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During my twenty-five years of association with the Health Information Management Association of Australia (HIMAA), I have witnessed the organisation go from strength to strength. This growth did not come about haphazardly, but has flowed from the concerted efforts of many dedicated members who, in pursuit of their profession, have also enriched our organisation.

It is with sadness that I report that in the past year two of the founding members of the organisation, Betty James and Dorothy Bell, have passed away. The Association owes much to these two women who were early leaders of our very diverse profession; we remember their passing with sadness.

Betty James, of Sydney (New South Wales), established a distinguished career as a Medical Record Librarian (MRL). Ms James was responsible for the development of the School for Medical Record Librarians in NSW and, in 1968, became the first elected President of the International Federation of Medical Records Organisations (IFMRO). She worked for many years at the Royal Prince Alfred Hospital in Sydney. Miss James received an Award of Merit in 1976 for her contribution to this profession. In recognition of her service, she was also awarded Life Membership of the HIMAA.

In Melbourne (Victoria), Dorothy Bell was the first Director of Training of the Victorian Training School of Medical Record Librarians. Ms Bell had been selected to receive a scholarship to travel to the United Kingdom to undertake the British medical records training course held at the Bristol Royal Infirmary. She returned to Melbourne in May, 1960, and, as the first Director of Training and with the support of the Victorian Hospitals’ Association and the Victorian Association of Medical Record Librarians, developed and ran a short course in late 1960. She then developed the syllabus for a full-time, two-year course that commenced in 1961; this was the forerunner of the current Bachelor of Health Information Management at La Trobe University. Ms Bell held the position of Director of Training from 1960 until the end of 1971, when she retired for health reasons. The late Ms Bell is remembered with admiration by colleagues, including former students, for her outstanding service to the profession. In 1972, Ms Bell was the Australian Director of the IFMRO and was elected to the executive as Treasurer in the same year. In 1983, she received the Award of Merit for her contribution to MRL development in Victoria. She was awarded Life Membership of HIMAA for her contribution to the profession.

While remembering those who have shaped this profession, I also consider the links across the Tasman with our New Zealand colleagues. This association has a long history, dating as far back as the 1970s. One such colleague I remember with fondness is Mark Thorburn, who trained in Melbourne and returned to New Zealand to become part of the small dedicated group of medical record professionals in that country. Other links with New Zealand have included Gerald Wakley and Philip Roxborough, through our association with the International Federation of Health Records Organisations (IFHRO).

Recently, major changes to the health information management profession and to hospital-related activities in New Zealand have been brought about through collaboration between Australian and New Zealand colleagues. The New Zealand profession has been strengthened through the solid framework and knowledge gained in Australian universities and hospitals; Barbara Arundell, Linda Fletcher and Jodee Ogbonna are among the many involved today in the development of this profession in New Zealand.

Individuals crossed the Tasman to share knowledge and expertise in the field of health information. The National Centre for Classification in Health, under the direction of Rosemary Roberts AM, is involved in New Zealand through the provision of the Australian edition of the International Classification of Diseases and through education and training in coding practice. The HIMAA also has been involved in professional development in New Zealand and is currently negotiating with the New Zealand government for ICD-10-AM training. Our colleagues are able to access current information, resources and even employment opportunities in both countries through this journal and the HIMAA website.

Indeed, HIM graduates from all schools have forged ahead internationally and provided professional services, consultancy and assistance in many countries. I congratulate the educators who equip graduates with the skills, knowledge and confidence to not only face the challenges of the profession in their own country, but also to have the courage to extend their experiences and share their knowledge in many other countries and communities.

I encourage you all to support your Association through membership, presentation of papers at conferences, writing and submitting articles to this journal and, importantly, by keeping abreast of current trends and professional development opportunities. Internationally, our HIM graduates and colleagues are well regarded, and you never know when you will be called to travel across the Tasman or beyond.
Guardians of knowledge: the paradigm of confidentiality

Barbara Arundell

One of the greatest challenges faced by all managers of personal health information is how to maintain patient confidentiality and information privacy. This is a daily trial, easily identified by anyone who has worked with patient information for any length of time. We hear a lot about the issues related to maintaining the integrity and confidentiality of patient information in the context of electronic data storage and transfer. We don’t hear a lot, though, about the low-tech front line of confidentiality — the local hospital.

The importance of confidentiality becomes more obvious and immediate when the health service is located in a small town, and New Zealand, like Australia, has many such communities, some of which are surprisingly isolated. I recently spent some time in one of the most isolated New Zealand communities, the Chatham Islands, where not only does everyone know everyone else, but they’re usually related to them as well.

The Chathams are a small archipelago located about 860 km east of mainland New Zealand, separated by more than 700 km of ocean from any other inhabited land mass. The seas around the Chathams are renowned for their abundance of lobster, abalone and various fish, but are described even in the tourist literature as often savage. The two largest islands, Chatham and Pitt, are the only two permanently inhabited islands in the group, with populations of about 712 and 35, respectively.

The Chatham Islands Health Centre is located on the larger island. This medical centre has a four-bed hospital and a medical clinic. It is staffed by a doctor, nurses, a midwife and some local carers. The Health Centre is administered by the Hawkes Bay District Health Board, over 700 km away in Napier, on the east coast of New Zealand’s North Island.

The ambulance service on the Chathams is staffed by volunteers 24 hours a day, and anyone who requires more specialised care than that which can be delivered at the Health Centre is flown (weather permitting) back to either Christchurch or Wellington for public hospital treatment.

Maintaining the confidentiality of patient information in such a close community is a daily challenge; the mere presence of the Health Centre’s large, muddy 4WD vehicle at someone’s house can prompt queries about the person’s health. There is no doubt that this interest is well meaning, but disclosure of any information about the visit is effectively a breach of confidentiality.

Many health professionals work in such close environments as this, and are acutely aware of the need to safeguard the information entrusted to them by patients. Confidentiality is crucial to clinical practice. The patient’s reliance on the confidential nature of his or her disclosures has always been necessary in order to engender trust between the patient and the person treating them. This relationship is no less important in larger centres, but is perhaps slightly more difficult to maintain in small communities. Having lived and worked in many small, isolated country areas, I can appreciate the tension between everyday reliance on the social networks of the area, and the need to protect the information available through the course of daily work in the local hospital.

Most health information is highly sensitive and, if improperly disclosed (even inadvertently), may be used to discriminate against the person concerned, or misused in other ways. There is an often-heard idea that some health information is somehow more confidential than other information: for example, that the result of an HIV test is more confidential than an address or date of birth. Without being aware of the context, however, and without understanding the circumstances under which that information was given by the patient, we as health information managers should treat all health information as equally confidential, whether or not it appears as innocuous as an address.

We are all aware that the primary use of personal health information is to provide care and treatment to the patient. But there are also a variety of secondary purposes for which it is used within the health sector, including:

- quality assurance activities to improve the quality and safety of health care
- billing
- service planning
- data collection to support monitoring and advancement of the population’s health
- analysis of service utilisation
- teaching
- research.

As the number of authorised users increases, so too does the challenge to ensure all users understand and accept their responsibilities and obligations with respect to patient confidentiality and privacy of personal health information.

As the use of health information increases and diversifies, so should our vigilance as a profession on maintaining the confidentiality of that data. It is inextricably tied up with the essence of our role.

