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Advancing global health: in pursuit of high-quality digital information

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Preface

Advancing Global Health: in pursuit of high-quality digital information

High-quality, trusted health information is essential for improving global health and health outcomes across all settings. For patients, it allows them to fully understand their health situation, and to engage with their care providers about compliance with medications, other treatments, preventive measures, and advice about health risk factors. High-quality health information also helps them make informed decisions about their care, such as whether to undertake a particular treatment or participate in a clinical trial. For health care professionals, it improves communication and helps build consumer health literacy, supports shared care with other health care providers, and protects them legally. For researchers, high-quality health information is vital for demonstrating the validity and reliability of research outcomes based on interrogations of patient data. Educators and policy makers rely significantly on high-quality health information to inform program planning, teaching and educational course content, service provision, and health funding and resource costing.

Health information can exist in many settings and formats. Digital technology is an enabler consumer involvement through monitoring and contributing to the health information about their care and increasing their awareness about proper governance of their health information. Internationally, the COVID-19 pandemic emphasised the benefits of digital health technologies in many ways, particularly in the ability to capture information about, and deliver appropriate health care to, those in remote locations. It has also highlighted the inequalities for those less likely to have access to digital health innovations.[1]

The rich, eclectic collection of stories published in these Proceedings underscore the variety of areas that incorporate the HIM skillset and the need for the HIM core competencies to underpin so much of the 'data space exploration' on which the world has embarked. These competencies will be more necessary than ever to ensure the quality and protection of health information, as we progress further into the digital world, **advancing global health in pursuit of high-quality digital information**.

Dr Joan Henderson,
Scientific Committee Chair (Academic)

Ms Kathleen Rogers,
Scientific Committee Chair (Industry)

Ms Sallyanne Wissmann,
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Peer-reviewed abstracts: Research

Mapping HIM placement student learning outcomes against HIMAA Professional Competency Standards

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Introduction (including aims)

Work-integrated learning (WIL) refers to learning that is ‘embedded in the experience of work’ [1]. It is an umbrella term for the intentional integration into a curriculum of the theory and practice of work for authentic learning experiences [2],[4]. An underlying premise of WIL is that students’ engagement and reflection in an appropriate work environment create meaning for their career development and their personal development [1]. Work-integrated learning is highly valued by employers [5].

In 2017, 37.4% of students had a WIL experience in Australian universities, with the highest engagement across health disciplines at 57.7% [2]. Student clinical placements, as one form of WIL, are well-established within the health disciplines’ teaching curriculum [6] as a pedagogical approach founded on experiential learning theory [7].

Health information management (HIM), as one of the longest-taught health disciplines at La Trobe University (LTU) and its predecessor, Lincoln Institute of Health Sciences, has a long-standing WIL program known as professional practice. Similarly, WIL is integrated into the curricula of Australia’s other HIM degree programs. As part of LTU’s placement program, students in their final year engage in either a project, role emerging or traditional model of WIL. The demonstrated benefits from applying learning goals to professional learning [8] make it important for universities to ensure that placements meet the required learning outcomes and competency standards to produce work-ready graduates. This is consistent with Australian government policy for universities to produce work-ready graduates in all disciplines [9].

Each year, agencies offering a final year HIM placement submit a professional practice proposal. This contains agency contact details, organisational overview, description of the proposed placement, outline of the planned (student) activities, and the placement learning outcomes (skills, knowledge, and experiences). There has been minimal Australian research on how HIM professional practice placements assist in producing work-ready, graduate health information managers.

Aim and objectives

This paper will report findings of a component of an in-progress study which aims to establish best practice guidelines for delivering and evaluating professional practice projects in the context of (a) the domains of the Health Information Management Association of Australia’s (HIMAA’s) (2017) profession-entry, professional competency standards [10] and (b) course and subject intended learning outcomes. The objectives of this component of the study are to:

- Identify the intended key learning outcomes for each placement

- Evaluate the proposal authenticity, and
- Map the proposal descriptions, including learning outcomes and skills, against the domains of the HIMAA competency standards.

Methods

A documentary analysis method is being utilised. Ethics approval has been granted for analysis of LTU's professional practice proposals from 2012-2021. Smith's (2010) WIL curriculum evaluation framework [3] has been modified to enable evaluation of proposal authenticity, and alignment of the learning outcomes with the domains of HIMAA's (2017) competency standards [10].

Descriptive statistics will be utilised to determine the proportion of proposal learning outcomes that are mapped to each broad domain of the HIMAA profession-entry, professional competency standards.

Results

From 2012-2021, 643 professional practice proposals were submitted for final-year student placements. Results from the analysis will be presented at the IFHIMA 2023 Conference.

Discussion

The outputs from this research will guide and assist healthcare agency supervisors in formulating and establishing robust and focused project proposals for best value WIL placements for HIM students. They will demonstrate the scope and capacity of students' skills and knowledge that can be applied during a placement, and the versatility of the HIM knowledge domains and skillset. They will ensure the robustness of final year placements for developing work ready HIM graduates.

Conclusion

The findings will inform the intentional formulation and delivery of professional practice programs as part of HIM degree curricula.

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Knowledge and attitudes of Medical Record and Health Information Professionals in the adoption of electronic medical records: Towards digital health transformation in Indonesia

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Introduction (including aims)

The Indonesian Ministry of Health (MoH) launched a digital health transformation platform, 'SATUSEHAT,' to integrate patient medical record data. Associated new policy requires all health service facilities to implement Electronic Medical Records (EMR) by December 31, 2023. However, more than 80% of health service facilities in Indonesia currently have yet to experience digital technology. The application of EMR cannot be separated from Medical Record and Health Information (MRHI) professionals. This study aims to describe the knowledge of MRHI professionals about EMR and their attitudes toward digital health transformation programs.

Methods

A mobile-based cross-sectional survey was conducted on a total of 205 MRHI professionals from 26 provinces. Before the data was collected, this research had gone through ethical clearance. The survey questionnaire consisted of three parts: 1) sociodemographic information, 2) knowledge about EMR, and 3) attitudes toward readiness for digital health transformation programs. Sixteen (16) questions measured knowledge, and the respondent was classified into "good knowledge" and "poor knowledge" determined by the median of the total given a score. Attitudes were assessed regarding overall readiness, determined with 25 questions with a 4-Likert-scale (Strongly agree, Agree, Disagree, Strongly disagree), scoring 4 points, 3 points, 2 points, and 1 point, respectively, for positive statements and reversed for negative statements. The critical score was 75 for 25 attitude statements. A score equal to and above 75 was regarded as "Ready" and below that score as "Not ready".

Results

The survey was completed by 202 of the 205 MRHI professionals approached (98.5%). The average age of the respondents was 27 years, with a standard deviation (SD) of 4.96 and an average length of employment of 3.6 years (SD=4.0); in hospitals (67.7%), primary health care (27.3%), clinics (3%), independent practice doctors (1%), maternity homes (0.5%) and others (0.5%). The most common professional education level was a diploma degree (85.9%), a bachelor's degree (13.1%), and a master's degree (1%). Only 57.6% of respondents had ever used an EMR; among them, 83.3% had

ever had some EMR training. In this study, only 62.6% of the respondents had good knowledge, and 37.4% had poor knowledge of the EMR systems. Among those with poor knowledge, it was found that 46.2% had never attended training related to the EMR systems. The overall readiness attitude for the EMR system found that only 63.1% of respondents were ready, and 36.9% were not ready. There was a significant association between knowledge of the EMR system and overall readiness (p-value = 0.028).

Discussion

Lack of knowledge of the roles of MRHI professionals can be a challenge in supporting the success of digital health transformation. Moreover, many MRHI professionals in Indonesia have never used EMR in their workplaces because more than 80% of healthcare facilities in Indonesia are currently untouched by digital technology (MoH, 2021). Knowledge is one factor that influences a person in the learning process; the higher a person's knowledge, the more that person accepts, and has an attitude of accepting and adapting to new information (Budiman & Riyanto, 2013). As MRHI professionals are the main actors in the adaptation and sustainability of the EMR, interventions are needed to build an attitude toward the EMR systems. As discussed in other studies, health professionals with a good attitude toward computerisation are more likely to adapt to the system and develop their readiness for better adaptation (Terry et al., 2012).

Conclusion

From this study, recommendations are that teaching programs related to the EMR system should be incorporated into the medical and health information education curriculum, and in-service training in EMR systems should be provided to improve the readiness of MRHI professionals for EMR implementation.

Please note: Details of all references are available from the authors.

The need for Health Information Management professionals in Malawi Health facilities

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Introduction (including aims)

The Malawi government is the largest provider of healthcare. Health information management (HIM) is the core of a health organisation, providing essential information to all health care workers. HIMs organise data, which is available for patient care, for management purposes, for health planning, population health monitoring, epidemiology, and research. Malawi has a substantial deficit of qualified personnel, specifically HIMs, who can properly manage health information in electronic and paper-based formats. Malawi's health sector lacks accurate, reliable, complete, consistent, and timely health data to inform effective planning and resource management, and there are no higher education institutions offering an academic HIM programme. It is against this background that the researchers were motivated to carry out this study.

Aim and objectives

The aim was to investigate the need for Health Information Management Professionals in Malawi government Health facilities, to determine the kinds of data managed by data users, the competencies of HIM workers, and the challenges associated with the current HIM system.

Methods

This was a cross-sectional research design employing a qualitative approach. Interviews were used to gather data from 13 participants who were selected from six government health facilities across the country. Data were analysed thematically using content method. The research was approved by the Saint John of God College of Health Sciences Research Ethics Committee and Mzuzu Central Hospital Publications and Ethics Committee.

Results

The data users were handling a diversity of data such as budget; human resources; medical supply and drug management; planning clinical services; service improvement; patient data; research and statistics. The majority of data users had moderate skills in HIM. Key challenges connected with the existing HIM system included: shortage of registers and stationery; incompetency of those involved in data capturing; missing some of the indicators in District Health Information System (DHIS2); and frequent changes in some indicators and forms in DHIS2. Main challenges were associated with inadequate or absence of well-trained HIM professionals included: inadequate background on medical related terminologies; incomplete data; errors at data entry; manipulating data; limited analytical skills and interpretation of data; late submission of reports; and lost data.

Discussion

These results are like those of other researchers [1],[2],[3] who also found that data users were handling finance, administrative, human resource, research, and clients' data. The advancement in health information technology has significantly improved all activities related to health information. Data users had moderate skills in HIM. Some scholars in Africa have also reported gaps in skills and knowledge among workers who manage health information in hospitals [1],[4],[5]. Key challenges connected with the existing HIM system in health facilities are not new in Africa, they have been previously reported by various scholars [5],[6],[7]. These problems exist due to resource insufficiency in the health sector, extreme poverty, and the lack of human resource [8]. Crucial challenges associated with inadequate, or the absence of well-trained health information management professionals exist due to lack of a training programme in HIM.

Conclusion

Health information is affected because of inadequate and incompetent data users in Malawi. Introducing training in HIM would improve data management, improving service delivery.

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Recognising the educating attributes of Health Information Managers and the implications for professional practice, professional competencies, and curriculum development

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Introduction (including aims)

Educating has been a longstanding practice for Health Information Managers and is well recognised in the international literature [1],[2],[3],[4],[5]. Koskimaki et al. (2021) [5] identify educating competencies including the integration of knowledge into practice and continuing professional development. The value of clinical documentation education, performed by Health Information Managers, has wide-reaching effects such as changes in documentation practices leading to improved patient outcomes, correct financial reimbursement and enhanced communication between services [6]. Educating is also recognised as a core skill in the future vision of the Health Information Manager's identity (Brodnik cited in [4]). Nygren et al. (2019, p. 1760) associate lifelong learning with adaptation to the changing work and life environments, which is very much influenced by the presence of "…technology-rich environments (TRE)" [7]. Given the place of lifelong learning, the act of educating adds critical value to both the sustainability and versatility of the Health Information Management profession heading into the future. While the term "educator" is cited numerous times in the Health Information Management Association of Australia's national competencies (HIMAA 2017) [8], research is lacking in exploring the specific elements of the educating attributes of Health Information Managers in Australia. This paper presents a case for the study of educating attributes of Health Information Manager professionals. This research paper aligns with the conference topic "Research, Education and Training" (International Federation of Health Information Associations 20th International Congress Call for Submissions 2022) but critically influences Health Information Manager practices across the domains of digital health, data analysis, quality and governance and health classification.

Aim and objectives

The aim of this paper is to explore the emerging themes characterising the educating attributes of Health Information Manager professionals from a scoping systematic literature review. These attributes may also be tested empirically to add to the existing body of knowledge as well as to inform and develop Health Information Management course curricula.

Methods

A scoping systematic literature review protocol was developed based upon best practice guidelines as described by Peters et al. (2020).[9]

The scoping systematic literature review methodology included key word searches based upon PICo (Population, Interest and Context) [10] as well as hand searches of selected professional journals, such as Health Information Management Journal (HIMJ), Journal of American Health Information Management Association (AHIMA) and Perspectives in Health Information Management. Title and abstract screening using Covidence will be performed by two researchers. Thematic analysis will be conducted to discover common/contrasting themes across the selected research studies.

Results

The results will inform if there are consistent or contrasting themes across the literature pertaining to the educating attributes of Health Information Managers. The findings will be used to further develop graduate capabilities for both undergraduate and postgraduate Health Information Management course programs.

Discussion

The recognition of the educating attributes in Health Information Managers acknowledges the important contributions of past practices of educating, current practitioners, and future practice in Health Information Manager education. The Health Information Manager's role of educating will continue to advocate for the creation of quality, accurate health information that in turn will drive better patient outcomes and service delivery. This research paper seeks to capture educating characteristics for Health Information Managers from the scoping systematic literature review that will shape the domestic context and align/contrast with the international context.

Conclusion

The research findings will inform future research practice exploring Health Information Management perspectives on the educating role in professional practice within the Australian context. The results will inform professional practice with a view to advancing professional competency development pertaining to the act of educating. The results may also contribute towards Health Information Management curriculum development with an intentional embedding of pedagogical elements into the graduate capabilities for Health Information Management course programs.

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Implementing an Electronic Medical Records System in Nigeria Federal Capital Territory Hospitals: benefits and challenges

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Introduction (including aims)

Electronic medical records are designed to support detailed patient documentation, improve the accessibility of information for continuity of care, and ensure accurate data collection and processing to support clinical decision-making. Although electronic medical record (EMR) systems have been in place, in some form or other, for well over a decade, however, it is only recently that each district's health offices in Nigeria have appeared to encourage digitalisation. As a result, various electronic medical records (EMRs) have been produced and implemented to improve healthcare delivery.

Considering the Federal Capital Territory (FCT) context, the FCT is a complex and multicultural community with an extremely high population growth rate which puts enormous strain on available services including health care. EMRs were implemented in Federal Capital Territory Administration (FCTA) hospitals on the argument that digitalisation of the healthcare system will address some of the common healthcare challenges which include, patients missing files, poor documentation, and misrepresentation of hospitals' generated revenue.

In this regard, the FTCA through one of its key Secretariats, the Health and Human Services Secretariat (HHSS) implemented EMRs in six hospitals out of its fourteen secondary hospitals to improve healthcare delivery services, health systems management, patient health outcomes, public health surveillance, and clinical research.

Aim and objectives

The aim is to explore the benefits and challenges involved in the implementation of EMRs in the FCTA Hospitals and further proffer solutions to the identified challenges.

Methods

This study was conducted among the six hospitals where EMRs have been implemented in FCTA. A semi-structured questionnaire was used to better understand the impact of EMR in health care delivery. The populations used for this study were the staff of these hospitals which comprise doctors, nurses, medical records officers, lab scientists, physiotherapists, radiologists, hospital accountants, and pharmacists.

A semi-structured questionnaire was deployed to elicit information from respondents. Three hundred and ten participants consented and participated in the study. A simple percentage method was used to analyse data.

Results

The study revealed that EMR systems have led to an increase in the productivity of healthcare delivery, reduced waiting time, reduced costs of repeated medical investigations arising from patients missing medical records, improved data validation, improved hospital-generated revenues, secured access and confidentiality of patient information, better clinical decision making, and effective collaboration between healthcare providers. The major challenges identified were a lack of sustainability for the adaptation and utilisation of the EMR systems, resistance to change, weak governance and regulation, computer illiteracy among staff, and a shortage of Information communication technology (ICT) staff in the hospitals.

Discussion

Preliminary findings from the implementation of electronic medical records in the FCTA hospitals have changed the way of doing things making it much easier with new processes and new procedures which result in cost savings and efficiency gains. For instance, there has been evidence of improved quality care, security, and confidentiality of patients' information, reduced costs of repeated medical investigations arising from patients' missing medical records as well as reduced patients' waiting time.

Additionally, there is documented evidence that the deployments of EMR in FCTA Hospitals have increased hospitals' revenue. It is now possible to track each payment made with the generation of electronic receipts according to cash entries lodged by individual cashiers and the time of transaction. Daily, weekly, and monthly cash summaries are instantly generated and made accessible to supervisors through dashboards.

Despite these successes, there still exists some challenges in implementing EMR which include poor governance and regulation, lack of acceptance, ownership, and resistance to change among some health care workers in various hospitals of the FCTA, Abuja.

Conclusion

The implementation of EMR systems in FCTA Hospitals has improved the healthcare delivery system leading to increased patient satisfaction and efficient health outcomes. However, implementation should be supported by appropriate coordination among relevant stakeholders, refresher training for all staff to update user knowledge on the benefits of EMR as well as sustainable funding for effective system utilisation.

Workforce survey of Australian ‘graduates’ from a Short Course in Clinical Coding Auditing: employability, knowledge and skills needed as an internal and external auditor, 2004-2021

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Introduction (including aims)

Auditing is a quality method that has been widely applied for several decades in hospitals, globally, to measure outcomes associated with patient safety and quality of care [1],[2]. Non-clinical auditing has also been practiced for many years and, together with clinical auditing and other measures, has constituted an important component of hospitals’ quality plans [3],[4].

Clinical coding auditing is another application of audits in health. In reflecting what Power (1997) described as the ‘managerial colonisation’ (p.106) of medical auditing, it combines the concepts of clinical, non-clinical and financial auditing [5]. The clinical coding auditor plays an integral role in quality assurance for decision makers who use coded data. In Australia, these auditors are contracted by providers and purchasers of healthcare in the public and private sectors to ensure appropriate reimbursement and revenue.

Minimal research has been undertaken on the education, experience, and career pathways of clinical coding auditors. Stakeholder recognition of the value of clinical coding, paired with a workforce shortage, has garnered interest in the role of automation in the clinical coding process [6],[7],[8]. It is anticipated that the automation of abstraction and code look-up will transform the clinical coding role to include some skills associated with the clinical coding auditor role, such as code review and validation [9],[10].

In Australia, specialised qualifications for internal and external clinical coding auditors have predominately centred around a Short Course in Clinical Coding Auditing delivered by the Discipline of Health Information Management at La Trobe University (LTU) [11]. Certification at an “external” level is evidence of a very high achievement in health classification across all domains, sufficient to facilitate clinical coding auditing externally across a range of organisations; certification at a high level (called “internal”) facilitates clinical coding auditing within a participant’s own organisation.

Aim and objectives

This paper reports on part of a larger study. The relevant aims are to identify:

- the professional skills required to operate effectively as a clinical coding auditor; and

- how this skillset is projected to change in a future, computer-assisted-coding (CAC) environment.

Objectives are to:

- Identify and analyse the audit career pathways of individuals who obtained internal or external auditor certification via the LTU Short Course in Clinical Coding Auditing, 2004-2021; and
- Explore the knowledge and skill domains of these individuals to predict requirements for clinical coding auditor education in a post-CAC adoption environment.

Methods

A mixed-methods approach will be used, following ethics approval. The sample will comprise Australian participants in the LTU Short Course in Clinical Coding Auditing, 2004–2021, who qualified with an external or internal auditing certificate. A purposely designed, electronic survey instrument will incorporate a forced response format to elicit: demographic details; certification awarded, and year; previous qualification(s); employment categories; and major duties performed.

Data will also be collected in open-ended format to capture participants' comments on their career pathways, application of learnings to current position(s), and additional skills required to perform their activities. Descriptive statistics will be used to summarise the quantitative data and content analysis will be used to analyse responses to open-ended questions.

Results

Work is still in progress at the time of writing. Selected results (aggregated data) from the survey will be presented at the IFHIMA 2023 Conference.

Discussion

The study findings will demonstrate the career pathways and major duties of LTU-certified internal and external auditors. They will inform employers on the status of auditors' skills and knowledge, thereby enabling industry to anticipate the training requirements of HIM-Coders and Clinical Coders transitioning to a post-CAC adoption coding role.

Conclusion

This research will provide evidence to inform the future development of national clinical coding auditing standards, and guidelines for professional competencies for this specialist career pathway for HIM-Coders and Clinical Coders.

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Awareness of Patients’ Right to health information among Health Profession students: A cross-sectional study

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Introduction (including aims)

Patient rights are one of the important contexts considered in providing appropriate health care and supporting ethical medical practices. Respect for patients’ rights is a necessary professional practice quality required for all medical staff, including health professional students. Adequate awareness about patients’ rights to health information is one of the important components in establishing privacy and confidentiality with the use of patients' health information in medical practice.

Aim and objectives

- To develop and validate a survey questionnaire,
- To assess the awareness of health profession students on patients’ rights to health information.

Methods

This is a cross-sectional study conducted among health professional students on a university campus in southern India. In the first phase of the study, a survey questionnaire was developed with the help of existing literature and an online consultation with 11 Health Information Management experts across the globe. Lawshe content validation ratio and Cronbach’s Alpha test were carried out to validate and measure the internal consistency of the questionnaire. The survey was conducted with a validated questionnaire with 18 items. A scoring system was used to determine the awareness level among the participants. Appropriate ethical clearance has been obtained for the study.

Results

A total of 287 final-year undergraduate health professional students participated in the survey with a majority (78%) of participants being female. The participants represent 12 different streams of health professions associated with patient care in a tertiary healthcare setting. The overall awareness was measured under three broad categories; the right to access health information, the legal right to health information, and the right to manage health information.

The overall awareness about the patient’s right to health information was found to be ‘average’ among 88% of participants. The results show that the awareness of the majority of respondents about patients’ right to access health information, and their right to manage health information, was ‘average’ for 88.1% and 80.8% respectively. The awareness was found to be ‘good’ among 51% of participants about patients’ legal rights to health information.

Discussion

The study results indicate that the awareness level among health professional students on different aspects of patient's right to health information is not at a desirable level. A study conducted among medical interns reported low awareness of the patient's right to health information [1]. A study conducted in Saudi Arabia revealed that more than 55% of physicians lack adequate knowledge about patients’ bills of rights [2]. As health professional students get access to a multitude of patient health information, they must have a clear understanding of what rights the patient have about their own health information in ensuring privacy and confidentiality.

Conclusion

The study outcomes highlight the necessity of providing adequate education and training to all healthcare professionals about health information management requirements as part of their curricula. The awareness of patients’ right to protect the confidentiality and privacy of their health information is essential in the evolving digital healthcare ecosystem.

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The African Perspective – assessing readiness and preparing the workforce for ICD-11

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Introduction (including aims)

The International Classification of Diseases (ICD) is a global clinical coding tool that categorises health data according to standard criteria. The 11th revision of the ICD, which is fully digital, has been launched. The World Health Organization (WHO) advocated for its global adoption. The training curriculum plays a vital role in workforce preparedness. Every time there are major changes, the school curricula are affected. There is a need to update these curricular to address society's needs. As nations across the globe are preparing for ICD-11 adoption, however, no study to date has explored the African perspective, about the readiness and workforce preparedness for ICD-11 implementation. Technology Acceptance Model (TAM) was adapted to conceptualise this study.

Aim and objectives

This study investigated the African perspective of ICD-11 and the continent's readiness for, and their workforce preparedness for, ICD-11.

Methods

This was an online descriptive survey with 280 participants - Nigeria (n=271), Uganda (n=4), Tanzania (2), Ghana (n=1), Kenya (n=1), and Mauritius (n=1). The participants were not evenly distributed. The study population comprised all 13 members of the IFHIMA Africa Database and the database of all 267 members of the Association of Health Records and Information Management Practitioners of Nigeria. The two Databases were combined because 13 members of the IFHIMA Africa Database is considered too small a sample for a study of this magnitude that cut across the African continent. Total enumeration technique was adopted for the study. A structured questionnaire and semi-structured interview were the research instruments used. Seven hypotheses were tested. A Google form was used for data collection while the data was analysed with SPSS Version 25.0.

Results

The majority of the respondents were male; 31-40 years old; H.N.D/BSc.-holders; Officers with 11-20 years working experience; an employee of teaching hospitals; and from Nigeria. The HIM professionals are knowledgeable about ICD-10. African countries are not fully ready for ICD-11 implementation. There are no perceived behavioural and technical challenges but there are perceived organisational and access to basic technology challenges (no policy on ICD-11 implementation, irregular internet connectivity, erratic power supply and inadequately trained clinical coders) and perceived challenges relating to staff (used to manual system and possible reluctance, resistance, and anxiety among HIM staff). The ICD-11 syllabus is yet to be included in the training curricula and the trainers need more training. The hypotheses tested revealed no significant relationship between the respondents' biodata, the perceived challenges and willingness to implement ICD-11 in Africa.

Discussion

The study revealed that: HIM Professionals are knowledgeable about ICD-10; the knowledge is acquired during educational training; African countries are not fully ready for ICD-11 implementation; and few ICD-11 implementation resources are available.

Findings on interrupted internet connectivity and restricted access to computers at Coding Units corroborated the findings of Yehualashet et al., (2021) on hindrance to the adoption of EMR in Africa [1]. Findings on irregular power supply and inadequate clinical coder conforms with the findings of Adeleke et al., (2015) on hindrance to adoption of ICD-10 in Africa [2]. Findings that ICD-11 implementation might be too costly conform with Kusnoor et al., (2020) in their report on a review of the transition to ICD-10 and ICD-10 CM/PCS [3].

This study revealed that though there is willingness to adopt ICD-11, users are used to manual systems and the possible reluctance/resistance and anxiety revealed could be due to the completely digital nature of ICD-11. Findings on inadequate training for ICD-11 implementation conforms with that of Sanders et al, (2012) regarding ICD-10-CM/PCS implementation [4]. Findings on inadequate ICD-11 infrastructure conforms with other literature (Monestime, Mayer & Blackwood, 2019) [5].

The ICD-11 syllabus is yet to be included in the training curriculum, the trainers need more training to understand the innovations, structure, and proper use of ICD-11. Partnership and exchange of knowledge is essential for ICD-11 adoption.

Conclusion

Significance: This study revealed the African workforce readiness for ICD-11 adoption, the potential challenges and possible solution. Clearly there is great promise ahead for ICD-11 implementation in Africa. Knowledge of ICD-10 is an enhancer to quick understanding of ICD-11, but the workforce is yet to be prepared for ICD-11 implementation in Africa. Therefore, there is a need for ICD-11 adoption's policy formulation and implementation, training across the board, availability of technical support from WHO, partnership and knowledge exchange between and among African countries, and review of the present training curricula are recommended.

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Assessing the level of electronic medical records adoption and its barriers in Federal Hospitals in Southwestern Nigeria

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Introduction (including aims)

Information and Communication Technology (ICT) refers to a broad spectrum of technologies that allow users to receive, produce, and share ideas and resources. ICT consists of but is not limited to e-mail, decision support systems, and health information systems. This kind of technology can assist Medical Records professionals in medical coding, medical billing, registration, accounting, and communicating etc. In Nigeria, health tourism requires hospitals to upgrade their healthcare services to meet international standards and make services that are sought outside the country available at affordable cost. The Government also faces increasing pressure to upgrade healthcare services as today's tech-savvy patients demand better healthcare services.

Aim and objectives

The study aims to assess the level of electronic medical records adoption and its barriers in Federal Hospitals in Southwestern Nigeria.

Methods

This cross-sectional study used primary data from three selected Federal Hospitals in southwestern Nigeria to assess the extent to which the hospitals have adopted automation in patient health care documentation, records keeping and preservation of medical records. The selected hospitals were Obafemi Awolowo University Teaching Hospital, Ile-Ife, Osun State, Federal Teaching Hospital, Ido Ekiti, Ekiti State and Federal Medical Centre, Owo Ondo State. A total of three hundred (300) participants were selected in the three Hospitals. All respondents were Health Information Officer/Technologists. Descriptive statistics and analysis of variance (ANOVA) were used to explore statistical relationships between efficiency in health care practices and the level at which electronic medical records are adopted in the study areas.

Results

Areas where EMRs have been adopted include Inpatient/Outpatient registration and documentation, master name index and clinical coding only, in the three hospitals, while other services are done manually such as patient records library, nurses' and doctor's documentation, with no interconnectivity between consultation clinics, medical records, pharmacy, laboratory. More than 50% of respondents reported having no ICT use in consultation, booking or telemedicine, statistical packages in use for data analysis, no e-pharmacy, and no e-communication between clinical departments etc. Respondents reported barriers to EMR adoption including lack of support from management, financial constraints, knowledge gaps and lack of stable power supply. Hypothesis testing showed a relationship between the efficiency in health care practice and EMR adoption at ($P=0.009$).

Discussion

The study revealed that registration and documentation, master name index and clinical coding are the only sections where EMRs were adopted in the selected hospitals. Despite all efforts to develop eHealth in Nigeria since 1994, these efforts are piecemeal, uncoordinated, and largely pilots yet to be scaled up. A 2014 assessment on a number of Health ICT Implementations identified 84 Health ICT projects: 28% were pilots and 24% were in the process of scaling up from pilot implementations (FMOH 2016a). The Nigerian Government developed a 5-year strategic plan on e-Health which includes providing an effective National Health Information Management System (NHIMS) to be used as a management tool for informed decision making at all levels and for improved healthcare, but as yet the achievement is less than 10% implementation. The barriers reported here for successful EMR implementation (lack of: support from management; finance; computer knowledge; and reliable electricity) need to be addressed. The lack of EMR adoption has had a negative impact on service delivery as there is a significant relationship between efficiency in health care practice and the adoption of EMRs.

Conclusion

From these findings, the following recommendations were made. A concerted effort must now be made for the full implementation of e-health since the expectation of health professionals is surging for full implementation. Health Information professionals unskilled in Information Technology should be enrolled for training, either within their organisation or through external training providers in preparation for full implementation of e-health. Policy should be made regarding the need for full implementation of EMR, and the Government should allocate funding for this purpose to their fiscal budget in coming years in order to enhance the provision of technology in readiness for full implementation.

Implementation of electronic medical records in Indonesia: Prospects and Challenges

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Introduction (including aims)

The Ministry of Health (MoH) Republic of Indonesia has established the use of electronic medical records (EMR) in the MoH's strategic plan for 2022-2024. The Ministry of Health Regulation of the Republic of Indonesia number 269 in 2008 and Law number 11 in 2008 regarding Electronic Information Transactions were regulations to implement EMR. Unfortunately, most hospitals are unwilling to implement EMR due to there being no standardisation of data and guidelines for EMR.

Aim and objectives

Our aim was to describe EMR implementation in Indonesia.

Methods

An observational survey with a quantitative approach was conducted from September 2021 to March 2022. The online questionnaire focused on the implementation of EMR in hospitals, including characteristics and distribution of hospitals that implemented EMR, the complete and partial implementation EMR as well as the obstacles experienced when implementing EMR. Responses were analysed and descriptive statistics are reported.

Results

A total of 118 respondents contributed and 108 have implemented EMR. The implementation of EMR was described according to distribution, types, and class of hospital, partial and complete implementation of EMR, EMR developer, year of implementation, and the obstacles to EMR implementation.

1) Of the 108 hospitals (respondents), the majority (71.3%) are in Java Island, 16.7% in Sumatra and Bali, and 3.17% each in Bali & Nusa Tenggara, Kalimantan, and Sulawesi.

2) Of the 108 respondent hospitals, 78% have a partial implementation of EMR, and 22% have a complete implementation of EMR.

3) Of 108 respondents, 36% were class A hospitals, 56% were class B hospitals, and 8% were class C hospitals.

4) Of the 108 respondents, 55% reported that the EMR was developed by the Information Technology (IT) team hospital, and 45% said their EMR was developed by a vendor (IT developer).

5) The vast majority (94%) had implemented the EMR after 2008 and 6 percent before 2008.

Respondents further reported:

6) There is no regulation and standardisation of EMR architecture which directly causes severe fragmentation of database design between EMR in each hospital.

7) There is limited support and monitoring from executive management.

8) There are bugs or errors in the EMR system (unstable system) such as a freezing interface in the middle of work or a computer that suddenly won't respond to any user input.

9) There is a lack of proper network requirement calculation which causes a bandwidth shortage and unstable connection

10) The IT workforce numbers in some hospitals don't meet the minimum labour required to properly maintain the usage of EMR.

11) There is limited training for the health and IT workforce relating to EMR usage in many of the hospitals.

Discussion

EMR implementation in Indonesia is still low and not evenly distributed throughout Indonesia. The Ministry of Health Regulation of the Republic of Indonesia number 269 in 2008 and Law number 11 in 2008 regarding Information Transactions Electronic were regulations to implement EMR. Unfortunately, in 2008 there was no data standardisation or guidelines for Electronic Medical Records. The existing regulations are not equipped with the requirements for implementing EMR, such as a stable network (unlimited connection), infrastructure, support, and monitoring from executive management, etc.

Conclusion

The implementation of Electronic Medical Records in Indonesia is still not evenly distributed in the territory of Indonesia, mostly in Java. There are still many obstacles in the implementation of Electronic Medical Records.

Building a case for Electronic Personal Health Records in the health sector of Zimbabwe

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Introduction (including aims)

The complementary role of Electronic Personal Health Records (EPHRs) to conventional Electronic Health Records (EHRs) is overwhelming. An EPHR system is one that is managed by the patient by allowing him/her to input and change the contents of the health record whilst an EHR is a full summary of patient history that is owned by a healthcare facility and does not allow a patient and any unauthorised person to input or change patient information. EHRs can be shared between different health facilities through Health Information Exchange, on condition that the systems are interoperable.

EPHRs are simply meant to facilitate easy and fast patient management by improving patient-physician communication but are not formal health records and cannot be used as legal evidence, whilst EHRs are an official and legal version of a patient's health record. Notably, EPHRs have the potential of significantly reducing problems of fragmented and incomplete patient health records, which is usually the case with many patients' health records. As the California Mental Health Planning Council (2011) observed, imagining all patient's personal health information in a single file or location, or even in a consistent format is missing the point. This demonstrates the chasm that EPHRs can significantly reduce. At a national level, EPHRs have the potential to strengthen the country's national health information system as they can be rich with additional, usually non-conventional but useful health information about patients.

There are currently no EPHRs in use in the health sector of Zimbabwe, despite the country having made meaningful strides in the adoption of Information and Communication technologies (ICT) in the health sector, including the on-going efforts through the Impilo (health) EHR which is meant to be a national EHR system. Given that EPHRs largely depend on a sound internet infrastructure, it is the contention of the author that Zimbabwe may have the capacity to roll out and sustain EPHRs. This argument is premised on the following. First, a steady internet penetration rate which stood at 30.6% of Zimbabwe's total population as of January 2022, translating to 4.65 million internet users (Kemp 2022), provides fertile ground for EPHRs. This rate comes on the back of the global penetration rate of 62.5% of the world's population, translating to 4.95 billion internet users as of January 2022. Second, Zimbabwe already uses a patient held medical record system where patients have their medical histories documented from the primary right through to the quaternary tier of health. A patient health record is a system of heath recordkeeping in which patients visit healthcare facilities with booklets in which their medical encounters with healthcare personnel are documented. Patients retain these books and produce them in each visit to physicians or any other healthcare givers. Each encounter with health personnel is documented and authenticated, for example, by stamping, dating, and signing by the staff at healthcare facilities, and to a certain extent, the record may serve as legal evidence. One can only imagine how much benefit can be realised by having such patient health medical records generated, maintained, and shared as EPHRs!

