the specialist where possible, consulting with nursing staff, allied health and other health professionals the Health information Services team have found our Clinical Documentation has improved.

## Conclusion

The CDI program is now in its 4th month, revenue has improved by several thousand dollars a week.

Our CDI program is reviewing all patients within the pilot specialties regardless of whether there will be a financial impact, the philosophy of our program is to improve clinical documentation for all of our patients ensuring the complexity is captured in the medical record.

Improving clinical documentation for purely financial gain is not the objective of the program. Strong evidence shows incomplete or poor documentation can negatively impact on patient safety and outcomes. One study (James 2013) undertaken in the United States reviewed medical records and reported incomplete documentation may have led to up to 40% higher in hospital death rates. Such findings show

a clear correlation between accurate clinical documentation and improved patient outcomes.

Having commenced my Doctoral studies in this field the first of two engagement surveys is drawing to a close. Whilst the outcomes of the survey are yet to be analysed fully the early indicators are that the Doctors are engaged (the response rate was 72%) as well as the Nursing and Allied Health staff, and the aims of the program are well understood. The survey asked in the future would you adopt this level of specificity as part of normal practice when documenting and 75% of respondents have said yes.

I would be happy to share the outcomes of the survey and the pilot in November at the conference.

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# The role of the Clinical Documentation Specialist in Activity Based Funding

Kathleen Wilton – 3M

*This paper will discuss the role of a Clinical Documentation Specialist and the advantages of a concurrent documentation improvement process as a way forward for data quality, coding quality and appropriate reimbursement based on the principles of Activity Based Funding (ABF).*

ABF is primarily dependent on the accurate allocation of ICD10-AM and ACHI codes assigned to an episode of care. Behind the scenes in most hospitals the Coding Managers and Educators are working to look for more specific diagnoses for documented signs and symptoms, for treatment plans without a corresponding diagnosis, for the most appropriate principal diagnosis, they are looking for complications and co-morbidities that may have impacted on the admission but are not adequately documented, they are looking for test results that are not adequately documented and interpreted in the clinical notes. In the main, they are doing this in the retrospective space, ie after the patient's discharge.

The procedure in the post discharge space is time consuming, complex and not timely. It involves coding the episode of care, reviewing the record for documentation gaps and then forwarding a query to the discharging doctor to clarify the missing documentation. The query is then recorded in a spreadsheet so it can be followed up and the results of the query recorded. Finally the episode is recoded and it is complete. This is a cumbersome process for both the Coder, Reviewer and the doctor dealing with the query.

Is there another way? Concurrent review systems have been part of the US landscape now for 20 years. A concurrent system involves reviewing the record during the course of the admission, querying the clinician whilst the patient is still an inpatient and finalising the documentation prior to discharge. The benefits of such a system are many including timely completion of documentation which is then available to all practitioners involved in the patient's care, a more efficient and effective system for medical, nursing and allied health staff, a faster turnaround time for the coding

process ensuring data is complete and available in a shorter timeframe. To facilitate this process the role of the Clinical Documentation Specialist is essential. This role highlights the importance of clinical documentation and acts as a conduit between the Clinicians and the Coding staff. The Clinical Documentation Specialist should be seen as an extension of the Coding role. It ensures the documentation is complete at the time of discharge which in turn ensures that the coding is complete and accurate which in turn ensures the appropriate Diagnosis Related Group for the episode is assigned.

As a profession we know that quality morbidity data is essential for national, state and local hospital planning. Morbidity data reflects a hospital's outcomes and is being used for more and more purposes including patient safety. It is essential that the data is reliable and complete. How better to do that than to ensure the clinical documentation is complete and truly reflects the conditions that were treated during the admission, the treatments that were provided so that the complexity of each episode is captured according to the rules and regulations of the classification.

A new approach is needed if documentation improvements are to be sustained over time. A concurrent review system is ongoing and sustainable. It allows the focus on improving the documentation as an end in itself and not just to meet the requirements of the current reimbursement system. If data quality is a priority then concurrent review is the solution. As part of a concurrent review system a Clinical Documentation Specialist is essential. Several hospitals in Australia now have these positions in place and are being rewarded for their investment.

# Clinical Coder Career Progression: A transformation of the coder workforce in WSLHD

Natasha Smith – Western Sydney Local Health District

## Introduction/Background

*The Clinical Coding Unit had been operating with a number of staff shortages for many years due to a varied number of reasons. Over the last 4 years, not only has the number of separations increased, highlighting the need for additional clinical coders, but the role of the clinical coder has also evolved. The fundamentals of coding have remained the same, yet coders are now expected to have additional competencies to support documentation and coding quality initiatives. Clinical coders are required to be critical thinkers, have problem solving abilities, great communication skills, ability to engage with clinicians and a willingness to continue professional development.*

WSLHD needed a permanent solution to address these workforce issues, providing not only opportunities to elevate the standard of clinical coding through the establishment of a pathway to professional certification, but also

by developing a training program for those with a HIMAA ualification wishing to embark on a career in clinical coding. Our aim was to build a certified, self-sufficient workforce and reduce long term dependency on contractors.