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Once upon a time . . . the power of story and learning journals

Melinda Lewis

Abstract
This paper will invite you to consider the role of stories for learning and the use of learning journals as a tool to create meaning. The application of story and story culture in higher education, academia and management contexts will be presented. As an example, an old Punjabi tale will be adapted for use when managing and inspiring teams in the workplace. Storytelling is experiencing a revival and being used in the corporate sector to ignite action in knowledge-era organisations.

Once upon a time . . .
The analysis of language and making meaning has always been of interest to humanity, society and culture. Storying (the art of creating your own stories) is part of being human (Ewing 2003). Telling and listening to stories helps us to sort out our own ideas, thoughts, reflections and contemplations, as well as to establish a sense of self and a sense of others in the social world. For the young child, it is through storying and storytelling that they are initiated into their culture. This too can be said of students studying for a particular degree as, for most, this is their entry point into a given professional culture.

To hear a well-told story is magic, and that magical web can linger for as long as we choose. Images of women sitting by an open fireplace, spinning and weaving their story strands of the past, present and future, is what storytelling is all about. In modern times, this age-old form of communication is not used as widely at home, in places of learning or the workplace as was experienced in the past.

Reading wonderful stories from the past empowers us to speak and write our own stories. There is untold power in story and storytelling and the origins run very deep. Story can be seen as a metaphor for life on earth, and all stories use a type of architecture that represents our language and us. The four traditional tales are folk tale, myth, legend and fable.

Origins of story
Story is older than the art and science of psychology and its origins lie with the spiritual teachers of humanity. Buddha and Jesus employed a device to circumvent the opposition of their listeners — the story. The human heart longs for truth; however, the first reaction to truth can be hostility and fear. Through truth, we can find liberation and delight. For this reason, story is still the most prevalent form of human communication today.

Prominent psychologists continue to explore the power of story on the human psyche. In her book Women who run with the wolves (1992), Clarissa Pinkola Estes suggests that stories set the inner life into motion and lead us back to our own real lives, particularly when we are frightened or feel cornered in our inner life. C P Estes also describes story as medicine. Therapists, on all levels, work with the transforming and healing power of story through recovery programs (Perrow 2002).

Stories have a holistic value — that is, they make us whole. They work with the more expressive, imaginative realm of our thinking and feeling — almost a separate intelligence or way of knowing. Storytelling is central to developing that realm of imagination as a way of learning and knowing. As story connects us with each other, we feel we belong to the human tribe.

Other researchers suggest that story works on our ideas, morals and styles of consciousness. Listening to cultural and personal stories is a way of getting to know someone while gaining an appreciation of the diversity of the world. Telling stories, without books or illustrations, allows us to engage with the story.

Learning journals . . . living words
Journal writing can lead you to self-discovery, insight and creativity. It is a tool to link your outer world to your inner life and meaning. Stephanie Dowrick, in her recent book Living words (2003), states that journal writing can give you an invaluable sense of being at the centre of your life rather than at the periphery (p.2).

How does it do this?
1. By externalising your thoughts, ideas and impressions. As you record your deepest feelings and capture your experiences, it allows you to gain a measure of distance from them and perhaps to see things with more clarity. In a work setting, it may allow you to see all sides of a story.
2. Journal writing allows us to see patterns in our thoughts, our behaviours and our reactions to the world.
3. As a whole-brain activity, journal writing develops both our right-brain strengths (lateral problem-solving, intuition, creativity and emotions) and our left-brain strengths (intellectual, sequential, rational and orderly thought). For example, you might find yourself writing about a rational aspect of your work or study (left-brain) and trying to see it from a creative/intuitive angle (right-brain).
4. Writing about a complex situation is a highly effective way to bring conscious and unconscious processes closer together, especially when you can do so without feeling that things must be resolved in a particular way (Dowrick 2003).

Learning journals in higher education
Encouraging students to keep a learning journal allows them to free associate content material from within the same subject, across subjects and, particularly
when undertaking practical experience, to facilitate the connection between theory and praxis.

From my experience of using Journal Club when teaching the Communication subject in the School of Health Information Management at the University of Sydney during 1995–1996, I found that students’ reflections on their learning provided me with a far greater measure of their understanding of a given topic area. It was all about how they make links to previous knowledge and experience to create their own ideas.

Assessing reflective journal entries is not difficult. A student need not quote from their journal — rather, they may use their journal as a tool to aid their thinking in preparing essays, for example. An educator may or may not need to see journal entries (which could be visual, as in mind maps) to make a specific assessment.

**Journal writing to make meaning**

Whenever I record in a journal, I write on two and sometimes three levels. Firstly, I record simple events and data (as any good information manager would!); secondly, I write my impressions about the events and possible links to previous thoughts and events. A third entry may or may not come about. If so, it would be a reflection at a later date about the second level of entry (my impressions) or when further research and dialogue may spark a link back to a previous entry. In a different-coloured pen/pencil (colour coding has many uses!) I would record this higher level of thought, quotations, comments, etc.

I find that recording phenomena, and particularly managing these notes (a new spin on record management), is vital to my general life, work, study and play. It is a highly regarded activity and coping mechanism for adult learners, women in particular.

**Stories and storytelling in academia**

Consider the relationship between creative work and academic enquiry. In the health sciences, as with most professions and industries today, information taught formally is superseded very quickly and one must continue to learn throughout life to maintain currency and to engage people’s hearts, minds, talents and potential through conversations, stories and experiential learning. Through their workshops and consultancies they improve communication, relationships and culture in the workplace. They equip people with the skills of conversation and stories as a tool to find solutions for workplace challenges.

Steve Denning, author of *How storytelling ignites action in knowledge-era organisations* (2000), uses a range of springboard stories to effect organisational change.

**Specific management situations include:**

- presenting a new idea to management
- transmitting concepts, attitudes and skills
- explaining to members of an organisation that work practices have been jettisoned
- gaining acceptance and enthusiasm for change.

Denning claims that storytelling is natural, easy and entertaining. It gets to the minds of people within the organisation and affects how they think, feel, worry, wonder, agonise and dream about themselves in relation to work processes and work relationships. A specific story could be created in which story metaphor is used to highlight the perspective of a particular protagonist or explore a phenomenon of change. Finally, Denning believes that storytelling relates to knowledge management and transformation.

**The five fingered family**

The beauty of looking at old tales is that they can be brought alive in whatever context suits. Who would have thought that Jane Austen based her story line on the fairytale of Cinderella? Instead of the sisters being physically ugly and repulsive, as in Cinderella, Jane Austen made her sisters morally ugly (Harrison and Maguire, 1999).

We can put a new twist on an old tale to give a contemporary view. Or we can change the setting of an original tale.

*The five fingered family* (Khalsa 2000) has been told, with many variations, in the Punjab region of northern India for many years. The themes: spirit winning over darkness; cooperation; and collaboration.

It is the retelling of the ancient Punjabi tale in which a family survives the loss of their weaving workshop and wrests a treasure from a troll because of the way they stick together. I will briefly present the core of this tale and leave it for you to imaginatively relate this story line to your work team or group of learners (if applicable).

*In the magical land of India, there once lived a family called Angulee (translation: finger) with Mama, Papa and three children. Each day their quick fingers spun and wove sheep’s wool into cloth. One day a fire destroyed their workshop and everything in it. They...*
needed to go to a new town and find work. In her bravest voice Mama Angulee said "All right children, Let’s go home and pack now!” and everyone did.  