Aim and objectives

This study seeks to examine the extent to which the present technological and policy infrastructure in the health sector of Zimbabwe can be leveraged in support of EPHRs, and advocates for the rolling out of these systems to complement the formal EHR. This will enrich the amount and quality of patient data, resulting in improved patient care.

Methods

Using a qualitative design, the researcher intends to gather views of the Ministry of Health and Child Care and the Ministry of Information and Communications Technologies, Courier, and Postal Services about their readiness to support EPHRs from a policy and technical perspective. Additional data will be gathered from patients at Zimbabwe's six central hospitals about their views concerning privacy, confidentiality, and security of personal information in the event of EPHRs being rolled out in Zimbabwe's health sector. Purposive sampling will be used in the afore-mentioned ministries, whilst convenience sampling will be used to gather data from patients. A thematic analysis of data is envisioned. On top of arguing for the implementation of EPHRs in the health sector of Zimbabwe, the study is expected to generate instructive insights into potential hindrances as well as opportunities surrounding the implementation of EPHRs in an endeavour to improve the quality of health information, and subsequently strengthen the country's national health information system.

Results

The work is still in progress at the time of submission. Results will be presented at the Congress.

Discussion

The work is still in progress at the time of submission. The Discussion will be based on the results, to be presented at the Congress.

Conclusion

The Conclusion will be drawn from the Results and Discussion and presented at the Congress.

Where am I going? Mapping Health Information Management graduates' early-career pathways in Australia, using position title and knowledge domain classification: A pilot study

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Introduction (including aims)

Research into health information management careers is not new. There is a global body of literature reporting research on Health Information Managers' (HIMs') professional career circumstances or pathways (e.g., Beesley et al., 2022; Riley et al., 2020; Al Kiyumi, et al., 2016; Gibson et al., 2015).

In 2013, Health Workforce Australia (HWA) observed that Australia's health information-related workforce was spread across all areas of healthcare, resulting in some blurring of professional boundaries. The phenomena of the Australian profession's dispersal and opportunities across the whole-of-health were reinforced by the findings of Riley et al. (2020) which revealed a wide range of both healthcare sector locations and position titles populated by early-career HIMs. There is, however, an element of challenge in defining the role of the HIM, especially given the behind-the-scenes nature of their work (Nexhip et al., 2022; Al Kiyumi et al., 2016). Arguably, this has contributed to persistent shortages of qualified HIMs, world-wide (Gibson et al., 2015; HWA, 2013), as others' lack of understanding of their job titles, roles and career pathways makes it difficult to promote the 'uniqueness' of the profession, particularly to school leavers (Al Kiyumi et al., 2016).

The American Health Information Management Association (AHIMA) developed an interactive career map (AHIMA, 2022), and the Canadian Health Information Management Association (CHIMA) created a career matrix (CHIMA, 2022; Zibrowski and Adams, 2016) based on job advertisements for HIMs. Recent research using similar methodologies has highlighted trends in the health information management workforce (Fenton et al., 2022; Madlock et al., 2021; Marc et al., 2019). In Australia, Riley et al. (2020) concluded that 'graduate HIMs have very high employability and demonstrate job mobility consistent with the national trends' (p.93). There is no contemporary, published research that maps pathways of early-career, graduate HIMs utilising primary data obtained from graduates themselves and describing their career journeys. Australia's La Trobe University (LTU) is investigating the early-career employability and primary knowledge and skills utilised by its graduate HIMs; the data presented here are part of this larger study.

Aim and objectives

To map early-career, health information management graduate pathways in Australia using primary data on position titles and a knowledge-domain classification.

Methods

A mixed methods study design was used. The sample comprised the 2012-2021 cohorts of graduate HIMs from LTU. Following ethics approval, a self-administered online survey elicited participants' demographics, qualification, position titles, employment type, and skills and knowledge. Position titles were analysed and classified into five key career sub-groups established previously by Riley et al. (2020): Health Information Management, Health Classification and Financial Foci, Health Informatics, Data Analytics and Research, and Other. Consistent with the methodology used by Riley et al. (2020), in cases where positions may have fitted into two or more categories, a hierarchical system was used, and the position was classified into the most common group. Descriptive statistics were utilised to analyse the data.

Results

The position titles of 310 early-career, graduate HIMs were mapped into the previously identified, five core domains. The study is ongoing; results will be presented at the IFHIMA 2023 Conference.

Discussion

Ongoing changes to the healthcare sector include patient-centric models of care, more sophisticated electronic medical records, increasing techno-governance requirements for health information, and technologies for artificial intelligence and big data (Hoyle, 2019; Robinson and Lee, 2021; Tsai et al., 2020; Price and Cohen, 2019). The healthcare system's reliance on health information and, therefore, on specialist HIMs, is central to much of this change. Consequently, the need to better understand the career pathways and career progression of HIMs is integral to the increasing promotion of the profession.

Conclusion

The findings from this study will enable the longitudinal mapping of early-career pathways of graduate HIMs in Australia and, thereby, enhance promotion and marketing of the profession.

Please note: Details of all references are available from the authors.

Investigation of the impact of COVID-19 on hospital management at National Hospital Organization Himeji Medical Center in Japan

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Introduction (including aims)

After March 2019, as with other countries we were notably affected by the new coronavirus infection (hereafter referred to as COVID-19). Therefore, we decided to study the trends in patient consultation behaviour and its impact on hospital revenue. Our aim was to measure the impact of COVID-19 on hospital management by analysing the departments and diseases affected by COVID-19. Furthermore, we investigated whether there were changes to the number of cancer registrations.

Methods

1） The growth rate of medical expenses: First, the growth rate of medical expenses by department was examined using DPC/PDPS (Diagnosis Procedure Combination/Per-Diem Payment System) data from FY 2018 to FY 2020. The impact was calculated as (increase/decrease in medical expenses)/(total medical expenses in the previous period) × 100.

2） Multiple regression analysis: Next, multiple regression analysis was conducted using the total number of medical care points; the number of medical care points by department as the independent variable and the number of medical care points in FY 2018-2019 as the dependent variable to estimate the number of medical care points in FY 2020 (reported as ‘share of treatment points (SOTP).

Furthermore, a multiple regression analysis was conducted using the number of medical scores by ICD classification as the independent variable and the number of medical scores for FY 2018-2019 as the dependent variable to estimate the number of medical scores for FY 2020. Differences between the estimated and actual scores for both medical care points, and medical care scores, were verified.

3） Number of Cancer Registrations: Japan has a national cancer registry to investigate the trends of cancer patients. Corresponding t-tests were used to compare numbers of registrations by stage for lung, breast, stomach, and colorectal cancers between 2018-2019 and 2020-2021.

Results

Respiratory medicine (SOTP: 39.8%): growth rate: -28.3 to -9.5, impact: -11.3 to -3.6.

Pulmonary surgery (SOTP: 10.0%): growth rate: -39.2 to 21.0, impact: -3.9 to 1.8.

Orthopaedic Surgery (SOTP: 5.5%): growth: -51.6 to 71.7, impact: -3.2 to 3.5

Urology (SOTP: 4.5%): growth rate: -22.1 to 50.5, impact: -1.2 to 2.0.

By department, y=25,216,800+1.883*(orthopaedics) + 0.997*(respiratory surgery) + 2.698*(urology) + 0.676*(respiratory medicine), R2=0.881.

By ICD classification, y=-48,646,763+1.752*(Neoplasms) +0.738*(Respiratory), R2=0.885.

When estimated for FY2020, actual scores were lower than estimated in April and October 2020. The number of registrations by stage for lung, breast, stomach, and colorectal cancers showed a significant difference ($p<0.05$) only for lung cancer.

Discussion

When estimating FY2020, actual results were lower than estimates in April and October 2020. The reasons for this are thought to be the 7 prefectures which "declared a state of emergency" in April and the beds were closed in October for the preparation of new coronary disease beds. As in the Japanese Ministry of Health, Labour and Welfare report, COVID-19 had a significant impact on the respiratory system in our hospital, while the impact on the surgical system was relatively small.

The number of registrations by stage for lung, breast, stomach, and colorectal cancers was significantly different only for lung cancer. Our hospital has the fourth largest number of lung cancer registrations in Japan. However, since 2020, there has also been a significant decrease in the number of chemotherapy procedures and surgeries performed with respect to lung cancer, and the number of registrations decreased for all stages 1-4. The number of new patients was also on the decline, suggesting that COVID-19 caused a reluctance to see patients or fewer patients presenting.

Conclusion

As a temporary and exceptional measure for COVID-19, the "Emergency Comprehensive Grant for COVID-19" was given to pay the fee for securing hospital beds that are already vacant or have been closed in Japan.

Profitability of medical institutions has improved significantly since FY2020. As a result of this support, the financial results for 2020 for the national and public hospitals have changed. They are now significantly in the black and have accumulated current assets.

The hospital management strategy is to continue Himeji Medical Center as a COVID-19 receiving hospital, while treating lung cancer and other lung diseases (including interstitial pneumonia), colon cancer, and bladder cancer in the future.

Preliminary study of patient safety and quality use cases for ICD-11 MMS

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Introduction (including aims)

In May 2019, the International Classification of Diseases and Related Health Problems, 11th Revision (ICD-11) was adopted by the 72nd World Health Assembly (WHA) with an effective date of January 1, 2022. The effective date was the earliest date any country could implement this enhanced clinical classification. In the four plus years since the WHA decision, countries have taken steps toward determining an implementation path forward for mortality and morbidity reporting.

The National Committee on Vital and Health Statistics (NCVHS) serves as an advisory body for health data, statistics, and national health information policy to the United States (US) Secretary of Health and Human Services (HHS) including making recommendations regarding ICD-11 adoption. The NCVHS published two recommendation letters regarding ICD-11. In both letters, the Committee recommended research be conducted to evaluate the impact of different approaches to the transition to and implementation of ICD-11 in the US.

Aim and objectives

This study investigated how well-suited the International Classification of Diseases, 11th Revision, for Mortality and Morbidity Statistics, (ICD-11 MMS) is for two morbidity use cases, patient safety, and quality. The research focused on examining the level of detail captured and evaluating the necessity for the development of a US clinical modification (CM).

Methods

The NCVHS recommendations listed five perspectives, such as safety, based on the anticipated impact of ICD-11 implementation. The authors added that of the consumer and all six became the base material for a use case framework of the International Classification of Diseases, 10th Revision, Clinical Modification (ICD-10-CM). Analysis of programs and applications for a given use case yielded candidate source criteria for use in case evaluation. A matrix of the use cases and source criteria was created. Patient safety and quality were chosen for further investigation to evaluate how well-suited ICD-11 MMS is for these two use cases.

Granularity differences and content coverage of ICD-11 MMS entities were assessed pre- and post-coordination to determine suitability. Pressure ulcers, a common condition across three patient safety applications, became the focus for comparing ICD-10-CM codes to ICD-11 MMS codes. For the quality use case, the HHS electronic clinical quality measures (eCQMs) value sets provide ICD-10-CM

codes for quality measures. The evaluation centred on specified value sets for three eCQMs: ischemic stroke, hypertension, and diabetes.

Results

For pressure ulcers, the ICD-11 MMS was found to exceed ICD-10-CM capabilities via post-coordinated extension codes. Using a stage 3 pressure ulcer of the coccygeal region as a clinical condition, ICD-10-CM groups the coccyx and sacrum together by referring to the 'sacral' region. However, ICD-11 MMS has extensions for coccygeal area, sacral region, and sacrococcygeal region.

For the three eCQM value sets evaluated, the ICD-11 MMS fully represented the disease concepts when post-coordinated code clusters were used. For example, ICD-10-CM has multiple precoordinated combination codes for hypertension that require the use of post-coordination in ICD-11 MMS to fully reflect the combined ICD-10-CM concepts.

Discussion

The comparisons of the utilisation of ICD-10-CM with that of ICD-11 MMS for specific examples from the patient safety and quality use cases reveal that the ICD-11 MMS may have the necessary content and detail for use in the US, particularly if post-coordination is applied as needed.

The authors believe other research studies combined with their exploration of the use cases present an argument that the US should explore using the ICD-11 MMS. Furthermore, the US should investigate mechanisms to effectively use the ICD-11 MMS post-coordination feature.

Conclusion

The examples from the patient safety and quality use cases evaluated in this study are appropriate for ICD-11 MMS. It captures greater detail than ICD-10-CM, and ICD-11 MMS specificity would benefit both use cases. The authors believe this preliminary study indicates the US should invest resources to explore adopting the WHO ICD-11 MMS along with the tooling and guidelines to implement post-coordination. Doing so, several benefits result such as more comparable global data.

‘Do No Harm’ belief is not just for Doctors: Preliminary findings in exploring the contribution HIM professionals make to patient safety

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Introduction (including aims)

The healthcare system collects vast amounts of information. Health Information Management (HIM) professionals ensure data is trustworthy and accessible for clinician decision-making, health service funding and planning, research, epidemiology, and legal requirements. However, the contribution the HIM professional makes to patient safety in Australian acute hospitals has yet to be empirically examined.

Aim and objectives

This article highlights the preliminary findings from key informants' interviews about the impact of HIM professionals on patient safety (PS).

Methods

This qualitative study used key informant interviews which is an established qualitative data collection method that gathers perspectives and experiences in response to the researchers’ questions. For this study, purposeful sampling was used to identify informants via professional associations, publications, research activities, and recommendations from leaders in the disciplines of HIM or PS. Participants included HIMAA Presidents, leading HIM practitioners, researchers in HIM or PS, or PS experts. Consent was obtained at the start of each semi-structured interview and an interview guide was used to ensure consistency in the approach. Interviews were held virtually using either Zoom or MS Teams, and were recorded and then transcribed verbatim. To ensure validity, transcripts were sent to participants for verification, and then de-identified. A grounded theory-informed coding method was used to analyse the data.

Results

Interviews were held with thirteen Australian-based key informants with expertise in HIM (n=8) or PS (n=5). The informants discussed beliefs related to patients, the workplace, and as individuals working in the field. There was overwhelming support that HIM professionals do impact patient safety believing this is through the work performed, the value of the qualification, and data.

Informant responses indicated that HIM professionals work in roles or in organisations that improve the health or welfare of Australians because they want to help patients. Respondents used words and phrases such as caring, helping, giving back, respectful, valuing people, and helping staff help patients. One informant stated, “We are here to help is a thread that runs through the HIM profession, it is ingrained”. Informants also believe workforce shortages and workloads are a barrier to HIM professionals collaborating or participating in patient safety initiatives.

Workforce-related beliefs were prominent in the informants' responses. Participants stated that individuals with HIM qualifications understand there is a relationship between their role and patient safety. Qualified people ensure there is a focus on patient safety and quality, rather than finances, and they believe that role substitution will impact patient safety.

Overall, the data collected, stored, managed, analysed, and reported by HIM professionals greatly impact the systems that support patient safety and the minimisation of harm. Informants in this study believe that organisations are doing the ‘right thing’ by staff and patients, and they do their part by being accountable, honest, and authentic in their work. One informant discussed harm-free healthcare as something to aspire to, while others mentioned that ‘do no harm’ applies to all who work in healthcare. The ‘do no harm’ belief was discussed by both the HIM and PS informants.

Discussion

Beliefs, when combined with values and attitudes drive people’s behaviour, and are critical for an organisation’s patient safety culture and minimising harm. The literature describes patient safety beliefs across the domains of teamwork, staffing, feedback/communication, organisation and supervisor expectations, and accountability. Responses from the HIM and PS informants were comparable to these domains. They also aligned with the Framework for Safe, Reliable and Effective Care, in both the culture and learning system components.

Conclusion

The preliminary findings from the key informant interviews indicate HIM professionals believe their work supports clinicians to provide safe patient care. They also indicate that HIM professionals are altruistic. They believe that what they do makes a difference to staff and patients. HIM professionals believe the ‘do no harm’ philosophy applies to all who work in healthcare, not just individuals who take the Hippocratic Oath.

Mobile application for recording 9-Personal Health Behaviours to Improve Healthy Living Community Empowerment (GERMAS) in Indonesia: Development and feasibility study

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Introduction (including aims)

A recent phenomenon in epidemiological research is a transition from infectious diseases to non-communicable diseases. This transition is caused by lifestyle patterns that have increased mortality and morbidity due to non-communicable diseases such as hypertension, heart disease, and diabetes mellitus. Currently the most cases are hypertension 68.02%, followed by heart disease 26.0% and diabetes mellitus 16.04%. The Indonesian government sought to accelerate promotive and preventive actions by issuing Presidential Instruction No. 1 of 2017 concerning the Healthy Living Community Movement (GERMAS). GERMAS is a systematic and planned individual healthy lifestyle behaviour, which consists of 9 healthy lifestyle behaviours to improve the quality of life. Therefore, personal health records through mobile application development are deemed necessary to record and independently manage individual health behaviour activities.

Aim and objectives

The purpose of this study was to develop a mobile application and test the feasibility of using a mobile application to record 9-personal healthy behaviours.

Methods

The study was conducted in two parts. Part I was the mobile application development which consists of user requirements and interface design; Part II was the validation test and feasibility study. User requirements were discovered through focus group discussions between researchers, application developers, the health department and healthcare team. Validation testing was carried out using two smartphones to test whether the application functions were running well before being assessed by the user. Tests were carried out on the login function, user dashboard, self-activities, and self-monitoring. The test used was the black box test, which was testing the software against functional specifications without testing the design and program code.

Feasibility testing was conducted by 30 real users (adults) to provide an assessment of the quality of the system, the quality of information, and the satisfaction of using the application. Assessment was done through a questionnaire, where respondents were asked to provide answers on a Likert Scale 1: strongly disagree, 2: disagree, 3: agree or 4: strongly agree.

Results

User requirements found through the focus group discussion determined that the applications need to be easily accessible anytime and anywhere, and the interface design should be uncomplicated and have a user-friendly dashboard (so users can independently record their activities in this app). The interface design for the mobile application was developed with two 'faces': the '9-personal healthy behaviour' face and 'monitoring healthy behaviour record' face. Further information about the entire development of the mobile-based tool will be presented at the Congress. This application was developed on a multi-platform basis, both can be accessed with a web browser and can be accessed with Android phones; (*Self-Registration Features)*: users can register themselves for free to use this mobile application; (*More Information to be presented*). There were two features developed, namely filling in 9-healthy behaviour personal details (such as: physical activities, diet (eating fruits and vegetables), exclusive breastfeeding practice, no smoking, no alcohol consumption, using the latrine, cleaning the environment (home), time spent outdoors, and routine health check-up). Monitoring of the 9-personal health behaviours was accumulated and calculated every month with the categories of less, enough, and good.

Black box testing was used with 5 item scenarios: the menu functions were as expected. System quality test (c:1.08), information quality test (c:1.32). On the application user satisfaction test (93%) answered 'agree' that they were satisfied using this mobile application.

Discussion

Mobile application is a feasible and valid tool to record and manage independently, personal healthy behaviours. The app is easy to use and can be used by all Indonesian people as a personal health record to support the empowerment of healthy living by the people in Indonesia.

Conclusion

This study supports the feasibility and usefulness of mobile applications in community settings. Future upgraded versions may include activity reminders and suggestions for analysis of health check results.

Designing a Comprehensive Minimum Dataset for patients with COVID-19 in Iranian Hospital Information Systems

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Introduction (including aims)

A Minimum Data Set (MDS) is the core of data elements that have been agreed upon to collect and report data at the national level and used for data exchange, data collection, data access and quality improvement.

Aim and objectives

This study aimed to develop a comprehensive MDS for COVID-19 patients in Iran, with objectives to identify essential data elements and integrate the MDS into hospital information systems, enhancing data exchange and supporting decision-making.

Methods

In Phase 1, a comparative-descriptive study was performed based on the World Health Organization (WHO) and the Centres for Disease Control and Prevention (CDC) MDS (as contained in their respective Case Reporting Forms for COVID-19) for patients with COVID-19 and the extracted data elements were designed into forms for Iran. In Phase 2, a Delphi technique consisting of two rounds was conducted in 2020 in Iran and 50 experts in the management of health information were interviewed including clinicians (respiratory therapists and infectious disease specialists), health information technology, and medical informatics.

In the first round, a checklist of essential data elements (as extracted by the researchers) was revised and edited in person and electronically by experts. Then, in the second round, the refined checklist was sent to the experts and they were asked to express their agreement about each of the data elements based on a five-point Likert scale ranging from very high to very low. Further, an open-ended question was added to the checklist to gather further suggestions and opinions from experts.

In Phase 3, the MDS was categorised into 9 main terms and 80 sub-terms, which were recommended for implementation into all health information systems. The main terms include 1-patient identity information (4 questions), 2- patient symptoms (15 questions), 3-underlying disease information (11 questions), 4- history related to COVID-19 (11 questions), 5- diagnostic results Patient (15 questions), 6- development of the disease (11 questions), 7- occupation (5 questions), 8-discharge status (4 questions) and 9- diagnostic laboratory information (4 questions).

If 75% or more of participants chose “high and very high” options for each element, then it was considered the main term. If 50-75% of the respondents have selected the options of "very high and

high", the element will be considered as the recommended element, and if less than 50% of experts selected "very high and high" options for an element, the element will be removed. In our study, the perspective of clinical experts, information management specialists and medical informatics were analysed using descriptive statistics using SPSS software version 26.

Results

The MDS categorised into 9 main terms and 80 sub-terms were recommended for all health information systems. The main terms include 1- patient identity information (4 questions), 2- patient symptoms (15 questions), 3-underlying disease information (11 questions), 4- history related to COVID-19 (11 questions), 5- diagnostic results Patient (15 questions), 6- development of the disease (11 questions), 7- occupation (5 questions), 8- discharge status (4 questions) and 9- diagnostic laboratory information (4 questions).

Discussion

This study aimed to design a MDS for COVID-19 tailored to the Iranian community, facilitating data exchange, collection and quality improvement, and providing a model for Iran's hospital information systems. The MDS creates a standard method for data collection, facilitating data comprehension and comparison.

Conclusion

The COVID-19 pandemic has highlighted the importance of reliable and comprehensive data to effectively prevent, monitor, and manage the disease. Various challenges have been identified in data collection and information systems, including tracking, and recording information, lack of timely access to medical records, and inconsistencies in data elements. To address these issues and improve the quality and accessibility of health services, we developed a MDS specifically tailored to the needs of COVID-19 patients in Iran. The MDS aims to support integrated health services and offer comprehensive, valid, and accessible information for better decision-making and future planning. By standardising data collection and incorporating essential demographic and clinical data, the MDS will contribute to enhancing healthcare quality and efficiency, ultimately supporting the healthcare system's preparedness for potential outbreaks or similar public health emergencies.

Examining current measures to prevent failures to confirm imaging reports: Verifying the effectiveness of system improvements

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Introduction (including aims)

Since August 2018, our hospital has been taking measures to prevent the failure of the physician to check the diagnostic imaging report, and in October 2021, we launched a new system with several improvements to the messaging functionality of the electronic medical record which notifies physicians of the existence of reports. However, as cases may require close immediate examination, we are continuing our previous efforts to have them reviewed in a timely manner. Before the introduction of this system, the number of all unread reports was not known, but since August 2020, the number of reports requiring attention has been known. The criterion for determining that a report has been read is whether the assessment is documented in the medical record.

Aim and objectives

Here we examine the current status of these two measures and their effectiveness.

Methods

1. Brief description of the new system to notify the completion of diagnostic imaging reports.

2. Measure the unread rate for all reports in the new system for half a year from October 2021.

3. Compare the unread rates for cases requiring examination over a six-month period before and after system improvements.

Results

1. Three new function methods for report completion have been established in October 2021.

- Using the "To Do Mail" notification function provided in the electronic medical record. (When you press the report completion notification icon, you will see an "Open" button. Clicking that button will allow you to view the report. The icon then changes to "Opened")
- Reports completion notification function was established in the lower part of the "Toolbox" of the initial screen of the electronic medical record.
- The number of notifications for reports that have not yet been opened was displayed on the “Patient Bulletin Board", which opens automatically when the patient chart is opened.

2. Measured ‘unread’ rate for all reports in the new system.

The unread rate was 4.4% in Oct (2021), 4.0% in Nov., 4.1% in Dec., 5.4% in Jan (2022)., 6.9% in Feb., 2.3% in Mar. Of 14,843 total reports, 655 were unread, an average of 4.4%.

3. Comparison of the number of unread cases requiring close examination.

Number of unread cases.

- Before the system improvement (From Apr. 2021 to Sep. 2021) the average 24.0%, Total reports 25 cases, Total unread 6 cases, Minimum value 0 cases, Maximum value 5 cases.
- After the system improvement (From Nov. 2021 to Mer. 2022), the average 23.1%, Total reports 26 cases, Total unread 5 cases, Minimum value 0 cases, Maximum value 3 cases.

4. Effectiveness of the system change.

- Differences in these unread rate averages 0.9%. (Before:24.0% / After:23.1%).

Discussion

The new system has made it possible for physicians to become aware of the existence of reports and to easily access the reports using multiple methods. However, the percentage of unread reports for cases requiring close examination has decreased only 2.1% (Oct 2021 – Mar 2022) even after the system was introduced, so the contribution of the system has not been significant.

However, to prevent these inadequate checks from the risk management viewpoint, the physician in charge should not only read the report, but also understand its contents, and this evaluation should be clearly indicated in the medical record. One of the reasons for requiring such a description is that the content of the medical record is not only of value to just one doctor, but to contribute to team medical activities. We believe that this audit activity for cases requiring close examination contributes to safety management in that it confirms the fact that all cases are documented in the medical record, regardless of whether the report has been read or not.

Conclusion

Even if 100% of the reports are opened by the physician in the new system, we will continue to audit cases requiring close examination, as we believe that it is an important initiative to track them down to ensure their entry in the patient's medical record.

However, there are limits to leaving everything to human judgement and action. More effective information technology support is desirable.

We would like to continue our medical safety activities as a member of the team.

Diagnosis Procedure Combination coding issues in long-term care hospitals

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Introduction (including aims)

Since 1961 the Japanese National Health Insurance (NHI) system has been based upon a fee-for-service (FFS) reimbursement using a national price schedule. In Nov 1998, the Japanese government introduced a case-mix system, the J-Diagnosis-Related Group (DRG)/Prospective Payment System (PPS) trial for 10 national hospitals. The six-year trial ran from Nov 1998 to March 2004.

In April 2003, the next generation system, known as the Diagnosis Procedure Combination / Per Diem Payment System (DPC/PDPS) was introduced for the special functional hospitals (acute care). They are composed of 82 hospitals (80 University hospitals and 2 National centres) with collectively 66,497 beds. Since January 2022, the DPC hospitals are increasing to 1,764 hospitals (approximately 490,000 beds). They provide more than 60% of acute care beds in Japan.

The FFS system has contributed to the improvement of, and access to, medical care in Japan but led to an increase in the burden on the public. Now, Japanese medical expenses are more than $400 billion, so the government had to suppress medical costs as soon as possible. Since the introduction of the J-DRG system, coding issues have occurred. One of the problems is that ICD-10 was not adopted for medical claims under the NHI system.

In April 2010, DPC hospitals established a committee for coding accuracy when their unspecified codes (.9) exceeded 40% and there was a penalty. As a result, these levels fell from 40% to 20% by April 2012, and to 10% from April 2018.

To further improve coding accuracy at DPC hospitals, the Ministry of Health, Labour and Welfare (MHLW) decided to develop the “Coding Textbook”, a coding manual for use by DPC hospital committees to improve coding accuracy. Initially, DPC was a system for acute care. However, as the number of DPC hospitals grew they began to include hospitals with chronic care beds. Inconsistencies in the DPC system have been discovered.

In August 2021, the MHLW released a report revealing hospitals whose medical resource input and length of stay deviated from the average. Many of the factors were found in hospitals with long-term care beds.

Based on these results, the MHLW research team decided to examine the need to revise the coding textbook.

Aim and objectives

The aim was to investigate trends in ICD coding in chronic care hospitals and the presence of special factors that may need to be considered and if necessary, addressed in the revision of the coding textbook.

Methods

A purposive sample of 10 hospitals were selected on the criteria of having long-term care beds and employing Health Information Managers (HIMs) who are members of the Japan Health Information Managers Association. The participating hospitals were surveyed using validated items (147 items) to determine the necessity of revising the coding textbook.

Results

Some of the participating hospitals did not respond to all survey items because of the wide variation in hospital functions (i.e., some did not apply). Many reported a lack of understanding of coding.

Some participants reported that coding rules are well understood in their hospitals, but that only the HIMs understand them. In these (participant) hospitals, because they have HIMs, there were no issues related to ICD coding as reported by the MHLW.

However, it was suggested that the lack of diagnostic equipment and specialised physicians to make a definitive diagnosis in small long-term care hospitals may be limiting the reliable selection of a diagnosis.

Discussion

Despite differences in hospital functions, from the perspective of the participating hospitals' HIMs, most of the 147 survey items were issues related to the DPC system (covering acute care), and responses from long-term care hospitals regarding ICD coding and DPC classification were not considered to be particularly problematic. Therefore, it was determined that there was no need to be overly conscious of long-term care hospitals regarding coding textbook revision.

Conclusion

From the survey of cooperating hospitals, it was inferred that a major factor in improving the accuracy of DPC classification is the presence of personnel (in this case, HIMs) who understand the ICD rules and coding textbook and who can fully communicate with physicians and others in the surrounding area. However, it also became clear that the DPC system, originally intended for acute care, has its limitations.

Telepsychiatry Readiness Assessment: Case study at Dr. Soeharto Heerdjan Hospital, Indonesia

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Introduction (including aims)

Telepsychiatry refers to one type of telemedicine service which provides medical services related to psychiatry such as psychiatric evaluation, therapy (individual therapy, group therapy, family therapy), patient education, and therapy management using interactive telecommunications equipment that includes audio and video. During the COVID-19 pandemic, the use of telemedicine was a solution for people who needed health services. The Ministry of Health Republic Indonesia established the circular letter number HK.02.01/MENKES/303/2020 regarding the Implementation of Information and Communication Technology in healthcare, to allow continuity of care while preventing the spread of Corona virus disease 2019 (COVID-19). Dr. Soeharto Heerdjan hospital deployed telepsychiatry in May 2022 to ensure that patients with mental disorders could continue to receive treatment and their conditions remain stable. Initially the service did not run optimally, due to several obstacles, such as there being no registration officer who answered patient's messages, unscheduled telepsychiatry service, no designated consulting room, and most patients or patient representatives being unable to use telepsychiatry applications.

Aim and objectives

This study aimed to assess telepsychiatry readiness at Hospital Dr. Soeharto Heerdjan.

Methods

An observational survey was conducted in April-May 2022 with a sample of 40 members of the telepsychiatry workforce by using the Telehealth Readiness Assessment (TRA) tool. The TRA tool has five key domains associated with readiness for the successful implementation of telehealth, including Core Readiness, Financial Considerations, Operations, Staff Engagement, and Patient Readiness.

This tool includes a questionnaire, scoring sheet, supporting guidance, and additional resources. Scores indicate if a practice is in the beginning stages or has not yet considered aspects related to the concept (Low, scores ≤ 50%), has considered some aspects but shows a need for some improvement (Moderate, > 50% and ≤ 75%), or has considered many aspects and is in the more advanced stages of readiness (High, scores > 75%). The overall readiness score is a weighted average of the concept scores included within each of the five domains.

Ethics approval was received from the Hospital's Ethics Committee (approval number 0923-02.045/DPKE-KEP/FINAL-EA/UEU/III/2022).

Results

Of the 40 respondents: 72.5% were female; 42.5% between 31-40 years old. Scores for the five domains for telepsychiatry readiness were: 1) Core Readiness score was 651 or 90.42% (high more advanced stages of readiness), 2) Financial Considerations score was 333 or 73.03% (moderate), 3) Operations score was 317 or 68.57% (moderate), 4) Staff Engagement score was 252 or 62.41% (moderate), and 5) Patient Readiness score was 293 or 64.67% (moderate), i.e., have considered some aspects but show a need for some improvement. The overall total readiness score was 70.05%.

Discussion

In a total of 5 aspects of telepsychiatry readiness, the level of readiness for the implementation in Dr. Hospital Soeharto Heerdjan was 70.05% or at a moderate level. The aspect of core consideration scored the highest, while in the other 4 aspects, the readiness for implementing telepsychiatry was at a moderate level. Dr. Soeharto Heerdjan needs to increase readiness in aspects of financial considerations, operations, staff engagement, and patient readiness. It also needs to develop goals based on the expected use of telepsychiatry and its benefits, what goals can be measured, consideration of the number of encounters or outcome measures for a subpopulation and to establish guidelines for when to expect to use telepsychiatry and keep that in mind when defining goals.

Conclusion

Dr Soeharto Heerdjan Hospital needs to improve aspects of readiness, including providing a workforce for patient registration of telepsychiatry, drug delivery, scheduling, designated consultation rooms for telepsychiatry services, user-friendly telepsychiatry applications, and electronic media for information on telepsychiatry services.

What's holding us back? Barriers to HIM Professionals' investigator involvement in research

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Introduction (including aims)

Society highly values health and medical research [1]. Health information-based research has become commonplace, complementing more traditional approaches. It involves the secondary use of data from health information registries and databases, including electronic medical records. Technologies support previously infeasible studies that lead to 'new insights regarding health and disease' [1].

Globally, Health Information Managers (HIMs) are the data custodians for the vast bulk of patient administrative data. They are the curators to whom researchers apply for access to patient data. HIMs and Clinical Coders (CCs) are specialists within their domains of expert work and would be an asset as collaborators on any research project involving these patient data. It is crucial for both the positioning of the health information management profession and the expansion and currency of its knowledge base, that both HIMs and CCs share and disseminate their knowledge and experience via publication of their workplace-based studies and research project outcomes [2],[3].

In 2015, in recognition of the need to increase HIM participation in research, the Health Information Management Association of Australia (HIMAA) included the following statement in *the HIMAA Professional Practice Guidelines for Health Information Management Professionals:* 'Members of the Health Information Management Association of Australia (HIMAA) shall: '… '8. Advance health information management knowledge and quality practice through continuing participation in **education, research, publications, presentations, and interdisciplinary collaboration**. HIM Competency Domains Cross-Referenced: A1, A2, A6, A7, E' (emphasis added) [4].

A 2021 examination of articles published in *Health Information Management Journal* (*HIMJ*) (HIMAA's academic peer-reviewed journal) in 2016-2020 found that only 34.5% of articles involved at least one HIM as an author – the other 65.5% were published on HIM professional knowledge domains by clinicians, pharmacists, public health specialists, non-profession specific health researchers, health informaticians, and nursing and allied health professionals [2]. This finding suggests there is a great need to engage HIMs in research and publication.

To encourage research investigator participation by HIMs and/or CCs, and to explore attitudes to their investigator participation, the HIMAA Research Advisory Committee (RAC) undertook survey of the HIMAA membership in 2022.

Aim and objectives

The aims of the project were to investigate HIMAA members':

- Interest in investigator involvement in research projects
- Current exposure to/opportunity for investigator involvement in research projects
- Areas/topics of research interest for research projects
- Barriers to investigator involvement in research projects.

Methods

A survey of 18 questions was created in REDcap, and an electronic link to the survey form was distributed to the HIMAA membership by the Membership Officer, thereby protecting the privacy of individual members and ensuring anonymity of the participants. Questions were designed and revised by RAC members (HIM professionals, educators, and researchers with decades of experience in their roles), and included four characteristic variables (aggregated to test for representation of the membership), and 14 questions to elicit information about types of organisations and roles in which they were employed (categorical responses based on four domains of specialist professional knowledge)[5]; level of education; current and previous experience as an investigator in research; interest in future research participation, including as a professional development activity or for a higher education degree and/or mentorship; and what barriers prevented them from involvement in research projects. Most questions (15) were categorical, and three were open-ended for free-text responses. Descriptive analyses of categorical variables were performed in Microsoft Excel. Qualitative analyses of open-ended questions were undertaken in NVivo software. The survey was undertaken in June-July, and September-November 2022. The project was approved by the Human Research Ethics Committee of The University of Sydney (Protocol No. 2022/385).

