



# Proceedings of the HIMAA Virtual 37<sup>th</sup> National Conference 2020



*Health Information Management:  
Enabling Better Health  
in a Digital World*

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**'Health Information Management: Enabling better health in a digital world'.**

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# Preface

Health Information Management:

Enabling Better Health in a Digital World

‘Unprecedented times’ is a term we hear very often of late, and it is certainly an accurate description of 2020. It seems that we are presented almost daily with yet another interruption or inconvenience that is an unforeseen consequence of Covid-19. Our annual conference this year being conducted in a ‘virtual’ space instead of the large physical location intended, is yet another example.

While the virtual space limits our ‘usual’ opportunity to share and network widely with each other over coffee, lunch and dinner, it provides an excellent alternate avenue for HIMs, clinical coders and other Health Information Management Professionals, to connect in a meaningful exchange of ideas and experiences.

Time constraints, and uncertainty that participation commitments could be honoured, generated the decision to forego the usual full-length conference papers for 2020. However, while the content is presented in a different, shorter format to those of previous years, this year’s program showcases the diversity of abilities and expertise that are synonymous with Health Information Management Professionals. The abstracts included in these proceedings were all peer-reviewed by both academic and practitioner members of the profession.

The pandemic has triggered significant changes to health care delivery around the world, with an unparalleled focus on new technologies and data analytics. These changes have touched the way our education programs are delivered, how our clinical coding audits may be conducted, how new Covid-related conditions/treatments are coded and classified, the enduring need for improvement in clinical documentation, tracking and monitoring clinical “hot spots” and the ongoing challenge of ensuring that the most complete, comprehensive ‘real time’ health information is available for ever-increasing purposes – all while maintaining the protections that information, and the patients to which it relates, demand. Health Information Management Professionals are at the forefront of this work, and through continuing to display this level of agility, our proven professional value in the health setting will remain essential. The collection of presentations in 2020 highlights the professional diversity these changes and challenges generate, and demonstrates the innovative pathways being crafted for the future by our profession, to ensure and enable better health in a digital world.

**Dr Joan Henderson,**  
*Scientific Committee Chair (Academic)*

**Ms Kathleen Rogers,**  
*Scientific Committee Chair (Industry)*

**Mr Mark Upton,**  
*Conference Committee Chair*

# Mapping symptom and diagnosis terms from the ICPC-2 PLUS terminology to SNOMED CT-AU

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## Abstract

**Introduction:** The ICPC-2 PLUS clinical terminology is widely used in electronic health records (EHRs) in Australian general practice, Indigenous health services and in community health. It contains terms capturing symptoms/complaints, diagnoses/diseases and processes of care (interventions). EHR vendors using ICPC-2 PLUS requested a map from ICPC-2 PLUS to an international clinical terminology called SNOMED CT to promote interoperability between terminologies used in Australian health care. The Australian extension of SNOMED CT is SNOMED CT-AU. One possible use is converting data collected in ICPC-2 PLUS to SNOMED CT-AU for transfer of clinical data from general practice to other health providers. The aims of this study were to create a one-to-one map of best fit from the ICPC-2 PLUS symptoms and diagnosis terms to SNOMED CT-AU, and to assess the quality of mapping results.

**Methods:** In Phase 1, two mappers (experienced ICPC-2 PLUS coders with backgrounds in health science/HIM) did initial mapping using the CSIRO's 'Snapper' mapping tool. Automated maps were generated using Snapper. Mappers reviewed the accuracy of each automated match, and manually searched for an alternative if they disagreed with the automated result or there was no automated match. A 'map rating' was assigned to describe the accuracy of each map result. Mappers worked independently to ensure results could be compared accurately. In Phase 2, the two independently produced maps in Phase 1 were compared and reviewed by two map leads (one GP clinician and one senior HIM). Discrepancies between maps produced in Phase 1 were identified and resolved. Phase 1 occurred in 2015–16. Due to factors outside our control, the project was put on hold and re-started in 2018. As both terminologies had been updated during the interval, update work occurred during Phase 2 to update the map to the most recent versions in 2020.

**Results:** Versions used in these results are ICPC-2 PLUS April 2020, and SNOMED CT-AU 31 March 2020. There were 5,880 ICPC-2 PLUS terms mapped to SNOMED CT-AU. Of these, 5,629 terms could be mapped to SNOMED CT-AU (95.7%). A review of map quality found that 34.9% of all results were an exact match (lexical and semantic match to the SNOMED fully specified name), 15.5% were matches to a SNOMED preferred term or listed description and 27.2% were terms synonymous with a SNOMED concept, but not explicitly included in SNOMED CT-AU. Together, these results indicate that 77.7% of the ICPC-2 PLUS terms mapped to SNOMED CT-AU were acceptably matched to SNOMED CT-AU. Remaining maps were either rated as 'best fit' where meaning was lost during the mapping process (12.7%) or indicated that pre-coordination existed in the ICPC-2 PLUS term which affected the mapping (5.3%). No acceptable match was found in SNOMED for the remaining 4.3% of terms.

**Discussion:** Findings indicate that three-quarters of ICPC-2 PLUS symptom and diagnosis terms could be acceptably mapped to SNOMED CT-AU. However, only half of the terms were explicitly included in SNOMED CT-AU. Terms that could not be mapped to SNOMED CT-AU, while relatively small in number, may indicate content gaps in SNOMED CT-AU for terms currently used in Australian general practice. Maps assessed as ‘synonyms’ suggest that additional descriptions could be added to SNOMED CT-AU to aid users when searching for concepts. ‘Best fit’ matches indicate that information was present in the ICPC-2 PLUS term that couldn’t be captured in SNOMED CT-AU. Use of such maps creates risk which must be carefully assessed during implementation. Acceptable risk levels depend on the map’s use—clinical use requires higher accuracy, while lower match levels might be tolerated for statistical purposes.

**Conclusion:** This study indicates that while most ICPC-2 PLUS symptoms and diagnosis terms could be mapped to SNOMED CT-AU in some form, there was substantial variance in the quality of mapping results. As both terminologies are regularly updated, opportunities exist to improve these results over time.



# Students' perceptions of the professional role of the Health Information Manager: Preliminary findings of a study of Generation-Z's engagement with their university studies in health information management

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## Abstract

**Introduction:** Generation Z (Gen-Z) were born after 1995 (Hampton, Welsh and Wiggins, 2019). The internet has existed for their entire lives (Shatto and Erwin, 2017). This long-term exposure is known to influence their university-level learning. This paper reports preliminary findings of a component of an in-progress research study. The project is investigating Years 1 and 2 undergraduate health information management students': (i) academic identity, i.e. preferred teaching and learning styles and experiences; (ii) professional identify, i.e. understanding of Health Information Managers' (HIMs') professional work; and (iii) social identity, i.e. engagements with other students and academic staff. We share, herein, early findings on the professional identify component, i.e. understandings of the HIM professional role.