On their way to the next town they had to pass through a dark forest. They made a camp under a large tree and this is where they spent the night. Mama Angulee gave jobs to each of the children, saying, "My sons, go to the river and bring back buckets of water for cooking. Daughter, you and I will gather wood for the fire. Then we will all help prepare the food.”  

Each child respectfully did as they were asked and in no time the aroma of the soup floated up into the big tree. In a dark leafy corner there lived a forest spirit — a dark spirit — sometimes called a troll. The troll had been watching this family and saw how unified they were, and this surprised him. He wanted to capture the family, so he jumped down from the tree hoping to scare the father who was chopping more wood. "You have nothing to eat so why are you making a fire?" the troll snarled.  

Papa Angulee made no sign of surprise or fear. He looked the troll in the eyes and calmly said, "We are going to cook and eat you!” The troll was surprised. He looked at this family and thought, "This family has five people, and they are like a hand with five fingers. You cannot take them apart and use them against each other. They know how to work together.  

So the troll pleaded with Papa Angulee, "Please don’t eat me. Dig a big hole under this tree and you will find a great treasure there. You can have it — just don’t eat me. Dig a big hole under this tree and you will find a great treasure there. You can have it — just leave me alone!"  

The five-fingered family worked together to dig up the ground, and sure enough, there was treasure — gold, silver, jewels, more than they had ever seen in their lives. They took it home, bought another business and returned to a happy life.  

Then the Lobha family saw the Angulees living a good life and they wanted some treasure too. So they went to the dark forest to re-enact the Angulee family story. However, this family was always bickering among themselves, the children not respecting the parents, which made the parents quarrel all the more. As they were not unified, the troll scared them fiercely and they ran as fast as they could back to town.  

I hope, through the presentation of this tale (although shortened for this journal article), that you can see how the power of story can be used in any setting at any time. Rediscover those old fairytale books and see how the power of story can be used in any setting.  

... The end.

References


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Melinda Lewis is currently exploring the use of story and oral tradition to enhance learning through embodied personal creativity.  

She influences local primary school curriculum with the creative arts, particularly drama, to encourage language learning through narrative and commenced a ‘youngyoga’ weekly yoga class for children, including an element of storytelling. She is the author of My magical story journal — a learning journal for children to enhance literacy skills imaginatively and creatively. She delivers a range of playshops for teachers, parents and carers to play with the use of oral tradition in both early childhood and adult learning settings. Melinda has applied to undertake postgraduate research with the School of Social Ecology and Lifelong Learning at the University of Western Sydney.  

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The draft National Health Privacy Code: unresolved issues for health records

Cassandra Gordon

Abstract
While the need for a consistent national privacy framework is well recognised, it has become even more pressing in light of the development of online health information networks which transcend existing state and territory borders. The Commonwealth Government’s draft National Health Privacy Code attempts to address this need by providing a single mechanism for governing the privacy of health records nationally. This paper identifies the privacy challenges posed by e-health records and the importance of proper safeguards to protect this information. The draft Code, including a number of unresolved problems underpinning its implementation, is discussed. Although a stakeholder consultation process has been undertaken, it is argued that further debate and development is required before such an untested and fundamental change to Australia’s health privacy framework can be effectively implemented. Key words: Confidentiality; computer security; medical records; privacy.

Introduction
A robust privacy framework is critical to the protection of patient records from inappropriate and unauthorised access, and the handling of paper-based records is governed by such protocols in federal and state-based legislation. However, the move to collect and store clinical records electronically and access them online as part of broader health information networks means the existing matrix of privacy laws that impose different standards on different parts of the health system is not only confusing, but also outdated in the context of electronic records. In an attempt to address the self-evident need for a consistent protocol, both nationally and across the public and private sectors, a working group appointed by the Australian Health Ministers Advisory Council (AHMAC) has developed a draft National Health Privacy Code.

This paper examines the significant risks to patient privacy presented by e-health records, establishes the importance of proper controls for accessing records, and explores the suitability of the proposed Code in meeting these privacy requirements. It analyses the proposed implementation mechanisms of the Code and discusses a number of potential problems and unresolved issues of the proposed model. It is argued that because of these challenges, the Code in its current form will not provide a policy or regulatory framework to adequately meet the significant challenge of applying consistency to Australia’s health privacy framework.

Protecting privacy in the e-health environment
The duty of confidentiality is a core tenet and legislative requirement of medical practice to protect patient privacy. It was traditionally based on an intimate client-professional relationship, where an individual divulged personal information to their doctor, who was responsible for any third party access to that information (Gerber 1999). While this common law requirement is clearly a necessary part of providing high quality medical care, it is becoming outmoded in the context of modern health care. The increasing use of e-health records in hospitals and general practice means a far greater number of clinicians can access and share patient records. The global availability of medical records is needed beyond the walls of the facility where a patient is usually seen, and patients want their records to be available wherever they present themselves to seek care (Gibby and Schwab 1998). During a hospital stay it is likely that several staff will need to access patient information simultaneously, and e-health systems offer the flexibility to do this (Schoenberg and Safran 2000).

Compared with a paper-based system, e-health records can significantly increase the security of health information. This can be done by restricting access to authorised users who must prove their identity and by ensuring that information cannot be amended, lost or destroyed. Audit trails enable tracking of user access and identification of improper activity such as attempts to access unauthorised information (National Electronic Health Records Taskforce 2000).

Despite these security features, in comparison with a paper registry, storing information electronically can create a greater privacy risk, as an act of intrusion by a ‘hacker’ or an error by an administrator could compromise the records of a much larger number of people (Carter 1999). An important feature of protecting privacy in the context of e-health records is that consumers should be able to control and monitor access to their health information, including the level of disclosure of information appropriate to the type of care received. Unless proper privacy safeguards are in place, it is more difficult for individual patients to control the flow and exchange of e-health records, given they are likely to be accessed by a wide range of clinicians. This is considered to be a fundamental requirement for empowering consumers to take greater responsibility for managing their own health care (National Electronic Health Records Taskforce 2000). It has been observed that while the public generally has a high level of trust in existing practices for protecting the privacy of paper-based information, there is some anxiety about who can access their records if they are stored electronically (National Electronic Health Records Taskforce 2000).

This tension is magnified by the concerted effort to develop online health information networks and to
capture systemic, longitudinal health data on patients, including summaries of all interactions with the health care system. These networks would enable all health providers involved in a patient’s care to access their health records, so they are instantly available when and where they are needed. In July 2000, the National Electronic Health Records Taskforce proposed a coordinated national health information network for Australia, named HealthConnect. The system is being developed by the federal, state, and territory governments to allow summaries of health events to be collected at the point of care and exchanged electronically with authorised health care providers. Patients who suffer chronic conditions or have complex health needs would be among the first to benefit from a national system, given they often use multiple providers; however, all consumers would clearly benefit from improvements in the safety and quality of care (National Electronic Health Records Taskforce 2000).

Similarly, the federal government’s MediConnect (formerly the Better Medication Management System) is being developed to link prescription information provided by doctors with dispensing pharmacists. This is expected to lead to better decision making and subsequently reduce adverse drug events as well as fraud, and would ultimately form the medicines component of the HealthConnect network (Department of Health and Ageing 2003).