Results

The results are being analysed and initial results will be presented at the IFHIMA Congress 2023 (aggregated data).

Discussion

While many HIMs do participate in research investigations, these results will (potentially) highlight areas of research interest by HIMAA members. Discovering the barriers to research participation will provide avenues on which to focus redress.

Conclusion

Greater recognition of research as an advantageous, valuable professional development activity will strengthen the health information management profession by enriching the next generation of HIM professionals, educators, and researchers, to strengthen the profession.

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Health Information Managers and professional development: A cross-sectional analysis

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Introduction (including aims)

Continuous professional development (CPD), the maintenance of profession-related skills and knowledge, is considered necessary for health professionals' knowledge-skills currency and relevance [1]. Professional bodies often initiate CPD activities [2]. Internationally, health professional bodies are increasingly attempting to provide CPD for improved practice [3]. Engagement in CPD can also promote career advancement opportunities and strengthen one's feelings of belonging within a profession [4]. In the health information management sphere, the American Health Information Management Association (AHIMA) and the International Federation of Health Information Management Association's (IFHIMA's) Global Health Workforce Council developed a set of internationally applicable professional competency standards for the health information management, health informatics and health information and communications technologies workforces [5]. The aim was to support skills and knowledge development across these health information professionals' formal studies and strengthen the workforce. Similarly, one purpose of the Health Information Management Association of Australia's (HIMAA, 2017) professional competency standards is to "guide continuing professional development and programs for individual health information managers (HIMs)" (p.5) [6].

Aim and objectives

This paper reports the findings of a component of a larger study which investigated the motivation and professional identity of four cohorts of Australian HIMs. The aims of this paper are to:

1. Determine the level at which Australian HIMs engage with their professional association, as measured by their involvement in extra-curricular activities; and,
2. Examine the reasons why these HIMs consider CPD to be an important activity in their careers.

Methods

A cross-sectional study design was utilised. Following ethics approval, an online survey was sent to 99 HIMs from the 1985, 1995, 2005 and 2015 graduate cohorts from an Australian health information management or medical record administration university course in the state of Victoria. Subjects were identified via university databases, the researchers' professional networks, and LinkedIn. The survey items reported herein were developed by the research team to elicit information on the HIMs': involvement in HIMAA-related activities and committees; attendance at conferences, and seminars/webinars; and perceptions of the (un)importance of CPD. The

quantitative data were analysed using descriptive statistics, and content analysis was used for the qualitative responses.

Results

The survey response rate was 72.7% (*n* = 72). Around 43% of respondents had been involved in one or more of HIMAA's extra-curricular activities, including: special interest or working groups; professional credentialling schemes; state branch executive; board of directors; editorial board of *Health Information Management Journal;* editorial sub-committee of *HIM-Interchange;* and membership of other HIMAA (sub-)committees. Over half of the respondents (56.9%) had not engaged in any of these activities. About 72% had attended one or more of the following events: a HIMAA national conference; an IFHIMA conference; or a HIMAA webinar/seminar. Over two-thirds (70.8%) agreed that engaging in CPD was important to them; 9.7% disagreed and 19.4% were unsure. Professional development was considered important for assorted reasons: networking and connectedness with peers; continuous learning, professional growth, and skills development; keeping abreast of changes in the profession; insights into the work of other organisations; and remaining current with new health technologies/practices.

Discussion

Healthcare is rapidly changing with evolving technologies and practices. Beesley et al. (2020) observed that HIMs must continue to build their knowledgebase and develop their skills to ensure alignment with industry needs [7]. This is embedded in HIM professional competency standards and codes of ethics [8],[9],[10]. The findings revealed that a large proportion (70.8%) of the participants acknowledged the importance of CPD; however, of concern, are the 27.1% who disagreed or were unsure.

Conclusion

This study identified a need for HIMAA to strengthen HIMs' engagement with their professional association and to ensure their commitment to career-centred lifelong learning.

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Exploring automation of morbidity data capture from structured health records

Sam Yan[1], Heather Grain[1].

[1]Global eHealth Collaborative, Melbourne, Australia.

Introduction (including aims)

Automation of morbidity data capture is being explored using “smart technologies”, including machine learning, natural language processing and mapping. These technologies struggle to achieve high accuracy when automating coding as they are largely limited to diagnosis extraction from text without consideration of coding rules.

There is evidence of the use of maps to provide limited automation from structured health records, such as those where SNOMED CT is used in the record for the diagnosis field. However, these approaches are insufficient to apply coding standards or rules.

OpenEHR provides a structure for standardised health records.

Aim and objectives

This presentation reports the viability of morbidity data automation and clinical coding standards algorithms based on this record structure.

Methods

A rule-based approach will be applied to develop automation algorithms for a selection of Australian Coding Standards (ACS).

Analysis began with ACS 0503 Drug, alcohol, and tobacco use disorders for tobacco use, to create a workflow defining the data and rules applicable. This standard was chosen because a code value to assign for each circumstance is defined, other standards with similar features will be identified, but not investigated at this stage.

For the standard ACS 0503, automation factors analysed include:

- What data is needed in the record to apply the rule;
- Is that data available in the standard record structure;
- Application of each rule to return relevant code value(s);
- Identification of barriers to automation;

Based on the understanding of the automation factors, algorithms will be

1. built to verify if the standards and the standard record structure support automation of this ACS 0503 for tobacco use coding.

2. tested to see if it is possible to extract the correct ICD-10-AM tobacco use codes from openEHR structured health records.

The automation factors of other standards will be investigated based on the initial results, but related algorithms will be developed in the next stage of the research.

Results

The workflow choices to apply the ACS 0503 for tobacco use are demonstrated in Figure 1. The computer system will review the patient's documented health record data fields for the relevant episode of care.

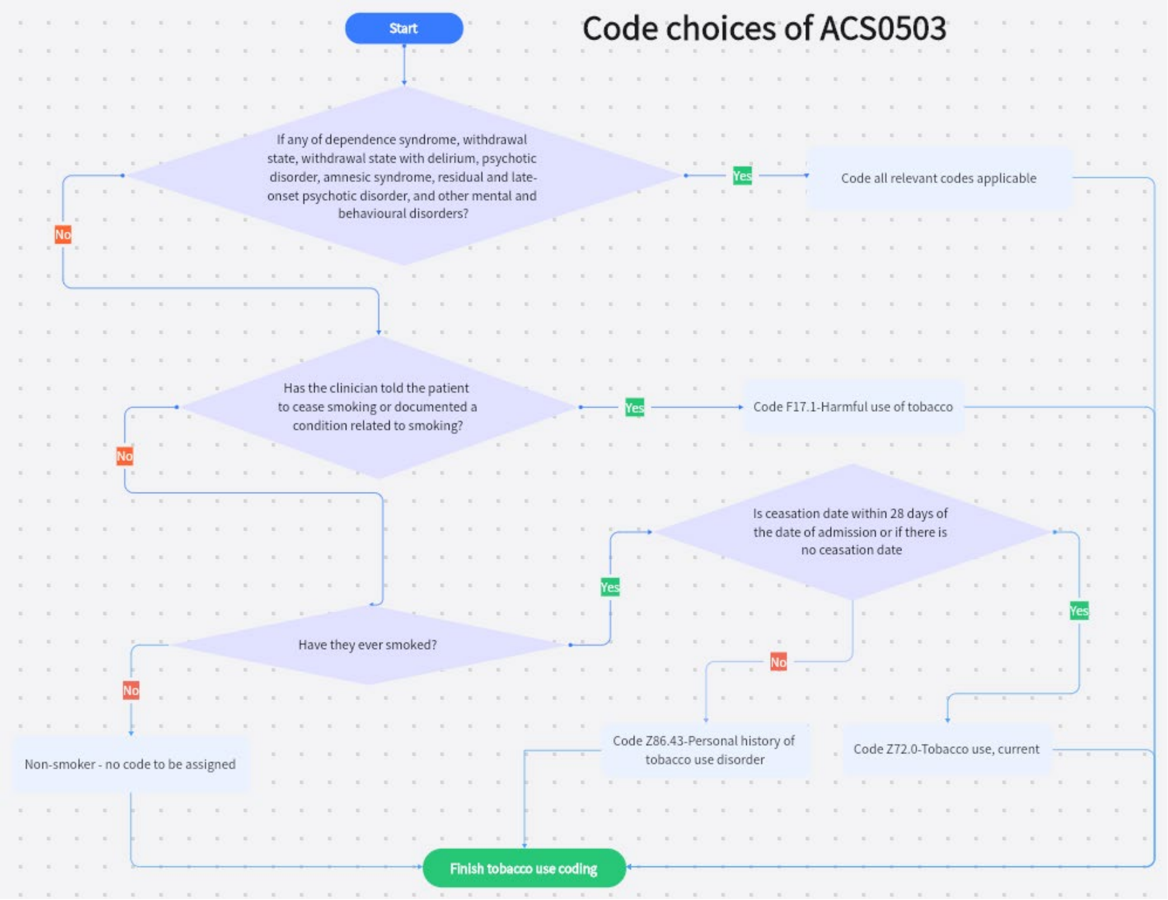

Figure 1: Associated ACS 0503 code values for each coding rule identified.

Although this suggests that automation algorithms could be developed for ACS 0503, barriers were identified in this approach. The barrier associated with F17.1 is that decisions on a list of "harmful conditions" need to be made. For this research, this barrier was resolved by an investigation of literature regarding illnesses caused by smoking. This process is also highly dependent upon the data structure being standardised and each relevant data element coded, using a standard system such as SNOMED-CT. Other standards which represent clear rules will be investigated, particularly the ACS 1500 - 1552 - Pregnancy, Childbirth, and the Puerperium standards.

Discussion

Morbidity data collection is expensive and highly complex. There is the potential to automate clinical coding, with the automation of standards where the data elements are atomic, and standardised data elements and codes used. This allows experienced coders to focus on complex coding. This research proved that this approach is viable.

ICD standards need to be structured so that rules and logic are easier to understand and consistently apply. These factors, particularly the data elements and SNOMED-CT values could be used in the published ICD-10-AM coding standards in the future. This enables the automation of simpler coding tasks and produces more consistent and quality-assured code collection.

With the introduction of ICD-11, it is time to consider how morbidity data is collected and to leverage the opportunities offered by standards. The design of morbidity data needs to consider the structure of the reportable data. Smoking status should be reported as a specified field of health status information in morbidity reporting - not included in the list of diagnoses.

Conclusion

Rule-based automation of morbidity data from structured EHR is viable and logical. Although barriers exist, they are solvable.

Empowering patients and caregivers with a home care platform for real time interchange and integration of data: The experience of HomeConnect

Guillermo Paluzie[1], Griselda Manzano[3], Esther Ferrer-Cobo[4], Monica Gomez-Lopez[3], Joan Garcia-Vilches[5], Ana-Belen Fernandez-Guerra[3], Eva Ochoa-Nieto[6], Javier Zambrana[7], Enric Llopis[8].

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Introduction (including aims)

Digital Health applied to the group of chronic patients provides new alternatives in healthcare. mHealth, among others, offers support and tools to health professionals in the field of Home Care, promoting a different organisation with new work dynamics and simplifying the management of patients at home. Furthermore, it facilitates patient-centred care and gives users/patients an active role in their health process.

Aim and objectives

The aim of this study is to design, develop, and implement an mHealth platform (HomeConnect) for the Hospitalisation at Home (HaH) team (serving over 1,200 patients per year), which allows for the real-time integration and exchange of data.

Methods

A non-randomised intervention study is planned for 2023. The intervention group will recruit 400 patients with either COPD or heart failure and will provide HaH care using the HomeConnect platform. These patients will be followed for an additional month. Meanwhile, a control group of 400 patients will receive regular HaH care. The HomeConnect platform involves installing the application on the patients' or caregivers' Android phones, allowing them to send vital signs and patient-reported outcome measures (PROM) to the HomeConnect platform. An expert panel of respiratory pathology specialists previously selected 11 basic questions for the PROM form, as well as a minimum of vital signs such as temperature, systolic BP, pulse rate, and oxygen saturation percentage, which patients or caregivers are required to record at home using the mobile application, either manually or automatically with medical devices. The collected data are then sent to both the HomeConnect platform and the corporate HIS, enabling healthcare professionals to access real-time patient information. Data for analysis will be collected by extracting HaH activity files. The hypothesis is that the use of the HomeConnect platform will result in a shorter length of stay, early detection of potential complications, and a reduced readmission rate, better indicators compared to the control group. The study was approved by the Ethics Committee (CEIm [63/21]) prior to its initiation.

Results

A pilot study was carried out in September and October of 2022 to test the feasibility of the platform in real-world use. After two months, 171 selected COPD and Heart Failure patients were admitted to the HaH unit: 47% of patients were women, with age distributions as follows: <65 yrs (21%), 65-84 yrs (48%), >84 yrs (31%). Ten patients (5.8%) died, and the average length of stay was 5 days. Patients recorded an average of 41 vital signs during their hospitalisation, and 46 patients (27%) answered the PROM questionnaire. Finally, professionals reported that they found the HomeConnect platform to be simple, convenient, adequate, and pleasant to use in clinical practice.

Discussion

The use of HomeConnect facilitates early decision-making based on observed data (PROM and clinical parameters) and detects patients at the highest risk of complications. It also empowers patients and caregivers by involving them in their health process alongside health professionals. It is important to evaluate the value given to clinical measures obtained by professionals at the bedside versus those obtained by patients/caregivers themselves. The pilot test experience shows that proper training of patients and caregivers resolves most issues.

Conclusion

It is possible to design and implement a work platform (HomeConnect) in the hospitalisation at home environment that integrates clinical data in real-time from the corporate HIS, professionals at the bedside, and patients. The unique feature of the HomeConnect platform is its design to integrate all applications needed by healthcare professionals in home care with the active collaboration of patients at home.

Benefits of a shared simulation environment for clinical coder training

Megan Deutsher[1], Nandan Cox[2], Heather Grain[1].

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Introduction (including aims)

Clinical coder education is a method to improve coding quality (McKenzie 2004).[1] Standardisation through technology use is proposed as one solution to decrease the variability in training and improve professional career outcomes (Crook et al, 2022).[2]

A new online learning environment was specifically designed, from extensive collaboration with industry-based senior coders, to support clinical coder education. It consists of cloud-based shared health record simulation (eHRoL) and learning management system (LMS) containing validated standard answers to all coding questions. Automated standard responses are provided to students when their coding results display an error based on those validated standard answers. This provides consistency regarding coding rule interpretation and responses to known types of errors. The eHRoL LMS is owned by the Global eHealth Collaborative (GeHCo), a not-for-profit organisation, made available under license to external national and international education providers.

Aim and objectives

The aim was to compare the eHRoL LMS to previous coding education methods, to improve the quality of clinical coder education.

Methods

All participants had access to the cloud-based LMS. Invitations to complete a survey were sent electronically to all (n=24) international and national current teachers from multiple training organisations using this simulation LMS. Consent was provided as part of their response.

Results

The response rate was 37.5%. Table 1 summarises survey responses to specific educational elements on a Scale of 1-5. All participants believed their knowledge increased with the use of shared answers and resources; 87.5% (7) reported time saving; and 75% (6) reported that it gave them confidence in their answers. Qualitative data highlighted that 33.3% (2/6) believed the immediate positive feedback enhanced student's confidence in their learning; 33.3% (2/6) said that access to the wide variety of records of differing complexity and specialties was beneficial. The 3 most important benefits of teaching with the simulated LMS were:

- Increased knowledge gained through sharing of knowledge amongst teachers, 50% (3/6)
- Automated feedback to students, 33.3% (2/6)
- Practice and the "ability to make up for a shortfall in placement sites", 33.3% (2/6)

Table 1: Perceived benefits of teaching with a simulated LMS

	Number (%) of respondents (*n=9)*				
Educational Element	1 Not beneficial	2	3	4	5 Very beneficial
A resource for students to practice coding				3 (33.3%)	6 (66.7%)
A standardised assessment of student's coding competence				6 (66.7%)	3 (33.3%)
A workplace simulated environment		1 (11.1%)	1 (11.1%)	6 (66.7%)	1 (11.1%)
Practice with real world medical records			1 (11.1%)	6 (66.7%)	2 (22.2%)
Quality and consistency with agreed upon answers and feedback		1 (11.1%)	3 (33.3%)	4 (44.4%)	1 (11.1%)
Reduced time for marking and provision of feedback to students			2 (22.2%)	5 (55.6%)	2 (22.2%)
Reduce time spent on updating resource material to a new code system			2 (22.2%)	5 (55.6%)	2 (22.2%)
Access to student progress and assessment reports			2 (22.2%)	4 (44.4%)	3 (33.3%)
Improved quality of graduate's coding				6 (66.7%)	3 (33.3%)
Improved employability of graduates (n=8)				5 (62.5%)	3 (37.5%)

The perceived weaknesses of the simulation LMS (n=5) related to some discrepancies in the automated answers and feedback (60%, 3/5) and the quality of the documentation (40%, 2/5).

Of the 9 participants, 6 (66.7%) reported having taught clinical coding with another teaching method. Table 2 summarises the perceived improvements in the educational elements using a simulation LMS with shared, quality assured answers and feedback to students. Overall, 66.6% (6) preferred using the simulation tool compared to their previous teaching method. All respondents were satisfied (7 - 77.8%) -very satisfied (2 - 22.2%):

- with the simulated LMS for clinical coder training,
- would recommend such tools to other educators and
- were confident the students are work ready on completion.

Table 2: Perceived improvements in educational elements using a simulated LMS

Educational Element	% participants who believed element improved
Number of episodes available for students to practice	100% (6/6)
Assessment of students' coding competence	83.30% (5/6)
Access to simulated workplace environment	50.00% (3/6)
Access to real world medical records	66.70% (4/6)
Time spent on marking and feedback	83.30% (5/6)
Quality and consistency of answers and feedback	66.70% (4/6)
Access to student progress and assessment reports	66.70% (4/6)
Time spent on updating resource material to new code system	66.70% (4/6)
Quality of graduates' coding ability	33.30% (2/6)
Capacity to tutor more students	66.70% (4/6)

Discussion

The simulation LMS improved assessment and practice and provided an alternative to hospital placements which are in shortage. The increased confidence in the skills of those trained with the tool as work ready is encouraging, leveraging:

- The variety and complexity of real-world records (Grain. 2022)[3]
- The ability to practice without supervision (new and existing coders)
- Reduced tutor, mentor and educator time required for marking and feedback. This should be further investigated and quantified.

A simulation LMS may support continuing education within the hospital system by providing:

- a more cost-effective way to develop coder skill within the organisation, through reduced supervision time; improved consistency; and greater confidence in training outcomes.
- the ability to manage focused improvement on specific specialties or coding issues.

Ambiguity in some records was perceived as a weakness. In reality, notes are not always detailed or easy to read, and trainee coders need to learn how to handle these situations. Disagreement on correct coding answers was also noted as a weakness, reflecting the lack of consistency in current educational approaches and standards interpretation. A shared approach achieves some consistency and highlights areas for improvement in the absence of total clarity of coding standards. An open and shared environment where debate is encouraged should be considered.

Conclusion

The shared simulation LMS was beneficial, providing educational improvements. Serious consideration of this approach is needed to enhance clinical coder education.

Please note: Details of all references are available from the authors.

Risk analysis in promoting the improvement in dental and oral health and extending health life expectancy in the Japanese population

Aya Takahashi[1], Haruka Tabuchi[2], Mieko Suehuku[1].

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Introduction (including aims)

The ’Health Japan 21’ patient survey that the Japanese Ministry of Health, Labour and Welfare carries out is an extremely important investigation for the purpose of getting the basic data of medical care administration by clarifying the actual diagnoses and injuries for patients using hospitals and clinics (hereafter "medical facilities") and estimating the number of patients according to the area.

Aim and objectives

Using the ‘Health Japan 21’ survey data, we aimed to investigate the effect of the 2000 "Health Japan 21" campaign on improving the dental and oral health of the elderly.

Methods

The number of the patients who consulted the dental clinic during 1999-2017 were calculated according to the disease classification, sex, the age-grade, and dentistry consultation rate (estimated number of patients per 100,000 population). Diseases are classified by applying the Statistical Classification of Illnesses, Injuries and Causes of Death based on the International Statistical Classification of Diseases and Related Health Problems (ICD). Permission and ethical approval were unnecessary for acquisition of the information, as the data were anonymised before extraction. The data for this investigation were from grouped medical facilities from the whole country, for each area and facility, using a stratification random sampling method. The statistical number of patients is the estimated number of patients who visited medical facilities on the day of the survey (per day). When a questionnaire was not submitted by the deadline, an appeal was carried out from the public health centres.

Results

Elderly patients (65 years and older) seeking dental care has increased progressively in recent years. In 2008, in the age group of 55-60 years, the numbers of both male and female patients seeking dental care increased significantly (1.5-fold for men and 1.4-fold for women). The main problems for which the number of patients increased were prostheses for missing teeth (Z46) in males and chronic periodontitis (K05.3) in females.

In 2017, in the age group of 65-70 years, both male and female patients seeking dental care increased 1.5-fold. The main problems for which dental care was sought were chronic periodontitis in males and chronic periodontitis and prostheses for missing teeth in females. In both years, the number of female patients was greater than the number of male patients. In 2000, the national government set goals for dental health in the 'Health Japan 21' campaign as a part of the government health policy. The numbers of patients receiving dental care per 100 000 population in 1999 and 2017 were compared after age adjustment. The results showed that, in 2017, the number of patients increased 2.03-fold for gingivitis and periodontal disease, whereas it was 0.93-fold for dental caries and 1.31-fold for prostheses for missing teeth.

Discussion

The age of groups showing a significant increase in the number of patients receiving dental care has increased more and more in recent years. However, the reason remains unclear, whether it is a result of postponed treatment due to the extended retirement age, or whether health conditions of teeth have improved. The dental care-seeking behaviour suggests marked improvement (since 2008) in dental health consciousness in people aged 55 years and older, compared with that before the campaign. On the other hand, the numbers of patients with gingivitis and periodontal disease doubled. Since periodontal disease increases the risk of various systemic diseases, it may become a risk factor that disturbs the extension of healthy life expectancy. Therefore, we hope that dental check-ups will become mandatory for elderly people.

Conclusion

A data analysis of published patient surveys showed that the 'Health Japan 21' campaign was beneficial in raising awareness of dental health and delaying the timing of tooth loss. Accurate, timely, coded data remain imperative to ongoing assessment of this public health strategy.

Strategies to increase patient flow in the ED

Judith Jones[1], Roger Mayer[2].

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Introduction (including aims)

Overcrowding in emergency departments (EDs) is a systemic issue, which has resulted in inefficiencies affecting the quality of patient care. Hospital leaders struggle with reducing bottlenecks in EDs and providing care to patients in an efficient manner. Prior to Covid 19, there was already a shortage of doctors in the United States. The Association of American Medical Colleges projected that in 2025, the United States would need 46,000 to 90,000 more physicians to meet patient demand, not including specialists (Whiteman, 2015).[1] Additionally, with the onset of the pandemic, there came a greater burden on our healthcare system with a substantial amount of fallout.

Technology is an efficient way of triaging patients, managing wait times, and communicating with key stakeholders within the ED and hospital. Over the last decade, the healthcare sector has accelerated its digitisation and use of electronic health records; the notion of intelligent health has also increased in popularity. EDs are leveraging technology to ensure that patient care is timely and not compromised. In this presentation, we will highlight key emergent technology that will impact ED efficiency.

Aim and objectives

Grounded in general systems approach, the purpose of this presentation is to explore the use of current and emergent technologies to reduce inefficiencies in EDs.

Methods

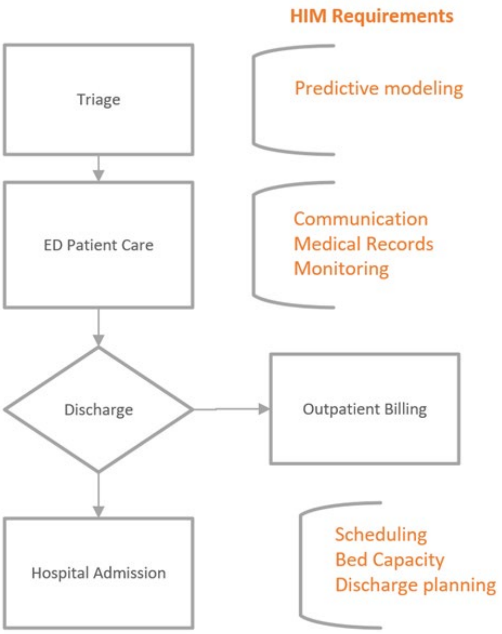
Data collected from semi structured interviews with key stakeholders, supplemented with a review of organisational documents and artifacts, were analysed, using Yin's five-step data analysis process. Yin's process is a model of data analysis outlined in the five steps of: compiling, disassembling, reassembling, interpreting, and concluding.

Results

Three themes emerged:

- communication
- triage and workflow
- staffing.

Further details will be presented about the application of technology to help predict patient flow.



Discussion

Technology improves communication and enhances prediction ability in ED patient flow and triage. The framework of technology starts at the point of entry through to discharge or admission into the hospital. The unpredictability of patient flow in the ED is compounded by staffing issues, especially since the ED must include full-time staff 24 hours a day, 365 days a year. Therefore, hospital leaders benefited from the results of this study by identifying methods to increase efficiency by using technology in the ED.

Conclusion

A key recommendation for healthcare leaders is to communicate, share information, and increase collaboration between clinical staff and patients. The implications for positive social change include improving efficiencies in EDs, which could potentially benefit the care for citizens of local communities.

Please note: Details of all references are available from the authors.

Influence of Health Information Management on HIV/AIDS surveillance data in tertiary health institutions in north-east Nigeria

Babale Garba Nafada[1], Vincent Unegbu[1].

[1]Babcock University, Ilshan-Remo, Ogun State, Nigeria.

Introduction (including aims)

Understanding of HIV/AIDS surveillance data will not only enable healthcare providers to integrate patients' information on diagnosed, newly infected, behaviour and transfer from mother to child but also enhance the determination of impact, spread, risk and transmission of the disease.

Aim and objectives

The study evaluated the influence of health information management education practice on HIV/AIDS core, incidence, behavioural and enhanced perinatal surveillance data in tertiary health institutions in North-East, Nigeria.

Methods

The descriptive survey design was used in the study. A total of 382 healthcare providers were proportionately selected out of a population of 5,050 from the whole 9 tertiary health institutions in the North-East. A self-structured and validated questionnaire was used for data collection. Data analysis involved the use of mean and standard deviation as well as simple regression.

Results

The study revealed a low understanding of healthcare providers on HIV/AIDS core, incidence, behavioural and enhanced perinatal surveillance data (mean = 2.69)(SD = 0.889) while a high score level of understanding of health information management education practice was revealed (mean=4.69)(SD = 0.228).The tested hypothesis revealed that HIM education practice had significant influence on core, incidence, behavioural and enhanced perinatal HIV/AIDS surveillance data in tertiary health institutions in North-East, Nigeria. (Adj. R^2 = 0.454, F (380) = 317.408, $P < 0.05$).

Discussion

The study underscores the need for regular training of healthcare providers to understand the importance of integrating through sorting, categorising, and classifying HIV/AIDS core, incidence, behavioural and enhanced perinatal surveillance data in the tertiary health institutions in North-East, Nigeria.

Conclusion

It was recommended that the management of 9 tertiary health institutions in the North-East, should appreciate the understanding of health information management education practice by healthcare providers which in turn enhances the integration of HIV/AIDS core, incidence, behavioural and enhanced perinatal surveillance data through sorting, categorising, and classifying of the disease by type.

Implementing ICD-11: Tipping point for change

Heather Grain[1], Megan Deutsher[2].

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Introduction (including aims)

The quality of inpatient morbidity data is paramount to funding, public health and planning. Research has identified quality issues in these data, with improved collection, education, and standards as recommended solutions. However, the literature is not demonstrating improvement (O. Olagundove, 2021). ICD-11 is a tipping point for change to improve quality. This research analyses the inpatient morbidity data collection structure and the potential to improve quality through improved data design.

Aim and objectives

The aim of this research is to identify the potential to use improved data structure and system capture design concepts in ICD-11 implementations to deliver improved data quality.

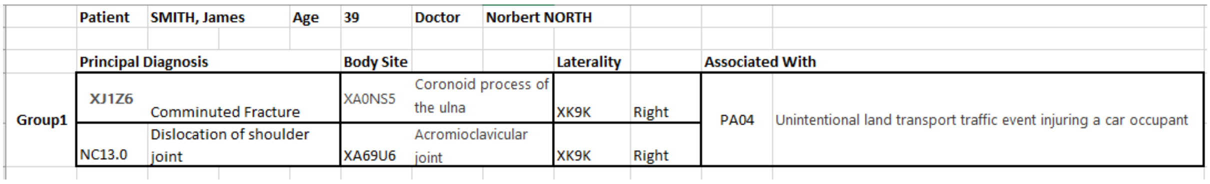
Methods

The method involved an evaluation of the systems used to collect and represent morbidity data from 3 countries (USA, Australia and UK) and how these systems compare to the requirements specified in 'ISO/IEC 25012 Software engineering - software product quality requirements and evaluation - data quality model'. Each of these potential data quality areas was then analysed to see how the implementation of ICD-11 could be used in combination with these modern design principles to positively impact data quality. The analysis considers the structure of ICD-11 in general rather than specific codes or groups with a focus on the utility for morbidity data capture.

Results

The results indicated that modern data design approaches to structured data, including 'collect once, use often' and atomic data component design in conjunction with ICD-11 offers improved concept representation and potentially improved data retrieval and analytics. The following results were found based upon the data quality characteristics:
Accuracy: Data that are consistent and clear must be precisely defined. ICD-11 provides a glossary, but it is incomplete and not always consistently applied. Example: 'Associated With' used to represent different entities, such as associated conditions without causal relationships, condition onset or cause of injury.
Consistency and completeness: Inclusion of concepts which are collected 'if desired" such as laterality, will require the use of clear coding standards if consistency is to be achieved. Current coding standards are unclear, neither is it clear how this will be managed in ICD-11.
Efficiency and Accuracy: Where data systems exist, such as admission and discharge systems, re-use of existing data (e.g., from admission and discharge systems) is best practice rather than recollection

e.g., ‘age’ - (rather than selection of an age group in ICD-11) or type of admission (no overnight stay). *Accessible and Understandable*: Post coordination in ICD-11 is exciting. However, there are simpler ways to achieve this rather than concatenation of concepts into a single code which does not make data collection or retrieval easier. Improved data collection systems are needed where each additional type of information is collected in defined fields (example Figure 1)



	Patient	**SMITH, James**	**Age**	**39**	**Doctor**	**Norbert NORTH**				
	Principal Diagnosis			**Body Site**			**Laterality**		**Associated With**	
Group1	XJ1Z6	Comminuted Fracture		XA0NS5	Coronoid process of the ulna		XK9K	Right	PA04	Unintentional land transport traffic event injuring a car occupant
	NC13.0	Dislocation of shoulder joint		XA69U6	Acromioclavicular joint		XK9K	Right		

Discussion

Using common EHR structures to automate and inform the coding process was identified as a potential area of improvement in system data capture. ICD-11 uses terms with specific meanings which need to be singular and consistently applied throughout the classification. Improvements in writing coding standards, guidelines and rules is essential to ensure greater consistency, accuracy and comparability of data and the use of decision logic should be considered.

Health records data should support more consistent, quality, evidence-based data and simplification of coding. Concatenation of codes into a single concept NC13.0&XK9J&XA69U6/PA04&XE6NQ&XE47R does not simplify data collection nor data analytics. To the IT mind this looks like encryption where meaning is being purposely hidden, which is not the intent and can be better achieved. Terminology service software is needed to simplify the process, but this is expensive and not available to all. The current approach has built local or national based information models and data capture systems which are very manual and skill dependent. This results in expensive implementation where every organisation expends considerable resources in obtaining data and results are inconsistent. Our systems currently collect a string of data without structure - no longer a viable option.

Conclusion

Inpatient morbidity data must modernise and develop a data structure more aligned with quality data practices. Rather than more codes, our code systems need better structure, and we should move away from the flat list of codes and incorporate structure where the relationships between diagnosis and causal factors, status information are clear. Such systems are easier to build and maintain and deliver higher quality data. ICD-11 is well designed to be part of this modernisation. This is not a threat to coders, but an opportunity for improvement. The Profession needs to work with those skilled in data representation to consider these opportunities NOW.

Please note: Details of all references are available from the authors.

What stroke doctors should know when introducing the ICD-11

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Introduction (including aims)

If ICD-11 is introduced, detailed coding may not be possible if doctors do not know what documentation is required in medical records for accurate coding with ICD-11.

Aim and objectives

The purpose of this presentation is to extract and enlighten what stroke physicians should know for accurate documentation after the transition to ICD-11.

Methods

We compared changes from ICD-10 to ICD-11 regarding "cerebrovascular disorders" in which stroke physicians are involved. Then, we extracted the points necessary for detailed ICD-11 coding.

Results

The classification axis differs depending on the disease of cerebrovascular disease. "Intracerebral haemorrhage" is a stem code by site and is the same classification axis as ICD-10. For the extension code, it is necessary to input the light reflection and the Glasgow Coma Scale (GCS). In "cerebral ischaemia", importance is attached to the input of the responsible blood vessel and laterality, and it has become a classification axis as a factor related to prognosis. "Cerebral ischaemic stroke" is classified by mechanism, and "embolic occlusion" is subdivided by stem codes such as cardiogenic, aortic arch, and paradoxical. Therefore, detailed mechanistic descriptions were required. Since thrombolysis in cerebral infarction (TICI) grading, which indicates the recanalization of occluded blood vessels, is strongly related to the prognosis of patients, we think it would be good to enable input by extension code. In ICD-10, "subarachnoid haemorrhage (SAH) due to ruptured cerebral aneurysm" was classified according to the site of the aneurysm, but in ICD-11, it is the same stem code. Input the extension code for the position of the cerebral aneurysm and the symptomatic vascular syndromes. As the severity, enter the light reflex and GCS with the extension code. Anterior communicating artery (AcomA), Posterior communicating artery (PcomA), etc., need to be searched by extension code, and there is no World Federation of Neurosurgical Societies (WFNS) grading or Fisher group extension code, so there is room for improvement.

Discussion

Changes in the classification axis are classified according to factors related to severity and prognosis and are clinically relevant. TICI grade in cerebral embolism, WFNS grade, Fisher group, AcomA, and

PcomA in SAH are frequently used, so it would be beneficial to have them documented to assist with coding.

Conclusion

The ICD-11 classifies factors that have a large impact on prognosis as a classification axis, and the code emphasises severity. It is necessary to know that the classification axis differs depending on the disease, and other things necessary for the chart description.

Research and development of nation-wide, Clinical Coder workplace-based performance standards

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Introduction

Australia's clinical coding workforce largely comprises Clinical Coders (CCs) and Health Information Manager (HIM)-Coders (hereinafter, 'Coders'). Together with Coding Auditors, Coding Educators and Coding Managers, most are employed by hospitals. The residual component of the workforce includes: Classification Specialists, who develop (a) the classification, or (b) classification decision-support systems and software; External Coding Auditors; Classification Consultants; and Classification Academics.

The complexity of the ICD-10-AM classification, frequent updates to the Australian Coding Standards, and multiple demands for high quality coded data necessitate highly specialised clinical classificatory skills. Coders also need clinical documentary and computer literacies for competency in interpreting and abstracting data from patient records and using electronic coding resources and tools (Varela et al., 2022). These requirements drive the need for systematic, workplace-based Coder performance management and development/training, plus workforce (re-)training for new revisions and editions of the ICD (Golpira et al., 2021; Stanfill et al., 2014).