### *Aims and objectives*

The study aims to investigate the teaching and learning experiences of Generation-Z health information management undergraduate students in transitioning to university and, subsequently, to second year. The research question for this component concerned professional identity: What are Years 1 and 2 students' perceptions of the professional work of HIMs.

**Methods:** The study utilises a quasi-experimental, non-equivalent, before-and-after design (Christensen, 1977). Cohort 1, enrolled in Semester I, 2020 in the Year 1 subject, 'Healthcare in Australia', is exposed to new teaching technologies and strategies. Cohort 2, enrolled in the Year 2 subject, 'Introduction to Data Analytics in Healthcare', is exposed to conventional teaching approaches. The Cohort 1 participants will be re-surveyed in Year 2, 2021, to test and compare effects of the novel teaching strategies introduced in 2020. A purposively-designed online survey was administered via RedCAP to both cohorts in Week 4, Semester 1, 2020. This elicited quantitative and qualitative data on academic and social identity factors. The other data collection instruments and teaching and learning interventions will be described, and results reported, following study completion.

We focus here on students' perceptions of professional identity, obtained via the survey. To contextualise, we analysed socio-demographic factors: age; gender; previous studies. Descriptive statistics were applied to analyse the quantitative responses, using Excel. Thematic analysis of the open-ended responses was supported by computer-assisted search and find functionalities, and manual data analysis. The La Trobe University Human Research Ethics Committee has approved the study.

**Results:** Eighty-six percent (19/22) of Cohort 1 and 68% (25/37) of Cohort 2 consented to participate, representing a response rate of 75% (44/59). Almost all participants (42/44) completed the survey; five were >25 years of age and excluded from analysis, leaving a sample 37 Gen-Z participants. One quarter (9/37) of the participants were male, 65% (24/37) were <20 years of age, and eight percent (3/37) had undertaken prior tertiary study. Responses to the open-ended question were received from 100% (n = 17) of Cohort 1, and 90% (18/20) of Cohort 2.

Cohort 1 (Year 1 students) demonstrated quite a sound understanding of the profession's roles. Emergent themes were: (1) management of data and information; (2) health information systems and databases; and (3) data collection, management, analysis, integrity and translation. There was awareness of privacy, and professional roles.

Cohort 2 (Year 2 students) demonstrated a more comprehensive understanding of the profession's roles, used more sophisticated language and showed awareness of connections between health information and quality of care.

**Discussion:** At the survey, the Year 1 cohort had been less than four weeks in the course; therefore, their accurate understanding of HIMs' professional work-roles was unexpected. Their emphases on key professional components indicated a broad appreciation of their future roles. The Year 2 students' more sophisticated descriptors reflected sounder understanding.

**Conclusions:** Both cohorts demonstrated largely accurate understanding of the HIM professional identity with Cohort 2, as expected owing to their stage in the course, showing comparatively deeper understanding. The Cohort 2 responses may have been influenced by the mandatory (all health-based courses) Year 1 'profession mentor' sessions whose recent removal reflects university trends towards intra-course content standardisation. A potential curriculum-related implication of the findings may be the re-incorporation of systematic, profession-related exposure via Year 1 discipline-specific subjects.

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# The Aisbett method – description of a Probability Proportional to Size Sampling methodology for clinical coding audit

Jack Aisbett<sup>1</sup>

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In honour of Chris Aisbett and his lifetime goal of improving clinical coding quality, we wish to present the Aisbett Method for sampling in clinical coding audits.

**Introduction (background/setting):** The conduct of Clinical Coding audits is an essential component in quality assurance for clinical coding. audits measure the accuracy of the clinical coding's representation of the medical record. Fundamental to all audits is a sampling method by which records are selected for sampling.

Most sampling methods for coding audits either use random sampling or non-probabilistic sampling methods. Non-probabilistic methods are beneficial in targeting problematic areas of hospital coding but cannot give the statistical robustness and precision required to get an accurate picture of overall coding quality. Random sampling can offer useful and statistically valid insights. However random sampling of health records only achieves robustness through the sampling and auditing of a large numbers of records. Clinical coding auditing is very time-consuming, resource-intensive and there are limited numbers of experienced auditors available to conduct audits. Random sampling is particularly resource intensive if statistical robustness is required of multiple strata, for example, an audit of a hospital group (e.g. Local Health Network) that requires statistically valid insights at the hospital (stratum) level. Approaches that can balance statistical robustness of results with feasible audit sampling sizes are a vital addition to clinical coding audits.

Chris Aisbett devised an approach that balances statistical robustness of large random sample sizes with some of the benefits of non-probabilistic sampling and the practicalities of auditing large numbers of medical records. It is the aim of this paper to describe his sampling methodology and argue for its greater use in the field of Clinical coding audits.

**Professional practice/case study description:** The Aisbett method involves sampling by agreed upon measures of coding complexity and assigning a value to each record in the audit population. Finding an Agreed upon measure of coding complexity enables the audit to benefit from expert insights that are a strength of non-probabilistic methods. The Aisbett method has traditionally used the square root of a nation's relative value unit (e.g., the National Weighted Activity Unit (NWAU)).

Assigning a complexity measure to each record enables the random selection of records based on the record coding complexity score and the record's ranking in the overall complexity of the stratum (hospital). The Aisbett method biases the random selection of records towards more clinically complex records, which have a higher chance of errors. This method is not unlike the 'Probability Proportional to Size' method that is employed widely in accounting audits. Statistically valid sample sizes using a probability proportional to size method are much smaller than those required for random sampling methodologies and the same size sample can be used at any stratum regardless of stratum size. These differences will be highlighted using a hypothetical hospital network.

**Outcome/experience:** Using the Aisbett Method, the sample sizes of episodes of care for clinical coding audits are robust enough to extrapolate to the whole, while small enough to feasibly conduct the audit with limited resources. The method has the added advantage of improving coder efficiency through a deliberate bias towards clinically complex records while ensuring a decent sample is selected from all complexity levels. In addition, it enables robust investigations of coding quality at all stratum (i.e. hospital level) that other methods cannot achieve.

**Conclusion – what was learned:** This method facilitates the conduct of clinical coding audits while maximising the efficient use of auditor resources. More wide-spread use of this method has the potential to improve coding quality through more targeted auditing and coder education for less financial burden.

*Chris Aisbett sadly passed away in 2016. His family have given their permission for this abstract.*

## Disseminating research findings and commentary on issues related to the management of health information: Practical guidelines for publishing in a peer-reviewed research journal.

Joanne Callen<sup>1</sup>

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**Introduction (background/setting):** Publishing research, professional practice studies and opinions is critical for the health information management profession as it extends the knowledgebase of our profession, shares practical experiences with our peers and others and publicises the important work that Health Information Managers (HIMs) and Clinical Coders do. A strong and innovative profession is evidenced by the quality of publications from its members.