## Case Study Description

Following an external audit in 2012, a training gap analysis was performed on the existing coder workforce. It was acknowledged that the organisation had neglected the coders for many decades and now it was time to invest and transform the structure and way we deliver coding services.

A long term strategy to improve the clinical coding and give back confidence to the District was required, and hence the Clinical Coder Progression Criteria was developed.

### ***Clinical Coder Progression Criteria***

All Clinical Coders employed within these progression criteria are required to successfully complete a HIMAA clinical coding course.

The purpose of these progression criteria is to acknowledge and promote Clinical Coder knowledge, expertise and professional development.

Level 1 Trainee Clinical Coder

Level 2 Clinical Coder

Level 3 Senior Clinical Coder

Level 4 Certified Clinical Coder

With each increase in level, comes an increase in salary. At Level 4, HIMAA certified coders progress to a HSM Level 1 Award.

## Implementation/Experience

Each coder was assessed using the HIMAA challenge exams and subsequently enrolled into their respective course depending on their current skill level.

In addition to the HIMAA courses, focus sessions on abstraction techniques and Australian

Coding Standards were also delivered.

Approval to recruit 2FTE Educator/Auditors to support education and quality activities was granted, however contractors were sourced to deliver the recommendations from the external audit until recruitment was finalised.



This change in focus resulted in a huge staff turnaround. Within a matter of months, there were 2 resignations and within the 12 months I had lost half my coding FTE.

Implementing the progression criteria for new trainees and existing coders with half the workforce meant the challenge just got greater: initiatives were explored to build and

## Conclusion

Within 3 years, WSLHD was back to a full coding establishment with 5 additional FTE approved and 2 additional educators/auditors. Coders are working remotely, professional development is ongoing and staff morale has improved considerably.

Lessons learnt along the way:

- Professional development is not a benefit, it is part of any good retention strategy. The LHD has invested heavily and it is our obligation to tap into the talent and progress further.
- A robust recruitment process aimed at attracting those with a greater level of commitment and professional capability is required.

secure a workforce to deliver the outcomes required of the LHD; continue with professional development of existing coders and to make career success matter just as much as career progression.

Within this period, the implementation of scanning and eMR occurred allowing for even further opportunities to support the strategies.

- Be flexible, stay contemporary and use technology to support outcomes. Remote coding (from home or other facilities with the LHD) not only helps us achieve our KPIs, but attracts and retains good coders.
- Change management and changing the culture: take your people with you and exhibit the behaviours and values that you want in a team.
- Spend time connecting and communicating. Inclusive and engaged teams perform better.
- Reinvent opportunities and focus on the positives.

# Managing clinical coding education

Heather Grain – Global eHealth Collaborative

## A classification system for clinical coding exercises

*An important component of the learning process in Clinical Coding is practice, and for educators there is the constant problem of providing to students exercises and questions that test not only basic coding practice, but also current Australian Coding Standards and Coding Rules. Students require timely, consistent solutions and feedback as part of the learning process. One educational strategy is to provide a staged introduction to the material, moving from basic to advanced material in a systematic manner. The problem is to determine definitions of the level of difficulty or stage of coding required to code a specific case.*

Educators, whether university or Registered Training Organisations, need to identify the characteristics required for building skills and assessing competence. The scope and detailed pathways of learning are essential in order to achieve this. Current competencies to determine skill levels for Clinical Coding use very loose definitions of record types. In this paper we suggest that a better approach is to use the attributes of records and coding practice to define Clinical Coding skill levels. As with quality coding, quality education requires more precise definitions and processes.

In this paper we propose a metadata and a system for categorising Clinical Coding exercises and exam content to support the selection of cases:

- to be presented to students according to the training required (case filtering)
- to be updated when code system/s, standards and rules are modified or reviewed

This classification is intended to be generic, (i.e. not specific to the Australian situation), although Australian experiences have been key to the work undertaken. The classification is not intended to directly control course sequence or content (i.e. you might have a course which includes content at level 3–5 but would naturally start at the lower level).