The literature on Coder performance standards is scant; however, researchers have identified the importance of associated issues including workplace-based Coder training and continuing professional development (Reid et al., 2017a, 2017b; Bramley and Reid, 2007). In their international study, Varela and colleagues (2022) identified some workplace-based Coder training in 77% of respondent, World Health Organization-member countries, albeit with between- and within-country inconsistencies. International and Australian evidence indicates that employer provision of supporting resources and training/education for Coders affects the quality of hospital-coded data

(Varela et al., 2022; Doctorchik et al., 2020; Santos et al., 2008) and coding practices (Doctorchik et al., 2020).

Academic credentials: Australia's CCs enter the coding workforce having completed a short course in clinical coding and/or a Certificate IV in Clinical Classification; some are upgrading to the recently-established Diploma of Clinical Coding. The HIM-Coders have studied a comprehensive medical sciences and health classification knowledge domain in their university degree in health information management.

Research team: The Clinical Coder Working Group (CCWG) resides under the auspices of the Health Information Management Association of Australia's (HIMAA's) Education Committee. The CCWG research team included HIM-Coders and CCs from each state and territory: membership reflected public and private hospitals, government departments of health, and the tertiary education sector, and included Coding Educators and Managers, and HIM-Classification Specialists, Consultants, and Auditors.

Aim and objectives

The research aim was to establish nationally applicable, workplace-based performance standards incorporating a framework for managed career progression for Australia's clinical coding workforce. This was achieved via the objectives to:

1. Determine the key domains of practice in clinical coding
2. Ascertain the performance domains and associated standards of practice, and
3. Develop contemporary, empirically-informed performance standards to replace the existing outdated version (HIMAA, 1996).

Methods

A non-experimental design was adopted. A mixed-methods approach utilised: (i) documentary analysis of publicly-available documents sourced Australia-wide; (ii) an online survey of the coder workforce (the focus of this paper); and (iii) focus groups. A survey of the relevant literature supported the study.

A consultation draft of performance standards was devised following documentary analysis of: (a) Coder Position Descriptions; (b) Coder-related Industrial Agreements and Awards; and (c) Examples of Coder performance standards and levels.

Following ethical approval, a purposely-designed, online survey of CCs, HIM-Coders, Coding Managers, Auditors and Educators, will ascertain Coders' and employers' (a) needs and expectations regarding workplace-based performance standards, and (b) perspectives on the consultation draft.

Focus groups will be convened with other key stakeholders. The quantitative data will be analysed in Microsoft Excel, using descriptive statistics; qualitative content analysis will be used for free-text responses, reflective comments, and focus group data.

Results

Selected results (aggregated data) from the survey will be presented at the IFHIMA 2023 Conference.

Discussion

The findings will inform contemporary, empirically-established, evidence-based workplace performance standards for Coders, nation-wide. They will frame a pathway for career progression within this key component of the health workforce.

Conclusion

The performance standards will assist employers, underpin recognition of the coding workforce, and help to raise and reinforce its status.

Please note: Details of all references are available from the authors.

Health classification beyond reimbursement – the gateway to authorised data usage in research practice

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Introduction

Health data classified according to the International Classification of Diseases and Related Health Problems (ICD) has long been recognised as holding a strategic position in the determinants of health funding and hospital reimbursement. Australia's Independent Health and Aged Care Pricing Authority (IHACPA) formally acknowledges the roles of classification systems in both describing and contributing towards the pricing of public hospital services [1].

Coded data are also important globally for measuring population health accurately, to ensure the availability of accurate data and information for monitoring trends in population health, health service planning and provision, and public health policy development. For example, the availability of Covid-19 mortality data in the Michigan Disease Surveillance System provided "…public health officials with critical data that drove public health policy and direction as the pandemic unfolded" [2].

The ICD is an internationally recognised, standardised method for the reporting of diseases and health conditions (WHO, n.d.). As such, it is one of the most important tools utilised in public health surveillance. The global adoption of the ICD in 1948 has facilitated easier comparison of disease surveillance at all government levels from local, state, and national to international. The tenth revision of the ICD (ICD-10) was released in 1990 and remains the current version utilised in Australia. In 1998, the ICD-10 was modified to include Australian specific disease codes [3]. The classification then became known as the ICD-10-AM (Australian Modification).

The use of ICD-10-AM permeates the whole of the Australian health system. Whilst the ICD was originally developed to facilitate the international comparison of disease and health statistics, it is now also used as the primary tool in determining hospital funding. The casemix/activity-based funding models require the strict application of the Australian National Coding Standards which potentially limits the usefulness of the ICD coded data for monitoring and surveillance purposes, because only conditions specifically treated during the inpatient episode are captured. Despite this limitation, ICD coded data are used widely to estimate population-level burden of disease, to underpin health service planning, and to inform research practice.

Aim and objectives

The aims of this research are to identify the secondary uses of ICD-coded data in published peer-review research in Australia between 2012-2021, and to classify its purposes for use.

Methods

A scoping literature review incorporating methodological guidelines used in JBI scoping reviews and the inclusion of Preferred Reporting Items for Systematic Reviews and Meta-Analyses extension for Scoping Reviews (PRISMA-ScR) was conducted, Research methods included conducting key term searches, title, and abstract screening of articles from the Medline, PubMed, Embase, CINAHL, Scopus and Google Scholar databases. A period of ten years, 2012-2021, was selected for review to represent the most current use of the ICD classification. Only papers submitted in English were included. Screened abstracts that met the inclusion criteria were reviewed to determine the purpose for which the ICD-coded data were used. Up to three purposes per paper were recorded using a Taxonomy of Data Use [4]. Descriptive statistics were utilised to summarise the results.

Results

The analysis of the data is still in progress. This will be finalised prior to the IFHIMA Conference in November 2023.

Discussion

Collectively, ICD-10 data has positioned itself centrally within the realm of hospital and health insurance reimbursement and public health funding. There is significant potential to increase its visibility, presence, and application in multiple layers of the health care ecosystem. Importantly, ICD-10 data are used in evidence-based practice to achieve both better clinical and patient reported outcomes. This research serves to explore the use and application of ICD-10 as evidenced by the literature spanning the past 10 years.

Conclusion

The findings of the literature review will inform stakeholders about the uses and applications of ICD-10 data, and the future implementation of classification systems such as ICD-11.

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How easy is it to find online the process for health record access?

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Introduction

Ever increasingly, consumers want access to their own health records. During a time where information is just a few clicks away, consumers are searching health organisation websites to identify how they can go about accessing their health record. Relevant legislation outlines the mandatory requirements for gaining access to personal health records and it is well documented that engagement between patients and health care providers is strengthened when information about health, care and treatment is available and easily accessible by both parties. However, how easy is it for a consumer to find information on the website of a health organisation about the process they need to go through to apply for access to their health record?

Aim and objectives

The aim of this paper is to examine consumer expectations and their experiences of searching different websites to find out how to apply to access their own records from a health care provider and discuss in detail the concept of 'ease of use' of health care provider websites and how these can be improved from a consumer perspective.

Methods

A survey, ethically approved by the University of Tasmania, was designed in REDCap. Using a convenience sample, the survey was conducted in April 2020 over an eight-week period through Amazon's crowdsourcing platform, Mechanical Turk (MTurk) in both Australia and the United States of America (US). Underpinned by a popular theory used in marketing, Expectation Confirmation Theory (ECT), and validated through a pilot using similar survey designs from related empirical studies, the exploratory survey examined the expectations and satisfaction of participants with their experience searching for information about the record access process. This paper examines the expectations with regards to the website information, including the thematic analysis of qualitative data for common themes relating to their expectations.

Results

In total, 1083 respondents shared their expectations for information provided on the websites of health organisations about the process for accessing health records. The majority of the respondents,1021, (94.3%) were from the US with 62 (5.7%) from Australia. Utilising a thematic analysis approach, an overwhelming number of responses provided by the respondents related to

‘ease of use’, which encompassed the design of the website and explanations of what information could be accessed (Nicol et al., 2022). Examples included ‘easy to navigate’, ‘well designed’, ‘easy to read and understand’, ‘visual appeal’, ‘helpful’ and ‘quick links’. Negative comments impacting the use of websites included information not being visible on the first page and access found through links such as ‘privacy’ or ‘freedom of information’, which were unfamiliar terms to many of the respondents.

Discussion

Consumers reported difficulties to easily locate information or instructions on how to apply to access their health record. To enable a patient-centred approach, it is necessary to have clear, easily understood, and transparent processes upfront on websites. It is acknowledged not all the population have access to the internet and with advances in technology, such as online portals, there will be a decrease in the number of people needing to request access to their health records. However, it may be some time yet until all health systems are digitised, and patients are routinely using patient portals. Health care providers can empower the consumer in their health care journey by providing more easily accessible information on their websites, including information about privacy, freedom of information, and requests for information.

Conclusion

This study explored the expectations of consumers searching health organisation websites to find out how to access their own personal health records. Consumers report websites should be designed in such a way as to be easy to use and display information upfront. Simple changes through co-designed processes that involve the consumer will result in websites that enhance the patient-centred care approach and engagement between patient and health care provider.

Please note: Details of all references are available from the authors.

Peer-reviewed abstracts:

Professional Practice

Overcoming challenges to digitise and optimise hospital bed management as a Health Information Manager

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Introduction (background/setting)

In 2020, I was an HIM at the national hospital, Shinshu Ueda Medical Centre (SUMC). The hospital information system had no functions for hospital bed management, and the process was done manually. There were daily meetings led by head nurses of each ward to share bed status information. Multiple pieces of printed information were shared such as: bed maps, inpatient lists, expected discharges, new admissions in waiting, etc. These data were combined to make a complete list of hospital bed data. However, to ensure accurate bed status throughout the day, multiple updates were necessary, which took valuable time and resources away from patient care. Staff advocated to get a new bed management system (BMS) developed and consulted with the vendor of our Electronic Medical Record (EMR) system. Unfortunately, the vendor's response was unfavourable - that it would be difficult to customise the information system to incorporate the needed functions of a Bed Management System (BMS). Furthermore, to develop the BMS, it would cost an amount the hospital was unwilling to pay. Since we couldn't rely on vendor support for our BMS dilemma, I successfully proposed to our hospital executives and administration, an inhouse project to develop such a system.

Professional practice/case study description

I moved forward with the project and assembled a team of System Engineers (SE), doctors, and nurses to consult with. First, I interviewed the doctors and nurses about the following: 1. What kind of information is needed? 2. What format is best? 3. Where to post information about bed status in the electronic medical record system? 4. How often should the information be updated?

Next, working with our SE's we analysed the results of our questions to understand what was necessary to realise the project. Data to be used: Information in tables accessing database of the hospital's electronic medical record system. Tools to be used were the following 1-4 that can be utilised to integrate the bed management system with the electronic medical record system which operates on "Windows 8.1" OS environment: 1. Access 2010 (Microsoft software); 2. Excel 2010 (Microsoft software); 3. Task Scheduler ver.1.0 (Microsoft software); 4. Visual Basic (Development language).

Outcome/experience

We developed our BMS by utilising readily available digital technology. These are the following 6 points in our new system: 1. It provides real time information; 2. It provides quick estimation and prediction of Bed Occupancy Rate (BOR); 3. The information is automatically updated; 4. Low cost to develop as the system was developed inhouse; 5. Easy maintenance that can be done in house without vendor reliance; 6. Operates on standard PCs. The bed performance in 2021 after implementing the new BMS and compared to the two previous years (2019 and 2020) is reported below. (Note: Data below is calculated excluding data of the COVID patient ward to keep comparisons consistent.) The mean BOR was 92.8% in 2021, 83.4% in 2019 (before the COVID-19 pandemic) and 80.9% in 2020 (the first year of the COVID-19 pandemic). The mean BOR in 2021 was the highest of the 3 years. Bed management performance in 2021 had improved significantly compared with 2019 and 2020. The mean hospital days were 12.2 days in 2021,12.6 days in 2019 and 12.5 days in 2020. The mean hospital days in 2021 had shortened compared with 2019 and 2020. All performance metrics show improved results since the new BMS was implemented. We were able to take in more patients, improve BOR and lessen patient stay length. Furthermore, nurses were able to significantly lessen their administrative workload, and focus more on patient care.

Conclusion – what was learned

Through this experience, I realised that as HIMs we can overcome challenges to make a positive impact on many aspects of healthcare in our place of work. In this case, by moving into action despite the hurdles, and acting as a bridge between different levels of staff and departments, as a collective group we were able to develop, implement and manage a new BMS with positive outcomes on many levels. This was also an empowering feeling for not only me, but all members involved with the project. Compared with many other countries, Japan’s healthcare system is in an earlier period of transition to modernise its digital information flow and this experience made me truly believe HIMs will have a leading role along the way.

Value of AI driven technology in optimising Clinical Documentation Integrity Programs

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Introduction (background/setting)

Understanding the value stream and proposition for clinical decision support and clinical documentation workflow can assist in defining the right technologies needed for an effective Clinical Documentation Improvement (CDI) solution. There is a need for correct documentation, allowing accurate coding of each episode of care, improving quality and compliance. Evidence-based CDI is also important in reducing the complexity of case management, ensuring that all diagnosis codes are coded to the highest level of specificity. By combining the power of AI technology, proactive solutions can be delivered at the point of care to improve clinical documentation.

Professional practice/case study description

Discovering value stream optimisation starts with identifying risks or gaps in clinical documentation processes. When designing a CDI program, one needs to ensure proper engagement from clinical stakeholders, and education focused on the respective clinical service lines. Training materials specific to coding and DRGs should address the documentation needs of clinical care managers, physicians, nurse care managers, nurses, and health information professionals. Discovering documentation gaps and inconsistencies rapidly improves discharge and retrospective query processes, diagnosis mismatches, mortality, severity of illness remediation and clinical second level of review, query process and escalation, and review and prioritisation processes. Bringing technology solutions into CDI programs can improve efficacy and efficiency.

Outcome/experience

The outcomes of the CDI process inhibit the emergence of shared technical solutions, clinical data solutions, and data governance. It starts with building a comprehensive clinical team model that embodies documentation integrity processes and the involvement of clinical interdisciplinary teams. The core teams typically comprise a query team, education team, CDI leaders, coding and CDI professionals, and technical analytics and IT solutions teams. These teams are critical in designing an optimised CDI program and its technical components. One such component encompasses the best practices for computer-assisted physician documentation (CAPD) by applying compliant CDI concepts to proactive documentation improvement at the point of care with CAPD technology, allowing the focus to be on physician-CDI interactions, clinical threshold levels, visibility into how nudges are triggered, and content and workflow customisation.

Implementation of CAPD technology should be to set clinical threshold levels for nudges. Unlike traditional CDI queries, nudges are delivered proactively as physicians document—within seconds—

before they complete their note. Customising clinical thresholds for clinical conditions determine when prompts are triggered, while more advanced CAPD technology enables CDI teams to customise clinical thresholds based on protocols established by their hospital, health system, or individual service lines. Implementation success feedback advised that “the CAPD program allowed us to leverage technology on the front end for physicians as they’re documenting, reducing administrative burdens from retrospective and even concurrent templated queries.”

The department also brought in contract work for a period that reflected a 30% increase in CDI productivity and an improvement in CC/MCC capture rate, CMI, physician engagement, and quality outcomes. “We showed the return on investment and said that CAPD technology could do the same as staff.” They expected some physician pushback as their priority is patient care and were asked to document things that they see as financial gain. Engaging the physicians at the point of care to demonstrate compliant outcomes with quality, was a better approach.

Conclusion – what was learned

Successful implementation of AI-based software solutions enabled clients with predominant transcription models to show a decrease in documentation volumes by 15-20% using front-end speech recognition that can interface with electronic health records and share pertinent information, such as the working DRG and query delivery. In some cases, they have shown a 9% increase in query response rate. Introducing technical software solutions such as voice-enabled platforms, especially those supported by natural language processing, will help reduce patient safety indicators, alleviate rework for physicians around query response, enables inclusion of diagnostic findings, encompass clinical service lines, and incorporates clinical validation and the overall quality process. Our experience with clinical documentation integrity programs enhances evidence-based medicine and reduces physician fatigue. The benefits are far-reaching and even show decreases in specificity queries due to the concept of nudging. These AI solutions can drive clinical documentation quality and efficiency across the globe in inpatient, outpatient, and grouping.

Life after graduation: reflections of new graduates working in non-traditional roles

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Introduction (background/setting)

It is a truth universally acknowledged that if you are a new graduate of a Health Information Management (HIM) degree, you must be in want of a hospital coding job. As two HIM graduates, this presentation will focus on why the skills learned at university can be applied to roles outside of traditional HIM settings from the start of the career. The authors will focus on working in the government sector immediately after graduating, specifically at a national data agency where coding and classification are skills that are still needed but applied with a much more global perspective to ensure the underpinning metadata and standards result in high quality health information.

Professional practice/case study description

This case study will focus on:

- differences in the graduates' tertiary education backgrounds, the employment outcomes of the two bachelor's degree cohorts, the initial expectations of the graduates when joining the workforce, as well as the pathway to their career in the government sector.
- the role and duties of the graduates as metadata developers, in creating the components of metadata according to international data standards for a national metadata repository hosting both national and international metadata; utilising knowledge acquired through tertiary education of metadata components such as object classes, value domains, and other items that comprise data elements which form metadata items. These metadata items are then compiled into data set specifications, which are key to describing and providing context to data collected as part of Australian national data collections.
- the role and duties of the graduates as classifications analysts, knowledge of clinical classifications such as the International Statistical Classification of Diseases and Related Health Problems, Tenth Revision (ICD-10) and the Australian Modification of ICD-10 (ICD-10-AM), as well as the Australian Classification of Health Interventions (ACHI), is applied through ensuring that classifications are utilised correctly in metadata, and according to international data standards and guidelines.
- providing advice to teams within their national data agency to utilise classifications accurately within their analyses and reports. This advice is also provided to external actors such as researchers, other agencies, and departments.
- the skillsets of the graduates are key in the application of data analysis, statistics, and data reporting, particularly exploring how these skills are essential at a national data agency.

- opportunities for involvement in specialised pieces of work because of the role of the national data agency more broadly, such as providing secretariat support to national committees, as well as taking part in the work programs of these committees. This includes liaising with committee members, topic experts, and involvement in the development of the ICD-11 roadmap and resources. Additionally, the opportunity to promote and provide education on the work of the national data agency at national and international conferences, along with developing the workshops and promotional materials in the lead up.
- Possibilities in career development in following this career pathway.

Outcome/experience

This case study will bring attention to non-traditional HIM roles and the experiences of the upcoming generation of HIMs entering the workforce.

Conclusion – what was learned

Although the skillset of an HIM is incredibly technical and specialised it is widely applicable to areas that make use of health data and health information systems beyond the walls of a hospital. The graduate's unique knowledge of the classifications is useful across a wide range of projects beyond metadata development such as research and advisory tasks. The case study seeks to emphasise the non-traditional roles and the multiple and varied possibilities available to all HIMs.

Accreditation of Health Information Management education program in Korea: A University’s experience

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Introduction (background/setting)

In Korea, since 2019, educational certification has been introduced for related universities for the entire health information management (HIM) education program. The legal basis for the evaluation and certification of HIM education was changed in 2017 to "Medical Service Technologists Act" and "Article 11-2 of the Higher Education Act", applicable only to graduates of universities that have been certified by accredited special institutions for the HIM education course (Korean Accreditation Board for Health & Medical Information Management Education: KAHIME). The purpose of this abstract is to introduce the preparation process for the accreditation of the one university that has continuously produced students in HIM since the 1980s, covering five areas (Operating system, Education courses, Support for students, Adequacy of faculties, and facility conditions of the school).

Professional practice/case study description

The KAHIME suggested standardised guidelines which were required for Health and Medical Information Management Education. The Yonsei University decided to apply the certification for educational programs to produce graduates with the competencies required by the society. In detail:

1. For direction in objective development, Missions, objectives, and required subjects of ‘International Federation of Health Information Management Association (IFHIMA)’ and ‘The American Health Information Management Association (AHIMA)’ were identified, and learning outcomes were formally systematised.
2. Demand-oriented education was planned to converge the needs of industries including medical institutions and reflect them in educational goals and program learning outcomes.
3. Circular self-improvement structure is aimed at performance-based education that evaluates the abilities and qualities of graduates.
4. The course subjects have actively embraced the needs of the health information area recently.
5. The course includes a range of support for students, adequate acquisition and capacity building of professors, and improvement of facility conditions in the university.

Outcome/experience

In accordance with the standard manual required for certification, the main system of the department has been reorganised. A "self-evaluation report" has been submitted; the first round of written review is being received in October 2022. Thereafter, according to the results of the written deliberations, the complementary points will be modified, and a second “self-evaluation report” will be evaluated in November 2022. In December 2022, the review group will visit the Yonsei University and conduct a detailed examination of the five areas of the HIM’s education program. The jury will score the final evaluation results according to the standardised criteria. As a final score, the Yonsei University will receive the results of the assessment (approved or conditionally approved or eliminated) in January 2023.

Conclusion – what was learned

It is meaningful to secure the expertise of performance-based education through the certification of HIM education programs and to achieve international equivalence. Based on the objectivity, validity and reliability of assessment accreditation, universities can produce higher quality health information managers as experts. The education certification program will ultimately enhance the national competitiveness of Korea's healthcare industry and contribute to fostering professionals who will impact the promotion of national health.

Reforming the way medical information managers work – Task shifting by Robot Processing Automation (RPA)

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Introduction (background/setting)

In Japanese hospitals it is recommended that one health information manager be assigned for every 2,000 discharged patients. However, at our hospital, although 5 health information managers are required for every 9,000 discharged patients, only 1.8 are assigned.

The work of health information managers has changed dramatically since the shift to electronic medical records in 2010, from paper-based management to data management and analysis. Due to the increase in work requests and the accompanying increase in overtime hours, it was necessary to consider improving the efficiency of medical information management operations. Our hospital therefore decided to improve operations by utilising RPA (Robot Process Automation).

Professional practice/case study description

To review business contents, we undertook:

1. Time study of normal operations
2. Identification of one-off work content
3. Survey of staff's intentions

Based on the above points, it was decided to use Microsoft Access-based RPA for a part of the regular work. The flow of RPA is as follows:

(1) Search and extraction → (2) Transcription and execution → (3) Tabulation and processing → (4) Collation and checking → (5) Form and report creation

The strength of RPA is the accurate execution of routine tasks, while its weakness is its atypicality. For this reason, staff needed tasks to identify and simplify the work procedures being performed. These included:

(1) Request to physicians to prepare discharge summaries (to be prepared within 14 days of discharge from the hospital). A list of patients without discharge summaries is created from the electronic medical record Data Warehouse (hereinafter referred to as "DWH"). A message is sent to the doctors urging them to prepare the summary.

(2) Request for approval of medical record (Doctors approve actions performed by non-physicians). A list of unapproved medical records is created from the DWH. A message is sent to the doctors to urge the approvals.

Outcome/experience

(1) Work time (per day): decreased from 30 minutes/person → 3 minutes/person; Decrease in the number of days to prepare discharge summaries (6.0 → 4.0 days); Rate of preparation within 14 days after discharge: 95%. Maintained at least 95% completion rate within 14 days after discharge.

(2) Work time (per day) decreased from 24 minutes/person → 5 minutes/person; Improved approval rate (90.16% → 99.98%)

Overtime hours (5 hours per month) decreased.

Conclusion – what was learned

The following three changes were made because of the improvement of operations using RPA.

(1) Reduction of workload: RPA has reduced the physical and mental burden by replacing large amounts of repetitive and simple tasks performed by the health information managers.

(2) Prevention of human error: RPA can perform speedy and accurate processing of large volumes of work provided the work rules are set, thereby eliminating human error.

(3) Effective use of human resources: Allocation of limited human resources to routine tasks exacerbates the shortage of human resources. The introduction of RPA freed staff from simple tasks, allowing their reallocation to higher value-added tasks e.g., health information managers can now assist physicians with National Clinical Database (NCD) registration work, which used to be a burden for them. In the future, we plan to further expand and improve the efficiency of work, such as reducing the number of unauthorised hospitalisation plans and unauthorised substitutions.

While the strength of RPA lies in its ability to perform repetitive tasks accurately and quickly, it is necessary to be aware of possible risks. We are currently working on the development of operation rules and backup systems to address the following risks:

(1) Risk of expansion of error processing: If an error is inherent in the workflow, the risk that the error will be processed repeatedly.

(2) Risk of business interruption: Risk of workflow stoppage due to changes in the core system, changes in referenced databases, etc.

(3) Risk of improper processing: The risk that the contents of processing become a black box, making it impossible to determine whether the output has undergone appropriate processing.

Remote Workforce: Preparing students for the current environment

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Introduction (background/setting)

We utilise diverse online modalities in our current and evolving work environment. Now more than ever, we are engaging professionally through technology and different forms of communication. Employer and market demands require new graduates to possess an even wider variety of skills and knowledge. A study in Northeast United States found that these six skills and competencies were rated the highest by employers: interpersonal skills/works well with others; critical thinking/problem-solving skills; listening skills; oral/speech communication skills; professionalism; and personal motivation. (NACE, 2022) Later in this same article, the author advises the job seeker to try and obtain real-world experience through internships, part-time jobs, and volunteering.

Professional practice/case study description

According to their projections, 25% of all professional jobs in North America will be remote by the end of 2022, and remote opportunities will continue to increase through 2023 (Forbes, 2022). New graduates must have a multitude of skills, including the ability to navigate through a remote work world. By experiencing various presentation styles, opportunities for culture immersion, interprofessional engagements, research concepts, problem-solving scenarios, and soft skill interactions within the curriculum; students will emerge as well-rounded individuals who are fully prepared to enter the workforce.

Outcome/experience

This presentation will demonstrate a variety of student opportunities, projects and scenarios that serve to enhance and prepare students for the remote workforce experience; appraise the value of student opportunities to simulate ‘real world’ scenarios; explore student collaboration with interprofessional engagements and educate students on global cultures and competencies.

Conclusion – what was learned

Faculty and student discomfort can be expected in the process of continuously adapting to new paradigms. A strong understanding and base of soft skills, professionalism, and critical thinking competencies is necessary. Exposure to different cultures is beneficial to building an effective workforce. Proficiency in virtual technology is critical to success currently and will continue to be essential. Anticipated demands of a new graduate will be shared, as quoted by professional mentors. The incorporation of opportunities such as project work and research into the internships has created greater satisfaction in employers/site mentors.

Preparing for HIM program continuing Accreditation: Lessons learned from a procrastinating perfectionist amidst a pandemic

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Introduction (background/setting)

High-quality digital health information begins with providing high-quality education to future HIM professionals. While there are many outcomes to measure an HIM education program's success, accreditation is a vital indicator of a quality program, whether initial or ongoing. In the United States, accreditation by the Council on Accreditation of Health Informatics and Information Management education (CAHIIM) is not only the gold standard for HIM programs but also enables graduates to sit for AHIMA credentialing exams.

In April 2020, our Associate of Science in Health Information Technology degree program was notified of its CAHIIM continuing accreditation review, scheduled for summer 2021. While the program had submitted annual program assessment reports every year, this would be the first comprehensive review for continuing accreditation since 2005. Additional "stressors" included a survey process under newly implemented curricular standards, AND the program was pivoting all face-to-face classes to online due to the COVID-19 pandemic lockdown. Regardless, we had only 12 months to complete a self-study in preparation for the virtual re-accreditation visit, with much of the process occurring during the pandemic-enforced remote work environment. Lastly, a perfectionist who tends to procrastinate was spearheading the process!

Professional practice/case study description

We are a small program consisting of three full-time faculty, three adjunct faculty and one part-time lab assistant, making the time commitment required challenging. The program director was responsible for the process, so we sought and obtained administrative support to include course releases. Next, we took advantage of CAHIIM educational offerings on the accreditation process and standards. These included conferences, on-demand tutorials, and resources and templates. Then, we placed the gathered materials into an online OneNote "binder" that we created to store and organise them by the standards they addressed.

The bulk of preparation involved gathering evidence of meeting curricular standards. A curriculum map that outlined the standards and the assignments that met them was crucial to ensuring all standards were covered, especially since we were transitioning to new curricular standards. In addition, the map made it evident which standards were unmet. OneNote then provided a method for each faculty member to upload assignments to be used as evidence of meeting the curricular standards.

Evidence gathered for the remaining standards was also uploaded to its appropriate area in OneNote. We also created a Word document listing links to our university and program web pages for easy access to evidence of standards. Organising everything in OneNote made submitting evidence to CAHIIM's self-study portal relatively quick and easy.

Regular faculty meetings dedicated to the accreditation process were held throughout, primarily via Zoom due to being in lockdown. These meetings ensured everyone was kept in the loop on the progress and on track with assignments.

Outcome/experience

We improved our curriculum, assignments, syllabi, and other accreditation requirement items during the self-study completion process. Ultimately, the program received a rare, perfect continuing accreditation result!

Conclusion – what was learned

Benjamin Franklin said, "If you fail to plan, you are planning to fail." Planning is critical in any complex endeavour, and we learned that preparing for a comprehensive continuing accreditation survey is no exception.

Other essential activities such as leaning on and collaborating with fellow faculty, getting support from program administration, organising the work, and utilising available technology and materials aid in the successful submission of the self-study and ultimately an approved, if not a perfect, continuing accreditation survey! Employing these activities early on makes for a less-stressful experience, as well. A more significant division of work can do the same.

Additional learning outcomes included gaining more in-depth knowledge of accreditation and curriculum requirements and becoming more familiar with the intricacies of our program, from specific assignment development to establishing and monitoring program outcome goals.

The methods used and learnings from our experience can be applied to any accreditation process, regardless of the type of HIM program or accrediting body.

Ensuring clinical coding accuracy during cessation of chart-based audits due to COVID-19

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Introduction (background/setting)

The Hospital Inpatient Enquiry System (HIPE) is part of the Health Service Executive (HSE) and based in the Healthcare Pricing Office (HPO). It is responsible for the collection and reporting of hospital inpatient activity data for all public acute hospital inpatient and day case discharges as well as offering support and training to all the 300 clinical coding staff. Part of the HPO's coding teamwork is data quality and audit which involves ensuring accurate clinical coding for up to 1.7 million discharges per year.

The first case of COVID-19 was reported in Ireland on the 29th February 2020. On 27th March 2020 the first lockdown banned all non-essential travel and contact with others. This resulted in the cessation of chart-based audits by the HIPE auditing team.

This presentation will show the work carried out by the HPO to ensure the continued accuracy of clinical coding in Ireland as the pandemic put even more emphasis and scrutiny on the data as needed for analysis by Department of Health and other agencies. During the pandemic the HPO could not continue to perform chart-based audits and the following case study describes the desktops reviewed performed as an alternative.

Professional practice/case study description

A comprehensive desktop review of data was performed to ensure quality of data. Initial review of data included follow up on previous issues identified from chart-based audits.

Other reviews included:

- Review of 100 inpatient cases (random selection) from national file.
- Review of 100 elective same day day-cases (random selection) from national file.
- Review of 100 procedural complication coded cases, in particular assignment of code T81.89, Other complications following a procedure, not elsewhere classified which was appearing in high numbers on the national file.
- PICQ Review, especially indicators that were firing frequently in hospitals. This showed the need for further training in certain areas for coding.
- Use of the HADx flag (hospital acquired diagnosis), especially those assigned to chronic conditions.

- Spike review of coded data which showed the pattern of coding of some conditions and procedures that were not consistent with national reporting.

Desktop reviews identified issues from previous chart-based audits that appeared to be still occurring in hospitals. For example, an audit in Hospital X identified use of a code incorrectly coded from lab reports in all the cases reviewed. Desktop review showed that coding of this diagnosis had increased the following year by 52% which would not be expected considering it had been used contrary to guidelines in a previous chart-based audit. This required urgent attention and review by the hospital concerned. Other discrepancies were also easily identifiable such as uncomplicated diabetes code used with renal failure.

Outcome/experience

Although the desktop review proved a good alternative to chart-based audit it can only give an indication as to the potential quality of the coded data in hospitals. It does not reflect the overall quality of coded data for a hospital in general. To gain a greater insight into the overall quality of data a more detailed chart-based audit is required.

Since the removal of restrictions for COVID-19 a total of 11 chart-based audits are completed to date. As Ireland moved from 8th to 10th edition of ICD-10-AM in January 2020 the focus of these audits was targeted on several of the changes in 10th edition to include *ACS 1904 Procedural Complications* which was also identified as an issue from the desktop review. Issues identified from the desktop reviews were also found on audit.

Conclusion – what was learned

Desktop review of coded data highlighted some inaccuracies of data and areas in which coders required further training. True indication of the quality of coded data is only available by chart-based audit. Chart based audits recommenced in May 2022 and areas of concern identified from the desktop review were also identified in the chart-based audits.

Overall, the desktop review proved a good alternative during a very challenging time, but chart-based audit remains the gold standard.

Structuring a comprehensive Data Governance Plan in the era of Cloud-based and Artificial Intelligence driven technologies

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Introduction (background/setting)

Data governance is an ever-increasing topic for healthcare organisations and consists of a realm of opportunities and challenges during and after implementation. With technology increasing at exponential rates the organisations need to develop and maintain a comprehensive governance plan. Governance in healthcare tends to focus on providing quality of care and with that, comes the strategic process of data management. Data is the driver of essentially all health care processes and can consist of a variety of variations such as shared data, referential data inclusive of classification nomenclature and standards, and metadata. The proper data governance plan includes the structural framework, guiding principles, organisation-wide applications, and best practices surrounding healthcare data. Linking the digitisation of data and technical standards to establishing healthcare governance programs is inclusive of all clinical processes, resources, and multi-systems to manage data throughout the cycle of clinical care.

Professional practice/case study description

Creating a comprehensive governance structure could improve reimbursement and impact internal data workflow processes including the application of technologies like natural language understanding and artificial intelligence. Solutions that were primarily on-premises are fading, and the cloud-based solutions are now becoming more predominate. Cloud-based technologies can analyse data points across the patient journey for continuous learning and provide intelligence to improve patient care; this drives better outcomes for revenue cycle teams.

A hospital organisation based on the Eastern border of the United States, has taken a collaborative, multidisciplinary approach to technology by forming a documentation excellence committee that recommends documentation standards, educates clinicians, and monitors success in achieving timeliness and accuracy in documentation; these outcomes are driven by AI technology. Part of the team's efforts included combining the clinical documentation improvement and coding query process via an AI tool that allows CDI specialists and coders to make queries using the same platform. The tool was rolled out facility by facility over time, and the process continued to be automated. Within one year, the health system captured an additional $18 million in revenue through more complete documentation and improved capture of accurate complexities of the patient and improved quality indicators. The newly educated physicians engaged in CDI with a better understanding of the impact of incomplete documentation on quality scores. As a result, the number of coded complications decreased dramatically: a 59 percent reduction since the CDI transformation program launch.

Outcome/experience

The outcome of such an experience led to undeniable governance strategies that ensure technology assets, clinical documentation policies, and procedures that are continually reviewed. Utilising cloud technology as a holistic part of governance will dramatically reduce the burden for technical teams; not long ago, many health systems operated full-scale data centres. Today, cloud providers run data centres at a scale that a single healthcare organisation could never achieve. Together these factors mean that healthcare organisations no longer must choose between multiple, disparate best-of-breed solutions or a one end-to-end solution that lacks depth. This allows for the optimisation of immediate needs, and the formulation of strategy and provides for investment in resources needed to keep technical systems current. The success of these healthcare systems provides insight that migrating technical solutions enable a capability of becoming cloud native by working closely with others making the same technological transition. Changing legacy interfaces to cloud-based APIs increases agility and flexibility between systems. As healthcare IT continues to evolve, this interoperability will be the key. It is essential to form collaborative partnerships when possible, working together for customers.

Conclusion – what was learned

Governance has become one of the single most important steps in healthcare strategy; the overall administration, through clearly defined procedures and plans, predicates the security and ability to use structured and unstructured data by connecting workflows from the point of document capture to the point of a final coded record. In this position, partnership with the electronic health record systems is crucial; the goal is to strive to be interoperable and capable in any electronic health record system. A provider focus is on the accurate delivery of patient care, all the while trying to eliminate the administrative burden.