Publications listed on CVs are also professionally important for HIMs and Clinical Coders. They provide concrete evidence of work undertaken which is advantageous for career progression. However, many HIMs and Clinical Coders have difficulty writing up their studies and submitting their work to a professional journal and often new and exciting results are left unpublished. Lack of time is often quoted as a key reason for not publishing but also a lack of experience and knowledge of the publication process comes into play.

**Professional practice/case study description:** The aim of this presentation is to present background information and practical guidelines on how to prepare and submit a paper to a peer-reviewed research journal. The aim is to demystify the publication process. The focus of the presentation will relate to publications in the Health Information Management Journal (HIMJ), <https://journals.sagepub.com/home/him> which is the official peer-reviewed research journal of the Health Information Management Association of Australia (HIMAA).

**Outcome/experience:** The presentation will include: Types of articles published in HIMJ; Format for a journal article with practical examples of different types of papers: research article; literature review; professional practice paper; commentary piece and correspondence; Connecting the dots: turning a work-place study into a publishable paper; Authorship standards; Ethics and conflict of interest considerations; The peer review process and how to respond to reviewers' comments.

**Conclusion – what was learned:** In the domain of health information management and health informatics, where there are many stakeholders, it is important for HIMs and Clinical Coders to disseminate the breadth and quality of their work-place studies and research. Publication of work promotes the profession and publicises the critical position of HIMs and Clinical Coders in this field.

## International flavours: Personal perspectives from Australian and Irish based auditors on the ground in Singapore.

Karyn Duncan<sup>1</sup>, Kate Francis<sup>1</sup>, Denis McKay<sup>1</sup>, Ben Spurr<sup>1</sup>, Ann Marie Sealy<sup>2</sup>, Beth Reid<sup>1</sup>

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**Introduction (background/setting):** Ministry of Health Singapore (MOH) engaged Pavilion Health as the result of an international tender to examine the quality of the clinically coded data in 6th edition ICD-10-AM and ACHI, grouped using the Australian Refined Diagnostic Related Groups (AR-DRG) v6.0 in public and private hospitals in Singapore. The core purposes of this project covered the following three areas: assess the validity of data underpinning the clinically coded data; validate a range of data reported to the MOH by public and private acute hospitals in Singapore; and identify best practice to improve coding quality management.

The data quality review was conducted on 12 months of data ending March 2018. The Coding Service Assessment was conducted in February 2019, desktop analyses were conducted in March 2019 and auditors were on site at hospitals from late April to end of May 2019. Hospital-specific workshops were conducted in July 2019 with national level workshops in August 2019.

**Professional practice/case study description:** This presentation will discuss the detailed pre-planning and processes which were necessary to achieve a successful outcome of the audit process. The issues included the following:

- Screening and testing of potential auditors, including differences in coder backgrounds and training between Australia, Singapore, and Ireland.
- Pre-audit on-site interviews for Health Information Services (HIS) managers and Coding managers / representatives to understand system and medical record issues
- Rostering and duty of care for auditors
- Investigation of local coding and grouping issues including local coding directives.
- Preparation for the audit tools taking account of data privacy regulations.

Three members of the audit team were involved in an earlier audit in Singapore in 2003 and insights to the significant changes, particularly in relation to data privacy will be highlighted. The pre-audit interviews were conducted using a tool developed in earlier work in Ireland. The Coding Service Assessment (CSA) consists of interviews with each hospital coding managers and senior clinical coders which provided the insights needed to understand the local conditions. For example, the CSA revealed that most of the clinical coders had a clinical background and all had received similar on-site training in clinical coding. This profile of the clinical coders differs significantly from clinical coders in both Australia and Ireland.

### **Outcome/experience:**

*What worked well in terms of conducting an audit in another country?*

The project was completed on time meeting tight deadlines. At each hospital, the clinical coding audit was completed on time with only minor scheduling problems which had been planned for in advance.

The CSA process facilitated planning and prepared the auditors for physical audit at each hospital. The post audit workshops and presentations conducted on-site, were welcomed by the coders and a successful part of the project.

*What were the challenges of conducting an audit in another country?* There are several challenges in ensuring data privacy when working in another country. These were overcome by discussions and collaboration with MOH, IT and privacy experts in Australia and Ireland and by troubleshooting by the auditors themselves once the audits were underway.

Variation in local Health Information Systems (HIS) provided challenges for the auditors to complete the audits at each hospital and in the time frames that would be usual in Australian or Irish settings.

More time on-site is needed to ensure sufficient feedback and explanations to the coding managers and clinical coders. The details of the auditors coding and how this differed from the original coding was provided in the written report to each hospital. However, more time is worthwhile to achieve immediate face to face discussion between the auditors and the local clinical coders.

More time on site would have also assisted auditors in dealing with differences in the systems for accessing the HIS and medical records.

**Conclusion – what was learned:** Overall, the conduct of this audit was a positive experience in terms of outcomes. The auditors welcomed the opportunity to have this international experience. However, international auditing work poses several challenges and overcoming these was an important part of the experience for all involved.

We wish to acknowledge the assistance of the Ministry of Health Clinical Quality, Performance and Value Division and hospital staff for their time and input.

## Clinical Documentation Improvement: More than words.

Kylie Holcombe<sup>1</sup>, Debra Pearce<sup>1</sup>, Joanna forteath<sup>1</sup>.

<sup>1</sup> Ballarat Health Services, Ballarat, Australia

**Introduction (background/setting):** Ballarat Health Service (BHS) is a large regional public hospital within the Grampians region of Victoria. In August 2019 BHS launched an official CDI pilot program. The pilot team consisted of a Health Information Manager with a coding and audit background and two Clinical Documentation Specialists (CDS) with an extensive nursing background.

Documentation within the clinical record is a responsibility of all clinicians. All too often the crucial information is buried in reams of duplicate entries and written communication is not as comprehensive as verbal communication. BHS already had a successful program seeking clarification of clinical information retrospectively; however, whilst improving data quality, this did little to benefit patient outcomes and clinical communication.

**Professional practice/case study description:** The goals of our CDI program are to:

- Improve patient outcomes through good documentation while the patient remains during an inpatient stay
- Allow for accurate patient data and funding reimbursement
- Strengthen communication and collaboration between coders and clinicians (ensuring the information is documented accurately for coding)
- Enable planning for future service delivery

On preparation for the launch of the CDI program, there was well recognised executive support leading to teamwork and collaboration in key departments. After a 'big bang' launch the team hit the ground running. We were fortunate to start with a reasonable level of engagement and the bulk of the junior medical staff were enthusiastic about participating. The program went through some work in progress modifications and we soon felt that we had the right mix of contact and follow up.