The need for a nationally consistent framework

There is no single piece of privacy legislation for managing health information that applies nationally in Australia. Instead, there are different standards that apply across jurisdictions and public and private sector boundaries. This framework is complex and consists of a number of layers. Firstly, the common law requires health professionals to uphold a duty of confidentiality with respect to patient information. At the Commonwealth level, the Privacy Act 1998 sets out the Information Privacy Principles that apply to Commonwealth agencies and, since 21 December 2001, the National Privacy Principles apply to private sector organisations. At the state and territory level, generic privacy legislation applies to public and private sector organisations in Victoria and the public sector in NSW. Health-specific privacy legislation also applies to both the public and private sectors in Victoria and the ACT (Magnussen 2002; Australian Institute of Health Law and Ethics 1998).

Clearly, this matrix of laws is confusing and inconsistent. There is an obvious need for a national approach to privacy legislation that applies to both private and public sectors. The collocation of health services, or the delivery of services collaboratively between public and private sectors, exemplify the difficulties of pragmatically applying existing privacy standards. It may be unclear to consumers what standards actually apply when receiving care, and health providers could also be uncertain of which legislation they are bound to in a particular setting (AHMAC 2002). According to the Federal Privacy Commissioner, the proposed National Health Privacy Code is the key to addressing such lack of cohesion and achieving the required legislative consistency (Office of the Federal Privacy Commissioner 2002).

The need for national consistency has become even more critical given the substantial resources being invested in developing and implementing e-health records at both the federal and state levels (AHMAC 2002). The development of the national HealthConnect network is a particular impetus for the drive to finalise the development of the Code, given that a rigorous privacy framework will be fundamental to its success (AHMAC 2002). To achieve high participation rates, consumers will need to feel satisfied that appropriate safeguards are in place to protect their personal information. It is intended that patients will be able to choose whether their data is used in HealthConnect and control who has access to it (National Electronic Health Records Taskforce 2000). By having HealthConnect and MediConnect operating within the same national framework, it is expected that individuals can be assured that when their information is transferred to another provider who operates outside these systems, it will be handled in accordance with appropriate privacy standards. The Department of Health and Ageing recognises that unless such a framework is in place, consumers and providers will simply not use the network (Briggs 2000).

The draft National Health Privacy Code

The AHMAC Health Privacy Working Group, comprising government, provider and consumer representation, developed a draft National Health Privacy Code, released in December 2002 for five months of public consultations. The accompanying Consultation Paper states that the aim of the Code is to achieve the required consistency in protecting health privacy, while specifically taking into account initiatives proposed under HealthConnect. It introduces a set of rules broader than the existing legislative framework to cover all methods and situations for handling health information. These have been designed to regulate how information should be managed in the patient–health care provider relationship, and how it should be exchanged on a wider scale between sectors of the health system such as hospitals, pharmacies, insurance companies, government departments and researchers (AHMAC 2002).

To cater for e-health records, the Code has been drafted on the basis that standards for handling all forms of health information would be the same, regardless of whether they are kept in hard copy or electronic format (AHMAC 2002).

Proposed implementation mechanisms

To achieve the required national consistency, the Health Privacy Working Group proposes that the implementation of the Code should be based on one set of rules which would govern how health information is handled. These rules are outlined in the National Pri-
privacy Principles, which stipulate standards with which all health service providers in the private sector need to comply when handling personal information.\(^1\) It would also use a standard process for dealing with requests by individuals for access to their health information.\(^2\)

While the mechanisms for implementing the Code are yet to be defined in detail by the Privacy Working Group, the Consultation Paper outlines three possible approaches:

- **Option One**: The application of the Code would be limited to information handled by health services only. The National Privacy Principles and/or applicable state or territory law would cover other private and public sector organisations. The advantage of this approach is that clear boundaries for the operation of the Code would apply. The disadvantage is that health organisations could not disclose information to non-health organisations that do not have adequate standards of privacy protection in place to meet the cross-border requirements set out under National Privacy Principle 9.\(^3\)

- **Option Two**: The Code would apply to all information regardless of whether it is held in the health sector, or by other private and public sector bodies such as schools, employers and insurers. The benefit of this option is that consumers would be assured that their information is protected by universal rules, regardless of where it is held. The disadvantage to this approach is that non-health organisations would have to consider different privacy standards for different types of information.

- **Option Three**: A combination of Options One and Two. The Code would apply primarily to the health sector, with limited coverage of other organisations that have significant holdings of health information, such as health departments, insurance companies, and housing and welfare organisations.

The draft Code adopts Option Two, the broadest scope possible, so it would apply to all information held by any organisation. However, the Health Privacy Working Group has stated it would revise the draft Code if health ministers decide coverage will be limited to the health sector (AHMAC 2002). If this is the case, it would contradict the original intention of developing a Code that incorporates a robust nationally consistent framework to protect the privacy of individual health information in all sectors that handle and manage this information.

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2. This process is set out in Part 5 of the proposed Code, which is Part B to the National Health Privacy Code (Draft) Consultation Paper, pp 63-88.

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Unresolved issues in the draft National Health Privacy Code

In its current form, the draft Code has a number of complex political, legislative and practical issues that should be resolved before it can be finalised.

The consultation process

Policy makers need to be mindful of the requirement under section 18BB(2)(f) of the Privacy Act 1998\(^4\) which requires that the Privacy Commissioner must be satisfied that the public has been provided with adequate opportunity to comment on a draft of the Code before it can be approved.

The opinions of policy makers and consumers differ as to whether the five month consultation process has been adequate. Some commentators believe that this is an insufficient amount of time for the thorough consideration of this major policy issue that will have fundamental implications for consumers and government and private sector bodies responsible for managing health information (I-Privacy Health Privacy Consultants 2003). While this should be borne in mind, it should be noted that widespread and active consultations have occurred, including a series of public forums in state and territory capital cities and Townsville. These forums comprised representatives from the AHMAC Privacy Working Group, the Australian Government Department of Health and Ageing and the Attorney-General’s Department. Several hundred participants took part in the forums and the Working Group received one hundred written submissions (Utkin, T. pers. comm. 2003). Policy makers need to be committed to continuing dialogue with key stakeholders even though the formal consultation period has been finalised. Ministers agreed at the Australian Health Ministers’ Conference (AHMC) in November 2003 to refer the proposed code and implementation options to relevant state and territory departments for consideration. It is expected that these views will be tabled at an AHMC meeting at an unspecified time in 2004 (Department of Health and Ageing 2004).

Adherence to the Code

It is unclear whether the application of the Code would be mandatory or voluntary. The Consultation Paper seeks views on which would be more appropriate; however, it was clearly the original aim in developing a national health privacy code that providers and organisations would be bound by it, at least when using the proposed HealthConnect network (Briggs 2000). The former NSW Privacy Commissioner has supported the view that the Code will only be effective if it is a nationally enforceable standard (Weule 2003).

It should be noted however that there is a legislative barrier preventing the implementation of a mandatory code; the Privacy Act 1988\(^5\) excludes compulsory adherence to a Code. Under the legislation, the
Federal Privacy Commissioner can only approve a code if membership is either by consent or voluntary (I-Privacy Health Privacy Consultants 2003). This is a fundamental issue underpinning the scope of a national framework that could hamper or prevent its implementation. If ministers do decide that the Code will be mandatory, then consideration will have to be given to the amendment of the Privacy Act 1988 to ensure this can be achieved. It is also likely that many health providers will be unwilling to be bound by a new code, as they have already invested time and resources into conforming with existing federal, state and territory privacy regimes when delivering care.