The quality and integrity are assessed by the data stewards who are responsible for the creation and understanding of business specifications. A fundamental purpose of governance is the establishment of culture in an organisation to ensure that the data is secure, reliable, and accessible to those who require access. A data governance plan should account for new technologies thus providing an oversight into the organisational processes such as reimbursement and quality of care metrics that drive accurate reimbursement. As a result, the data governance plan will have a powerful impact on the entire clinical system and patient care levels thus, maximising overall reimbursement.

Global Trends in Health Information

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Introduction (background/setting)

Today's health information professionals transform health care by leading in a vast, global network of people, processes, and technology. This presentation will connect how health information professionals work at the intersection of healthcare, technology, and business by managing and protecting health information wherever it travels. It will focus on the privacy and security of health information; exploring the myriad of processes and related laws affecting the protection and management of health care data as well as related workforce challenges that lie ahead as healthcare continues to transform globally.

Professional practice/case study description

The privacy and security of an individual's health data is a global concern. A survey conducted by an IFHIMA privacy workgroup (70 participants from 17 countries) in September 2019 revealed the need for education and awareness related to health care data privacy whereby 54.4 percent of respondents answered that existing laws are not fully developed or implemented effectively [1]. The presenter will highlight the importance and prioritisation of training and education which may involve upskilling of current workforce on data's value, best practice for data collection, quality improvement and utilisation [2].

There is a general expectation in many countries that personal health information will be available when needed to support individuals receiving health services as the patient presents across town or across the nation [1].This expectation is not always reality as today's health information systems operate with great variability in how they are built, implemented and utilised; creating gaps and challenges in how the data flows and how privacy and security provisions are administered and supported. The presenter will address the health information professional's role in supporting the individual's privacy and sharing of their health data as it cascades throughout healthcare networks. In addition, she will discuss the myriad of processes and laws such as GDPR, HIPAA and considerations for how to manage data that isn't protected under regulations.

Opportunities to bridge implementation and process gaps when preparing for new digital health solutions include the need for development of new and existing workforce. One workforce example includes expansion of healthcare in the retail space such as pharmacies where information professionals are not currently engaged. It is projected that this trend will become more prominent as global economic conditions lead to tight budgets at traditional frontline primary care facilities [3]. This coupled with artificial intelligence (AI) technologies will bring new challenges related to privacy as new efficiencies are realised. The presenter will make connections between these two emerging

trends and provide guidance for health information professionals to stay ahead of transformational curve.

Outcome/experience

The audience will hear how healthcare transformation is dependent upon health information that is private and secure. In addition, the presenter will address how the professional(s) can embrace new technology and processes to stay ahead of the curve.

Conclusion – what was learned

The audience will learn how health information professionals can effectively work at the intersection of healthcare, technology, and business to ensure the privacy and security of health information wherever it travels. Attendees will understand the processes and related laws affecting the protection and management of health care data and related workforce challenges as healthcare continues to transform globally.

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Adjusting the Lens: A review of the challenges faced with the implementation of an Electronic Medical Record System in the Ophthalmology Department of a public tertiary care hospital in a small island developing State

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Introduction (background/setting)

The use of an electronic medical record (EMR) has been shown to positively impact healthcare quality and delivery. However, improper execution of the implementation process can lead to increased levels of inefficiency and loss of productivity [1]. The EMR adoption process is arduous, particularly in resource-limited healthcare systems, where it may be challenging to obtain adequate infrastructure, funding, and trained personnel [2]. Additionally, EMR implementation in specialised fields such as Ophthalmology can be highly complex. Given the paucity of published data on EMR implementation in the developing world as well as specialised ophthalmic EMR systems, exploring this case is essential to the expansion of international knowledge on digital transformation as we work to advance global health.

Professional practice/case study description

The Ophthalmology department in the sole public hospital on the small island developing state of Barbados implemented an EMR system. The department consists of a high-volume surgical unit and an outpatient ambulatory clinic.

In 2021, an EMR system was implemented with the aim of improving efficiency, quality of care and communication with external healthcare practices. The EMR which was selected was originally designed for other medical specialties and adapted for use in the Ophthalmology department. It was modified and installed by an external IT professional in consultation with two senior Ophthalmologists. Wide scale consultation with staff members on preferred EMR design and features was not offered prior to EMR selection and implementation.

Despite receipt of only informal notification, on the day of implementation all employees were immediately required to interface with the system despite lack of formal training. Clinical staff were tasked with entering the demographic and clinical data of patients into the EMR during clinical consultations. Training sessions were held at the request of staff several weeks after the EMR launch.

The Ophthalmology department was the only one that implemented an EMR system. Therefore, a hybrid record system was created given the institution's continued usage of paper-based records as the primary instrument of documentation.

Multiple upgrades to the department's technological infrastructure were required to support the EMR. Technical support was provided by an off-site, independent IT consultant which resulted in frequent service interruptions particularly in the initial six-month period post implementation. The intradepartmental diagnostic equipment lacked compatibility with the selected EMR thereby rendering direct transfer of results for upload to the EMR impossible.

Outcome/experience

Preliminary staff interviews and review of an internal audit report revealed significant attrition of EMR utilisation patterns. Lack of training and views that the EMR resulted in widespread departmental inefficiency with interruption of patient flow were cited by staff as a major reason for cessation of use. The absence of features which allowed for documentation of clinical complexities, incorporation of diagrams and surgical notes were also highlighted by staff as deterrents to use of the EMR.

Objectively, retrospective review of the features of this EMR revealed that less than half of the requirements deemed essential by the American Academy of Ophthalmologists [3] had been met by this system.

Conclusion – what was learned

The implementation of an EMR system in a specialised healthcare setting can result in revolutionary benefits including improved efficiency and quality of service. However, improper EMR implementation can lead to a myriad of negative effects on the operations of an organisation. Clinical specialties such as Ophthalmology have unique characteristics and it is therefore recommended that in EMR implementation, there is strict adherence to gold standard guidelines. The involvement of key stakeholders with an emphasis on clinical, health information and administrative staff during the adoption process is paramount. Given the challenges outlined above, in resource-limited settings, thorough planning and targeted approaches are necessary for the long-term success of an EMR system.

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Driving health data governance, classification, and quality in the Kingdom of Saudi Arabia

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Introduction (background/setting)

The National Casemix Center of Excellence (NCCoE) in the Kingdom of Saudi Arabia (KSA) was established with the aim to promote transparency of information and enable the advancement of quality and efficiency of healthcare delivery. The NCCoE is supporting those aims by promoting the employment of clinical coding, classification, and clinical costing to achieve the Kingdom's vision of quality information to drive sustainable value-based healthcare.

Professional practice/case study description

To realise this mission, the NCCoE has already been entrusted with the responsibility for some of the key national initiatives. This paper will outline the significance of each of these key initiatives underpinning health system reform and present a discussion on the enabling factors and requirements necessary for their success.

Outcome/experience

The presentation will discuss learnings from the following NCCoE initiatives, in large part delivered over 2023:

- Developing non-admitted care classification systems tailored for the Kingdom to unify and standardise the clinical language of non-admitted care delivery nationally.
- Developing the first Health Information Management Strategy for the Kingdom.
- Developing and continuously updating clinical coding and documentation and clinical costing standards for the Kingdom.
- Developing national clinical costing training guidelines, assessment, and accreditation policies to expedite the capacity building of the local clinical costing workforce and expertise.
- Leading the establishment of the provider payment strategy for the transformed version of the public KSA healthcare system, thus refining provider payment mechanisms to encourage more efficient and responsive service delivery.
- Developing actuarial governance frameworks for the public healthcare system to create stakeholder awareness of the potential and added value of actuarial model governance and statistical analysis in enabling efficient and sustainable healthcare financing.

Conclusion – what was learned

Promoting the employment of clinical coding, classification and clinical costing is critical to achieving the provision of quality information to drive sustainable value-based healthcare. This presentation will conclude with consideration of progress against the above initiatives and the next steps required for ongoing success.

Precision planning in Qatar Health Care with predictive analysis

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Introduction (background/setting)

With increasing technology advancements, and computer assisted data driven decision making for complex challenges like healthcare, Primary Healthcare Corporation (PHCC) in Qatar has been thriving to utilise data for decision making since its inception in 2011. Over that time PHCC's data literacy has grown considerably, expanding to includes predictive analytics in departmental operations planning and scope. This abstract provides an outline of PHCC's efforts in developing twelve customised predictive analytics use cases and implementation of these, and of five uses in primary health care in Qatar. The use of a wide variety of curated data including clinical data, have made and supported precision planning in both operational and management levels.

Professional practice/case study description

Customised predictive analytics use cases supports PHCC Operations to plan and prepare to meet possible future demands. Predictive analytics can also help departments and directorates within PHCC to realistically make financial and budget plans based on resource utilisation data combined with projected growth of services and expected patient throughputs.

The process of developing primary care based predictive analytics has brought forth 12 uses from 10 predictive analytics domains of healthcare. Both conceptual and actual dashboards and analytics results from this exercise underscore quality and variety of data that PHCC collect and store systematically through its enterprise data warehouse, as well as the capacity of business and health intelligence departments under the auspices of Strategy Planning and Health Intelligence Directorate. The models incorporated a wide variety of datasets both clinical and administrative, and proposed 45 key measures through the 12 use cases. Of the 12 use cases, 2 of the use cases (Demand Forecasting of Patient Appointments and staff distribution prediction) have been implemented and 2 of them (Complex case management [Diagnoses Based], Patient Engagement Measures and Staff Productivity and Burnout predictions) have been selected for implementation in 2023 Q2.

The process also involved the required data analytics and validation, development conceptual dashboards for each use case, and linkage of use cases to Strategic Priority Areas and Strategy Priority Populations to emphasise the relationship between strategic planning and monitoring aspects of PHCC's predictive analytics initiative.

Outcome/experience

The essential requirements of Predictive Analytics are: Specialised manpower; health intelligence analytics tools; algorithms; types of modelling methods; and computer assisted systems such as Artificial Intelligence, Machine Learning and Deep learning technologies. Considering these essential requirements, the development of custom and pragmatic uses cases is undoubtedly an arduous task, especially given that all uses were expected to pass the validation of the fundamental steps of predictive analytics as outlined in the methodology section above. As such, the core clinical and administrative datasets and associated analytics which resulted in greater knowledge and insights paved the way for use case development. Implementation of two of the models have further boosted confidence in the predictive analytics arena which helped to get management support for acquiring required resources and technology. While the use case on forecasting future clinic appointment through the modelling helped to create a dashboard showing weekly levels of expected patient throughout and patterns for PHCC operations, the staff distribution prediction enabled the management to envision required clinical manpower distribution across PHCC health centres. These were achieved through complex regressive analysis, testing and validation processes. Moving forward, data on diagnoses, data from clinical records such patient care goals, and biomedical values etc. have given further scope on population health, prediction on complex cases, prognosis of manifestations and compilations which could potentially be breakthrough models that will determine futuristic quality of care in the primary healthcare arena of Qatar.

Conclusion – what was learned

Predictive Analytics will drive PHCC’s data driven decision making to the fourth level of the Analytics Maturity model and will eventually pave the way to prescriptive analytics in the future. From an ever-increasing amount of data, PHCC are trying to leverage valuable knowledge and insights through centralised health intelligence and use of information in decision making to make these transitions inevitable in the future.

Advancements from descriptive analytics to prescriptive analytics moves in successive fashion and it is imperative for PHCC to reap the benefit of prescriptive analytics, which is now a priority. Advancing from predictive to prescriptive would not only provide analytical insight but also direct pointers to address primary healthcare needs.

A national policy for Health Information management in Oman: A step-by-step guide

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Introduction (background/setting)

Policies for governing Health Information are equally as important as Health Information itself. It has been emphasised in previous studies that policies and procedures for Health Information Management need to be developed in some Gulf countries, including Oman (Al Salmi et al., 2020; Al Kiyumi, 2019; Al Salmi, 2015). It is imperative that policies are in place to ensure the accuracy and validity of health information, as well as to ensure that privacy and security are maintained. Considering this, the Ministry of Health (MoH) developed guidelines for Health Information Management that include five scopes (Human resources, Content Management, Privacy and Security, Quality, and Governance). Then, in August 2021, a Technical Task-force team was formed by the MoH with the responsibility to develop public and private health information management policies and procedures.

The aim of this project was to address the neglected aspects of policies and demonstrate the step-by-step process in the development of the National Health Information Management Policy and procedures.

Professional practice/case study description

A combination of methodological approaches was used. Since the HIM system is an existing system, which has been in use for several years now, the Technical Taskforce team followed a clear methodology when preparing this policy to accommodate this, and to ensure its compliance with relevant local and global requirements, practices, and standards.

Initially, all scattered health information policies within the MoH institutions were gathered. Then, the Technical Taskforce team visited several healthcare institutions and held focus group discussions with healthcare workers in various specialties to understand the current situation and identify the challenges related to privacy and information security practices. The requirements and objectives of Oman Vision 2040, the Oman Digital Strategy 2030, the digital transformation strategy, and its implementation plan 2021-2025, and all relevant national laws and policies were also taken into consideration.

As part of the policy development process, the technical Taskforce team identified the first scope of HIM principles, which is privacy and security, as the most urgent and necessary among them.

The third stage involved creating the first draft of the privacy and security policy manual, which was then reviewed by the committee members for accuracy and completeness. Given the scale and

importance of the work prepared, it was important to share the document with stakeholders and those involved in health institutions. Thus, the second draft manual was sent to all MoH hospitals and institutions through the health directorates in the regions to check and review the applicability of the policy. In conjunction with the latter, a workshop was conducted to explain the different aspects of the policy manual and to emphasise to healthcare workers the importance of reviewing and providing feedback, to make its implementation successful. Finally, the manual was submitted to the public hospitals that are not affiliated with the MoH and private health institutions for review and validation that the policy is appropriate for their context.

Outcome/experience

It is through all the above-mentioned steps that the National Health Information Management policies ‘Privacy and Security Policy Manual’ have been created and approved by the Minister of Health and put into practice. The following steps are to create the remaining policies.

It was clear that if the quality of Health Information Management was to be improved a unified Health Information Management policy had to be created. During the development of this policy, a clear methodology was followed to ensure compliance with local and global requirements, practices, and standards to develop national Health Information Management policies. Therefore, this project should be considered a basis for further policy development.

Conclusion – what was learned

Policy development required a considerable amount of effort. However, securing the support of the higher authority and their understanding of the need to develop policies for managing health information should be the priority when planning.

The working group was able to prepare a draft of the national policy for health information management - "Privacy and Security Policy", detailing the rules that should be followed by health institutions in the Sultanate when processing health information and data. The policy will ensure standardised practices in health information across all sectors. Moreover, it will also facilitate future data exchange opportunities between the public and private health sectors.

Please note: Details of all references are available from the authors.

The Three R’s of Coding

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Introduction (background/setting)

Coding staff invariably only hear from their Managers and Executive when something has gone wrong, it's time to shift the way we think about coding accuracy.

Professional practice/case study description

In most workplaces, coding staff receive feedback about their work quality during initial training and then when records are audited in one of the many ways that health service coding quality is assessed. Invariably, the feedback coders receive on their coding quality occurs if errors are made, revenue lost, incorrect DRGs are coded and the like. Particularly in times when positive mental health is seen as increasingly important, it is incumbent upon health care leaders to find new ways to deliver coding quality messages. This presentation will investigate the ways the author has identified and implemented as real world examples of how to adjust the messaging that coding staff receive about their coding quality to not perpetuate negativity, build a positive culture and morale whilst also building staff capability to accept negative feedback.

Outcome/experience

The "Three R's of Coding" I have defined as Reward, Recognition and Remuneration. All are important, some more than others, but there are vagaries to each that need to be explored. This exploration leads to ideas on how ensuring staff receive appropriate levels of all three on a background of Award limitations and budgetary restrictions in both Public and Private settings. Often, there doesn't have to be significant additions to all three to make a positive impact upon the workplace and staff morale. However, often the experience of staff can be varied according to what leaders are prepared to do and what they pay attention to. The presenter has been able to implement several initiatives to endeavour to make a positive impact on staff and some of examples of these will be included in the presentation such that the audience can consider their applicability for their workplace.

Conclusion – what was learned

Thankfully, clinical coding is still a human-based role. Health care leaders need to recognise that fact and work accordingly to improve retention, coding quality, morale, and the mental health of their clinical coder workforce. Learnings from the presenter’s experiences have been that a relatively small number of initiatives can make a big difference, yet industry knowledge suggests that in health we collectively don't do enough consistently, or at all. This needs to change.

Human Research Ethics Committees – an opportunity for Health Information Managers

Gowri Sriraman[1].

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Introduction (background/setting)

The theme of the IFHIMA conference is Advancing Global Health: in Pursuit of High-quality Digital Health Information'. A key activity in advancing global health is research. The National Statement on Ethical Conduct in Human Research [1] forms an overarching framework for research governance in Australia. This document provides guidelines for the conduct of medical research involving humans. Such research proposals are reviewed by Human Research Ethics Committee (HREC). There are around 200 HRECs in Australia.

In the United States of America, these are known as Institutional Review Boards or Independent Ethics Committees. There are Ethical Principles Underlying Human Research Participant Protections [2].

In Canada, the research is governed by Tri-Council Policy Statement: Ethical Conduct for Research Involving Humans [3].

Health Information Managers are the data custodians of health data, and they need to be familiar with the principles and processes of health research.

Professional practice/case study description

The author has served on a Human Research Ethics Committee (HREC) in Australia for the last four years. The learnings of the author from serving on the HREC and the perceptions of the other HREC members on the contribution of the author will be shared. The author will compare the ethics processes internationally and outline the underlying principles of ethical research.

Outcome/experience

A profession is defined as a group of people with specialised knowledge [4]. This specialised knowledge comes from research. While it may not be possible for many to actively engage in research, there is a role for HIMs and CCs to support the wider clinician community in the conduct of research in Health. Serving on an HREC is a way of testing the waters in this regard.

While the primary purpose of an HREC is to assess the ethics of the research proposal, they also consider the protection of privacy for humans participating in research and their data. This is done by reviewing whether the research proposal conforms to relevant legislation, principles, and guidelines. This is an area of expertise for HIMs. Consent is a key consideration in a research

proposal. Again, HIMs can provide input on qualifying or waiving conditions for consent. HIMs can comment on the research design and research methodology.

Management of data and information related to research is an area of interest. Issues that need to be addressed include:

1. Data stewardship: who owns the data. The data in research are usually a mix of data collected by the health service and some additional data. HIMs can advise on taking due care of these data.
2. Health Information Managers can advise on the relevant policies and guidelines for the storage, retention, and disposal of research data. Often research data are stored in personal computers of principal investigators.
3. Heath Information Managers can advise on how to maintain the privacy and confidentiality of the research data.
4. Health Information Managers can advise on how to access data; both the data needed for research e.g., the number of first-time mothers who choose to breastfeed, as well as how to set up guidelines for access to the additional data gained through research.
5. A key issue in research is assuring the participants that their responses will be de-identified. However, in certain cases, other associated information may result in inadvertent identification. The algorithms for de-identification need to be clearly defined and followed to enable later re-identification if necessary.

Conclusion – what was learned

There is a role for HIMs and CCs to advance global health and research through serving on HREC committees. This is also an opportunity to showcase the unique talents of the profession and raise the profile of its members.

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Succession planning on a large scale: Creating career pathways through the development of a comprehensive Internship Program

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Introduction (background/setting)

The Veterans Health Administration (VHA) is the largest integrated health care system in the United States, providing care at 171 hospitals and 1,113 outpatient clinics, serving 9 million Veterans. In the early 2000s, VHA faced the dilemma of an aging health information management (HIM) workforce which created the need for large-scale succession planning, however, there was a national shortage of qualified candidates to fill those knowledge gaps.

Professional practice/case study description

Objective: Secure a continuous resource pool of qualified and competent HIM professionals positioned to succeed as leaders in a complex, unique, and challenging HIM environment.

Methods: VHA created a career pathway program to develop future professional leaders to manage a VHA Health Information Management (HIM) Program. The Technical Career Field (TCF) Program is a two year full-time paid internship under a trained preceptor. Trainees are paired with HIM Leadership who have planned retirements so they can pass on their extensive knowledge and experience to the next generation of leaders.

Comparison of TCF to an academic program: The two-year training program is not a substitute for formal education. Trainees must obtain Registered Health Information Administrator (RHIA) or Registered Health Information Technician (RHIT) credentials within the first year of the program, through formal college coursework (Commission on Accredited for Health Informatics and Information Management Education accredited program). Each trainee has an Individual Development Plan (IDP) bridging the gap between conceptual HIM knowledge and practical experience.

Recruitment to the program: Our Human Resources office announced the trainee positions and a "Why become a trainee" advertisement flyer was made available to the selected preceptors and interested applicants. The preceptors have a responsibility to promote the trainee positions to their local HIM/HIT academic programs. Since the trainees are hired as Federal Government employees, the applicants go through the formal recruitment, interview, and selection process.

Each year there is an open window for Prospective preceptors from all 171 VHA facilities to be eligible to apply and all facility HIM Directors are notified when the application window is open. To be considered, prospective preceptors must have a vacancy that the trainee can matriculate into at

the end of the 2-year training program. Facilities must also have the support of their executive leadership team as salary and benefits will be funded by the site at the end of training. Preceptor selection comprises of a panel of VHA HIM Headquarters staff who rank and score the applications.

The trainee professional development plan: The VHA's national Field Leadership Council consisting of senior HIM managers representing multiple medical centres routinely reviews and updates the more than two-hundred individual develop plan assignments stratified across more than twenty domain areas to ensure continuous relevance to industry practice and implemented VA HIM policy.

Outcome/experience

The TCF Program was established in 2003 to prepare trainees for HIM careers within VHA. The program provides real world experience in areas such as HIM Department management, Informatics, Records Management, Electronic Health Records Systems, Clinical Documentation Improvement, Coding, Release of Information, and Privacy. Over the course of the two-year program, trainees develop necessary knowledge and skills to move directly into HIM leadership positions. Upon completion of the program, trainees are placed non-competitively into a position at their training site, effectively addressing succession planning needs. Since inception, 157 trainees have participated in the TCF Program with a completion and placement rate of 97%. The 5-year retention rate is 93% and 10-year retention rate is 82%.

Program Evolution: The TCF HIM program conducts evaluations of the trainees at the 1-year mark, once the trainee completes the program (2-year mark), and 1 year after program completion to collect input on the successes and areas for improvement for the program.

Conclusion – what was learned

Creating a comprehensive system-wide training/internship program successfully addressed the challenge presented by an aging workforce and shallow qualified candidate pool. Internship programs are an investment and require organisational resources in addition to personnel to manage it to be successful.

A Global World with trusted information as the key to international community wellbeing

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[1]Texas Health Services Authority, United States of America, [2]Children's Hospital of Orange County, United States of America, [3]Harris Data Integrity Solutions, United States of America, [4]American Health Information Management Association, United States of America.

Introduction (background/setting)

As individual's require and seek healthcare services outside of their native countries, the need to establish a standard process for capturing multicultural names is critical to safe, cost-effective clinical care delivery. A manual clean-up process is not financially sustainable nor reliable. Manual processes for patient identification create situations where clinicians are caring for patients with inaccurate, incomplete, or delayed health information. The risk to patient safety, privacy due to inappropriate sharing, or identity theft are grave concerns. Adoption of a standardised policy for capture of multicultural patient names is a cost-effective solution that can be leveraged internationally.

Currently EHR technologies employ a range of algorithms that can be classified as basic, intermediate, and advanced. Basic algorithms are typically rules based and rely heavily on data that matches exactly. Intermediate algorithms utilised some fuzzy and cross field matching, while advanced algorithms (typically in Electronic Master Patient Index (EMPI) products) employ probabilistic machine learning technologies. Most intermediate and advanced algorithms will do cross field matching against all name fields to catch swapped and changed names based on the alias field. It is important to understand the kind of matching algorithm utilised by an organisation because depending on the level of algorithm used, many real duplicates may not be identified and will remain unnoticed in the EMPI.

Professional practice/case study description

Three health information professionals from unique backgrounds discuss the value of a standardised patient naming convention to improve care delivery, enhance patient safety using pragmatic processes that can be supported in all healthcare delivery modes. Their experience ranges from a large healthcare delivery system in California, national organisation focusing on data integrity and a state's health information exchange. The group will share recommendations for data elements to capture for optimum patient matching along with examples of multicultural name capture for ease with adoption. Current EHR Algorithm technologies will be examined and limitations with international naming conventions.

Outcome/experience

Adoption of a standardised patient naming convention improves patient matching and can be supported regardless of the electronic health information vendor. Data integrity with capturing patient names is fundamental to improving patient matching. Patient matching is key to assuring accurate, and complete clinical information is made available regardless of algorithm or where information was generated. An open discussion with audience on the value of a search based on patient name include multicultural spelling of names based on 1) the country of origin and 2) country of current residence.

Conclusion – what was learned

1. Enhanced understanding of the impact of patient matching on interoperability
2. Learned about the American Health Information Management Association Patient Naming Policy
3. Introducing best practices to facilitate patient matching and patient naming conventions
4. Learn about usage of AHIMA's Patient Naming Policy for capture of proper names in the electronic health record.

Struggles of a hybrid Medical Record Department: Implementation of an Electronic Medical Record

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Introduction (background/setting)

The Northern Adelaide Local Health Network (NALHN) has implemented the Sunrise Electronic Medical Record (EMR) Patient Administration System (PAS) in late 2022 and will soon be activating the clinical documentation component of Sunrise EMR. As part of the change management process, NALHN has not digitised the original hard copy medical record and is currently working with a hybrid hard copy and electronic medical record.

Professional practice/case study description

There are change management processes that are currently being experienced by the Medical Record Department (MRD) including workflow changes, managing a hybrid record (continued pulling of hard copy records for clinics plus new scanning requirements) and expected versus actual changes to workforce requirements.

Outcome/experience

The There will be the requirement for a hard copy medical record to be available for clinicians in the short to medium term and anecdotal evidence from other hospitals indicate this may be for up to 18 months. Pressure on the MRD to reduce workforce due to the perceived staffing benefit with digitization and EMR.

Conclusion – what was learned

Work is still in progress, and learnings will be presented at the Congress.

1,000 Legacy Systems, 10 Hospitals, 1 EPR

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Introduction (background/setting)

Manchester Foundation NHS Trust (MFT) is one of the largest NHS Trusts within England comprising of 10 Hospitals, 2 Local Care Organisations (LCO's), 3,000 beds and employs over 20,000 staff. The Trust had 4 main PAS systems and just under 1,000 individual information systems and moved to one encompassing Electronic Patient Record (EPR) in September 2022. This case study reflects the impact on the Health Information Management (HIM) Teams – mainly Data Quality, Health Records and Clinical Coding.

The Trust evolved over many years to its current size and complexity. Consequently, MFT had very mixed clinical record keeping and information systems. Record keeping varied from traditional paper health records, Paper Light/Scanned records and partial Electronic Patient Records. This brought with it problems in providing complete clinical histories for patient interactions, ensuring data were present and accurate, and reporting through multiple systems for one Trust submission. Some of the systems were old and limited in functionality whilst others meet required National standards (The Spine). However, none of the incumbent systems had the full functionality of an integrated EPR. The Trusts vision of a Single Hospital Service was intended to create clinical services that provide local accessibility using new models of care to deliver consistent high quality, safe patient care. As such the introduction of a Single EPR was an essential requirement.

EPIC was appointed in May 2020 to support MFT's vision in 2020 and September 2022 was agreed as 'Go Live' date. This programme of work was called HIVE.

Professional practice/case study description

Following EPIC's appointment MFT worked through a 2-year readiness programme of work. This included technical readiness as well as software development and migration planning.

MFT set up a Governance Structure comprising of Rapid Decision Groups (RDG's), Design Authorities, and Operational Readiness Authorities, all reporting into HIVE Boards. Each RDG held a mix of operational and hospital representatives and worked through how the system would function and the changes in process that would be required.

To support the move to digital records MFT appointed a supplier for an Electronic Document Management System (EDMS). This had significant impact upon Health Records Departments and ways in which clinical staff view patients' records.

Migration of data from the nearly 1,000 systems was a significant concern as access to the clinical history and ongoing operational reporting would need to be always maintained before, during and after go-live.

Pre implementation requirements including identifying additional resources, training and differing skill sets of staff to move to EPR, change management requirements for such a fundamental shift in working practices all had to be factored in and managed to tight timelines.

Outcome/experience

Despite a global pandemic (COVID-19) the Go Live date of 8th September 2022 was adhered to, and EPIC is now live within MFT. Legacy systems are in the process of being decommissioned and staff are fully transacting within EPIC.

The EDMS programme is still being rolled out and a full EDMS is not yet in place.

Significant changes in processes and reporting have been and continue to be made.

A Go Live of this size and complexity has not been without challenges and issues. Some of those are known and are being addressed whilst others are still emerging as early as three weeks after going live. By the time of presentation more of these will be known and discussed.

Conclusion – what was learned

The Trust delivered the single largest EPIC /European Go live.

Lessons learned and what we would do differently are yet to be formulated.

We are still adapting to this new system and are still in the implementation stage of Go Live. We are working on stabilisation and will then move on to maintaining and maximising the system.

Full impact of what this EPR means for the HIM function is still being discussed and developed and will be more fully discussed over the next few months and included in the presentation at IFHIMA Congress.

Establishing a CDI program – our Saudi Arabian experience

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Introduction (background/setting)

Improving clinical documentation can better patient outcomes, inter-clinician communication, clinical coding accuracy, and hospital funding. The Kingdom of Saudi Arabia has recently standardised the classification used in the private health sector which includes the use of ICD-10-AM 10th Edition and AR-DRG Version 9. Drawing on international experience, our hospital sought to establish a Clinical Documentation Improvement (CDI) program as part of our overall revenue cycle management project.

Professional practice/case study description

Initially, a clinical documentation audit was performed to understand our baseline and identify opportunities to improve documentation across several specialties. In this audit, CDI specialist clinicians looked through the record to identify diagnoses that were evident from a clinical perspective but had not been coded owing to poor documentation. The financial impact of these missed codes was calculated, and we will present these data. Physician champions were identified and underwent training and education. They were presented with feedback from the audit, including specific examples of deficient documentation. This demonstrated to them the reason behind the CDI initiative and the need for change. Their new knowledge and perspective enabled them to support the clinical documentation improvement specialists and CDI program.

Clinical documentation specialists (CDS) underwent specialised training covering the ICD-10-AM classification, AR-DRG system, medical record review, documentation queries, physician engagement, and data analysis. The CDI model adopted by our hospital is based on concurrent review of the medical record. In this model, the CDS reviews clinician entries while the patient is in hospital and can approach clinicians to have documentation problems fixed contemporaneously. This model has been shown to have the greatest impact in improving patient outcomes through improved inter-clinician communication, clinical coding accuracy and appropriate hospital funding.

In May 2023 CDI week was held at our hospital where clinicians, including physicians, nurses, and allied health practitioners, attend education about how to document to facilitate patient safety and accurate code assignment. The aim was to educate everyone who writes in the electronic medical record. The hospital wide clinician education was provided in a variety of formats, including in-person, via teleconferencing, and with pre-recorded sessions. Clinicians were presented with hospital specific data and audit recommendations. The education is delivered in a peer-to-peer format as physicians especially appreciate receive education from their peers. Templates were created in the EMR to support CDSs to generate ethical queries in a format that is easy for the

providers to see and answer. Furthermore, clinical coders underwent specific CDI training. This was to ensure that there is a collaborative approach to CDI.

Outcome/experience

The author's experience and reflections on the process of establishing a CDI in a Saudi Arabian hospital will be explored. Furthermore, the number of CDSs appointed and the rationale for the size of the team will be discussed. Communication between CDSs and physician champions, CDSs and clinicians and CDI clinical champions will be explored as we have adopted a whole of hospital approach to education.

More specifically communication between the CDS team and Coding teams will be shared with the audience as this is a known challenge for CDI programs. Feedback from CDI week will be shared along with the challenges and successes of creating the CDI week schedule.

Conclusion – what was learned

CDI is still new in Saudi Arabia, however, using fundamental concepts that have been tried and tested in other ICD-10-AM countries, such as concurrent review, diagnostic audits, and clinician education, will likely produce effective results. This will optimise safety and quality of care, the accuracy of hospital data, and appropriate hospital reimbursement.

The next generation of CDI? Moving beyond DRG

Cass Maxwell[1].

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Introduction (background/setting)

Over recent years ‘CDI' in Australia has matured from ’Clinical Documentation Improvement’ to ’Clinical Documentation Integrity’. Most programs include patient safety objectives however outcomes continue to be measured by the effect of DRG changes on funding – if not solely, at least primarily – implying reimbursement accuracy continues to be the main driver of CDI.

By moving away from a focus on DRG change, there is opportunity for CDI to actively promote patient safety and enhance the clinical usefulness of data generated by hospitals. This presentation introduces ’Clinical Data Integrity’ as the potential next generation of CDI, where reimbursement accuracy is a happy side effect of a holistic approach to data quality.

Professional practice/case study description

A coincidence of timing in late 2020 provided an opportunity to experiment with CDI program design. During a significant departmental restructure and office move, yet another 'failing’ Clinical Documentation Improvement Specialist (CDIS) had thrown in the towel after having made a valiant attempt to meet DRG change expectations that were arguably unrealistic in the hospital’s funding idiosyncrasies.

A stop-gap process was pitched that would cover a portion of the CDIS functions without excessive loss of reimbursement. A short reprieve from appointing a new CDIS was granted, but it soon became apparent that the revised processes were doing more than holding the fort and have become established as ‘business as usual’.

Outcome/experience

A key feature of ‘traditional’ CDI programs is concurrent chart reviews, with a CDIS reviewing clinical documentation and working with clinicians to resolve any deficiencies for coding while the patient is still admitted, however this was not realistic while the CDIS role was vacant. An alternative process, taking advantage of my pre-HIM clinical experience, was developed to identify documentation gaps during retrospective chart reviews – after discharge and coding, but before data submission for reimbursement – with real-time coder feedback to develop coding practice and skill in identifying query opportunities.

Although dedicating less than a quarter of the hours previously allocated to the CDIS role, this process resulted in greater impact of documentation queries: DRG change targets were exceeded and additional gains made through coding review. Internal outcome metrics were expanded to

include all coding and condition onset flag changes, with or without DRG change or query, and the program evolved to have two distinct branches: documentation for coding, and coding quality.

These developments triggered reflection on the unique perspective of clinical coders, being a step back from the point of care but observing the entire episode – only the patients themselves also witness every moment from admission to discharge. The opportunity for genuine patient safety objectives became apparent, and the program was expanded to include two new branches: Hospital Acquired Complication (HAC) and Clinical Indicator (CI) data quality. Processes evolved with reporting into patient safety and craft group committees to inform policy and quality improvement activities.

Reengagement of a CDIS role is on the horizon, but with an aspiration to focus concurrent chart reviews on patient safety rather than documentation for coding, e.g., monitoring of medication charts for legibility, indications for new medications, and timeframes for antibiotics. However, this will only ever be an aspiration if there is not an uncoupling of the CDIS role from coding outcomes.

Conclusion – what was learned

The term CDI has come to mean Clinical Data Integrity at the hospital, with improvements of documentation for coding being only one of four program branches. Rebranding and extending the scope has resulted more clinically useful and actionable data, increased coder professionalism and pride in their patient safety role, and clinician engagement to a degree not previously seen.

This experience demonstrates a CDI program focussing on clinical data quality can result in similar (if not better) reimbursement accuracy outcomes while maintaining congruence with patient safety objectives, and hopefully opens a discussion on evolving the CDIS role beyond documentation for coding.

Single unit medical record number for patients – is it safe?

Catherine Garvey[1], Jason Billing[2].

[1]Northern Adelaide Local Health Network, Adelaide, Australia, [2]Electronic Medical Record (EMR) Project, SA Health, Adelaide, Australia.