Our CDS work on the wards to concurrently review clinical notes and prompt staff where additional information may be required. They document interactions on a progress style note that is specific to them and is only visible to CDS and coding team once scanned into our digital medical record. JMO's sometimes request input from CDS when writing discharge summaries for complex patients. They see the CDS as a documentation mentor. This is further enhanced by fortnight team meetings held with our medical units to review and discuss discharge summaries from recent episodes.

**Outcome/experience:** Details of goal evaluation will be reported. In addition to the \$3.4 million of additional inpatient funding that can be attributed to the CDI program there have been other benefits that have come to light with the program as it has progressed into what is now a permanent program:

- Mentoring and support of junior medical staff with feedback on documentation by peers.
- Improved relationships within medical teams - interns, HMO's, registrars and consultants – as all are involved in CDI this has seen a more formal interaction occur and has broken down barriers in communication.



- Work with allied health teams to assist in business cases for EFT and equipment, through better data and evidence of contribution to patient outcomes.
- Provision of evidence for accreditation particularly in relation to Standard 6 – *Communicating for safety*

The past few months with COVID-19 have been particularly challenging for the CDI work but we have persisted and adapted the program to keep it running. Development of electronic forms have assisted with remote contact and engagement with the medical teams where feasible.

At the end of each rotation medical staff are surveyed about the CDI program and generally the feedback has been very positive. All staff feel that they have benefited in some way from program, primarily feeling supported and appreciative of the feedback. On the negative side there are still some clinical staff who are unwilling to engage. This is inevitable but is more than counteracted by the staff who are keen to engage and embrace the program. Junior medical staff rotate through units and health services necessitating constant education and re-education on principles of CDI.

**Conclusion – what was learned:** The opportunity for education and professional development through the CDI programs has resulted in feedback being well received as staff across BHS work together to improve documentation. Influencing change in clinical documentation has occurred by building relationships and the specific application of knowledge by the CDS'. The end result shows that effective clinical documentation can result in less words, yet can capture critical information in an easily readable and understandable manner.

## Privacy in a Pandemic: Have privacy standards been lost? The role of the HIM in protecting information in unprecedented times.

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**Introduction (background/setting):** The current pandemic has affected the provision of health services across the world and Australia. Health information, specifically its protection, will be impacted in a number of ways during this challenging time. Health information managers, in order to recommend and implement privacy strategies, need to keep abreast of the changing treatment modalities.

COVID-19 has resulted in rapid changes to modes of health care delivery. For instance, teleconferencing and text messaging and other apps are now being used in lieu of face to face contact, particularly for patients of community mental health and primary health care (Kopelovich, Monroe-DeVita, Buck, Brenner, Moser, Jarskog, Harker and Chwastiak 2020).

Other challenges of patient care and privacy management during the pandemic include telehealth screening, drive-through specimen collection and remote testing and telehealth management and working from home/remotely (Lenert and McSwain 2020). The rapid devolvement of this technology more widely in the area of health services has resulted in steep learning curves for both providers and administrators in a short timeframe (Kopelovich et al 2020).

During the pandemic there have been several breaches of privacy related to technology use, both internationally and nationally (Park, Choi and Ho 2020, Hondros 2020, and Heron 2020).

Other changes that have occurred in this time concern the rapid development and release of contact tracing apps. Reeves et al (2020) state that utilising technology to deliver normal business operations, telemedicine, virtual meetings and to disseminate information and complete transmission tracing at a rapid pace are effective tools to support organisations in a pandemic. Although the privacy of health data is of the utmost importance there may be overriding public interest requiring immediate access to health information, with questions arising over whether privacy standards can still be maintained at a high level and allow health information to be delivered in a seamless fashion to those in health who require it (Lenert and McSwain 2020). This area may cause concerns to the general public in relation to the protection of sensitive information.

**Professional practice/case study description:** Case studies of sensitive information breaches and other privacy concerns from both a national and international perspective will be reviewed. Ways in which Health Information Managers can take the lead in preventing breaches and protection of patient information will be discussed, particularly given the uncertainty over the type and amount of health information required by researchers and clinicians, as well as the changing work environment in the pandemic (Rothstein 2020).

An IFHIMA workgroup is currently in the process of publishing an article that focuses on international concerns related to privacy of health information in the pandemic. The review of international concerns

is of key importance for Health Information Managers as there may be key adaptations that can be made in the Australian context.

The role of the Health Information Manager as a guiding conduit to protecting privacy will also be further discussed. Including ways that the HIM can ensure protection of information in cases where the Clinician or Clinical Coder are working from home, access through authorised means and an understanding of appropriate technology and policy guides to allow for optimal privacy controls to be in place.

**Outcome/experience:** The outcome of the discussion and associated research will result in a better understanding of the changes and challenges that a pandemic brings to the management and protection of health information in any health-related setting for Health Information Managers nationally and internationally with a focus on lessons learnt.

**Conclusion – what was learned:** Health Information Managers are facing many challenges and changes in the current pandemic. Learning from past issues to plan ahead for future concerns can assist in avoiding breaches of sensitive information in a health setting and provide a contingency plan for Health Information Managers and health services

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# Engaging your audience online: Greenscreens, Lightboards, animation, Mentimeter, Kahoot, Zoom!

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**Introduction (background/setting):** A widespread impact of COVID-19 has been the shift from face-to-face to online interactions. At La Trobe University, we faced the hurdle of redesigning our entire teaching practice to online in one week.

*How would we keep the students' attention? Would they achieve the same outcomes?*

**Professional practice/case study description: *Two scenarios!***

Let's revisit the time when you were a student...

You are in a lecture theatre. The lecturer is speaking passionately about systems design or information governance. Thirty minutes in, your attention drifts. The lecturer asks the class a question; your attention snaps back.

"What did she say?" you ask the next student.

Imagine the same scenario. This time, you are at home in a Zoom workshop. You have not turned your camera on; your microphone is muted. Thirty minutes into the class, your attention slips to plans for the weekend. You leave your makeshift desk for a cosy spot, pull out your phone and Google 'things to do in iso'. The lecturer asks a question, but you are too busy learning how to make a sourdough starter to pay attention.

***What to do?***

*Instead of battling for students' attention, why not 'adjust' the way we teach?*

At our university, some lectures were already delivered online, but the format was not always engaging. The question is: What can we do to engage students online, especially in Year 1?

Enter: greenscreens; lightboards; and animation. At the start of 2020, these three technologies were used to deliver lecture content. Student response was overwhelmingly positive. Who would not like an animated lecture instead of a traditional one?

*What about those two-hour workshops? How do we capture and keep the student's attention for the duration? How do we make classes more interactive and engaging?*

One way to do this is to break the workshop into chunks and request audience participation. A student is more likely to pay attention if s/he has to answer a question (Grosso, Smith and Grosso, 2012). We used a range of technologies (polls, Mentimeter, Kahoot) both to measure students' understanding and to engage them. We also utilised 'Zoom' breakout rooms for small group discussion of concepts, before students reported back to the wider workshop.