Absence of penalties
The draft Code does not propose using penalties for breaches of health information privacy. Instead, the Privacy Working Group suggests using a balance between promoting compliance through means such as positive endorsement for organisations that are compliant, and measures such as publishing details of organisations that practice serious or repeated breaches (AHMAC 2002). Such mild measures are at variance with the view of Briggs (2001) that there should be firm sanctions and that an appropriate legislative framework for e-health records should provide rights of redress and hold liable those who misuse health information. A number of stakeholders also support the view that without appropriate penalties, the Code may not allow for adequate redress through common law to individuals whose privacy has been breached (AHMAC 2002).

Additional legislation required for e-health record initiatives
The development of online health information networks like HealthConnect means that an additional layer of regulation will probably be required to support the specific requirements of the system. The format of an electronic record itself may require additional or revised standards, particularly in relation to obtaining consumer consent for forwarding information to a national repository or linking records containing personal information (AHMAC 2002). Such standards would also need to regulate the responsibilities and obligations of providers, the purpose for which information can be used, and governance arrangements. Additional legislation would need to be carefully considered to ensure it marries with the Code and does not create additional confusion.

Difficulties in attempting to unify existing privacy regimes
Australia’s health privacy framework is a complex matrix of four Commonwealth Acts and legislation in eight states and territories. It is foreseeable that the implementation of the proposed Code will create confusion given many separate and different privacy regimes already operating, some of which are incompatible and may not be able to be accommodated in a national code. For example, unlike the Privacy Act 1988, there is no statutory basis in either the Health Records Acts in Victoria or the ACT for the approval of a separate privacy code, whereas the Health Records and Information Privacy Act 2002 (NSW) does contain a mechanism for implementing health privacy codes (I-Privacy Consultants 2003).

Achieving national consistency will require significant organisational changes. Governments would need to consider whether changes to their existing laws and administrative arrangements are required to ensure uniformity in governing health information across the public and private sectors. Additional legislation may also be required at all levels of government to enable legislative frameworks to meet the objectives of a national Code (I-Privacy Health Privacy Consultants 2003).

The confusion that could result from introducing a national regime is a challenge also encountered by the United States. Dixon points out that one of the strongest drivers of a national framework in both countries is to avoid a patchwork of inconsistent, state-based privacy laws, given their historically similar piecemeal approaches taken to privacy rules (Dixon 2001).

Conclusion
The implementation of a nationally consistent privacy framework will inevitably be fraught with obstacles. Consumers have traditionally shown scepticism that governments will use their personal information in the most appropriate way. However, before consumer confidence in a national health privacy framework can be achieved, there are several problems with the draft Code that need to be debated and resolved before it can be finalised. These include application to a limited range of sectors managing health information, application on a voluntary basis, and a possible lack of penalties and redress measures. It is also uncertain whether the consultation period satisfies the requirement for adequate consultation set out under the Privacy Act 1988. Nevertheless, it is critical that the key stakeholder groups, particularly consumers and health care providers, are directly engaged in further development of the Code.

A key driver for the development of the Code is to provide a national privacy framework for the operation of the HealthConnect network. While this is necessary to ensure health information is being used in the most appropriate way, there are a number of problems with the proposed Code in its current form that indicate its potential impact on existing health privacy practices would probably be limited. The draft Code lacks the precedent of a national privacy regime successfully operating alongside existing state and federal regimes; it is therefore untested and likely to encounter significant resistance and difficulty from the private and public sectors before it could be properly implemented. At the very least, fundamental organisational changes will be required to unify the Code with federal and state arrangements. Clearly, a common commitment and agreement of all governments to administer a national regime will be critical to its success. In the context of e-health records, a solution that ensures patient records are subject to clear and practical privacy rules that afford patients the discretion to deter-
mine who can access their records should remain the principal concern of policy makers.

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The views expressed in this article are solely those of the author.

References


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The educational needs of health information managers in an electronic environment: what information technology and health informatics skills and knowledge are required?

Merryn Robertson and Joanne Callen

Abstract
The profile of health information managers (HIMs) employed within one metropolitan area health service in New South Wales (NSW) was identified, together with which information technology and health informatics knowledge and skills they possess, and which ones they require in their workplace. The subjects worked in a variety of roles: 26% were employed in the area’s Information Systems Division developing and implementing point-of-care clinical systems. Health information managers perceived they needed further continuing and formal education in point-of-care clinical systems, decision support systems, the electronic health record, privacy and security, health data collections, and database applications.

Keywords: continuing education; education, professional; medical informatics; medical record administrators; health information management

Introduction
Background
The health information management profession, like a number of other professions, is undergoing rapid change due to the increasing use of information and communication technologies in the workplace. Traditionally, health information managers (HIMs) were based in hospital medical record departments and were responsible for managing clinical and administrative information contained within paper-based medical records and manual patient and disease indices. Health information systems, both administrative and clinical, are now increasingly in electronic form. With this technological advancement the role of the HIM has expanded and the demand for HIMs with skills in information technology and health informatics has increased. Rollins (2001) stated that HIMs’ expertise in new technologies is increasingly valued and that they have an important role in easing the transition from paper-based to electronic health records (EHR).

The role of HIMs has expanded and their place of work is no longer confined to the medical record department of a hospital. Within area health services and hospitals, HIMs work in various roles, ranging from managers of health information systems and coders in medical record and patient information services departments, to system analysts, clinical information systems support specialists and information systems managers in information services departments (Callen & Craig 2000). HIMs also work in the clinical areas of hospitals as data managers and research assistants, and outside hospitals their roles can be even more varied. The HIM no longer works with just paper-based health information systems. One of the most significant changes occurring in the health care system in the area of information technology is the implementation of the electronic health record. The National Electronic Health Records Taskforce (2000) stated that electronic health records could provide the tools that consumers could use to share their health information with their health care providers and thus improve the quality of their care. This technology will improve access to information so health care providers and consumers will be in a better position to make informed decisions regarding health care. The introduction of the EHR and clinical information systems within the health care sector is seen as a major reason for the changing role of HIMs.

University programs in health information management incorporate education in both information technology and health informatics; however, it is important to understand the current needs of HIMs in the workforce. With the development of the electronic health record and point-of-care clinical information systems, and the linkage of clinical and financial information to support casemix funding, it is imperative that health information managers increase their knowledge in information technology and health informatics (Roberts & Mitchell 1998; Callen 2001). Indeed, due to the increasing importance of information storage and processing in health care, it is evident that all health care professionals, not just HIMs, need to learn skills and gain knowledge in the field of health informatics (Haux et al 1998). Education in health informatics is essential for the appropriate and responsible application of information technology in health care (Haux et al 1998).

The competency standards for HIMs in Australia have been revised recently by the Health Information Management Association of Australia (HIMAA) to reflect the changing role of the HIM (HIMAA 2001). Box 1 shows the information technology and health information systems competency areas that HIMs should possess upon graduation (HIMAA 2001).