Introduction (background/setting)

The case for a single unit record number has been debated for quite a long time, particularly as each State and Territory edges closer to a ubiquitous electronic medical record (EMR). A highly motivated topic from the point of view of our local health network (LHN) if not managed well will have severe impacts on the integrity of the patient electronic record including protocols for inter-hospital transfers and adaptation of legacy references to link with the paper-based predecessor. Other challenges include the electronic downstream systems and inter-operability with third party products for the patient journey between acute and community bases services. This presentation explores the change management and human factor engagement process which supported our LHN transition from a paper-and-pen to a sophisticated integrated digital and electronic record system.

Professional practice/case study description

The presentation will showcase the motivators, challenges, and benefits of establishing our Local Health Network Single Unit Record Number (URN) - two hospital sites and our associated non-hospital services - as the only LHN in our State to do so during the roll out of the new electronic record management database.

The EMR is developed as a statewide EMR in response to recognised benefits of modernising the record management of tertiary hospital health information gathering, managing, sharing, statistical and epidemiological stimuli to improve the effectiveness, efficiency, and safety of our public health services. The EMR enables data capture across all metropolitan and some country sites to avoid repeating information gathering and tests undertaken elsewhere simply because the patient presents to another LHN/ facility. The EMR also facilitates the collection and collation of patient data for local analysis and or research purposes.

The application and detailed governance and permissions processes for the EMR are outlined, with details established for health professional individual login, access, and audit systems. The EMR platform conforms with national patient data privacy legislation to ensure data is encrypted whilst also made available at organisational level for FOI, Casemix, quality improvement, clinical coding, and record management compliance with State Records.

Outcome/experience

We aimed to complete implementation in March 2023 and has received overwhelmingly positive feedback from both clinicians and Executives with experiences described-as part of the presentation.

Lessons learned in the 18 months of scoping, planning, implementation and enhancing the system has included considerations of the drivers for governance when establishing a single URN in our LHN.

This concept presented multiple ICT and system challenges. The involvement of the Digital Security, teams, EMR project teams, clinician-led focus groups were critical for implementation success with our HIM colleagues.

Its success is partly due to the practical elements of the benefits of consolidation of multiple patient identifiers across 22 systems, providing greater opportunity to build a more robust system of managing waitlists, activity and clinical indicators across multiple sites and services.

Regular audit and management of data integrity is integral in the embedding of safe practice, quality assurance and effectiveness for the delivery of services as the patient moves between levels of acuity and multi-disciplinary services providers.

Conclusion – what was learned

We learned so much from this change management and human factor engagement process. Understanding the need and drivers of change is crucial to building change readiness.

Navigating an implementation of this project across our LHN, multiple sites, multiple disciplines whilst keeping the patient safety at the heart of this implementation, connecting the paper-based hospital medical record with the new digital platform has been an exercise of enormous undertaking using the skill sets of Health Information Managers and eHealth/Digital Health Practitioners.

This implementation has been driven by the sense of improving the safety of our patients and our communication between teams on the care to their patients whilst we successfully support the business of running two large public hospital in our Local Health Network.

Effect of an information sharing system established due to COVID-19

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Introduction (background/setting)

With the spread of the new coronavirus (COVID-19) pandemic in Japan, each prefecture has been constantly on the move to collect information such as the numbers of vacant beds at medical institutions that accept infected patients. Public health centres established in each medical area were responsible for monitoring the health of patients and adjusting hospitalisations.

Okinawa Prefecture is a remote island from the main island of Japan, making it difficult to transport patients outside the prefecture. A self-contained medical care system is required, and we must utilise the limited medical resources and hospital beds to maximum efficiency. Therefore, a "Corona Countermeasures Headquarters" was set up within the prefectural office, consolidating functions, through an operation system that manages health observations, hospitalisation decisions, securing medical personnel etc., at the whole prefecture level. We have developed and constructed an operating system to visualise detailed information of the priority medical institutions in real time.

This presentation will report on an information sharing operating system that Okinawa Prefecture has built independently, how to use it, and the efforts medical staff have made at each hospital to collect necessary medical information through the operation system.

Professional practice/case study description

Development of the Okinawa COVID-19 Outbreak Assessment System (OCAS)

The Okinawa Prefectural Department of Health and Medical Care worked to gather the necessary information using Google Spreadsheets which enables access to the real time data fast and inexpensively. The information necessary for the operation is added daily, and the following items are entered and shared in real time basis. Six categories and eight items are entered by the person in charge at each hospital site. All staff at each hospital have been working to establish it and ensure that the operating system functions properly on a prefecture-wide basis.

The content is the occurrence of new patients throughout the prefecture:

1. Number of patients - items: 1) outpatients; 2) inpatients; 3) patient severity
2. Number of beds - items: 4) infectious beds; 5) intensive care units; (etc.)
3. Number of PCR tests
4. Use of medical equipment - item: 6) ventilators; (etc.)

5. Availability of medical supplies - items: 7) masks; 8) protective clothing; (etc.)
6. Infection status of healthcare workers

In the hospital, we collect inpatient, examination, and bed availability information from electronic medical record data. Information was collected from each section in charge, such as the usage status of equipment, medical supplies, and infection information of staff.

Outcome/experience

We have been able to share the status of COVID-19 outbreaks and patient acceptance in each of the five medical areas in the prefecture on a real-time basis. Through this operating system, we have been able to efficiently coordinate transportation destinations while constantly checking the status of patient acceptance at each medical institution. In addition, we have been able to clearly visualise the dispatch of staff and medical supplies to facilities where clusters occurred, as well as priority preparations. Importantly, we have been able to act in smooth cooperation with between the government and regional medical institutions.

Due to the spread of COVID-19, the operation of these systems has been established, and has since continued to evolve, for the acceptance status of non-COVID patients and the response to the spread of influenza virus infection.

Because of its isolation Okinawa Prefecture must provide medical care entirely within the island. It is necessary to have a system that can comprehensively grasp the situation where medical care is under pressure due to disasters and emerging infectious diseases.

It is also important to build Robotic Process Automation (RPA), a mechanism for automatic collection without human intervention. In the future, we believe there will be a great need for this technology as a mechanism for collecting a large amount of medical information.

Conclusion – what was learned

With the spread of COVID-19, the construction of these systems has enabled the establishment of a system in which the government and local medical institutions cooperate to provide medical care in the future. It will be important to develop a system that quickly collects various emergency medical information, not just COVID-19, without human intervention.

Going digital: Closing the gap between scanned, hybrid and digital documentation – the role of an HIM in a large multidisciplinary project team

Clare Holt[1].

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Introduction (background/setting)

A tertiary teaching and research hospital in Melbourne, Victoria, launched a significant digitisation project in February 2022. The core aim was to transition some 300 inpatient forms from a paper format to being entered electronically on the organisation's main Electronic medical Record (EMR) moving away from a scanned paper medical record. The project is on schedule with units beginning to adopt to new and improved workflows from March 2023. Notably this is one of the first projects where there was a designated role for a Health Information Manager. Previously EMR development was driven from the Information Technology team with limited involvement from the Health Information area.

Professional practice/case study description

Throughout the development life cycle of this project, the Health Information viewpoint was included and considered alongside thorough clinician engagement and consultation. Advice was given in the fields of ICD-10-AM clinical coding, mapping to SNOMED terms and outputs of the digital record to meet Freedom of Information and other release of information requests. The aim of the project was to ensure the entering of diagnoses and procedures would be terminology and data driven where possible to ensure the ability to extract meaningful data would be addressed. The mantra of 'Enter once and use many' is common in all project meetings.

The health service has a very vibrant Business Intelligence Unit which is closely associated with the Health Information Service. Throughout the project there has been engagement with speciality areas regarding their data requirements outside of the main content of a patient's medical record. This is often audit data, clinical registry data, mandatory reporting submissions and extracts for research purposes. Scarily the number of Excel spreadsheets, Access databases and other applications discovered has been significant. Through this consultation, we will be delivering dashboards and automated extracts to meet these needs reducing the amount of time areas are currently using transcribing data from one system to another. The Health Information Manager and a Clinical Data Analyst work closely together to capture requirements and outputs again adopting the 'enter once and use many' approach.

Outcome/experience

At the conclusion of this project, there will be a complete clinical streamlined workflow from pre-admission, admission, ward rounds, medication reconciliation, case conference meetings and through to a discharge summary which builds throughout the admission. This will include documentation from medical, surgical, nursing, and allied health craft groups. There is an expectation that approximately 300 paper forms will be retired and no longer scanned. At the time of writing, the expected outcomes are on track to be realised.

We are monitoring the quality and consistency of discharge summaries and the impact on clinical coding timeframes and quality with significant pre-implementation data collected to compare with post implementation data as available. This comparison will be presented.

Conclusion – what was learned

This is a significant operational change across a tertiary hospital. It is expected that some units will be early adopters and will gain significant benefits and time saving from this project. However, with a big change, comes big challenges and we expect that there will be extended education and support required to ensure the benefits of this project are realised as widely as possible.

One outcome already realised is the importance of having the Health Information viewpoint in a project such as this. A purely clinical or technology driven view often misses the nuances of administrative processes around admitting and discharging patients, data collection and maximising the impact that good clinical documentation has on clinical coding and reporting outcomes.

Pursuing COVID-19 quality health data

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Introduction (background/setting)

The ability to accurately capture novel coronavirus disease 2019 (COVID-19) data using the International Classification of Diseases and Related Health Problems, 10th Revision (ICD-10), depends on several factors. These include the World Health Organization (WHO) establishing ICD-10 codes and guidelines, and the Centers for Disease Control and Prevention (CDC) National Center for Health Statistics (NCHS) adopting or modifying them for the United States (US) Clinical Modification of ICD-10 (ICD-10-CM).

Professional practice/case study description

This study's objectives were to determine the pivot points and the basis for the coding shifts from February 1, 2020, to April 30, 2022, and determine the root cause of potential health data quality issues. The implications of the ICD-10-CM code and guideline changes are far-reaching because of the many uses of these coded data. Healthcare operations, public health reporting, population health management, payment, and scientific research often rely on the reporting of ICD-10-CM coded data.

A cross-sectional analysis between the publications, Official Coding Guidelines (OCGs) and/or Frequently Asked Questions (FAQs) was done followed by the categorisation into three categories, diagnosis, prevention, and post COVID-19, generated three scenarios. Data elements that were within the scope of ICD-10-CM were selected for coding. Given the timing of updates to codes and guidelines, February 1, 2020 – April 30, 2022, was determined as the timeframe for this study. The ICD-10-CM codes, OCGs and/or FAQs marked for inclusion guided the assignment and sequence of the ICD-10-CM codes.

Outcome/experience

Aggregating the data revealed the dynamic that occurred at the pivot point to cause a different code assignment. For example, WHO released U08.9, Personal history of COVID-19 and U09.9, Post COVID-19 condition. The CDC did not adopt U08.9 but instead created new Z code for history; CDC did adopt U09.9 but not until 13 months later. The basis for the shift was determined to be the ICD code structure, documentation and coding guidance, and the timing of the code and/or guideline release.

The CDC defines the three basic characteristics of high-quality data in public health surveillance as completeness (all cases and all variables), accuracy (valid and exact as when coding and classification are correct), and timeliness (prompt and responsive). The findings show that potential data quality issues exist using CDC's characteristics of high-quality data in public health surveillance spanning the

full course of the study timeframe in all three areas. The root causes include the ICD code structure, documentation and coding guidance, and the timing of the code and/or guideline release.

Conclusion – what was learned

Accurate COVID-19 data reporting is needed to support clinical care, organisational management, public health reporting, population health management, and scientific research. However, this has proven difficult in the US as the ICD-10-CM codes and its associated coding guidance have evolved several times since February 2020.

Knowing the pivot points and basis for the shift in coding are key to understanding the quality of the COVID-19 health data reported. Any use of this data for clinical care, organisational management, public health reporting, population health management, and scientific research will need to take into account the impact these shifts may have on health data quality.

With the development of country-specific ICD-10 versions, international comparability of morbidity data becomes challenging. Besides the US, other countries have chosen to not adopt WHO ICD-10 COVID-19 codes. One likely solution to different code assignments is the implementation of ICD-11. This classification holds much promise to improved coordination of codes and guidelines. However, the timing of implementation of ICD-11 Mortality and Morbidity Statistics for morbidity is likely to vary as countries perform their due diligence to move forward.

We’re already doing that! Assisting healthcare educator colleagues to meet health informatics competency requirements

David Gibbs[1], Karen Gibbs[1], Barbara Hewitt[1].

[1]Texas State University, TX, United States of America.

Introduction (background/setting)

Health information management (HIM) educators around the globe have a growing opportunity to assist colleagues in other healthcare disciplines to meet accreditation requirements. Driven by the promise of digital health to improve patient safety and outcomes, a growing number of healthcare program accreditors have added competencies requiring incorporation of health informatics. While health informatics experts exist across all disciplines, not all faculty members are confident in how to meet these emerging requirements. The confusion is worsened by inconsistent definitions of health informatics across accrediting organisations. As a result, clinical faculty may have trouble identifying, refining, and/or adding informatics-related activities to meet accreditation requirements. An explanation of health informatics with teaching examples by HIM educators could assist faculty colleagues in other disciplines to identify where informatics already exists in their curricula and how they could easily modify current content to expand incorporation of informatics across their programs.

Professional practice/case study description

The purpose of this project was to report how collaborations between the Departments of HIM and Physical Therapy (PT) at a public university in the United States resulted in the identification of existing PT-associated health informatics activities that were already incorporated in the entry-level, doctoral curriculum and how minor changes in current content allowed significant improvement in the PT faculty’s ability to demonstrate compliance with informatics accreditation expectations. This project was initiated shortly after the PT Department’s last reaccreditation (2021) as the process highlighted a minimum number of health informatics-related learning objectives that existed within the program. Post-reaccreditation discussions made it clear that many faculty did not have a good understanding of how to incorporate health informatics into their courses. At that time, PT faculty approached the Department of HIM to facilitate improvements across the program.

Outcome/experience

HIM faculty engaged with PT faculty in several ways. A survey of PT faculty was conducted to assess general understanding of health informatics, discipline-specific definition of informatics, and knowledge of accreditation expectations for informatics. PT syllabi were reviewed to familiarise the HIM team with course descriptions, learning objectives, and assignments. HIM facilitated discussions with individual PT faculty members and PT faculty focus groups including faculty from the on-

campus PT Clinic, faculty teaching in the research sequence of courses, and with faculty mentoring doctoral PT students in research projects. These discussions produced an understanding of current content and delivery methods. The results guided subsequent discussions between faculty groups regarding how health informatics was currently being incorporated in both didactic and clinical courses and how simple tweaks to learning objectives, assignments, and content could further highlight the Department's inclusion of health informatics to meet accreditation requirements.

Conclusion – what was learned

A post-project survey demonstrated improved understanding of general health informatics concepts among the PT faculty as well as improved awareness of accreditation expectations, both of which improved comfort levels among faculty in developing and refining informatics content in their courses. Syllabi were updated to reflect new and revised learning objectives and assignments written so that the application of health informatics would be clear to faculty and students as well as to accreditation reviewers. This project clearly shows how collaborations between HIM and other academic healthcare programs could improve the ease at which health professions programs can meet (or even exceed) accreditation requirements without major changes and disruptions in curricula. Many programs may already be incorporating health informatics activities in their programs but may not recognise their existing compliance. Through this process, we discovered relevant content was in many instances "hiding in plain sight" within the PT Department curriculum.

Creating a sustainable CDI program

Mike Kertes[1], Nicole Draper[1].

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Introduction (background/setting)

Clinical documentation improvement (CDI) programs are still in their infancy in ICD-10-AM countries including Australia, New Zealand, Ireland, and The Kingdom of Saudi Arabia. In contrast, the United States and other ICD-10-CM countries have been enhancing the quality of clinical documentation through targeted programs for almost twenty years.

As such, many hospitals and organisations in ICD-10-AM countries are considering implementing a CDI program for the first time. This session will outline best practice strategies for program development and implementation.

Professional practice/case study description

When establishing and implementing a CDI program, there are several essential components that maximise efficiency and efficacy.

Prior to program implementation, it is necessary to gather baseline data on clinical documentation. These data often catch the attention of the Executive owing to the evidence they provide of financial loss due to poor documentation. This is important, as Executive support is vital for the success of a CDI initiative.

In the best practice model, CDI programs are led by a clinical documentation specialist (CDS). The role of the CDS includes concurrent record review, documentation queries, data analysis, clinician engagement, quality improvement, and liaison between relevant stakeholders. The CDS role is dynamic and challenging and requires flexibility, tenacity, curiosity, and initiative.

It is crucial to create a positive and collaborative CDI team culture, with CDSs, clinical coders, and health information managers working together to effect change. The success or failure of a program can depend on the strength of this relationship. It is important that processes are implemented to ensure effective feedback and communication.

Physician engagement remains one of the most challenging responsibilities of the CDS role. Initial resistance to the idea can be common, and changing longstanding attitudes takes time, perseverance, and reinforcement. Strategies include formal education sessions, opportunistic education, positive reinforcement, and relationship building. Education must adapt to new challenges, such as the introduction of an electronic medical record.

Even with an excellent approach, without accurate and relevant monitoring and reporting of outcomes, CDI programs can stagnate, and misdirect their attention. Collecting data on record review, queries generated, clinicians' response rate, codes identified, and Diagnosis Related Group (DRG) changes quantifies the direct CDS impact.

More established CDI programs can consider other important concepts related to documentation such as hospital acquired complications, avoidable readmissions, and denials management.

Outcome/experience

Numerous programs in ICD-10-AM countries have implemented the above strategies and achieved widespread cultural change in documentation behaviour, appropriate hospital reimbursement for the complexity of care provided, and data which are accurate and can be used for healthcare system analysis and planning. The author will present their experience of developing CDI programs for both public and private hospitals in multiple ICD-10-AM countries.

It is advisable to reassess and collect new documentation data six months after the introduction of a CDI program. Audits which analyse the frequency of documentation deficiencies help track hospital-wide documentation change.

A further metric which can demonstrate the hospital wide impact of education is the rate at which certain conditions are coded. The author will present data demonstrating the coding of common conditions per quarter in the year before and after CDI program implementation.

Conclusion – what was learned

After considering the essentials of a CDI program, and how to assess its impact, attendees will leave with both a conceptual understanding of the reason behind these fundamentals and practical strategies to introduce them to their facilities. These can be used whether their facility is exploring the possibility of a CDI program, has recently implemented one, or has a mature program and is looking to advance its efforts.

A new era of education for ICD-10-AM/ACHI/ACS and AR-DRGs

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Introduction (background/setting)

The Independent Health and Aged Care Pricing Authority (IHACPA) is responsible for the development and new edition education of the classifications used for admitted and acute care in Australia:

- International Statistical Classification of Diseases and Related Health Problems, Tenth Revision, Australian Modification (ICD-10-AM)
- Australian Classification of Health Interventions (ACHI)
- Australian Coding Standards (ACS); ICD-10-AM/ACHI/ACS, and the
- Australian Refined Diagnosis Related Groups (AR-DRG) classification.

In August 2019, IHACPA commissioned a review to evaluate the end-to-end processes of the development of the admitted care classifications (the Review). One of the key findings of the Review identified the need to enhance educational resources to better support the implementation and application of new editions/versions of the admitted care classifications.

IHACPA released ICD-10-AM/ACHI/ACS Twelfth Edition and AR-DRG Version 11.0 in 2022 and in consideration of the Review, explored options to implement an online, visually engaging, repeatable, interactive, and responsive educational package to meet the needs of users.

Professional practice/case study description

Educational resources for previous editions of ICD-10-AM/ACHI/ACS included video tutorials, a coding exercise workbook, and a challenge quiz. However, feedback from the Review identified that the:

- video tutorials were monotonous, lacked interactivity and duplicated information found in accompanying education material
- video tutorials emphasised minor rather than major changes to the classifications
- coding exercise workbook contained mistakes, and that was confusing
- challenge quiz did not adequately test application of knowledge
- challenge quiz duplicated questions from the coding exercise workbook.

To better meet the needs of users and to ensure learning outcomes were achieved IHACPA progressed two key initiatives in developing an educational package for the new edition education.

Firstly, an external provider was engaged to develop digital education material (eLearning) an worked in conjunction with IHACPA's subject matter experts to develop engaging and interactive education material.

Secondly, a learning management system (LMS) was procured (IHACPA Learn) providing the platform to deploy and track the education. The LMS was a pivotal component of the education as it enabled:

- registration and tracking of users
- provision of completion certificates and feedback surveys
- interactive education materials including clickable animations and assessments with immediate feedback; and
- controlled release of modules that required evidence of completion/learning to progress.

For ICD-10-AM/ACHI/ACS 18 interactive online modules and an introductory module were released in May 2022, covering the key changes for ICD-10-AM/ACHI/ACS Twelfth Edition. Then in July 2022 education modules for AR-DRG V11.0 were released. This was the first time formal AR-DRG education had been released. It included a general introduction to AR-DRGs, two modules covering changes for the new version (Version 11.0) and an introductory module. Another module, *Designing and delivering Twelfth Edition education for local application (Building on eLearning)* was released to supplement the Twelfth Edition modules to assist users to build on the eLearning by aiding them to develop supplemental education that could be delivered face to face locally.

Outcome/experience

So far over 2,300 learners have completed the ICD-10-AM/ACHI/ACS Twelfth Edition education modules, a further 380 have completed the *Building on eLearning module* and close to 200 learners have completed the AR-DRG fundamentals module and Version 11.0 modules. More than 51,000 education modules have been completed overall. Survey feedback was overwhelmingly positive with 98 per cent of respondents reporting that they found the learning engaging. After completing the education modules 98 per cent of learners also reported that they understood the changes to ICD-10-AM/ACHI/ACS Twelfth Edition, 94 per cent reported that they understood the AR-DRG fundamentals module and 90 per cent reported that they understood the AR-DRG Version 11.0 changes.

Conclusion – what was learned

The new edition education for the admitted care classifications was an overwhelming success. The eLearning modules, provided interactive, self-paced, repeatable learning with knowledge checks and quizzes and for the first time, enabled the tracking and measurement of learning outcomes. The feedback from the surveys will be used to further enhance new edition education in the future.

Towards better healthcare: The role of health standards specialisation within Health Informatics at the University of Victoria

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Introduction (background/setting)

Healthcare, one of the most complex human endeavours, has many interrelated facets which rely on technology to efficiently interoperate. The School of Health Information Science at the University of Victoria in British Columbia Canada (the School) offers health informatics degrees at the undergraduate and graduate level. The School is active in a wide range of activities including education, research, community engagement and development of skills used to integrate health information technology in healthcare institutions not only within Canada but also within the international community. One core use of health technology which sees high demand for the School's graduates is the mobilisation of information via the adoption and implementation of health standards. The need for experts in health information interoperability is great. To service this need, the School developed a micro-credential in Health Terminology Standards, a one-year graduate-level non-degree online live program focussing on health standards theory and practice.

Professional practice/case study description

To play a role in redressing the shortfall of experts practicing in health standards in Canadian and international institutions, Dr Francis Lau, professor emeritus of the School, created a graduate-level certificate in health terminology standards (HTS). The certificate program is offered in addition to undergraduate and graduate-level programs. Students who have achieved a baccalaureate degree from an accredited institution in a field related to healthcare are encouraged to join the program. Students earn course credit which may be transferred to fulfil course requirements for a master's degree at the School affording them the opportunity to pursue higher education.

Graduates of the Program are eligible to be certified as terminology standards specialists (CTSS), an accreditation issued by the Canadian College of Health Information Management.

Students without a baccalaureate degree face university admissions policies which impose onerous barriers to entry. For example, if a candidate does not possess an undergraduate degree, then a minimum of fifteen years' related work experience in addition to a Health Information Management (HIM) diploma are required to qualify for entry to the HTS graduate certificate program. As a result, very few promising non-baccalaureate students qualify for admission. To accommodate those individuals who had an HIM diploma and two or more years' experience, a non-credit version of the certificate known as the "professional stream" was created in partnership with the university's

continuing education department. The curriculum is identical to that of the graduate stream, the difference being the lack of course transfer credit. Graduates of both streams are eligible to receive the CTSS.

Outcome/experience

The HTS micro-credential is popular among students who are enrolled in the Nursing–Health Informatics double-degree master's program who, on completion, emerge with two MSc degrees and a Certificate, and, on application, the CTSS. This is positive news for the awareness of nursing standards.

Enrolment has increased in the professional stream since its introduction. To ease the financial pressures, the provincial government recently introduced a "future skills" grant, monies from which may be used to offset the student's fees for the program. Interest in the professional stream is growing as the grant and other marketing efforts boost enrolment.

One of our Program's recent graduate's accomplishments includes work on the creation of inclusive documentation standards in health care from Canada Health Infoway's Sex-Gender Working Group. Another recent graduate is a regional director for a Transcription Services and Health Information Exchange office. Yet another has become a public health researcher in a private consultancy firm. These diverse outcomes affirm the foundational strength of health standards across diverse health institutions.

Conclusion – what was learned

Micro-credentials, such as the Health Terminology Standards Certificate Program at the University of Victoria, are a viable route for those who wish to specialise in health information management. Providing new pathways to accreditation increases the pool of individuals qualified to manage health information.

Objectives and measures for Computer Assisted Coding systems

Kathleen Wilton[1], Katrina Gins[1].

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Introduction (background/setting)

Clinical Coding Departments face increasing workforce challenges with a shortage of experienced coders and an ever-increasing demand to complete coding sooner while maintaining clinical documentation integrity. Current processes are largely retrospective, inefficient and require the use of disparate systems. There is a requirement to find a solution to give back time for coding quality audits and provide better linkages between coding and quality departments. Now that the Electronic Medical Record (EMR) is a reality in many Australian hospitals, Artificial Intelligence (AI) can be utilised to improve the process of coding via Computer Assisted Coding (CAC), but also in the Clinical Documentation Improvement (CDI) space via computer assisted CDI opportunities.

Professional practice/case study description

The introduction of a CAC system is a disruptive event in coding practices and requires the review of all current processes so that the maximum benefit can be gained. Understanding what the coder does during the coding process, including all software systems used, spreadsheets accessed, reports generated, coding query documentation all need to be addressed as part of a robust implementation so that the resultant system can be inclusive and alleviate these inefficiencies. The project must have clearly stated and documented objectives as part of the scope of work. Then for each of these objectives, measurable results need to be in place. These measures need to be established at the very beginning of the project so that a few months of data is available before the implementation of the system. These objectives may include reducing the turn-around time for clinical coding from the time of discharge, reducing the number of queries generated by the Clinical Coders, reducing the number of external resources required to complete the coding in a timely manner, increasing the quality of coding, increasing the hospital casemix index.

Outcome/experience

Planning for the first phase of CAC in Australia is well under way and a system will be implemented and live in a Victorian tertiary public hospital in June 2023. Phase One includes the use of annotations, which is the highlighting of medical terms in the record that may need to be coded. The Coder will still be responsible for the decision as to whether a particular medical diagnosis or procedure should be coded but will have the ability to interrogate the documentation more easily to make that decision quicker. Phase Two of the project will see the allocation of codes through AI. The codes will be suggested based on the built in rules and the machine learning. In addition, by using AI, documents can be processed and then highlight to the coder or to the Clinical Documentation

Specialist (CDS) where there may be evidence to lead to the assignment of codes. The system makes reading through the sea of text easier, highlights to the coder or CDS where they should be looking, suggests codes and CDI queries based on the evidence within the record and is able to do this concurrently or while the patient is still admitted, in addition to the more traditional retrospective workflow.

Conclusion – what was learned

At each stage it is expected that positive results will be found, and objectives met. It is expected that the system will provide productivity improvement and more consistent, complete, and accurate coding. The implementation of a computer assisted coding system is a significant undertaking. It involves the integration of the Patient Administration System (PAS), the EMR and other disparate systems. It also involves a team of IT specialists, Coding specialists and the Project team. The collaboration and support of this team is important to the success of the project. A complete understanding of current processes ensures that all aspects are taken into consideration to maximise the result, improve clinical documentation, and produce a product that supports the workflow of Clinical Coders. The implementation of such systems has returned a 10% Casemix Index increase and 20% productivity gain in the United States. As Phase One is implemented in June 2023 at a Victorian public tertiary hospital the learnings and early results on outcomes should be available.

SNOMED CT to ICD-10-CA: Supporting interoperability in healthcare systems

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Introduction (background/setting)

SNOMED CT (Systematised Nomenclature of Medicine Clinical Terms, or SCT) is a clinical terminology used to capture information relating to a patient's treatment and care in a uniform manner. In contrast, classification systems such as the International Classification of Diseases (ICD) were developed and are used for systematic statistical collection and analysis.

Efficient interoperability between clinical terminologies is crucial for accurate and consistent communication within healthcare systems. SNOMED CT and ICD are two global, and widely adopted, standardised terminologies that play pivotal roles in the electronic health record (EHR) domain. SNOMED CT can be cross-mapped to other international standards, such as ICD-10-CA to help facilitate semantic interoperability and apply the principle of collect once, use many.

Professional practice/case study description

As health care organisations in Canada adopt SNOMED CT within their EHRs there is an increased need for maps to enable efficiencies through semi-automation of classification codes assignment. The Canadian Institute for Health Information (CIHI) has developed rule-based maps from SNOMED CT's clinical finding hierarchy to ICD-10-CA (Canadian modification of ICD-10) target codes to support systematic statistical data collection and national reporting.

Outcome/experience

The outcome of this initiative aims to enhance interoperability and help reduce the burden of manual coding thus enabling clinical coders to concentrate their efforts on more complex cases.

The approach encompassed manual and automated mapping techniques. Due to the challenges with using Excel to create the maps, CIHI procured a customisable mapping tool that provided automated mapping support for workflow processes, training, reporting and quality assurance. The mapping tool significantly expedited and streamlined the process of generating a semi-automated solution for aligning SNOMED CT with the Canadian health classifications.

Proper documentation of the mapping process was essential. It helps maintain transparency, supports future updates, and ensures we are consistent in mapping decisions overtime. To facilitate the implementation and utilisation of the maps, CIHI created a comprehensive Vendor Implementation Guide and Coder Education Manual. These resources aim to provide extensive support and guidance to vendors and coders in effectively utilising the SNOMED CT to classification maps.

CIHI is currently engaged in discussions with various jurisdictions to explore the potential of piloting the maps within electronic solutions. Additionally, the development of these maps has provided CIHI with an opportunity to create a subset of mappings for a health authority to identify a specific patient population. This subset will enable researchers and analysts to study extensive datasets, identify patterns and monitor the prevalence of disease over time.

The maps are scheduled to be published on July 31, 2023, and will be subsequently revised to align with the SNOMED CT Canadian Edition updates, which are released biannually in October and April.

Conclusion – what was learned

Maps from SNOMED CT to ICD-10-CA that can be used consistently across Canada in electronic health record and electronic medical record systems will be of great benefit. Such maps would facilitate the re-use of point of care data captured by clinicians, enable best coding practices, reduce coder burden, and potentially expedite quality data submissions to CIHI from different healthcare settings.

Technology and CDI: Messaging for better clinical data

Mary Kouvas[1].

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Introduction (background/setting)

Since the introduction of the Clinical Documentation Integrity program in 2018 at Northern Health, Clinical Documentation Improvement (CDI) queries have been completed on paper forms and placed in the inpatient ward folder. The average monthly response rate was 37%. This low response to CDI queries from clinicians meant that the CDI program was not meeting its objective of ensuring clinical documentation was complete and accurate in real-time. Some reasons for the low response rates could be that the form was too difficult to sight, it may have gotten lost amongst all the other paperwork and may have been over-looked if the clinician was new and didn't know about our CDI program. When it was seen, there were times when the documentation was clarified on the form rather than in the progress notes, so could not be used by coders.

Professional practice/case study description

The CDI team explored various options for improving the response rates but only found these to be a "band-aid" approach rather than an improvement in the whole process (these will be outlined in the presentation). In 2018, Northern Health implemented a messaging application called 'Medtasker', a secure mobile communication and task management platform that ensures the right message gets to the right clinician the first time. It is used for clinical tasks, medical response to code greys and pre-METs. After hearing about the success of Medtasker at Northern Health, the CDI team saw an opportunity to use this technology to improve response rates. In November 2022, (once the pandemic response had subsided) after consultation with key stakeholders, the CDI team was granted permission to trial the use of Medtasker to alert clinicians of CDI queries. The implementation was seamless since clinicians were already familiar with receiving tasks on the application. The title of the task in Medtasker is "CDI Query", so clinicians are aware of the reason this task is being sent - clinicians were already aware of the functions of the CDI program, this process was merely replacing paper forms with an electronic message.

Outcome/experience

This innovative approach saw 95 CDI query tasks sent in November with 100% of tasks "accepted" and "completed" within 30 minutes (a KPI set within the application by Northern Health). The response rate to actual CDI queries as evidenced by documentation in the healthcare record was 78%. This was a significant improvement in just one month. With this success, Northern Health endorsed the use of Medtasker for CDI query submissions and continues to see a high response rate each month. To date, our response rate is sitting around 90%. The process was formalized and is part of the policy and procedure on clinical documentation. With an average of five CDI queries per day, the Junior Medical Officers do not feel overwhelmed with tasks via Medtasker and see these queries as learning opportunities to understand what is required of them in regard to clinical documentation and are able to apply this learning to future cases. CDSs have better job satisfaction knowing that their work has not gone to waste. Clinical coders have access to complete and accurate clinical documentation and can perform their role efficiently. The reporting function in Medtasker enables the CDI team to track conversations and feedback to clinicians that are noncompliant. The report also identifies clinicians who have improved throughout the year in terms of clinical documentation and are acknowledged through our “Intern of the Rotation” award.

Conclusion – what was learned

The use of this technology facilitated a better workflow for Clinical Documentation Specialists (CDSs) and clinicians with positive feedback from both professions. Medtasker is an effective communication tool as it allows clinicians to respond to the CDS if a query requires further clarification and it allows clinicians to comment on the status of the query. The use of Medtasker improves clinician engagement, an area that was so difficult on the busy ward. With Medtasker, this is made easy.

Concurrent clinical documentation integrity and clinical coding – collaboration and efficiency through automation

Kathleen Wilton[1].

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Introduction (background/setting)

The future of coding is more than just Computer Assisted Coding. Artificial Intelligence (AI), automation and intuitive workflow is the path forward to address productivity and efficiency and to ensure that quality data can be gathered in real time to improve patient care. A true end to end solution is the combination of understanding both the coding process and processes for concurrent clinical documentation improvement. If coding is dependent on the documentation, and it is, the solution needs to also facilitate clinician queries and Clinical Documentation Integrity (CDI).

Now that the Electronic Medical Record (EMR) is a reality in many hospitals AI can be utilised to improve the process of coding via Computer Assisted Coding (CAC), but also in the CDI space via computer assisted CDI opportunities. CAC is only going to be as accurate as the documentation so both must be addressed in tandem and a product that includes both sides of the story can only enhance the total result. The implementation of a complete CDI/CAC product ensures an end-to-end system. The AI will not only support the CAC but the concurrent review of medical records for completion of documentation. The AI will provide opportunities for prioritisation of records for review, query generation and real time prompting for Clinicians to review documentation deficiencies.

Professional practice/case study description

CDI is the process of ensuring the documentation is complete and accurate at the point of care. A Clinical Documentation Specialist (CDS) working in the concurrent space is confronted each day with new admissions, reviews for completion, results to be followed up and queries to be managed. With the introduction of a CDI workflow tool powered by automation, the CDS is quickly able to identify which episodes to target for potential improvement based on admission documentation and other predetermined criteria, they can generate a working DRG with more precision and to send queries in an efficient manner. Once the artificial intelligence is available through the system and auto suggested codes are available to the CDS, the process will be more efficient. Hospital acquired complications (HACs) will be recognised during the admission and notification to the Quality Team will occur during the patient admission. The Clinical Coders will also have the ability to access the documentation reviews conducted by the CDS and any queries that they generate and action. This visibility of the CDS work by the Clinical Coder is a productivity tool as it avoids duplication and supports collaboration.