### **Outcome/experience: *Did it work?***

If you give anyone something new and exciting, you are bound to get a response. This worked for three reasons:

1. It was new and exciting.
2. It has been proven that using technologies, e.g. Kahoot, gamification, 'the flipped classroom', has a positive impact on student engagement and learning (Kapp, 2012; Murillo-Zamorano, Sánchez and Godoy-Caballero, 2019; Plump and LaRosa, 2017).
3. In implementing these strategies, we appealed to each student's sense of intrinsic motivation: 'I am engaging with this because it is interesting and fun' (Gagne and Deci, 2005).

Importantly, our target audience is changing (Gottipati and Shankararaman, 2017). The generation we are teaching and employing differs greatly from the generation doing the teaching and employing (Gillispie, 2016). Utilising different technologies helps us to 'bridge the gap' between generations.

### **Conclusion – what was learned: *Was it worth it?***

For me, it was worth the considerable time and effort to have great student outcomes and an increase in student satisfaction during the pandemic. I have enjoyed transitioning from 'sage on the stage' to 'guide on the side' (Moursund, 2003) and the students also seem to appreciate this.

### ***In the end...***

When engaging students (or anyone), one size will never fit all. This is why we try multiple strategies. The strategies presented here can be used for your next staff meeting, training day, information session, webinar and whenever you are trying to engage a group of people online.

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## Work Program Update on ICD-10AM/ACHI/ACS Twelfth Edition and AR-DRG Version 11.0

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**Introduction (background/setting):** IHPA is responsible for the ongoing refinement and development of the following classifications:

- International Statistical Classification of Diseases and Related Health Problems. Tenth Revision, Australian Modification (ICD-10-AM) - used to classify diseases and other health problems
- Australian Classification of Health Interventions (ACHI) - used to classify procedures and interventions
- Australian Coding Standards (ACS) - provides guidelines to assist users of the classifications in obtaining national consistency in clinical coded data.

Collectively known as ICD-10-AM/ACHI/ACS, this classification system underpins the Australian Refined Diagnosis Related Groups (AR-DRG) and both are used in public and private hospitals in Australia to classify admitted care across the acute and subacute settings.

AR-DRGs underpin activity based funding and provide a basis for analysis of hospital outputs which can be used for a range of clinical, financial and research purposes. The Work Programs for ICD-10-AM/ACHI/ACS Twelfth Edition and AR-DRG Version 11.0 are predominantly informed by issues held over from previous editions and areas identified through public and stakeholder submissions.

**Professional practice/case study description:** These classifications are developed by IHPA with input from members on the Classifications Clinical Advisory Group (CCAG), the ICD Technical Group (ITG) and the Diagnosis Related Group Technical Group (DTG). These groups have reviewed the work program for the next release and are working with IHPA to refine the development proposals identified as priorities for this cycle.

IHPA uses public and private hospital activity data to inform the development proposals and further refine the classifications. Costed activity data is also used to ensure the application of AR-DRGs are fit for purpose and can be used in activity based funding

**Outcome/experience:** ICD-10-AM/ACHI/ACS Twelfth Edition: ICD-10-AM is derived from the World Health Organization's (WHO) International Statistical Classification of Diseases and Related Health Problems, Tenth Revision (ICD-10). The ICD-10 updates from October 2017 are still to be incorporated into ICD-10-AM and are the last updates for ICD-10.

ACHI is based on the Medicare Benefits Schedule (MBS) and expanded to cover interventions not included within the MBS. As with the WHO updates there is a requirement to update ACHI in line with updates to the MBS to ensure that national comparability is maintained.

Other priority areas being considered for ICD-10-AM/ACHI/ACS Twelfth Edition include:

- Expansion of the emergency use codes (informed by the coronavirus disease 2019 (COVID-19) pandemic)
- Incorporation of current emergency use codes for COVID-19 and the broader range of coronavirus diseases
- Exploration of a clustering methodology for utility of coded data, including the capture of chronic conditions
- International Classification of Diseases for Oncology (ICD-O-3.2) morphology code updates
- Update to the classification of sepsis to align with the 2016 Sepsis-3 updates
- Update to mental health legacy terminology
- General review of the Australian Coding Standards, including simplification of ACS 0002 Additional diagnoses
- Review of the classification of same-day chemotherapy
- Review of orthopaedic interventions (including MBS updates)
- Review of bone marrow transplantation
- New health technology updates:
  - Leadless pacemakers
  - Genetically engineered immunotherapy (CAR T-cell therapy)

AR-DRG Version 11.0: To maintain the clinical currency and robustness of the AR-DRG classification each new version ideally includes a standard set of minimum refinements that are key to achieving this goal.

For V11.0 this includes a review of:

- Codes in scope for receiving a Diagnosis Complexity Level (DCL)
- DCL scores
- DRG splits
- Intervention hierarchy
- Episodes that group to Adjacent Diagnosis Related Group 801 General Interventions Unrelated to Principal Diagnosis.

Other areas being considered for AR-DRG V11.0 include:

- Review of demographic and clinical edits
- DCL precision (i.e. deriving DCLs at the more specific fourth and fifth character levels to enhance the precision of the complexity model)
- Review of the placement of endovascular clot retrieval, trans-catheter valve implantation and neuro-stimulators within the AR-DRG classification.

**Conclusion – what was learned:** IHPA is continuing to develop these classifications and will go out to public consultation in 2021 before their release.

# A Review of the ICD-10AM/ACHI/ACS and AR-DRG Classification Development Cycle

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**Introduction (background/setting):** The Independent Hospital Pricing Authority (IHPA) is responsible for the development and licensing of the International Statistical Classification of Diseases and Related Health Problems, Tenth Revision, Australian Modification (ICD-10-AM), Australian Classification of Health Interventions (ACHI), and the Australian Coding Standards (ACS), otherwise known as ICD-10-AM/ACHI/ACS, and the Australian Refined Diagnosis Related Groups (AR-DRGs). These classifications are used in public and private health settings to classify hospital activity.

With IHPA making a strategic decision to retain the ongoing development of these classifications within the Agency, it was considered an opportune time to commission a review of the associated development processes and timelines.

**Professional practice/case study description:** A development cycle review had been previously conducted in 2009, and since that time several significant events have changed the landscape of the Australian health system including the signing of the National Health Reform Agreement (NHRA), the establishment of IHPA and the introduction of national activity based funding (ABF).

In August 2019, IHPA commissioned a review to evaluate the end-to-end processes of classification development. Key objectives of the review included; identifying the strengths, weaknesses and areas for improvement, highlighting stakeholders' needs, impacts and if the current classification development process meets these needs and, providing recommendations to enhance the future development and implementation of the classifications.

The review was conducted over a five-month period and included research, consultation planning and stakeholder engagement. Documentation regarding the development processes, advisory and governance body meetings, work program and technical aspects were reviewed to establish a basis for the consultation process.