The implementation of information technology in health care organisations, particularly hospitals, has been slow, with the major reasons relating to the complexity of health information, health care organisations and the health care delivery process (Benson 2002; Berg 1998). The transition from a paper-based to an electronic health record began a number of years ago. It is seen as a constantly evolving process and as such will require HIMs to update their knowledge continually through further education. NSW Health (2002) has highlighted the necessity for undergraduate and ongoing postgraduate education and skill development in health informatics to ensure the future success of the EHR.
Lewis (1998) has suggested that all graduates have a professional responsibility to keep up to date with advances in the health information management field and that, therefore, there is a need for all health professionals to have highly developed learning skills. Quick (2001) has proposed that HIMs should undertake internal or skill-specific training in the workplace, in addition to gaining another formal qualification in information technology or health informatics to keep abreast of the changes occurring in the industry. Courses in health informatics and information technology should be provided for all health care workers (clinical and non-clinical), not only at tertiary level but also as part of continuing education programs in the workplace (NSW Health 2002).

It can be seen, therefore, that it is important to ascertain what information technology and health informatics skills HIMs need to keep up with the rapid advances in the EHR and the use of other electronic databases for storage of health information. This information is essential for planning future education and training of HIMs (Callen & Craig 2000). Some research has been undertaken previously on the information technology and health informatics skills of HIMs (Booker 1987; Mitchell & Allen 1993; Callen & Craig 2000). The purpose of the present study was to expand on what is known in this area and to gain a better understanding of the current roles of HIMs within area health services.

Research questions
The aim of this study was to establish a profile of health information managers working within an area health service, to determine what information technology and health informatics skills they already have and what additional skills in these areas they need to acquire. The research questions were as follows:

1. What are the work roles of HIMs within a metropolitan area health service?
2. What information technology and health informatics knowledge and skills do HIMs employed in a metropolitan area health service possess?
3. What additional information technology and health informatics skills do HIMs employed in a metropolitan area health service possess?
4. What do HIMs perceive as being appropriate education methods for gaining additional skills in information technology and health informatics?

Methodology
Research design, sample and site
The study design chosen for this research project was an exploratory survey design. The target population consisted of all known, qualified health information managers (n=38) employed within one major metropolitan area health service in Sydney, New South Wales. Qualified HIMs were defined as those with an undergraduate or postgraduate qualification in health information management from a tertiary educational facility accredited by the national professional association of the health information management profession in Australia.

Survey instrument
The survey instrument was a self-administered, structured questionnaire designed by the researcher. A pilot study was undertaken which included five HIMs employed in hospitals in other NSW area health services and one lecturer in the School of Health Information Management, The University of Sydney. The questionnaire was modified based on the feedback received from the pilot study. The questions concerned demographic details, the HIMs’ roles in the workplace, their educational background, their current information technology and health informatics knowledge and skills, and the frequency of use of these skills in the workplace. Questions were also asked on the knowl-
edge and skill areas in which HIMs believed they required further education and what form they would like this education to take. The questions were a mix of multiple-choice, open-ended and five-point Likert scales. The data were collected between July and August 2002.

**Procedure**

The questionnaire was distributed via the internal mail service to all known health information managers within the area health service of the study. A letter included with the questionnaire described the purpose of the study, information regarding confidentiality, and the contact details of the researcher if further information was required. Subjects who had not returned the questionnaire after two weeks were sent a reminder letter by e-mail.

**Data analysis**

The results were entered into a Microsoft Excel spreadsheet and are presented using descriptive statistics.

**Limitations**

One limitation of this research was that the sample population was from one metropolitan area health service and therefore may not be representative of area health services in general. A further limitation was that the subjects’ responses represented their own perceptions of their knowledge and skills, and this subjectivity could bias the results.

**Results**

**Profile of the study population**

Thirty-four of the 38 HIMs (89%) responded; of the four non-respondents, one was on maternity leave, two had resigned and one returned a questionnaire that was subsequently lost in the mail. Sixteen HIMs (47%) in the area health service were in the 20–29 years age group. Twenty-one respondents (62%) were less than 40 years of age (Box 2). The majority of respondents were female (91%).

<table>
<thead>
<tr>
<th>Age (years)</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>20-29</td>
<td>16</td>
<td>47</td>
</tr>
<tr>
<td>30-39</td>
<td>5</td>
<td>15</td>
</tr>
<tr>
<td>40-49</td>
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<td>32</td>
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<tr>
<td>50-59</td>
<td>2</td>
<td>6</td>
</tr>
<tr>
<td>60+</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Total</td>
<td>34</td>
<td>100</td>
</tr>
</tbody>
</table>

Twenty-nine (85%) respondents were employed full-time, four (12%) were employed part-time, and one (3%) was employed on a contract. The salary levels of the HIMs are shown in Box 3. Twenty-three of the respondent HIMs (69%) earned $50,000 or more per annum, including one who earned over $80,000.

Box 4 shows the HIM qualifications held by the respondents. The majority (59%) had completed the Bachelor of Applied Science (Health Information Management) degree. All respondents completed their HIM qualifications between 1969 and 2002, the majority having done so between 1990 and 1999. Nine respondents (26%) were currently undertaking further study.

The respondents’ employment base was distributed almost evenly between the area health service administration and the hospitals: 44% were employed by the area health service administration and 53% by the hospitals. One HIM was employed by

<table>
<thead>
<tr>
<th>Salary ($A)</th>
<th>n</th>
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</tr>
</thead>
<tbody>
<tr>
<td>30,000 – 39,999</td>
<td>4</td>
<td>12</td>
</tr>
<tr>
<td>40,000 – 49,999</td>
<td>5</td>
<td>16</td>
</tr>
<tr>
<td>50,000 – 59,999</td>
<td>15</td>
<td>47</td>
</tr>
<tr>
<td>60,000 – 69,999</td>
<td>6</td>
<td>19</td>
</tr>
<tr>
<td>70,000 – 79,999</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>80,000+</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Total</td>
<td>32*</td>
<td>100</td>
</tr>
</tbody>
</table>

* Two values are missing, as two HIMs did not divulge their salary in the survey

<table>
<thead>
<tr>
<th>Course</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Certificate of Medical Record Librarianship</td>
<td>2</td>
<td>6</td>
</tr>
<tr>
<td>Associate Diploma (MRA)</td>
<td>6*</td>
<td>18</td>
</tr>
<tr>
<td>Bachelor of Applied Science (HIM)</td>
<td>20</td>
<td>59</td>
</tr>
<tr>
<td>Master of Health Information Management</td>
<td>3</td>
<td>9</td>
</tr>
<tr>
<td>Currently completing Master of HIM</td>
<td>2†</td>
<td>6</td>
</tr>
<tr>
<td>Total</td>
<td>33^</td>
<td>100</td>
</tr>
</tbody>
</table>

* Two of the 6 are currently upgrading this Associate Diploma to a Bachelor of Applied Science (HIM)
† These two respondents do not have undergraduate qualifications in health information management
^ One of the health information managers surveyed did not complete this question

| Facility employing health information managers in one metropolitan area health service in NSW |
|-----------------------------------------------|-----------------------------------------------|
| Facility                  | n  | %  |
| Area Health Service       | 15 | 44 |
| Hospitals*                | 18 | 53 |
| Community Health          | 1  | 3  |
| Total                     | 34 | 100|

* There are six public hospitals in the area health service
Reviewed articles

community health services (Box 5). Box 6 shows the roles of HIMs employed in the area health service administration, six public hospitals and the community health service. It can be seen that HIMs have a variety of job titles, and nine of the 15 (60%) HIMs employed in the area health service administration were employed in the Information Systems Division.