Outcome/experience

The CDS generates a working DRG based on the key diagnoses and procedures of the episode and will work towards having documentation to support each of the diagnoses in the medical record in a way that the Coder can action it and assign codes. Where there are two workflows, one for the coder and another for the Clinical Documentation Specialist (CDS), the coder can see what queries or notes, findings follow up the CDS has been acting on and the CDS can see the final coding and DRG from the coder and compare that with their own working DRG, thus improving visibility and fostering collaboration. Collaboration is essential for the continued improvement of both the CDS efforts to ensure documentation is complete and available to support the Coding function and in turn the education of Coders in documentation improvement. Episodes for review will be identified enabling the CDS to focus on episodes where input is required, enhancing productivity and the Coder will have the documentation, they require complete at the time of discharge enhancing the revenue cycle.

Conclusion – what was learned

It is expected with the implementation of a tool that combines a clinical documentation and clinical coding workflow with the ability to further refine documentation opportunities, create queries and manage queries, then more accurate and complete Coding will be achieved. The collaboration of these interests will serve the organisation from a quality, data and reimbursement perspective. A product that combines these two functions will be implemented in June 2023 in a Victorian, public tertiary hospital. The functionality and benefits will be defined, and learnings discussed of the implementation of an end-to-end system that addresses both the integrity of the clinical documentation and computer assisted coding.

Patient portal utilisation: Intersectional considerations toward health equity

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Introduction (background/setting)

UCLA Health is a multi-hospital and ambulatory academic healthcare delivery system comprised of four hospitals and more than 400 clinics, providing care in Los Angeles and surrounding counties to a patient population diverse in language, ethnicity, race, gender and socio-economic backgrounds. Our vision is to "heal humankind, one patient at a time, by improving health, alleviating suffering and delivering acts of kindness".

Within the Los Angeles safety net, studies have shown specific characteristics for patients around age, education, income, comorbidities, race/ethnicity, language, immigration and documentation, and health literacy.

In 2013, UCLA Health implemented our EHR, and we have continually optimised our patient portal, myUCLAHealth, to ensure communication and access for our patients. Our LGBTQ+ patients are likely to utilise myUCLAHealth to obtain their health data, but their needs from the health system have specific care considerations. Our geriatric and disabled patients may not utilise the portal at all due to limiting physical abilities. The patients' varied languages, cultural and socio-economic backgrounds create challenges to accessing, using, and understanding their own health information. Patients use our translation services or family members to translate during provider visits.

An adoption program was developed to increase utilisation of the myUCLAHealth portal, to decrease stigmatisation, and increase health equity through technology, addressing social systems, and training. The literature (Casias, et al., 2019 and 2022; Localio, et al., 2020; Smith, et al.,2015) provides foundation for developing an adoption project by addressing the disparities that patients face and helped our program further identify challenges for patients in marginalised groups.

This presentation discusses our patient portal adoption program that incorporates race, ethnicity, gender, and class to understand patients' barriers in engaging with the portal and to further our goals toward health equity.

Professional practice/case study description

Through our portal, patient information is accessible immediately following a visit and during admission. With over one million myUCLAHealth users, we engaged our Health IT and training department to increase adoption across all disciplines. Our adoption aim was to develop training for patient access and HIM staff to address some of these needs at the time of service and when possible, at the point of care. We developed materials for staff that provide specific language and sensitive communication tools for engaging with patients, we identified HIM Ambassadors and Super

Users to assist patients in navigating the portal and in understanding the information being made available for their care. The organisation included more patient education and integrated it into the patient portal and made education available in more languages and provides translation services across all clinical areas. HIMS rolled out our Concierge Service to assist patients throughout the health system in real time, face-to-face.

Outcome/experience

The outcomes of our adoption program have been met with positive feedback and much learning and marked increase in adoption between 2019 and 2022 (October 2022). Our teams are now well versed in the technical and legal aspects of portal access.

We created tech hubs for patients to get help with accessing the patient portal, beyond registering. We found that the sooner our teams can interact with the patient after they register, the greater the likelihood the patient would utilise the portal going forward.

Patients were more likely to call our HIMS Contact Centre and request step-by-step assistance and access to their health information after receiving information about the portal following their clinic visit.

Integrating Ambassadors in the hospital setting was beneficial for our patients who utilised Bedside (in-patient portal access), and this application made continued use after discharge more likely.

Conclusion – what was learned

As we continue to optimise our portal towards inclusivity and equity, we have set goals for the future that include requirements for annual training for staff on engaging with sensitive and marginalised patient populations, stretch goals for future adoption across all patient demographic areas, and support for patients who need assistance navigating the technical and literacy aspects patient portals.

Please note: Details of all references are available from the authors.

Surgical complications: The challenges in defining, capturing and reporting unplanned return to theatre data and the impact on Hospital Acquired Complications performance reporting and benchmarking

Laura Royce[1].

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Introduction (background/setting)

Each year, nearly 9,000 operating theatre visits involve patients who return to theatre unexpectedly following an earlier operation [1]. Healthcare organisations are driven to achieve good patient outcomes, however significant numbers of patients are harmed during health care, resulting in permanent injury, increased length of stay, higher costs to healthcare or even patient deaths [2]. It is well accepted that Hospital Acquired Complications can be reduced (but not eliminated) by the provision of high-quality patient care, and available evidence points to the provision of relevant and timely clinical information as an effective driver of safety and quality improvement. Unplanned returns to theatre events are frequently due to complications. Some complications following complex surgery are to be expected due the patients' pre-existing disease or condition and the nature of the disease or complication being treated [3].

The introduction of Version 3.1 of the Hospital-Acquired Complications (HACs) List [4] into Australia brings a greater focus on accurately capturing and reporting unplanned return to theatre and compliance with mandatory State and National statutory reporting requirements such as Victorian Admitted Episodes Dataset (VAED) and Hospital Casemix Protocol (HCP), presenting a huge challenge for all healthcare organisations due to variances in unplanned return to theatre data definitions, EMRs, and Patient Administration Systems (PAS) lacking the capabilities to capture and report the data item according to data specifications and hospitals not having clear clinician led processes and systems in place for determining and capturing if the return to theatre was planned or unplanned.

Professional practice/case study description

Beamtree, an Australian company, works with health organisations to improve patient outcomes by supporting healthcare providers to collect and report high quality data, and has established a Relative Indicators for Safety and Quality (RISQ) HAC theatre working group, which brings together Health Information Mangers, Clinical Coders, Quality and Safety Managers and Clinicians with the aim of:

1. Understanding the impact on reporting and benchmarking HAC outcomes by not having a national unplanned return to theatre data definition and specifications.
2. Assessing the capabilities of hospitals' EMR and PAS systems in capturing and reporting unplanned return to theatre data according to the data specifications.

3. Reviewing and sharing hospital theatre processes and workflows on the responsibilities for clinician led collection and reporting of unplanned return to theatre data.
4. Supporting working groups to identify gaps for improvement to enable accurate reporting of unplanned return to theatre which impacts hospital HAC reporting.

This presentation will share the group's work, report the outcomes achieved and present case studies to support other hospitals to improve the accuracy of collection and reporting of unplanned return to theatre data.

Outcome/experience

The Beamtree RISQ HAC working group has identified, reviewed and mapped variations in return to theatre data definitions across state and national jurisdictions and the impact on reporting and benchmarking V3.1 surgical complications HAC data; completed assessments of local EMRs and PAS systems' capabilities to capture and report the unplanned return to theatre data item and are now working with software vendors to enhance functionality to support the reporting in line with current data definition and specification. Aware of the challenges faced in achieving a clinician led unplanned return to theatre process and the impact this has on the coding workforce, the group is advocating for a national definition and specifications for collecting and reporting unplanned return to theatre data.

Conclusion – what was learned

Clinician governance structures and quality improvement processes must be underpinned by high quality data. Data on post operative hospital acquired complications are key for driving continuous improvement in the delivery of healthcare. To achieve this, Australia must move to a standard National definition and add additional capabilities into EMR and PAS systems to allow accurate reporting at a national level.

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‘Health Information Managers’ – can Health Care IT vendors live without them?

Fiona Miles[1].

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Introduction (background/setting)

Good quality digital health information is in demand, productivity improvements in healthcare are increasingly hard to achieve through labour changes and require digital solutions. Opportunities for Health Information Managers (HIMs) to move out of traditional roles are emerging due to the need for effective digital health solutions, but how does this happen? How can HIMs move into digital health transformation where tailored solutions are being built for hospitals and community health settings and how can they be a part of the decision-making process? More to the point, how can software vendors drive effective improvements without HIMs?

The purpose of this abstract is to describe how an HIM can influence an Australian owned company to explain and interpret the healthcare landscape and describe what happens at the ‘coal face’. For technology platforms to successfully meet service delivery needs, there is an ongoing requirement for software to better connect the clinician and their patient. HIMs, with their deep industry knowledge, are uniquely positioned to support this.

Professional practice/case study description

So how did an HIM end up working for Vitro Software? Opportunities do not come around often; you have to reach out and put yourself out there to demonstrate the influence you could have in an environment that has deep expertise in software but perhaps less in the practical delivery of health outcomes. You know you can do it, but how does a Health IT vendor know?

For me, an opportunity became available following a discussion that went something along the lines of, ‘How can a HIM continue to help us build our EMR and grow our Australian base?’ It led to me becoming an integral part of the company, a valued member of the senior management team, a driving force working closely with the project management team working with clients directly, and a strong contributor to the ongoing product design, development and delivery.

A HIM can be influential in the Health IT world, from how health information knowledge can be shared to key stakeholders of the software company in the design and delivery of health solutions, to how existing and future customers gain a sense of trust with the vendor, when key personnel have lived and breathed their everyday experience in the health care setting, talking the talk, and walking the walk.

Outcome/experience

The experience involved moving out of my ‘comfort zone’ of a traditional role in a hospital and community health setting.

My knowledge and skillset, developed over 27 years in the industry, needed to be trusted and utilised so I could make a difference. The biggest question I asked myself was how to impart this knowledge successfully, helping the company understand the evidence-based nature of health care, the way the health care setting works, and passing on industry expertise to make a valuable contribution and difference to the design, implementation, and management of the product.

I joined the company as a Director of Business Services. The HIM knowledge and skillset I have developed became a focal point of conversation both internally and externally and has contributed to re-imaging both customer engagement and the development focus for our products. While also looking at how to market and grow the brand awareness in the Australian market. The business recognised the impact a HIM knowledge set could bring, especially being based in Australia.

Conclusion – what was learned

Acknowledgement and recognition that the skill set of an HIM is transparent and that HIMs can deliver compelling contributions within the sector outside of the traditional HIM role.

The knowledge, leadership, and experience that can be shared translates beyond the standard health care provider roles and for a Health IT vendor who is moving into the next phase of design and development, industry expertise is essential.

It is OK to step outside of your comfort zone and try something new, trust your instinct when you know it will work and know that the skills you have developed do have strong applications across the sector.

The voice in the back of my HIM head saying for the last 27 years that Health IT vendors need HIMs was right. As a HIM providing a voice to Health IT vendors in solution design is very rewarding and enables HIMs to help create the best solutions for clinicians and patients alike – this really is a ‘win-win’ situation!

Pursuing high-quality digital health information using transversal leadership to influence others and build resilience

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Introduction (background/setting)

High-quality digital health information is critical for effective health service delivery [1]. Health Information Management Professionals (HIMs) are key enablers, ensuring the integrity and proper use of digital health information essential for patient care [2]. They are trained to protect patient confidentiality according to legislation and maintain healthcare data according to standards, supporting health professionals with proper documentation and legal compliance [3]. The scope of their work extends beyond their position title and organisation hierarchy as they consult and collaborate with peers, patients and external entities [4]. To enact change and motivate compliance without positional authority, HIMs can employ transversal leadership skills. Defined specifically for the health information management profession, this leadership style involves social influence, and self-awareness and management to promote a team-based, collaborative approach towards attaining shared goals [5]. Transversal Leadership (TL) skills enable what is intrinsically called for in a digitally capable health workforce: confidence, decision making, collaboration, and communication [5],[6]. It encompasses the internationally published set of transversal competencies (critical thinking and innovation, interpersonal and intrapersonal skills and global citizenship) identified as critical aptitudes for HIMs today [7]. This presentation shares insights from an empirical research study involving HIM participants on how transversal leadership can be used as an effective tool in the pursuit of high-quality digital health information [8]. The practical application and benefits of the results will be availed as a workshop within this conference.

Professional practice/case study description

Key findings from the research study will be presented across the following areas:

1. How HIMs can apply TL skills and techniques to real-life workplace scenarios.
2. Adult learning and training approaches based on published principles and paradigms of education specific to the health profession.
3. Examples of how HIMs can lead change and influence others using TL.
4. Recommendations for education, policy and future research related to building leadership capability in HIMs.

Outcome/experience

Attendees will be presented with key outcomes in the following areas, informed by the study that they can apply to their own workplaces.

- Professional practice: TL can be used to handle unfamiliar situations and resolve challenges at work.
- Professional education: HIMs can develop TL. Teaching and learning strategies can be informed by adult education principles and paradigms appropriate to the learner's existing knowledge and experience.
- Leadership: HIMs can achieve collaborative outcomes, influence others by leading through relationships, allowing them to enact change without positional authority.

Conclusion – what was learned

This presentation will provide attendees with the TL tools, techniques and outcomes to support HIMs in their pursuit of high-quality digital health information. A contemporary description of a leadership model for HIMs regardless of position, an overview of effective adult education strategies and discussion of key findings related to the Congress theme will promote discussion about developing leadership training and development that equips HIMs into the future.

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ICD-11 training: New Classification… New approach

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Introduction (background/setting)

ICD-11 is dramatically changing the way we collect, report, and manage information on clinical diagnoses in different health services and settings. ICD-11 is completely electronic, rich in synonyms and abbreviations, uses Unique Resource Identifiers (URI's - not just codes), and functions as both a classification and a terminology. It brings with it the potential to add much granularity to what we can capture from our clinical documentation. ICD-11 has new potential users (clinicians) and could possibly change the roles of legacy users (coders). With the great potential that ICD-11 brings to our clinical information comes a big challenge: training!

Professional practice/case study description

This presentation highlights the training approach that enabled the successful implementation of ICD-11 in a general hospital in Kuwait, and subsequent sharing of educational material with a wider audience on YouTube. We present the methods used for preparing, delivering and disseminating the training material in terms of: audience-tailored content to match the needs of different users (physicians, coders/HIM professionals); presenting the content in a way that is suitable for adult learners (succinct, informative and engaging); effective delivery and dissemination of the material that went beyond conventional in-person training to include social media (WhatsApp, YouTube), and virtual simulation.

Outcome/experience

Results of the user experience survey used in the pilot phase of implementation will be shared, in addition to analytics from the YouTube channel used for disseminating the training material. The presentation will also share lessons learned from our practical experience with respect to the training process. We believe that this experience would be of value to entities transitioning to ICD-11 as they prepare their training material and adapt it to their audience and local environment.

Conclusion – what was learned

ICD-11 implementation is a huge undertaking and at its heart is training. Only when training is successful and users are both willing and able to use ICD-11, can the actual implementation take place. A completely different approach to that used in ICD-10 training is required as training must match the electronic nature of ICD-11 and fulfil the needs of its different users (coders/physicians).

Management by Metrics

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Introduction (background/setting)

The management of a clinical coding department is both challenging and unique. Hospital casemix, coder experience, patient record type, work location and available technology all influence quality and productivity. The unsuccessful recruitment of a Coding manager saw Bendigo Health look to an alternative option, employing a senior clinician with experience leading a team in the clinical setting however with little knowledge of clinical coding practices.

It was during this time that SARS-CoV-2 (COVID-19) was declared as a worldwide pandemic and the organisation transitioned from a digital/scanned medical record to an electronic patient record (ePR). The resultant work from home orders with significant change to the presentation of the patient episode data saw the need to rapidly review current workflow processes. Existing processes and guidelines did not provide the necessary tools to manage a remote team effectively. Unreliable Information on coder statistics and KPI's not appearing to fit with the ePR. Clinical classification professionals were performing like production workers, challenged with meeting quotas rather than professionals managing a workload.

Professional practice/case study description

Over time, multiple sources of data along with many and varied spreadsheets had been developed to allocate, monitor, and measure coding quality and output. Existing tools had been primarily designed around a paper record and as such were difficult to apply to a fully electronic record and a remote workforce. A single data source that was reliable and configurable was key to the analytics that were required to first gain understanding of the business and then to allow for planning, process development, monitoring, benchmarking, and reporting.

The introduction of Code Focus, an electronic coding/auditing management software solution integrated with the Patient Administration system allowed for identified areas of improvement and opportunities to be further explored and introduced.

A review of the existing workload allocation was undertaken looking at:

- Coder experience
- FTE
- Current and predicted Casemix and patient separation numbers
- Admission Length of stay
- Hospital priorities for coding
- Available communication tools

This information provided insight to review current processes and guidelines, allowing for the implementation of necessary modifications to manage rapid changes.

Code Focus provided a clear picture of the capability and capacity of the team with the ability to accurately monitor output against timelines. Self-allocated coding was implemented, supported by processes and the provision of individualised quality and productivity reports. Individuals now feel confident in managing and monitoring their productivity and outputs. Reliable metrics are readily available to the individual and the senior management team allowing for benchmarking and performance assessment, providing an avenue for performance improvement based off measurable outcomes.

Suspected Increased workforce requirements and deficits associated with the implementation of the ePR have been validated with these metrics utilised within business cases seeking additional funding for staff. Real time data has allowed for accurate reporting, informed predictions, and future resource planning.

Outcome/experience

Twelve months of data were collected and analysed to provide a clear picture of the team's quality and productivity, allowing for a shift in workload management, and reportable outcomes. The transition from the use of multiple data sources to a single online platform has improved overall understanding of the coding undertaken by the Clinical classification team, whilst providing the ability to facilitate ongoing remote coding as an option.

Trainees were found to require supervision and support along with education and allocation. They achieved an output of 1.5-2.5 episodes/hour, working on-site.

Those with between 1-5 years' experience were classed as independent coders, who regularly seek support and require regular feedback, with tailored education. Coders were confident to self-allocate with an output of 2.5 -3 episodes/hour, and a hybrid of remote and on-site work location was recommended.

Five years + Independent coders, were able to source information independently, sort support and/or feedback as required, with confidence to self-allocate and an output of 3.5 – 4 episodes/hr, were able to work remotely.

Conclusion – what was learned

Metrics have enhanced understanding of the role the clinical classification professional which has assisted with managing rapid change and workforce challenges allowing for growth and development of the entire team.

Development of an integrated cloud-based platform for laboratory services

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Introduction (background/setting)

The cloud-based platforms have grown significantly over the last decade. A laboratory Information System (LIS) is a set of software that receives, processes, and stores information generated by medical laboratory processes. This study aimed to develop an integrated cloud-based platform for laboratory services.

Professional practice/case study description

This study was conducted in two scenarios, the first scenario is local in the context of a hospital information system (HIS) where sample information is sent to the platform via a web service. Finally, it interacts with the cloud-based laboratory system and exchanges information. In the second scenario, all the laboratory information is in the cloud and there should be integration and exchange of information between HIS and LIS.

Outcome/experience

Both scenarios have been used in this model and help laboratory specialists to store and share information on the cloud-based platform. This platform can support several activities, to: track specimens; reduce the cost and time of the patient testing process; analyse and visualise; prevent duplicate data; access patient data from anywhere at any time; easily manage patient information and test results; automatically label samples; and track Laboratory Maintenance.

Conclusion – what was learned

The goal of this study is to develop an integrated cloud-based platform for laboratory services by providing shareable, integrated, and high-performance laboratory information. The results of the tests are stored in the cloud-based platform and sent back to the Laboratory systems in hospitals to be easily accessible anytime and anywhere. This platform is more cost-effective and affordable for laboratory specialists to enhance their performance.

Walking the Labyrinth: Measuring clinical coding complexity

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Introduction (background/setting)

It is not uncommon for coding auditors and managers to hear phrases like “but you always give me the most difficult cases”; “I can’t progress as quickly as they can, because their work is easier than mine”; “the auditor deliberately selects my difficult cases to audit”; or even, “someone’s taken all my challenging cases, so I’m bored”. The cries of unfairness particularly apply when progression on the national pay scale is dependent on a combination of throughput and audit results.

Te Toka Tumai—Auckland City Hospital is New Zealand's only quaternary level hospital and treats patients from all over New Zealand and the Pacific. Thus, with over 70 specialties, we code some very complex cases (such as repair of cardiac anomalies) alongside the more straightforward cataracts, tonsillectomies, and joint replacements.

Professional practice/case study description

At Te Toka Tumai—Auckland City Hospital we looked for a way of measuring complexity for clinically coded events that is objective and uses already existing data. We used a range of variables that, when combined, give a robust way of reflecting the time a coder spends working through the documentation for an event. The measure had to be replicable in a blended record situation, so that those coding from a paper record were not penalised. This meant that the number of pages was not usable. The variables used include cost weight, length of stay, number of assigned codes, and admission weight (for premature infants).

Outcome/experience

The use of length of stay as a part of the measure means that there is a very long tail on the data. As a result, we needed to split the measure into more manageable groups. We found that three groups—low, medium, and high—worked best and set the boundaries so that 60% of the work was in the lowest group, 30% in the medium, and the remaining 10% in the highest complexity group.

The complaints of unfairness have stopped, and we use the measure in several ways. These include work allocation, training of new coders, stratified audit sampling, and staff progression through the steps of the NZ Clinical Coders’ National Pay-scale.

Conclusion – what was learned

Understanding Clinical Coding complexity is a valuable tool for ensuring equity both locally and nationally:

- Without a measure of case complexity staff felt that they were being treated unfairly with the selection of cases for audits
- Without a measure of case complexity that could stratify pay, staff would move to organisations that had less-complex cases for the same level of pay
- Without a measure of case complexity, it is not possible to see what impact changes to coding versions have on coding productivity
- Without a national measure of case complexity staff in different coding departments on the same salary would be coding different levels of complexity

Now that New Zealand is moving forward with a single public health organisation—Te Whatu Ora (Health New Zealand)—coupled with a single pay structure for Clinical Coders, we require common processes for recognising the abilities of individual Clinical Coders across the country. It will become increasingly important to recognise what levels of case complexity each coding department is expected to deal with, to adequately resource the teams. This will not be possible without a reliable tried and tested approach for measuring case complexity.

Building clinically coded data quality from the ground up: Mechanisms for whole system engagement – learnings from the Kingdom of Saudi Arabia

Stephen Badham[1].

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Introduction (background/setting)

The Kingdom of Saudi Arabia (KSA) is engaged in a national reform program to improve quality and efficiency in its healthcare system – driven by a value-based healthcare agenda – and has identified the need to improve the value, use and underlying quality of clinical coded data as critical to success. Data collection, standardisation and use have been variable to date, and the drive to improve them comes in the context of major system reform and competing priorities across the health system.

Professional practice/case study description

Historically, clinically coded data has not been valued in KSA, and therefore it is critical that initiatives to drive improvement consider both tools for supporting data quality improvement at source as well as mechanisms for stakeholder engagement across the system. The opportunity to build a system 'from the ground up' is rare, and the KSA experience is a valuable one as we consider how to leverage the value of high quality, timely clinically coded data across our systems internationally.

This presentation will evaluate:

- progress in embedding data quality improvement tools in KSA public and private hospital systems through to late 2023 – including adaptation of tools for different layers of the health system
- stakeholder engagement and communication at various levels, including the use of financial drivers, benchmarking, clinical insights, and system management to increase the value of clinical coded data and its use in KSA
- technical and other challenges and lessons learned
- use of automation and the uptake of contemporary solutions to fast track much of this work and set the system up for success in the future – including discussion on the applicability of this to other healthcare systems.

Outcome/experience

This presentation will reflect on progress in each of the four domains listed above across 2022 and 2023, and the mechanisms for engagement which have proved most and least useful, including highlighting how experiences of other nations have been applied in KSA, and how learnings from KSA initiatives can be applied to other healthcare systems.

Conclusion – what was learned

The opportunity to engage with a system nationally as it builds clinically coded data quality from the ground up is rare, and KSA has sought significant international engagement in the process, balanced against ensuring that key knowledge and skills are ‘homegrown’. This paper will conclude on the learnings from the KSA experience which can be applied elsewhere to improve the quality, value, and use of clinically coded data.

Data sharing and comparing outcomes - fostering positive clinical engagement to accelerate improvements in clinical care.

Victoria Hirst[1].

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Introduction (background/setting)

Healthcare organisations around the world are swamped with data and are producing reams of regional and national performance indicators. However, there are very few clinical comparisons of outcomes that can be compared directly across organisations, countries or between healthcare systems. In addition, there seems to be little understanding of whether these metrics are improving patient care. This has led to healthcare systems often struggling to ensure care providers are measuring the 'right' things at the right time to effectively support and provide insight to care providers globally.

The Global Health Comparators(GHC) program brings together healthcare organisations from Europe, the USA and Australasia. Hospitals involved in the program are aiming to:

- Comprehensively share and benchmark administrative data across 259 diagnoses groups via a fully mapped, risk adjusted international dataset
- Utilise the international dataset as a foundation for shared learning through global collaborative groups, bringing together clinicians to solve the current challenges in clinical care resulting in accelerated improvements in patient care
- Compare their outcomes across borders and work together to measure care more effectively as well as using the network to find new and novel ways to solve the similar challenges that are facing many health systems since the first wave of Covid 19 swept through the world in 2020
- Collectively conduct novel research
- Access a trusted network of peers via facilitated webinars and face to face meetings.

Professional practice/case study description

Outcome indicators are based on the analysis of inpatient records submitted from participating hospitals for discharge dates within the period 2018 to 2022. These are data that are routinely collected for administrative purposes and not specifically for clinical audit. Diagnostic groups are based on the Agency for Healthcare Research and Quality (AHRQ) Clinical Classification System.

Main tasks consisted of:

- Compilation of a database and integration of records from five countries

- Selection of General Data Protection Regulation (GDPR) compliant fields and definitions of variables
- Definition of an inpatient
- Selection of outcome measures
- Classification of diagnoses and procedures into meaningful groups across the different versions of ICD-10
- Adjustment for comorbidity
- Production of risk-adjustment models
- Extraction of model performance metadata
- Presentation of results

The project database can be interrogated by analysts and participants using an interactive online analytical platform developed in conjunction with data teams from member hospitals. The online platform provides an insight into the data and identifies variation in outcomes across organisations and countries. This acts as a starting point for discussions to identify what is driving these differences in outcomes within and between countries. Once variation has been identified members establish working groups, bringing together clinicians, healthcare leaders and data teams from the different organisations and health systems to determine the drivers causing the variation in outcomes and seek to identify the factors behind high performing hospitals. By working together these clinical teams can use the data and the network to identify what, how and who they need to change and accelerate quality improvement initiatives and therefore improve patient care.

Outcome/experience

Healthcare organisations are keen to make better use of the information they are collecting. Carefully managed administrative data can be an effective resource for creating new and novel metrics that initiate dialog between hospitals within and across countries. The combination of data and communication creates accelerated improvements in patient care.

Conclusion – what was learned

By outlining the key limitations of administrative hospital databases for international comparisons of important patient outcomes, this project may help to identify new variables that need to be routinely recorded to explain measured variations in risk-adjusted outcomes of hospital care including EMR and registry data.

The international dataset raises interesting questions and identifies areas of variation in outcomes across countries. Intercountry differences in outcomes may result from several different factors. These include differences driven by the structure of the different health systems, the quality of care or in practice patterns. These data have proven to be successful in engaging clinicians to work collaboratively across countries to understand the drivers of variation. By combining data and clinical expertise GHC is using these data to improve patient outcomes across countries.

Pilot experiences – Journey to Computer Assisted Coding and automation

Cheryl McCullagh[1].

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Introduction (background/setting)

Clinical coding and classification processes were established in an era of paper documentation and medical records. The way coding processes were built to standardise the data collection of acute events were necessarily complex to harmonise disparate ways of working. In Australia, the introduction of Electronic Medical Records (EMR) and other electronic clinical systems (such as oncology, cardiology, and endoscopic systems) has created the opportunity to innovate clinical coding delivery and to engineer workflows to leverage advancements in an abundance of electronically collected documentation.

There is a shared vision with Australian healthcare providers and technology companies to expand the use of computer-assisted automation to ease the burden of clinical and administrative tasks and improve documentation and collection standardisation. This paper represents a cooperative Industry, Health service and Academic collaboration to validate progress in the validation of classification of clinical records through assistive technology.

Outcomes of two pilots, one in Australia and one in the United Kingdom, will be reported to the audience to demonstrate the relative quality of assisted coding to human only coding processes. We propose that in time, more automated clinical coding collections will be possible, improving completeness and accuracy, providing an opportunity to re-align clinical coding resources to focus on the most complex cases and driving more efficient practices in coding collections.

Professional practice/case study description

Clinical coding is how Australian hospitals classify their activity, benchmark their outcomes, and determine funding. In Australia, all hospitals use ICD-10-AM and ACHI coding classifications to achieve this. The coding process relies on Health Information Managers and Clinical Coders applying ICD-10-AM and ACHI classifications and a complex set of Australian Coding Standards and coding rules against clinical documentation in the patient's record, to determine a string of diagnosis and procedure codes that results in the assignment of a DRG (Diagnosis Related Code). The coding process can be laborious, requiring great skill and experience to maintain accuracy. Currently, coding teams across Australia face many challenges in delivering coding services, such as workforce demands and shortages, variation in coded data which can cause mistrust with clinicians using the data, potential under and over coding which impacts funding and benchmarking and the timeliness in providing coded data for decision-making and monitoring patient outcomes.

Beamtree has partnered with large health services to integrate historical and real time structured (discreet value) and unstructured clinical/EMR data (clinical notes, pathology, radiology, medications) and apply rules written by expert clinicians and coders to link data sources to produce a coded summary. The results of this proof of summary can be validated or automated by the human coder, creating standardisation and efficiency opportunities.

Outcome/experience

Outcomes to be shared at the presentation will include the values that can be used for assisted coding, the level of confidence in the accuracy of the coded output in comparison to human coding process, and an assessment of the gains and losses in efficiency or cost, and what is possible with further work.

Conclusion – what was learned

To move to automation, we may need to look differently at the traditional models and standards of coding, and we will challenge historical standards to use more source data. The way in which traditional coding standards are applied may constrain automation opportunities in the modern era. We need to be able to drive prototypes that might meet standards in a new way for a more reliable future.

The auto-coding process applies rules to documented patterns of care, to propose a final record of the coded episode. Technology-assisted coding in all its forms will create collectively more standardised data sets, relieving the unnecessary burden of simple pattern recognition and free coders to work on complex clinical documentation, audit, and discussion in the clinical setting. The learning coding system will create a more accurate and comparable coded output for Australia, improving the reliability of benchmarking and costing processes, and ensuring equitable revenue distribution in health and the monitoring of safe health care.

Building a roadmap to deliver ICD-11 in Australia

Brooke Macpherson[1], Vicki Bennett[1].

[1]Australian Institute of Health and Welfare, Canberra, Australia.

Introduction (background/setting)

Australia has been working towards a decision regarding the potential implementation of ICD-11 in a variety of use cases. Stakeholder consultation in Australia recommended the establishment of an Australian ICD-11 implementation task force, to discuss and undertake planning activities to inform this decision. Subsequently, the Australian ICD-11 Task Force (AITF) was established by the Australian Institute of Health and Welfare (AIHW) at the end of 2021. The main task of the AITF is the development of a roadmap of activities that will inform a decision to implement ICD-11 in Australia.

Professional practice/case study description

Representatives from federal government agencies and state and territory health departments with responsibilities relating to the management and/or implementation of health classifications make up the membership of the AITF. This was strategic to ensure all relevant stakeholders are involved in the identification and consideration of the activities required at the federal and state levels to inform the decision-making process. Collaboratively, AITF members have been considering the activities in terms of timing, importance, relevance, and resource intensity to inform development of a roadmap. Australia's health-care system is complex, as are many of the arrangements, funding and data flows that underpin it. This brings complexities to potential implementation where classification systems are already in place, but also opportunities where they are not. Multiple roadmaps for these services are therefore essential to account for the different implementation requirements, across use cases such as hospital in-patient, primary care, aged care and causes of death, to name a few. In addition, there is a growing need to follow patient journeys through health services via linked, electronic services. With the increasing uptake of clinical terminologies in Australia, and ICD-11's capacity to integrate with these (and digital systems in general), how this could occur to best suit Australian purposes must be considered. This is part of the task of the AITF.

Outcome/experience

The AITF was established on a time-limited basis to facilitate urgently needed outcomes. As such, its deliverables are required under a short timeframe. The roadmaps are expected to be close to finalisation after 18 months. These roadmaps will then be used as a base for requesting funding from the relevant government departments for the work involved, but also building the use case for ICD-11 adoption across several use cases. The final roadmaps will be presented and progress on activities to date reported.

Conclusion – what was learned

Collaboration with a broad range of stakeholders to ensure buy in will be critical to the acceptance and success of activities that will be undertaken to inform ICD-11 decision making in Australia. Collaboration with international colleagues will also hopefully provide valuable insights and learnings through shared experiences with ICD-11 planning and implementation activities. The implementation of ICD-11 in Australia is complex and good evidence will be required to inform a decision to undertake what will be a large and costly exercise in many health settings. The roadmap of activities being planned by the AITF to inform this decision is an important foundation to provide this evidence for Australia.

Peer-reviewed abstracts: Workshop

Fostering global health: Introducing ICD-11 MMS structure and content in comparison to ICD-10 modifications

Mary Stanfill[1], Kathy Giannangelo[2], June Bronnert[3], Susan Fenton[4].

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Workshop

Target Audience

HIMs/Clinical coders/CoP members etc.

Learning objectives

This three-hour workshop is appropriate for anyone with an interest in the use of classification data for purposes such as monitoring the incidence and prevalence of diseases, determining casemix and detecting resource allocation trends, as well as keeping track of safety and quality guidelines. The session will also provide an opportunity to evaluate the classification of common diagnoses in ICD-11 MMS compared to ICD-10-AM and ICD-10-CM for those seeking knowledge of what's ahead. This workshop is also appropriate for anyone involved in the development, maintenance and use of electronic tools employing ICD codes.

By the end of this session attendees will:

1. Apply the WHO ICD-11 MMS guidelines for the use of morbidity code assignment.
2. Classify 50 common diagnoses using the WHO ICD-11 MMS coding tool, browser, and guidelines.
3. Critique the ease of use and coverage of ICD-11 MMS for morbidity coding compared to ICD-10-AM and/or ICD-10-CM.

Intended Outcomes

The International Classification of Diseases, 11th Revision, (ICD-11) is the new international standard as of January 1, 2022. The 11th revision of the ICD has improved usability and updated scientific content. It was designed for use in our digital world, with a new Application Programming Interface (API) and Uniform Resource Identifiers (URIs) for easier analysis and linkage to other systems. This workshop will introduce the ICD-11 Foundation, as designed by the World Health Organization (WHO), and its Mortality and Morbidity Statistics (MMS) linearisation. This will include an overview of ICD-11 structure and content, highlighting new classification concepts and methods such as post-coordination, cluster coding, multiple parenting, and extension codes. The WHO classification

guidance, especially for the mandatory use of additional codes and post-coordination will also be explained.

OUTLINE for the three-hour workshop

1. First 60 minutes: didactic training
    1. The faculty will provide an overview of ICD-11 structure and content, highlighting new classification concepts and methods such as post-coordination, cluster coding, multiple parenting, and extension codes.
    2. The faculty will provide instructions regarding the ICD-11 MMS classification guidelines, especially for the mandatory use of additional codes and post-coordination. Where apparent, differences from current ICD-10 coding guidelines will be highlighted.
2. Second 60 to 90 minutes:
    1. All learners will receive a document with 50 common diagnoses. They will be able to use either a computer, tablet, or a smartphone to access the WHO coding tool and/or browser, search for the diagnosis and assign the appropriate ICD-11 MMS code(s).
3. Final 60 to 30 minutes:
    1. The faculty will review the correct codes for the 50 diagnoses and facilitate an interactive discussion on the ICD-11 MMS structure and content improvements in comparison to ICD-10-AM and ICD-10-CM. Discussion and questions are expected.