The key stakeholders included IHPA, the classification technical groups, jurisdictional health departments, private sector healthcare organisations and international experts. An additional online survey was used to capture feedback from classification end-users with approximately 200 respondents.

**Outcome/experience:** Four key areas were identified for improvement; development cycle and timing processes, work program guiding principles, roles and structure of advisory groups and, implementation education and support materials. Significant resources are needed to understand and implement new classification changes. A three-year cycle allows for greater stability for data users and eases the administrative burden of implementing new editions or versions.

To ensure that the classifications are flexible to changes in the healthcare system, such as new health technology, placeholder codes will be added into the classifications. This will allow new concepts to be counted and costed sooner than waiting for a new release.



Stakeholders expressed an interest in the creation of principles to guide the priorities for the development of the classifications. Four types of principles have now been developed with input from the classification advisory groups: process, decision, prioritisation and development. The principles will assist in developing a transparent and forward planning work program.

An evaluation of the governance arrangements for the three advisory groups is being progressed by IHPA. The evaluation will investigate opportunities to streamline the advisory group process to improve classification development.

Feedback on the quality of the education and supporting materials for new implementations highlighted room for improvement. Refining and quality assuring these materials would greatly assist in the uptake of new changes within the classification. IHPA will explore more extensive education and support materials to assist with new edition uptake. Effective teaching and training models may be considered to enable jurisdictions to enable a more engaged education style such as train-the-trainer models.

**Conclusion – what was learned:** IHPA is currently assessing the four key areas from the Review to enhance the classification development process. The biggest change is the move from a two-year to a three-year development cycle which will enable additional time for classification development, more robust quality assurance and facilitate an earlier receipt of implementation materials by stakeholders.

Additional enhancements discussed in the Review will be explored in future development cycles.

## A Graduate HIM amidst an unprecedented crisis

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**Introduction (background/setting):** The thirst for COVID-19 information is, quite appropriately, huge and it is the responsibility of the Victorian Department of Health and Human Services (DHHS) to provide public health intelligence to Victoria. The data collected, processed, analysed and interpreted is utilised in decision making at the highest levels of the Response and Government.

Under the Public Health and Wellbeing Act 2008, monitoring and controlling infectious diseases are legislative practices for which the department is responsible, to protect the health and safety of Victorians. On 29th January 2020, the Public Health and Wellbeing Regulations 2019 were amended to add the Novel Coronavirus 2019 to the already existing notifiable conditions that require mandatory notification by pathologies and medical practitioners.

This presentation describes the journey of a new HIM Graduate in the midst of a pandemic, the specific HIM skills that made graduates 'work ready' and the characteristics which allowed them to excel during an unprecedented time. The ebbs and flows of uncharted waters surprisingly cultured a rewarding environment where HIMs excelled.

**Professional practice/case study description:** Transitioning into the real-world for any new university graduate is an overwhelming yet exciting experience. However, add an unprecedented pandemic to that mix and it poses another layer of challenges. Soon after completing my Bachelor of Health Sciences (Medical Classification)/Health Information Management degree from La Trobe University, I secured a position at the DHHS as a Surveillance Officer within the Informatics team for the COVID-19 Response.

This role involved reporting case numbers, close contacts with appropriate classifications, mapping outbreaks and processing test results along with a plethora of data quality activities – all of which effect the decisions made for Victoria.

**Outcome/experience:** COVID-19 notifications were received from clinicians by fax, email or telephone along with handwritten questionnaires from the contact tracing team, who were interviewing individual cases. Additionally, we would receive spreadsheets of an individual case's close contacts. These, if they met epidemiological classification, would then become outbreak sites. My team and I would have to decipher all of this and enter it in the system, often transferring from paper to digital format.

Informatics' critical role within the COVID-19 Response included processing the whereabouts of every case two weeks leading up to the onset of symptoms and then beyond. This involved identifying everyone they came into contact with, mapping postcodes based on residential addresses, places of work and the case's movement history to identify localised increases in cases.

Performing these detailed and intricate activities, and working towards tight deadlines ensuring accurate case numbers for the state Premier and Chief Health Officer to present at tomorrow's press conference, was a thrilling and rewarding experience.

**Conclusion – what was learned:** Improving information management practices is innate in HIMs. As the DHHS was thrown into this pandemic, processes were developed on the go. Being on-boarded early on during the pandemic, there was only one *quick entry guide* available to learn from, with a brief one-on-one training session. Over time, HIMs spearheaded the creation of an Informatics-specific learning and development framework and produced learning material, test scenarios, and conducted classroom-based training sessions for new staff. HIMs being well versed in health informatics, data analytics, and epidemiology gave us the ability to be adaptable and flexible in any health environment. Within this dynamic situation, constantly having to adapt and change, HIMs truly had the advantage.

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## COVID-19 coded data in Ireland – responding to demands for real-time data

Jacqui Curley<sup>1</sup>, Marie Glynn<sup>1</sup>, Jonathan Dunne<sup>1</sup>, Marie Rice<sup>1</sup>, Helen Nolan<sup>1</sup>, Aisling Grace<sup>1</sup>, Deirdre Murphy<sup>1</sup>.

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**Introduction:** The Healthcare Pricing Office (HPO) in Ireland manages the national acute hospital coded data set. The HPO also manages the data quality, classification support, coder training and IT systems for the data collection system. Access to the national data set as soon as it is submitted allows for the HPO's data quality activities to be performed at a national level on data as soon as it is received. The COVID 19 pandemic has focussed this work on real time data due to the requirement by health authorities to have coded data on COVID 19 discharges available within 48 hours where possible.

**Professional practice/case study description:** The coding deadline in Ireland is for data to be coded within 30 days of discharge. The demand for coded COVID 19 activity required that this data be prioritised for coding and be available for data users within 48 hours of discharge where possible. In order to support this approach to the coding of COVID 19 data the HPO put in place the following supports:

- Coding pathway for hospitals developed on the prioritised coding of COVID 19
- Specific coding guidelines put in place along with edits on the data entry system
- Designated coding contact identified in each hospital
- Regular communication directly with all hospitals on COVID 19 coding
- Prioritisation of coding queries related to COVID 19
- Input from senior clinicians to support coding queries
- Publication of FAQs
- Monitoring of COVID 19 data by data analysts with queries directed back to hospitals for immediate review.
- Monitoring of coverage and compliance with 48-hour coding requirement
- Monitoring of international coding approach on COVID 19

It is important to note also that in January 2020 Ireland updated the clinical classification in use from 8<sup>th</sup> edition to 10<sup>th</sup> edition of ICD-10-AM /ACHI/ACS.

**Outcome/experience:** The effort of coding teams in hospitals has ensured that COVID 19 activity is coded and available to data users as soon as possible after discharge. This has hugely increased the profile and understanding of the value of this national dataset. The time available for review and correction of any issues is reduced and the data was provided to data users while subject to further review.