It is important to note that the levels in the classification are levels of difficulty for the

individual case being coded whether in an exam or exercise, they are not related to a particular ICD Chapter, and they are not related to the level of course, though this information is captured in the metadata. For example we have defined a Level 1 coding question as requiring clinical diagnosis codes with only 3 digits or a .9 in the 4<sup>th</sup> digit. Procedure coding adds a level of complexity which moves the case up to Level 2

The current proposal is for 6 levels of difficulty, although more may be required to clearly differentiate the levels. The intention is to establish enough levels to give utility but not so many that management becomes too complex. Each level indicates the attributes of the case or in some cases what is not included.

Specific Metadata required to identify cases for these purposes includes, specialty being tested, case topic, code book chapter, level of coding difficulty, standards being tested, and/or coding rules being tested.

The most difficult of these metadata is the specification of the level of coding difficulty. The coding difficulty is not necessarily associated with course structures but does assist in focusing the learning

required and management of student expectations. The table below provides early content suggested for defining coding difficulty. This paper seeks input and discussion of these levels.

**Table 1: Level of Coding Difficulty**

Attribute	Level					
	1	2	3	4	5	6
<b>Diagnoses</b>						
<ul style="list-style-type: none"> <li>• Simple conditions at .9 (unspecified level)</li> <li>• No complications which change the code</li> <li>• No codes from chapter 19 or 20</li> <li>• Includes supplementary codes</li> <li>• Includes cancelled procedure - unspecified</li> </ul>	X	X	X	X	X	X
<ul style="list-style-type: none"> <li>• External causes (excluding medical and surgical complications)</li> <li>• .8 and .9 diagnosis codes (other and unspecified)</li> <li>• Code sets (such as cancer and external causes)</li> <li>• Includes cancelled procedures due to ...</li> <li>• Maximum of 6 diagnoses</li> </ul>			X	X		
<ul style="list-style-type: none"> <li>• Full range of codes</li> <li>• External causes including medical and surgical complications</li> <li>• Multiple injuries or accidents</li> <li>• Diabetes code sets</li> <li>• Tests medical vocabulary but not special words for lookup which are not clear from medical understanding</li> </ul>					X	X
<ul style="list-style-type: none"> <li>• All cases</li> </ul>						X
<b>Procedures</b>						
<ul style="list-style-type: none"> <li>• Where the record indicates the lead term and the procedure can be coded by just using the lead term</li> <li>• Anaesthesia (with and without)</li> </ul>		X				
<ul style="list-style-type: none"> <li>• Where the record includes first essential modifier using the term/s required for lookup.</li> </ul>				X		
<ul style="list-style-type: none"> <li>• Tests medical vocabulary but not special words for lookup which are not clear from medical understanding.</li> </ul>					X	
<ul style="list-style-type: none"> <li>• All cases</li> </ul>						X
<b>Australian Coding Standards and Rules</b>						
<ul style="list-style-type: none"> <li>• No coding standard knowledge required to obtain the correct code</li> </ul>	X	X				
<ul style="list-style-type: none"> <li>• The case requires the student to apply one or more coding standards to correctly code</li> </ul>			X	X	X	X
<ul style="list-style-type: none"> <li>• Include coding rules and standards</li> </ul>					X	X

# Development of Certificate IV in Clinical Coding

Thomas Galtieri – Western Health

## Introduction

*For a number of years, the Clinical Coding workforce across Australia has been experiencing difficulty in recruiting appropriately trained and experienced staff to fill coding roles. This has been a significant issue at Western Health where the Clinical Coding Service has not had a full complement of staff for several years.*

When recruiting recent graduates, it is reasonable for Health Services to expect to provide some level of training, however there is also a need for new coders to be more 'work ready'. The limitation of students experiencing difficulty in obtaining sufficient practical experience as part of their education has been highlighted as a particular issue with current

educational models. This problem has been compounded by a shortage of experienced staff to take on educational or senior roles within Organisations. The Victorian Department of Health and Human Services (DHHS) recognised this as a significant problem and enabled Western Health to progress the accreditation of a new Certificate IV in Clinical Classification.

## Aim

Western Health has developed and commenced delivery of a Certificate IV in Clinical Classification to assist with addressing the current workforce shortages and the capability of graduates to be work ready upon graduation from the course. The aim is that on completion of the course, all candidates will be, at a

minimum, competent to code basic casemix in an acute hospital environment across a variety of clinical specialties. It is expected that the only additional training required by these students would be for more complex or specialised casemix applicable to specific Organisations.

## Method

Western Health was awarded a partnership grant from the DHHS to develop and deliver the Certificate IV in Clinical Classification. The course includes twelve units, six of which are specific to clinical coding and six general health information units. Course material was developed for each unit based on curriculum accredited by the Victorian Registrations and Qualifications Authority and listed on the National Register for training. The units are designed to introduce students to the health

system and its funding mechanisms, health information service functions and operations, medical record abstraction, classification and auditing techniques. In the course, candidates will gain practical experience by examining pre-selected and pre-coded actual patient medical records via a digital medical record system, giving them practical hospital-based experience coding from a real representation of patients treated.