Evaluation

All attendees will be asked to complete a short survey regarding the use of ICD-11 MMS and the WHO tools, focused on ease of use and including questions such as whether the learners believe a country-specific modification is needed to replace current uses of ICD-10.

Using ICD-11 in practice – the where's, whys and why nots

Brooke Macpherson[1], Filippa Pretty[1].

[1]Australian Institute of Health and Welfare, Canberra, Australia.

Workshop

Target Audience

Any user of health classification systems across the health sector, including but not limited to: Health Information Managers, Clinical Coders, Data users.

Learning objectives

1. Identify structure and purpose of the ICD-11
2. Identify benefits of using the ICD-11
3. Understand the difference between the Foundation and the ICD-11 Mortality and Morbidity Statistics (MMS) Tabulation
4. Understand the classification conventions of ICD-11
5. Apply the ICD-11 codes and conventions to classify clinical concepts (cases) including use of extension codes.

Intended Outcomes

Participant outcomes:

This workshop will build on the skills learned at the 2022 HIMAA conference ICD-11 workshop and continue creating an awareness of the ICD-11 for clinical coders, health information managers and data users (i.e., "socialise" the classification). It will also cater for participants who did not attend the 2022 workshop, especially international colleagues.

Other benefits for participants include:

- Hands on experience using the ICD-11 digital environment (Coding Tool and Tabular List Browser)
- Understanding of the difference between the Foundation and the MMS
- Hands on experience coding cases in ICD-11
- Ability to direct live questions to the presenters, who are experienced users of ICD-11
- Sharing of learnings with other colleagues at their workplace.
- Workbook to keep and refer to for further reference.

Presenter outcomes:

The workshop will provide evidence to the presenters on ease of understanding of education materials as well as areas of the classification that may require additional education resources. This

will be achieved through the communication of workbook results and questions from participants. Learnings from the workshops can influence content and presentation of future workshops.

Evaluation

Self-evaluation by participants of their preconference workbook completion after the presenters demonstrate how to find the correct codes in the ICD-11 using the digital tools.

Participants will be asked to send their completed workbooks to the presenters (via email) pre and/or post conference so common issues can be identified, and discussion / education can be focused.

Introduction to Health Information Management research

Joan Henderson[1,2], Mary Lam[3,2], Tanija Tarabay[4,2], Jenny Davis[5,2], Kerin Robinson[5,2], Benjamin Brown[6,2], Nicole Payne[7,2], Merilyn Riley[5,2], Vicki Bennett[8,2].

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Workshop

Target Audience

HIMs / Clinical Coders / CoP members / Health Data Analysts / Clinical Documentation Integrity Specialists / Health Informaticians.

Learning objectives

The learning objectives are to:

1. Introduce participants to basic research skills; and
2. Provide advice to attendees on how to progress their ideas for research.

Intended Outcomes

Health information management research is critical for the future growth and status of all areas of the health information management profession [1]. Essentially, research is crucial for all components of the profession to grow and thrive. It is necessary, in every one of the International Federation of Health Information Management Associations' (IFHIMA) member countries, to underpin the profession's collective global, and individual country, knowledge base(s).

It is recognised that different member countries have different health information management research experiences, environments, and capacities. The Health Information Management Association of Australia's (HIMAA's) Research Advisory Committee (RAC) supports and encourages the conduct and publication of health information management research for Health Information Managers (HIMs), Clinical Coders (CCs), Health Data Analysts, Clinical Documentation Integrity Specialists (CDISs) and Health Informaticians in every part of the profession. To this end, the RAC is offering IFHIMA Conference attendees the opportunity to take part in an interactive, Panel and small group-based workshop. This will provide helpful, practical advice about the basics of doing research in health information management. This workshop will provide a practical introduction to core components of research practice in the field of health information management.

Structure and delivery strategies

Duration: 90 minutes

Members of the HIMAA Research Advisory Committee will conduct the workshop in Panel and small group mode. They have experience as:

- Academics
- Research Fellows
- Research Data Managers
- Health Information Managers

This will be an interactive workshop. Attendees will have explained, in accessible format, some important aspects of research that are occasionally considered to be challenging. The intention is to provide the attendees with introductory skills. There will be a focus on identifying representative samples in health information management research projects. Practical examples will be provided on the risks and pitfalls, and the problems that occur when the researcher ignores representation. The plan is to have active discussion between the Panel and participants. Participants will be encouraged to ask questions. The Panel members will then advise attendees in small groups.

Stage 1 of the workshop:

The workshop will commence with a brief, informal presentation on sampling. This will be followed by a Question-and-Answer session, with the Panel inviting and answering questions, and providing practical, useful advice.

Stage 2 of the workshop:

Using examples suggested by the attendees and Panel members, the Panel members will advise attendees how to proceed with their potential projects. They will answer questions on any aspects, from the initial concept through to publication of the results.

At the conclusion of the workshop, participants should be able to:

- Identify the critical issues surrounding sampling for research.
- Leave with concrete ideas for setting up their own research project.

Evaluation

At the end of the workshop, participants may be invited to complete a short, anonymous feedback survey.

References

[1] Henderson J (2015) Editorial. Standing your ground: The importance of Health Information Managers sharing what they do. *Health Information Management Journal* 44(3): 4-6.
DoI: https://journals.sagepub.com/doi/pdf/10.1177/183335831504400301

Preparing for initial or ongoing HIM Education Program Accreditation: learn from the recipients of a perfect survey!

Dorinda Sattler[1], Linda Galocy[1], Patricia Johnson[1].

[1]Indiana University Northwest, Gary (IN), United States of America.

Workshop

Target Audience

HIM Program Directors and Educators.

Learning objectives

High-quality digital health information begins with providing high-quality education to future HIM professionals. While there are many outcomes to measure an HIM education program's success, accreditation is a vital indicator of a quality program, whether initial or ongoing. IFHIMA's 2022 whitepaper, "Examining Today's HIIM Workforce with Recommendations for Elevating the Profession", included a call to action of standardising HIM educational requirements. IFHIMA's November 2022 position paper entitled "A Global Perspective on the Value of HIM Certifications" highlighted several IFHIMA member nations' approaches to HIM certification and education. Many of these member nations' HIM programs are subject to some iteration of authority. The purpose of this workshop is to provide HIM programs with tools to this end.

In the United States, accreditation by CAHIIM, the Council on Accreditation of Health Informatics and Information Management education (CAHIIM) is not only the gold standard for HIM programs but also enables graduates to sit for AHIMA credentialing exams.

In April 2020, our Associate of Science in Health Information Technology degree program was notified of its CAHIIM continuing accreditation review, scheduled for summer 2021. While the program had submitted annual program assessment reports every year, this would be the first comprehensive review for continuing accreditation since 2005. Additional "stressors" included a survey process under newly implemented curricular standards, AND the program was pivoting all face-to-face classes to online due to the COVID-19 pandemic lockdown. Regardless, we had only 12 months to complete a self-study in preparation for the virtual re-accreditation visit, with much of the process occurring during the pandemic-enforced remote work environment. As a result of our preparation, which included utilising accrediting body resources and developing our own tools and processes, we achieved a perfect survey. Each of the twenty-six standards we were required to meet was met with no recommendations made.

Through a presentation of our process and outcome, and the provision of, and workshopping, sample materials from the presenters' experience, attendees will:

- Discuss a typical program accreditation/certification/compliance survey preparation process

- Identify various tools utilised to prepare for an initial or ongoing program accreditation survey
- Extrapolate sample HIM program components into various tools, including Microsoft OneNote, curriculum maps, spreadsheets, Google Drive, and Microsoft Teams.

Intended Outcomes

This workshop will be geared toward HIM Program Directors and Educators who are preparing for an initial or ongoing accreditation survey, or who want to assess and organise their program based on any other HIM education standards. Results of a preconference questionnaire will be used to ensure that a wide audience, regardless of their program accreditation oversight, can incorporate the lessons learned from and the tools utilised during our successful accreditation survey preparation.

Directors and educators of HIM programs will benefit, regardless of whether their program accreditation comes from an educational authority, government agency, or professional accrediting body. At the conclusion of the workshop, attendees will be equipped to:

- Prepare tools for use in collecting evidence for meeting program accreditation standards, whether the standards come from a professional accrediting body, educational authority, or government agency.
- Perform a gap analysis of accreditation survey readiness
- Develop a plan for collecting and submitting evidence for standards compliance
    - Identify the processes required to conduct a gap analysis in your health service
    - Identify potential coded data quality issues
    - Implement the appropriate training / education practices to bridge the gaps
    - Identify the problems or issues that may be encountered when educating staff
    - Recognise what needs to be measured and how.

Evaluation

It is intended that a preconference questionnaire will be sent to potential attendees to assess where their HIM program is relative to seeking or maintaining accreditation, which accreditation standards if any, they are subject to, and if they have any tools in place. Additional questions will explore whether there have been past accreditation survey experiences and what the attendee hopes to gain from attending the workshop.

Using a Likert scale, the post-workshop questionnaire will assess whether:

- the learning objectives and outcomes were met
- the workshop expectations were met
- the provided materials were useful

The ability to provide open-ended comments will be included.

After the conference, the authors will submit the results via an article in the IFHIMA Global News.

Effective ways to engage with clinicians to support CDI and improved data quality: A clinician's perspective

Mike Kertes[1], David Tralaggan[1], Felicity Sinclair-Ford[1], Jonathon Wiggins[1], Chloe Tyson[1].

[1]Clinical Documentation Improvement Australia (CDIA), Melbourne, Australia.

Workshop

Target Audience

Clinical Documentation Specialists, Health Information Managers, Clinical Coders, Clinicians, Quality Improvement Managers/Coordinators.

Learning objectives

Through an engaging and interactive workshop facilitated by a group of clinicians, learning objectives for workshop participants will include:

- What's in it for me? The clinician's perspective and desire to be engaged.
- What clinician engagement looks like in reality.
- Effective strategies to engage with clinicians and clinical teams.
- Promoting CDI champions to fuel behavioural imitation.
- How to deal with disengaged or resistant clinicians.

Intended Outcomes

Clinical documentation improvement (CDI) programs deal with human behaviour. Managing human behaviour, especially with clinicians who are time poor, stressed and often burned out, is a daunting task for any Clinical Documentation Specialist (CDS) or Health Information Manager (HIM).

To effectively engage with clinicians to promote behavioural change, CDSs and HIMs must first understand and respect not only the current challenges faced by time-poor clinicians but develop a deep understanding of what it is like to be a clinician, and importantly a junior clinician, who is at the coalface of patient care and often responsible for translating the complexity of care into either a paper or electronic medical record.

An outcome of the workshop for delegates will be to step inside the world of a junior doctor as a premise to why engaging with clinicians has proven so difficult to this point.

Clinicians are human beings – they have good and bad days, just like everybody else. The workshop will explore effective, and not so effective strategies to engage clinicians to make meaningful behavioural change in clinical documentation.

Learning outcomes relating to these strategies will include:

- Employing a consistent approach when engaging with clinicians
- Positive reinforcement and the key role of concurrent CDI and the CDS
- Leveraging clinicians' preferences for communication to promote better interaction
- Drawing on the consistent principles of behavioural change to develop relationships built on mutual trust and respect
- How to ensure conversations with clinicians are succinct and meaningful
- What methods and forms of engagement should be avoided.

Evaluation

Workshop participants will be placed into groups to network and share their experiences, challenges, successes, and failures when engaging with clinicians. Participants will be provided with different scenarios of clinician engagement and be asked to comment (working as a group) on various aspects of the interaction, evaluating each scenario and providing potential alternative strategies for each.

Participants will also be asked (again in groups) to list the specific reasons why engaging with clinicians has proven difficult, with each of these again to be explored by the doctors facilitating the workshop. The workshop facilitators will role play different scenarios and forms of clinician engagement, with participants to provide feedback to the effectiveness and failures of each scenario.

Through this approach, the workshop will effectively address the learning outcomes listed above, arming participants with tangible strategies to effectively engage clinicians at their own health service.

An international examination of the HIM Workforce and recommendations for the future

Susan Fenton[1], Kerryn Butler-Henderson[2], Debra Primeau[3], Deepa Nair[4], Guillermo Paluzie Avila[5], Ramona Kyabaggu[6], Sooneeraz Monohur[7].

[1]University of Texas (TX), United States of America, [2]Royal Melbourne Institute of Technology, Melbourne, Australia, [3]Primeau Consulting Group, Lomita (CA), United States of America, [4]Chitkara University, Punjab, India [5]Corporació de Salut del Maresme i la Selva, Calella, Spain, [6]Johnson Shoyama, University of Saskatchewan, Canada [7]Ministry of Health & Quality of Life, Mauritius.

Workshop

Target Audience

HIM professionals, healthcare executives, government officials involved in setting policy, educators.

Learning objectives

1. Discuss the current state of HIM workforce research.
2. Describe the different considerations when examining the issue of HIM workforce.
3. Compare and contrast the status of the HIM workforce amongst countries.

Intended Outcomes

The International Federation of Health Information Management Associations (IFHIMA) sponsored a workforce whitepaper examining the current state of HIM workforce across the globe [1]. This whitepaper reviewed the existing HIM workforce literature, current educational trends, the role of HIM professionals in healthcare, and emerging technology and policy trends. The whitepaper concludes with a call to action for all HIM professionals regarding technology, education, specialisation, and more. The 2-hour workshop proposes to engage in a discussion with attendees regarding the similarities and differences of HIM professionals internationally. The first 30 minutes will be a presentation and review of the previously published whitepaper. The next 1 hour and 20 minutes will engage the participants in reviewing and discussing the whitepaper sections of HIM professional roles, technology and policy, conclusions, and the call to action. Each section will have approximately 10 -12 minutes of discussion, leaving the remainder for voting. A modified Delphi technique will be used to identify those determined to be most important. The workshop will end by soliciting volunteers to participate in future IFHIMA workforce initiatives.

Outline:

1. Introduction and Overview of Previously Published Whitepaper (a limited number of copies will be available for real-time review)
2. Participant Engagement

a. Review and discussion of additions or changes needed for the following sections:
    - HIM professional roles
    - Technology and policy
    - Conclusions
    - Call to Action

b. Modified Delphi to select the top 3 additions or changes in each section as appropriate.
c. Solicitation of volunteers for future IFHIMA workforce initiatives.

An intended outcome is an addendum to the IFHIMA workforce whitepaper based on feedback from the participants.

Evaluation

Participants will discuss and potentially update the Call to Action from the whitepaper. A modified Delphi technique will be used to have the participants choose the top 3 workforce development areas IFHIMA should focus on in the near-term.

References

[1]. Fenton SH, Butler-Henderson K, Albishi H, et al. Examining Today's HIM Workforce with Recommendations for Elevating the Profession. Published online March 2022. https://ifhimasitemedia.s3.us-east-2.amazonaws.com/wp-content/uploads/2022/03/18234714/IFHIMA_Workforce_WP_2022_FINAL.pdf

Your journey to authentic Leadership

Melanie Kiss-Endicott[1].

[1]Shearwater Health, Nashville (TN), United States of America.

Workshop

Target Audience

Managers, Directors, Supervisors, Leaders, Anyone wanting to progress into a leadership role.

Learning objectives

- Define Authentic Leadership
- Identify Your Character Strengths and Emotional Intelligence
- Lead with Confidence and Execute Your Personal Life Vision
- Amass Social Capital and Develop Leadership Presence
- Make and Keep Goals

Intended Outcomes

What does it mean to be an "authentic leader?" That is the question that will be answered during this workshop as well as how to become an authentic leader. Participants will define their sense of purpose as a leader, identify their character strengths/values, and learn the importance of building strong work relationships to become a good leader.

The workshop will flow as follows:

1. Overview of Authentic Leadership
2. Attendees take short quizzes to identify their character strengths and emotional intelligence scores
3. Small group collaboration to discuss their results and work through provided discussion questions
4. Address what it means to lead with confidence and execute your personal life vision
5. Discuss how to amass social capital and develop a leadership presence
6. Learn how to make and keep goals
7. Conclusion

Workshop attendees will walk away from this training with a renewed sense of confidence in their leadership skills and step-by-step goals to assist them in making that next leap in their career and/or personal life. Attendees will be encouraged to share their contact details with the group to build a network of “social capital” to support one another in pursuing their goals after the workshop concludes.

Evaluation

Attendees will take short quizzes during the workshop to identify their character strengths and emotional intelligence score. The workshop will include a mix of lecture, worksheets, directed discussion of small groups, and report-outs from groups. This is a very interactive workshop with plenty of time for open discussion and individual/group sharing.

Information Governance as a Reimagined Imperative Across Healthcare

Robert Gerbrandt[1], David Moldrich[1].

[1]Iron Mountain, Melbourne, Australia. [2]Iron Mountain, Boston (MA), United States of America.

Workshop

Target Audience

Health Information Managers, Chief Information Officers, Risk Leaders.

Learning objectives

The primary object from the workshop will be for participants to gain a better understanding of how Information Governance (IG) intersects with Corporate Governance. Secondarily, participants will gain insights into how IG can improve outcomes in non-traditional ways by creating a unified asset strategy that ties together the physical and the digital, while also considering forward looking dimensions such as AI and digital content delivery.

Intended Outcomes

Using Iron Mountain's Healthcare Information Governance framework to structure the workshop, the agenda will (generally) be as follows:

- The Evolution of Information Management to Information Governance through the lens of HIM leaders. Leveraging video interviews with HIM industry leaders from around the globe, we'll explore how the language of IG has and will change the practices and priorities of HIM practitioners.
- How can IG influence the Healthcare industry in ways that IM can't? Exploring the influence intersections between IG and IT Governance, Data Governance and Corporate Governance. Includes the benefits of connecting IG to Cyber and IG to AI.
- Future opportunities of IG. Introducing the idea of a Unified Asset Strategy along with other digital services that can pave the way to transform HIM.

Evaluation

A quick knowledge check will be included at the end to confirm learnings and to encourage subsequent personal development.

Pursuing high quality coded data: From the ground up

Julieanne Lee[1], Clare Collinge[1], Hayley Niewerth[1].

[1]The Coding Company, Sydney, Australia.

Workshop

Target Audience

Health Information Managers, Health Information Officers, Clinical Coding Managers, Clinical Coders, Clinical Coding Auditors, Clinical Coding Educators, Clinicians, Data Integrity Officers.

Learning objectives

Main objective is for participants to learn how to undertake a high-level review of a whole health information service, identify, rectify and measure all issues:

- critical thinking and problem solving in common areas of weakness in health information services which may lead to poor quality coded data.
- implementation / facilitation of training and education of all health information stakeholders and the challenges.
- benefits of evidence-based education and training; development of a training program based on the gaps identified.
- potential hurdles in education delivery, i.e., different learning styles, limited resources, or other issues such as privacy or Workplace Health and Safety, remote/on-site staff, method of delivery, full/part time/casual staff, levels of experience, ageing workforce.
- appropriate process implementation to obtain the required outcomes and ensure the process is appropriate to the issues.
- measurable outcomes to ensure the learning objectives are met.
- by what means coded data and DRG assignment can be impacted by the whole health information management cycle / system e.g., admin staff, clinicians, forms, clinical coders, CDS, workflow / management, workforce.

This will be conducted by presenting the following scenario in an engaging environment: *Executive management is questioning the coded data quality based on recent DRG benchmarking results*.

The group will workshop and develop ideas around how to identify and resolve the issues. As a group we will look at why the coded data could be producing incorrect DRGs - from the ground up. The group will workshop each stage and how they would approach the analysis to identify the current and then the desired performance using critical thinking skills.

(Below is an example only)

Focus 1 - Wards:

   a. Problem: clinician diagnosis terminology is incorrectly manipulating code assignment; ward clerks not sending critical forms for scanning, medical record compilation (including EMR)
   b. Action: education - workshop how to educate based on the specific problem and culprits
   c. Measure

Focus 2 - CDS

   a. Problem: chasing documentation with no coding or DRG impact; coder query processes
   b. Action: upskill via education
   c. Measure

Focus 3 - Clinical coders

   a. Problem: incorrect application of ACS 0002 (under coding)
   b. Action: coding audit and education
   c. Measure

Focus 4 - Clinical coding management

   a. Problem: unrealistic KPIs, workflow issues
   b. Action: workflow review
   c. Measure

Focus 5 - Forms

   a. Problem: pre-anaesthetic assessment design not allowing space for reason for ICU admission decisions / wound management form not allowing space to add debrided / dressed
   b. Action: form design review
   c. Measure.

Intended Outcomes

The participants at the conclusion of the workshop be able to:

- Identify the processes required to conduct a gap analysis in your health service.
- Identify potential coded data quality issues.
- Implement the appropriate training / education practices to bridge the gaps.
- Identify the problems or issues that may be encountered when educating staff.
- Recognise what needs to be measured and how.

Evaluation

The workshop facilitators will conduct an electronic, interactive, live whiteboard to ensure the learning outcomes are being met throughout the workshop.

At the conclusion of the workshop participants will be provided with an opportunity to share their feedback and take-home learnings.

Creating Equity and Inclusivity with Gratitude in a Global Market

Marjorie Rosen[1].

[1]Bryan University, Tempe (AZ), United States of America.

Workshop

Target Audience

Executive Leadership, Department Heads, Human Resources, Policy Leaders, and all audiences to promote inclusivity.

Learning objectives

- Participants will be able to identify resources to support the progression of Diversity, Equity, and Inclusion in a global market.
- Participants will understand the effects of a 'Diversity, Equity, and Inclusion with Gratitude' project to bridge communities where health disparities are prevalent.
- Participants will return to their organisation with a model that can be implemented in a department or community.

Intended Outcomes

There is a wide gap between organisations engaging in diversity, equity, and inclusion (DEI) work and those who are not. DEI is often considered an enormous undertaking, so many organisations choose not to put resources into this type of work. How do we help organisations become more diverse, equitable, and inclusive? The structure of every organisation is very different so there is no one shoe fits all approach that can be taken when it comes to DEI.

The purpose of this presentation is to educate Health Information Leaders in world markets on how to implement DEI bridging initiatives. There are many layers to diversity, equity, and inclusion, so it could be a daunting task to try and peel back every layer and address it.

In this presentation, you will learn the foundational aspects of DEI, and how to simplify your DEI efforts as an organisation by reviewing the Inclusion, Diversity, Equity, and Awareness (I.D.E.A.) Committee, highlight the impact of DEI awareness through gratitude from the Healthcare Department's Gratitude Project and how it scaled campus wide.

Finally, a take-home model of how to implement a Gratitude project at your site to lessen the gap created by inequities in diverse communities.

By attending this workshop, participants will:

- recognise health inequity on global markets and the impact of gratitude to build bridges in diverse health populations.
- better understand how gratitude can be quantified to produce inclusive environments.
- take the model and implement the Gratitude Project in familiar environments (Department or Community Wide).

Evaluation

There will be two types of evaluation: Kahoots games for interactive assessment of learnings and QR code for survey evaluation.

Achieving success with Computer-Assisted Coding

Heather Wilson[1].

[1]University of Michigan Health, Ann Arbor (MI), United States of America.

Workshop

Target Audience

HIM leaders, clinical coders, and health information technologists.

Learning objectives

Participants in this workshop will learn about one organisation's journey with computer-assisted coding (CAC) adoption from project conceptualisation through implementation, and post-go-live optimisation. This 90-minute workshop will prepare participants for a successful launch of CAC technology at their organisations. The workshop will provide an in-depth review of all phases of a CAC program, including topics such as:

- Determining goals, size, and scope of a CAC project
- Aligning goals to specific criteria to be used in selecting a CAC product
- Engaging subject matter experts in planning and implementation
- Defining a successful CAC project with key performance indicators
- Achieving team consensus in moving to automation technology
- Designing coding workflows for a CAC world
- CAC and business intelligence
- The importance electronic health record (EHR) documentation structure has on CAC success
- Fine-tuning the CAC application after implementation to maximise the return on investment.

Intended Outcomes

1. Understand key factors to consider in CAC vendor selection
2. Identify key stakeholders required for a successful CAC project
3. Know how to address common change management issues associated with the transition to CAC technology
4. Understand major steps involved with a CAC implementation
5. Identify common key performance indicators associated with CAC technology adoption
6. Achieve a basic understanding of key technical factors to be considered in CAC implementation
7. Understand how to leverage business intelligence resources in a CAC environment and enhance performance after go-live.

Evaluation

Questions 1-4 to be answered via a five-point Likert scale: 1. Strongly agree; 2. Agree; 3. Neither agree nor disagree; 4. Disagree; 5. Strongly disagree:

1. Presentation addressed the intended outcomes
2. Presenter displayed a good understanding of computer-assisted coding
3. The workshop was relevant to my role
4. I can apply the workshop content to my work

Question 5 is free text:

1. What additional feedback do you have for the speaker?

Techniques for pursuing digital greatness – Leading, influencing, and building resilience

Sarah Low[1], Kerryn Butler-Henderson[2].

[1]University of Tasmania, Hobart, Australia. [2]Royal Melbourne Institute of Technology, Melbourne, Australia.

Workshop

Target Audience

Health Information Managers, clinical coders, Health Information Professionals, Health Professionals.

Learning objectives

The uptake and effective use of digital health information is vital to the success of healthcare delivery. Health information professionals are responsible for managing and facilitating the proper use of digital health information and related technology. To do this, they require technical and non-technical skills to influence others, facilitate compliance and manage stress in the workplace.

This workshop will provide participants with techniques for developing transversal leadership capabilities to support the management of digital health information in their workplace.

Participants will be able to:

1. Identify the barriers and strategies to high-quality digital health information utilisation in the workplace.
2. Practice problem solving and communication techniques in relation to pursuing high-quality digital health information.
3. Identify and apply interpersonal and self-management techniques to handle challenging situations in the workplace resulting from the pursuit of high-quality digital health information.

Intended Outcomes

Health information professionals are at the frontline of managing the appropriate use and uptake of digital health (Low et al., 2019). To do this, they need to influence and collaborate effectively with others in a high-pressured work environment without positional power. Transversal leadership encompassing critical and innovative thinking, interpersonal and intrapersonal and global citizenship skills are needed (Low et al., 2019). This workshop will use workplace scenarios and published research to explore the application of transversal leadership in relation to the role of the health information professional. Through group exercises and reflective activities, participants will identify current issues affecting their roles and workplaces in relation to pursuing high-quality digital health

information, practice applying transversal leadership skills to address workplace challenges and develop professional development goals. The workshop will benefit participants by understanding how transversal leadership can be used to influence others and improve their own practice as they support digital health information utilisation. The intended outcomes are to:

1. Discuss key issues related to pursuing high-quality digital health information.
2. Identify strategies to support the issues discussed.
3. Develop an action plan to support their pursuit of high-quality digital health information in the workplace.

Evaluation

Evaluation will occur via a participant survey on efficacy of workshop and content.

Peer-reviewed abstracts:

Professional Practice Poster

The eConsult: a tool that improves communication between healthcare workers

Rosa de Ramon Frais[1], Adelaida Pons Fuster[1].

[1]Health Department Arnau De Vilanova, Valencia, Spain.

Introduction (including aims)

The implementation of asynchronous electronic consultation (eConsult) between Primary Care and Specialty Care has been accelerated due to the pandemic. However, other factors, such as the Electronic Health Record (EHR), have contributed to it.

Professional practice/case study description

We describe the implementation of eConsult between the two levels of care from the perspective of the primary care physician, the specialist, and the Health Information Management (HIM) Medicine Doctor, who supports the workflow and maintains the communication between levels of care and patients, in the Health Department Arnau de Vilanova-Liria of Valencia (Spain).

Outcome/experience

Before the e-Consult, there were significant communication problems between both levels and an excess of face-to-face consultations, lack of accessibility to the specialist and long waiting lists for the specialist's visit.

eConsult has become a tool to shorten the response time and improve communication between both levels of care. Now the average response time is 2 days, and the answer is integrated into the EHR. This is how paper problems (losses and delays) are avoided.

Thus, the specialist can better assess the priority of patients to make an appointment and even reduce their waiting lists. With the tool, the consultations are reviewed by the specialist who recommends further diagnostic work-up of the condition, provides management advice or suggests that the patient be seen for a face-to-face speciality care visit.

Due to COVID the real impact on activity and waiting lists is difficult to measure. In a pilot study carried out with surveys among primary care physicians and specialists, the evaluation of the tool was very positive. The authors will be able to offer the full results in a few months.

For the HIM Doctor, it is also a challenge because they have to train the rest of the professionals to use the tool, and must ensure the flow of communication between the care levels and the patients, supplying the deficiencies that the EHR currently has. HIM Doctor is the one who has designed the workflow and, therefore, the one in charge of avoiding errors and studying the improvements in the system.

Conclusion – what was learned

At first glance, eConsult seems like a beneficial tool, overall, to obtain a specialist consultant's expert opinion in a timely manner. However, its effects on patient safety, efficiency and user satisfaction must be studied in the long term.

Is it possible to sort the available health data in a useful way?

Rosa de Ramon Frais[1], Adelaida Pons Fuster[1].

[1]Health Department Arnau De Vilanova, Valencia, Spain.

Introduction (including aims)

Health Data has experienced an explosion with the advent of the EHR and other information-gathering databases. We need accurate, complete, and reliable data to know its meaning and how to use it to improve our health outcomes.

Professional practice/case study description

We describe the design and implementation of an electronic dashboard developed in the Health Department Arnau de Vilanova of Valencia (Spain) between Health Informatics and Health Information Management (HIM) Doctors and supported by Hospital Management. The electronic project started in 2020 and is ongoing.

The dashboard groups data from all the work areas of the Department: hospitalisation, emergencies, operating rooms, techniques, and ambulatory care, both from the perspective of the doctor and the nurse. The dashboard has filters such as dates, diagnoses, types of interventions... so that the user can obtain the data needed.

Data such as diagnosis, procedures, surgical checklist, or length of stay are extracted from the EHR and the databases in which they are distributed. Indicators of interest and some sentinel indicators have been designed to facilitate monitoring workflows. The system is updated daily, so we are able to have timely data, and it is accessible from any hospital computer. We obtain activity data such as the number of admissions, surgeries or patients attended for emergency care with which we elaborate others such as average stay, % of surgical suspensions or % of readmissions. We also calculate indicators on waiting lists.

Outcome/experience

This information system has been operating for over a year, and the different areas have been developed gradually. Delving deeper into our data has allowed us to discover bugs, areas for quality improvement, and development possibilities for better care information. Health Informatics and HIM doctors' teams have overseen the training of doctors and nurses, initiating a changing organisational culture that supports nearly every activity on data and information.

Conclusion – what was learned

Only reliable, accurate, timely, and accessible data can help achieve higher-value outcomes and to teach us what needs to change. A wide range of profiles in the hospital can benefit from that, such

as doctors, nurses, managers or the economic area staff, and indirectly the patients by improving the quality of their care. For that, we need tools as our dashboard.

Delivering classification education – a success story

Renee Porter[1], Nicole Rankin[1], Anne Elsworthy[1].

[1]Independent Health and Aged Care Pricing Authority, Sydney, Australia.

Introduction (background/setting)

The Independent Health and Aged Care Pricing Authority (IHACPA) is responsible for the development and new edition education of morbidity classifications used in Australia:

- International Statistical Classification of Diseases and Related Health Problems, Tenth Revision, Australian Modification (ICD-10-AM)
- Australian Classification of Health Interventions (ACHI)
- Australian Coding Standards (ACS); ICD-10-AM/ACHI/ACS
- Australian Refined Diagnosis Related Groups (AR-DRGs).

Professional practice/case study description

In 2022, IHACPA delivered online education for ICD-10-AM/ACHI/ACS Twelfth Edition on its new learning management system (LMS) - IHACPA Learn. AR-DRG education was also released for the first time.

IHACPA Learn provides access to interactive education providing consistent and comprehensive self-paced learning. Education modules offer a variety of assessments providing immediate feedback and evidence of learning through completion certificates. The LMS tracks user learning, demographics and uptake providing insight on both its success and areas for future improvement.

Outcome/experience

Following release of the education in May 2022 over 2,800 learners have completed over 51,000 modules. More than 90% of learners reported that the content was engaging, with integrated assessments aiding confidence and understanding. Self-paced modular learning provided flexibility for learners and managers.

Uptake of a ‘Building on eLearning’ module, designed to supplement education locally, was lower than other modules.

Conclusion – what was learned

Following the overwhelming success of the online education through IHACPA Learn, IHACPA will further explore the capabilities of the LMS and enhance education (including a train the trainer styled module) for future releases. The LMS also provides wider educational opportunities for IHACPA in the future.

Standardising principal diagnosis reporting for Australian emergency departments

Renee Porter[1], Andrea Earl[1].

[1]Independent Health and Aged Care Pricing Authority, Sydney, Australia.

Introduction (background/setting)

In 2018, the Emergency Care Principal Diagnosis Short List (EPD Short List) was mandated for use in national reporting of Australian emergency department principal diagnoses, to replace previous reporting inconsistencies whereby jurisdictions could report using several code sets. The EPD Short List was developed from the International Statistical Classification of Diseases and Related Health Problems – Tenth Revision – Australian Modification (ICD-10-AM) and is regularly updated in line with the parent classification.

Professional practice/case study description

Despite the national improvements standardisation has achieved, some variation between jurisdictional reporting is still evident due to local differences in systems and processes. As principal diagnosis is a critical variable in the Australian Emergency Care Classification, this variation is an area of focus for the Independent Health and Aged Care Pricing Authority (IHACPA).

Outcome/experience

To a certain degree, variation in the reporting of a diagnoses can be accommodated by the classification, for example reporting fracture of the hand rather than reporting fracture of each specified hand bone, as these diagnoses all map to the same classification end class. However, when the diagnoses reflect patient complexity, for example burn thickness, the correct classification end class may not be assigned if the reported diagnosis lacks specificity, resulting in an inaccurate reflection of complexity and resource consumption.

Conclusion – what was learned

IHACPA continually performs analysis on the distribution and variation of national data. This poster highlights the key achievements of principal diagnosis reporting to date using the EPD Short List and outlines how IHACPA has worked with jurisdictions to continually improve the quality of reporting.

Development of education materials for the application of the Mental Health Phase of Care (MHPoC)

Rosie Ohlsson[1].

[1]Independent Health and Aged Care Pricing Authority, Sydney, Australia.

Introduction (background/setting)

The Australian Mental Health Care Classification (AMHCC) Version 1.0 was implemented from July 2016 to improve data collections across mental healthcare settings. AMHCC is underpinned by the Mental Health Phase of Care (MHPoC), which is a consumer-focused variable. In November 2021, the Independent Health and Aged Care Pricing Authority (IHACPA) commenced the development of nationally consistent education materials to assist clinicians with MHPoC assignment.

Professional practice/case study description

IHACPA facilitated in-depth consultation with mental healthcare clinicians and consumers to understand the gaps in current learning materials for the application of AMHCC and MHPoC, through several forums including steering committees, working groups and surveys. Consultation feedback identified the requirement to develop a range of materials adaptable to local settings, which would support clinicians in the application of the MHPoC.

Outcome/experience

IHACPA incorporated the feedback and strategic advice of clinicians engaged as part of this project to create a suite of education materials:

- Overview video to increase awareness and effective use of MHPoC
- Quick reference guide on MHPoC definitions and requirements
- eLearning resources to promote and assist with local training
- Application video of clinicians providing insights into the benefit of the MHPoC
- Education tools for facilitating discussion of AMHCC and MHPoC
- Consumer Journey Maps
- A webinar planning guide to run local training.

Conclusion – what was learned

The education materials were released in December 2022 and include input from clinicians, consumers, families and peer workers. The education materials will support national consistency of MHPoC application, leading to improvement in the reporting and classification of mental health activity.

ENDS