Information technology and health informatics knowledge and skills

Box 7 shows that the majority of HIMs perceive they have very good to excellent skills in word processing and spreadsheet applications, internet/e-mail and patient administration systems (PAS), and limited or no skills in Microsoft (MS) Project® software, statistical

<table>
<thead>
<tr>
<th>IT Skill</th>
<th>Excellent</th>
<th>Very Good</th>
<th>Good</th>
<th>Limited</th>
<th>No Skills</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>%</td>
<td>n</td>
<td>%</td>
<td>n</td>
</tr>
<tr>
<td>Word processing</td>
<td>9</td>
<td>27</td>
<td>15</td>
<td>44</td>
<td>9</td>
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<tr>
<td>Spreadsheets</td>
<td>5</td>
<td>15</td>
<td>16</td>
<td>47</td>
<td>10</td>
</tr>
<tr>
<td>Database</td>
<td>3</td>
<td>9</td>
<td>6</td>
<td>18</td>
<td>8</td>
</tr>
<tr>
<td>Graphics</td>
<td>5</td>
<td>15</td>
<td>7</td>
<td>20</td>
<td>12</td>
</tr>
<tr>
<td>MS Project*</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>Internet/email</td>
<td>11</td>
<td>32</td>
<td>16</td>
<td>47</td>
<td>5</td>
</tr>
<tr>
<td>PAS*</td>
<td>10</td>
<td>29</td>
<td>11</td>
<td>32</td>
<td>9</td>
</tr>
<tr>
<td>Encoder</td>
<td>7</td>
<td>20</td>
<td>5</td>
<td>15</td>
<td>6</td>
</tr>
<tr>
<td>PACS^</td>
<td>1</td>
<td>3</td>
<td>3</td>
<td>9</td>
<td>1</td>
</tr>
<tr>
<td>Statistical packages</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>3</td>
<td>6</td>
</tr>
<tr>
<td>Programming</td>
<td>2</td>
<td>6</td>
<td>0</td>
<td>0</td>
<td>6</td>
</tr>
</tbody>
</table>

*One respondent failed to rate
* PAS = Patient Administration System
^ PACS = Picture Archival and Communications System
Note: percentages for all rows do not necessarily equal 100% due to rounding

6: Job titles of the 34 health information managers employed in one metropolitan area health service in NSW

<table>
<thead>
<tr>
<th>Facility</th>
<th>Department</th>
<th>Job Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>Area Health Service</td>
<td>Health Information Services</td>
<td>Database Collections Manager</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Health Information Manager</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Manager Trainee/Project Officer</td>
</tr>
<tr>
<td></td>
<td>Executive Unit</td>
<td>Telephone/Booking Clerk</td>
</tr>
<tr>
<td></td>
<td>Health Care Interpreters Service</td>
<td>Area Casemix Coordinator</td>
</tr>
<tr>
<td></td>
<td>Information Systems Division</td>
<td>Application Analyst</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Application Specialist</td>
</tr>
<tr>
<td></td>
<td>Medical Records</td>
<td>CCIS* Coordinator</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Clinical Documentation Analyst</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Manager, EHR &amp; Clinical Information Systems</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Person Management Coordinator</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Security &amp; Issues Manager</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Systems Analyst</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Project Manager</td>
</tr>
<tr>
<td>Hospital</td>
<td>Casemix &amp; Statistics</td>
<td>Child Protection Information &amp; Medico-legal</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Casemix Data Manager</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Manager, Casemix &amp; Statistics</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Statistics Officer</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Junior Project Officer</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Senior Project Officer</td>
</tr>
<tr>
<td></td>
<td>Clinical Coding</td>
<td>Deputy Clinical Coding Manager (2)</td>
</tr>
<tr>
<td></td>
<td>Medical Records</td>
<td>Medical Record Manager (3)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Deputy Manager, Medical Records</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Record Control &amp; Discharge Desk</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Quality Improvement &amp; Training</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Health Information Manager</td>
</tr>
<tr>
<td></td>
<td>Patient Information Services</td>
<td>Manager, Patient Information Services</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Manager, Patient Services &amp; Information</td>
</tr>
<tr>
<td>Other</td>
<td>Community Health Services</td>
<td>Information Requests Manager</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Health Information Manager</td>
</tr>
</tbody>
</table>

Note: One person occupies each job title position unless stated otherwise in parentheses

*CCIS = Central Sydney Area Health Service Clinical Information System
packages, programming, and the Picture Archival and Communications System (PACS). Fifty percent of the respondents stated that they had good to excellent database skills and 50% stated they had limited or no skills in this area.

Box 8 shows that the majority of HIMs use word processing, spreadsheets, internet/e-mail and the PAS on a daily basis. The majority of HIMs claimed they never used MS Project®, PACS, statistical packages or programming. Many use an encoder, database or graphics application either irregularly or not at all.

Box 9 shows that the majority of the HIMs studied believe they have good to excellent knowledge of the electronic health record, privacy and security, unique patient identifier, point-of-care clinical systems, and health data collections. They have limited or no knowledge of decision support systems, HL7 messaging, data dictionaries and medical vocabulary. Sixteen (48%) of the respondents stated they had limited knowledge, or no knowledge, of change management.

Further education of health information managers

Box 10 shows the areas where HIMs believe that they require further education. It can be seen that that the priority areas for further education (for over 70% of respondents) are point-of-care clinical systems, decision support systems, EHRs, privacy and security, health data collections, and database applications. It is evident that most HIMs do not require further education in word processing, internet/e-mail, the use of encoder software, or programming.

Box 11 shows that a variety of education methods were considered by HIMs to be appropriate for updating their skills and knowledge in information technology and health informatics.

Discussion

This study emphasised the great diversity of roles that HIMs assume. This diversity has been shown in other
10: The areas where the health information managers employed in one metropolitan area health service in NSW believe further education is required

<table>
<thead>
<tr>
<th>Areas</th>
<th>Yes</th>
<th>%</th>
<th>No</th>
<th>%</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>POCCS†*</td>
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<td>79</td>
<td>7</td>
<td>21</td>
<td>33</td>
</tr>
<tr>
<td>DSSY*</td>
<td>25</td>
<td>76</td>
<td>8</td>
<td>24</td>
<td>33</td>
</tr>
<tr>
<td>EHR</td>
<td>25</td>
<td>74</td>
<td>9</td>
<td>26</td>
<td>34</td>
</tr>
<tr>
<td>Privacy and security</td>
<td>25</td>
<td>74</td>
<td>9</td>
<td>26</td>
<td>34</td>
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<tr>
<td>Health data collections</td>
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<td>10</td>
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</tr>
<tr>
<td>Database</td>
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† Picture Archival and Communications System
∞ Patient Administration System
‡ Picture Archival and Communications System
* One respondent left item blank
* Two respondents left item blank
Electronic Health Record
Unique Patient Identifier
Decision Support System
Point-of-Care Clinical System
Yes
No

11: The methods of further education of health information managers deemed appropriate in one metropolitan area health service in NSW

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* Collaborative learning and peer discussion

studies (see, for example, Callen & Craig 2000). Within one area health service it can be seen that HIMs are employed in a variety of positions in many different locations throughout the hospital. An interesting finding of this study was the high number of HIMs employed directly in information technology areas, with nine (26%) of the respondents employed in the Information Systems Division, which is area-based rather than hospital-based. Most of the HIMs in this division were working on the development and implementation of clinical information systems throughout the area health service.