## Results

A Coding Educator was seconded to Western Health's Centre for Education to work in partnership with them to develop the course material. The initial cohort of students was recruited from existing Western Health staff through an expression of interest process, with response from more than forty people received. An information seminar was held to

explain the course, anticipated workload and explain the role of a clinical coder. Fifteen people applied for the first intake, which were screened by interview, resume and aptitude tests with nine ultimately successful for enrolment. The students are from a variety of clinical and non-clinical backgrounds including administration, nursing, research and clinical

technicians with a range of years of working experience. Classes commenced in April 2016 and will run for three hours every fortnight until December 2016. Online support in the form of

a Yammer discussion page has been provided to the students. The coding units have only just commenced, and the progress to date will be covered in the presentation.

## **Discussion and Conclusion**

Progress and findings of the pilot cohort to date will be provided in the presentation, including feedback from the students. Issues and challenges identified for future, such as access to hospital information for external applicants and methods of assessment, will be discussed.

Overall this has been an exciting venture which generated a lot of interest from current staff within the hospital. We hope to share our results from our pilot group and plans for expanding the course to external applicants in the future.

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# Results of a HIMAA aptitude test for clinical coding

Kerryn Butler-Henderson, Australian Institute of Health Service Management, University of Tasmania

## Introduction

*Clinical coding is a role that requires a high level of accuracy, attention to detail and an understanding of medical science. Hospitals advertising for a qualified clinical coder require applicants to complete a test to examine their competency in clinical coding. Yet, the Clinical Coder Capability Framework (Victorian Department of Health 2013, p.8), identified that “Current pathways of preparation for clinical coding work... are generally considered by Victorian employers to be insufficient to provide an entry level standard clinical coder”. Part of the explanation for this could be aptitude mismatch, given that recruits have demonstrated proficient coding skills through a coding test to gain the position. Catterson (2014 p.25) states “coding aptitude is largely dependent on the person rather than their training background”. Given the importance for finding the right person for the role, it is surprising there has been no reported research on the aptitude of clinical coders. Employment of the right person for the role can result in greater productivity, achievement of realistic key performance indicators, and happy, long term employees (Abbott and Fox 2010). The New South Wales (NSW) Health Education and Training Institute (HETI) reported developing an aptitude test (Jacobsen 2014), but an evaluation of this test has not been published, and industry feedback indicates of those it identifies as having an aptitude to clinical coding, in reality about half did and half did not.*

HIMAA, as the peak body for health information management and clinical coding and leading provider in clinical coding education in Australia, wished to develop an aptitude test that identifies the level of propensity to clinical coding, for potential students of their introductory clinical coding course to undertake,

and potentially to be commercialised for employers in the future. HIMAA worked in collaboration with the University of Tasmania to ensure a scientifically sound approach was used to develop and evaluate an aptitude test for clinical coding. This presentations will provide the findings of this research.

## Study description and findings

In 2012, HIMAA invited health organisations to provide position descriptions for clinical coders to HIMAA, who then developed a list of common characteristics of a proficient clinical coder. The first part of this study was to validate this list, by surveying members of the Clinical Coding Special Interest Group (SIG). were invited to complete a survey evaluating each of the characteristics previously identified, and suggesting others that were not part of this list. Eighty percent of respondent identified twelve important or essential characteristics.

These characteristics formed the basis of the aptitude test development. HIMAA and the University of Tasmania contracted an organisational psychologist from Benchmark

Psychology, with experience in aptitude test development. The psychologist was instructed to develop an aptitude test that could be delivered online within 20 – 30 minutes. This test was then created within HIMAA's online learning platform, Business Applications, and tested by the research team. To evaluate the tool, members of the Clinical Coding SIG and the Scanning and eHealth SIG (as the controls) were invited to complete the aptitude test and then provide feedback via a survey. The survey design was based on the DART (Dynamic Acceptance Model for the Re-evaluation of Technologies) tool developed for the evaluation of aptitude tests (Amberg, Fischer and Schröder 2005) Results of this part of the study shall be provided in this presentation.

## Conclusion

Availability of an aptitude test will allow potential students of clinical coding courses to make an informed decision about their level of investment in the training program and discipline prior to any outlay. Furthermore, a commercialised tool will be of benefit to employers prior to the investment of time and

money in trainee clinical coders. However, such a tool requires substantial evaluation before it can be used as a decision making tool. This study discussed the preliminary findings of such an evaluation. Further research is required, with a larger sample size and longitudinal data.

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