The HPO found that hospitals responded immediately to the call for prioritised coding of COVID 19 discharges and were appreciative of the regular contact and support provided for this new way of working. Access and availability of healthcare records and local infection control protocols affected the ability to code within 48 hours of discharge in some sites.

Reviews of data by the data quality team at the HPO as well as data analysts and data users identified any issues at early stages which were then rectified.

Coding queries from hospitals on COVID 19 were prioritised and the coding team met daily to respond quickly to the queries raised. The advice of senior clinicians was sought for some issues.

The coding of COVID 19 also has brought challenges in terms of coding and has also impacted hospitals. Some of the challenges remain around the coding of COVID 19 and related conditions which the HPO continue to work on. The impact on hospitals includes coding a new disease, with new guidelines while also adapting to a classification update. Issues such as staffing arrangements, location of coding offices, chart flow and access to healthcare records, availability of staff have all impacted hospitals in various measures.

**Conclusion – what was learned:** The key learning is the ability of the national system to respond quickly to the demands for accurate real-time coded hospital activity data on an emerging disease. Communicating clearly, concisely and getting advice right the first time was critical to the HPO implementing such a change in coding practice in Ireland. Awareness of issues arising in hospitals ensured that the HPO could respond appropriately in order to continue the accurate coding and coverage of COVID 19. Responding to coding queries and queries from data users and analysts in a timely way led to confidence in the data and the data collection approach.

## Rapid change to an on-line training module for certified Clinical Coder Education due to COVID-19

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**Introduction (background/setting):** Our education team are responsible for delivering an education programme for 300 clinical coders working in acute public hospitals throughout Ireland. These clinical coders code approximately 1.7 million discharges (separations) annually. The education programme includes foundation level training for new coders through to advanced training courses and workshops for experienced coders.

The current classification used for all discharges from 1st January 2020 is ICD-10-AM/ACHI/ACS 10th edition. As an accredited partner, in collaboration with the Technological University Dublin, Ireland, we offer a certificate course in clinical coding, using the current edition. This course is offered to clinical coders who are already working within the system. The programme's duration is 7-8 months and it provides certification through a two-module course for the foundation level courses. These currently consist of a blend of half day on-line modules, and classroom training courses ranging from one to three days' duration. The education team develop and deliver the course content, produce and mark all assessments. Seventeen clinical coders enrolled in the course in January 2020. All had completed foundation level training, and update training from ICD-10-AM/ACHI/ACS 8th edition to the 10th edition.

**Professional practice/case study description:** The onset of COVID-19 created many challenges for students. Their participation was affected by: cancellation of all classroom courses; changes to work arrangements (e.g., staggered working hours and remote working so some students are unable to participate in training courses); personal or family illness (e.g., COVID-19, childcare issues; one student deferred the course due to personal circumstances); inadequate study and assignment time due to work pressures and family commitments; lack of suitable facilities for study, assignments or participation in lectures delivered through video conferencing; and difficulty accessing training resources due to limited access to technology.

**Outcome/experience:** To address these challenges our team explored options to deliver the education programme in an efficient, flexible, supportive and timely manner. COVID-19 has been a catalyst for change and our organisations' digital transformation has been accelerated. We took the opportunity to increase technology use in the delivery of Clinical Coder education.

Changes to programme delivery were introduced through engagement with the university and on-going direct communication with students. The class representative played an important role through liaising with the education team and the students; All cancelled classroom courses were replaced by online training.

Through collaboration with the Office of the Chief Information Officer, restrictions were lifted on IT systems and students could join online lectures from their chosen location, without the need for

telephone connection and without financial implications. The university introduced a new learning management system and our education team used this platform to provide training and support to students. To accommodate students with changed working arrangements, tutorials were recorded and could be accessed through the learning management system. Advisory sessions to prepare students for assessments and the final exam were delivered through virtual meeting facilities; detailed notes were recorded and dispatched to students who were unable to participate.

All assessments were submitted online and marked electronically by two of the team. Arrangements for the final examination were revised to enable students to sit the examination in a venue close to their home on 2<sup>nd</sup> September. The education team had developed a contingency plan where the examination could be made available online, had this been necessary. Fortunately, all students were able to sit the exam as planned.

**Conclusion – what was learned:** Prior to the pandemic the clinical coder education programme was delivered through a blended learning programme. Delivery included classroom courses, online training, self-directed learning and on the job training and mentoring. This year was the first time that the certification in clinical coding course was delivered through online training and self-directed learning only. Students were also using a new version of the classification. The pass mark for each assessment and the final examination was 80% and the overall results are a positive indication that the steps taken to support students through technology use, and an increase in online training, were successful.

## Live National Coded Data as a Valuable Data Quality Resource

Jacqui Curley<sup>1</sup>, Marie Glynn<sup>1</sup>, Jonathan Dunne<sup>1</sup>, Marie Rice<sup>1</sup>, Helen Nolan<sup>1</sup>, Aisling Grace<sup>1</sup>, Deirdre Murphy<sup>1</sup>.

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**Introduction (background/setting):** The national coded data set is a valuable data quality resource enabling continuous review, analysis and revision of coded data. Access to data as it is uploaded from hospitals on a monthly basis allows for timely and effective data quality processes. While hospitals review activity locally and have data quality tools to perform reviews, it is at a national level where comparisons of data allow for variations in coding quality to be identified.

Access to live data allows for corrective and preventative measures to be put in place such as coder training programmes, data entry edits, coding guidelines and chart based audit. Coding issues identified in any one hospital can be checked across all hospitals and corrective action taken. There is a direct relationship with the hospitals whereby issues identified at a national level can be communicated appropriately.

**Professional practice/case study description:** A variety of data quality activities are performed on the national coded data including current open files. The national files are generally closed 3 months after the end of the calendar year. Changes cannot be made to the data held at national level once the file has closed.

Data are analysed at code level, AR DRG level, at hospital level and at national level; the Activity Based Funding team also review data and identify queries in terms of budgetary issues. Comparisons across hospitals are performed which can identify particular issues in particular hospitals. Reviews of data also identify where is standardised reporting across hospitals. Access to case level data allows detailed reviews to be performed as required. Regular data quality activities include chart based audit. Prior to sampling for a hospital based audit, data is reviewed to determine any areas requiring a targeted audit.

Where data quality issues arise corrective action is taken and hospitals are contacted accordingly. Actions can also be taken at national level to ensure that the issue is addressed across all hospitals for example; data entry edits to advise coders at data entry stage, creation of a coding standard, creation of data quality checks in data quality tools, inclusion of topic in coder training. Regular data quality online advisory sessions are held informing the coding community as to data quality work underway, issues that have arisen, how coded data is being used across the health service and the role of timely accurate data.

**Outcome/experience:** Access to the national data set is critical allowing for the system to be responsive to issues affecting data quality such as coder knowledge and experience, quality of clinical information and changes to codes and guidelines. The direct relationships with the hospitals allow for action to be taken to address data quality issues or for coding staff to alert the national centre as to issues arising locally. Data quality issues can be addressed as soon as they are spotted allowing for timely correction of data and preventative measures.



**Conclusion – what was learned:** Access to the live national coded data set is one of the most valuable resources in terms of data quality. At a national level the analysis of the data allows for comparisons and reviews of the data. By working with hospitals and data users directly, data quality issues are addressed in a timely effective way.

## Pathways to research for HIMs.

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### Workshop

**Introduction:** The 2017 survey into health information management professionals highlights a lack of research culture in the profession's body of members (Rupnik et al 2017). In response to this finding, the HIMAA Research Advisory Committee (RAC) sought to build the research capacity and research confidence of its members. The approach has included small group mentorship on specific research projects and the conduct of research workshops at the Health Information Management Association of Australia's (HIMAA) annual national conference.

At the 2019 HIMAA-National Centre for Classification in Health conference, members of the RAC led a workshop titled "Incorporating research into your everyday role". This topic was chosen for 2019 as lack of time had been identified in the wider literature as one of the reasons for professionals' poor research engagement (Akerjordet 2012; Marshall et al. 2016; Johnson et al. 2014; Rahman et al. 2011).

The 2019 workshop was well attended; many participants demonstrated interest in the topic 'Pathways to research' and indicated that they valued workshops of this nature. Specifically, Health Information Managers (HIMs) and Clinical Coders (CCs) were interested in learning how to join clinician led projects and how to contribute health information management knowledge and expertise to these, and to learn about academic pathways for further research training. The RAC workshop planned for 2020 addresses these two topics to provide more targeted support for HIMs.

**Target audience:** Anyone working in a role where the primary function is not research related, and who would like to learn more about how to undertake research in his or her role.

**Description:** This workshop aims to provide an overview of research pathways for HIMs and CCs to further their professional development. The following topics will be covered: formal research qualifications; identifying research opportunities; how to get involved in research projects; and formulating your own research project.

**Learning objectives:** After the workshop, participants should be able to:

- Articulate potential, different research pathways based on his or her existing qualifications
- Articulate and plan how to get involved in projects
- Understand the building blocks for a research project
- Articulate the approach to take when formulating his or her own research project.

## Structure and delivery strategies

**Duration:** 60-90 minutes

Five to six panel members with the following background will contribute to the workshop:

- Academics
- Research Fellows
- Senior HIMs/CCs

The workshop will start with panel members giving 10 minutes' presentation on the topics:

- Identifying where you are in your career, and next possible options
- Want to be part of a research group?
- Want to run a research group - longer term aspiration?

Audience members are encouraged to send in their questions during the presentation. Panel members will answer questions after the presentation.

Audience members will also be given the opportunity to ask additional questions after the presentation.

**Evaluation:** At the conclusion of the workshop, participants will be asked to complete a survey to provide feedback on how the workshop can be improved.

## References:

Akerjordet KM, Lode K & Severinsson E (2012). 'Clinical nurses' attitudes towards research, management and organisational resources in a university hospital: part 1', *Journal of Nursing Management*, vol. 20, pp. 814–23.

Johnson C, Lizama C, Harrison M, et al (2014). 'Cancer health professionals need funding, time, research knowledge and skills to be involved in health services research', *Journal of Cancer Education*, vol. 29, pp. 389–94.

Marshall AP, Roberts S, Baker MJ, et al (2016). 'Survey of research activity among multidisciplinary health professionals', *Australian Health Review*, vol. 40, pp. 667–73.

Rahman S, Majumder MA, Shaban SF, et al (2011). 'Physician participation in clinical research and trials: issues and approaches', *Advances in Medical Education and Practice*, vol. 2, pp. 85–93.

Rupnik C, Chan J, Kemp T, et al (2017). 'Understanding the perceived barriers/enablers to Health Information Management professionals undertaking research', *Proceedings of the HIMAA/NCCH 34th National Conference, Health Information Management: Challenging a Changing Landscape*, 1–3 November 2017, Cairns, Queensland, pp. 66-67.

## The link between ICD-10-AM/ACHI/ACS and AR-DRGs.

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### Poster

**Introduction (background/setting):** This poster will highlight the interrelationship between the International Statistical Classification of Diseases and Related Health Problems, Tenth Revision, Australian Modification (ICD-10-AM), the Australian Classification of Health Interventions, the Australian Coding Standards (ACS) and the Australian Refined Diagnosis Related Groups (AR-DRG) classification.

**Professional practice/case study description:** The classification of diseases and interventions is performed by clinical coders and health information managers in health services across Australia for the purpose of collecting information on morbidity.

AR-DRGs provide a clinically meaningful way to relate or group the number and type of patients treated in a hospital to the resources it requires and are underpinned by the diagnosis and intervention classifications.

**Outcome/experience:** These classifications are published and used independently but have a symbiotic relationship that can be profoundly impacted by an individual consumer's interpretation. This poster highlights their foundational elements, interdependencies and reliance on one another, including:

- development and implementation time frames
- development process (e.g. work program and public consultation)
- how the disease and intervention classifications underpin the foundational structure of AR-DRGs
- demographic and clinical edits.
- AR-DRG complexity model interaction with ICD-10-AM and the ACS (particularly ACS 0002 *Additional diagnoses*).

**Conclusion:** The poster will provide a visual depiction of the primary foundations of each classification and highlight the current interdependencies. It will inform individuals seeking to learn more about the classifications that underpin activity based funding within the admitted hospital setting.

## Preparing health managers for the future.

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### Poster

**Introduction (background/setting):** The Australasian College of Health Service Management run the Health Management Internship Program (HMIP) as a professional pathway for individuals interested in a health management career. Interns engage in work placement, post-graduate and professional development components for a two-year duration.

**Professional practice/case study description:** During the two-years, interns are employed within a health sector to achieve the necessary five competencies needed within the health management field. The five competencies are an evidence-based competency assessment tool and include; leadership, healthcare, business and professionalism.

The Independent Hospital Pricing Authority (IHPA) have continued to host interns since 2017. IHPA's primary function is to enable Activity Based Funding for Australian public hospital services. IHPA continues to provide numerous opportunities, for instance exposure to various areas of healthcare, for interns to achieve the competencies.

**Outcome/experience:** After successfully completing the three components involved in the HMIP, interns are equipped with the desired skill set to confidently and effectively lead health services and programs. Work place exposure allows interns to practice health management theory gained from the academic component while the professional development sessions also present as a networking opportunity.

Interns are able to gain employment in middle management positions across the public and private healthcare sectors, for instance; performance management, allied health, strategy planning, program and service coordination and implementation.

**Conclusion:** The HMIP is a professional pathway for developing health managers. Exposure to the various working, learning and professional development opportunities help develop the skills needed to manage in today's complex and rapidly changing healthcare environment.