The majority of HIMs employed in the metropolitan area health service (including six public hospitals, area health service administration and community health services) were female (91%). These results are similar to those of previous research; however, there is a trend towards more males being attracted into the health information management profession. A study conducted in 1987 found that 98.8% of HIMs were female (Booker 1987); in 1991, 94.3% were female (Mitchell & Allen 1993) and in 2000, 94% were female (Callen & Craig 2000). The HIMs employed in this area health service were relatively young, with 47% aged 29 years or less. There could be many reasons for this, but it may indicate that HIMs often commence their career in health information management in a public hospital or area health service before moving to different areas of employment such as health funds, computer companies, private hospitals, government positions, or pharmaceutical companies.

A great majority of the respondents believed that they had very good to excellent skills in word processing and spreadsheet applications, internet/e-mail, and the use of patient administration systems; this might be expected because of the types of positions that they held. This finding can be linked directly to the frequency of use of these applications, with the majority of respondents using them on a daily basis. The areas in which HIMs perceived that they had limited information technology skills were those in which skills are in line with the level of usage, as the majority of HIMs stated that they never used MS Project, statistical packages, PACS or programming.

In the context of health informatics, this study found that the majority of HIMs believed that they had a good to excellent level of knowledge of the electronic health record, unique patient identifier, point-of-care clinical systems, and health data collections. This level of knowledge could be reflective of the types of positions that the HIMs occupied or it may be due to the fact that these areas are all relevant to HIMs because of the changes currently occurring in information management within the health care system.

The HIMs’ perceptions of lack of knowledge in the areas of decision support systems, HL7 messaging, data dictionaries, and medical vocabulary may again relate to the jobs held by the respondents. It is noted that these areas are relatively new and are only now becoming relevant within the health information management field.

The most frequently cited areas for further education were point-of-care clinical systems, decision support systems, electronic health records, privacy and security, health data collections, and database applications, reflecting the rapid advances in these technologies. If HIMs are to remain current in these areas, further education is essential.

In contrast, the areas in which most HIMs believed they did not require further education were word processing, internet/e-mail, the encoder, and programming. Most HIMs use word processing and internet/e-mail regularly and, as a result, are likely to be quite proficient in their use and would not require further training. The encoder and programming are tools that are perhaps not often used in the types of positions held by the respondents; therefore, it would be expected that no further education would be required in these areas.
Conclusion

There are few published studies that describe HIMs’ perceptions of their knowledge and skills in the areas of information technology and health informatics. These constitute a common area of employment for HIMs as increasingly they are working directly on the development, implementation, and management of the EHR.

This study has outlined the information technology and health informatics areas in which HIMs believe their knowledge is lacking and the appropriate educational methods that could be used to update their knowledge and skills. Identifying the areas in which HIMs require further education can be useful in planning courses for HIMs in the workplace, and in curriculum development of undergraduate and postgraduate programs in health information management and health informatics. The diversity of roles that HIMs now hold makes it difficult to determine educational requirements of such positions. Callen (2001) found in a previous study that educators, the health information management professional association, and employers all have an interest in establishing what knowledge and skills HIMs require in their current and different roles.

This is a time of great change for HIMs. With the rapid advances in information technology and the implementation of the EHR, HIMs need to stay abreast of changes and to keep their knowledge and skill levels up to date. HIMs are an extremely valuable source of information to assist with the implementation of the EHR. It is essential that they receive not only a good grounding in information technology and health informatics in their university studies, but also undertake continuing education to keep up to date with the changes. Effective education programs in the areas of information technology and health informatics are a necessary requirement to provide HIMs with the level of knowledge and skills required to assist with the implementation of this new technology in the health care system.

References


Health Information Management Association of Australia (HIMAA) (2001). HIM competency standards, 1st ed. Sydney, HIMAA.


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Joanne Callen
Predicting the influence of the electronic health record on clinical coding practice in hospitals

Kerin Robinson and Jennie Shepheard

Abstract

The key drivers of change to clinical coding practice are identified and examined, and a major shift is predicted. The traditional purposes of the coding function have been the provision of data for research and epidemiology, in morbidity data reporting and, latterly, for casemix-based funding. It is contended that, as the development of electronic health records progresses, the need for an embedded nomenclature will force major change in clinical coding practice. Clinical coders must become expert in information technology and analysis, change their work practices, and become an integral part of the clinical team.

Keywords: electronic health records; clinical coding; health information management; nomenclature; clinical terminologies; health classification

Introduction

This paper explores the shift in the functions and responsibilities of clinical coders over a period in time, starting with a review of the last two decades of the 20th century and moving forward to identify drivers and to predict key changes that are likely to occur during the first two decades of the 21st century, within the context of the emerging electronic health record.

The boundaries in health care are shifting and the electronic health record will facilitate linkage between primary, secondary and tertiary health care services unlike anything experienced so far, bringing vast opportunities for clinical coders as they map and code clinical diagnoses and events in the extended continuum of care. To date, clinical coders have operated primarily in hospitals, with some notable exceptions (including, for example, mortality coding, pathology coding, and general practice coding). The following discussion focuses, by way of example, on hospital-based clinical coding; however, the effects of the electronic health record will be similar for clinical coders and coding practice across all areas of the health sector.

Historically, the primary purposes of the clinical coding function were twofold, namely to

- provide current and comprehensive disease and operation indices for use in research by individual clinicians, for example within the treating health-care facility or practice, and by epidemiologists and other researchers external to the treating facility; and
- meet reporting accountabilities, for instance to health departments, especially for morbidity data collections.

There is no reason why these will not continue to be important in the foreseeable future.

A third purpose, to use coded data as the clinical information foundation of casemix-based funding, emerged in the 1990s, driven by the imperatives of healthcare payment reforms, especially in some states.

The importance of these functions will continue, and clinical coders will face additional challenges, such as learning to operate competently and confidently in the information technology (IT) environment, to undertake analysis of coded data, and to become an acknowledged and legitimate part of the clinical team.

Problems for coding and coders

In many Australian hospitals in the 1980s, neither the quality nor the continuity of the coded data was questioned closely. There was an implied assumption, on the part of the individuals who performed the clinical coding function, that those who used coded data in clinical or epidemiological research in monitoring of disease status at state and national levels, as well as in health service planning, knew and accounted for any inherent peculiarities and inconsistencies.

One of the most problematic issues with respect to the continuity and consistency of retrievable data arose in the frequently imposed changes from one classification system to another.

Another key problem was the lack of uniformity of coding in the private hospital sector; this was due in part to the fact that, up until the time when various state departments of health mandated the regular reporting of coded hospital episode data, little coding was done in the private sector and, where it was attempted, it was undertaken generally by untrained personnel.

Poor medical record documentation

There are differences in the casemix of private and public hospitals in Australia and this becomes evident when the 20 most frequent Diagnosis Related Groups (DRGs) in both sectors are compared (Bloom 2002). Private hospitals account for 48.1% of all surgical procedures and the majority of services provided in specific sub-specialties, such as rehabilitation, some branches of orthopaedics, same-day colonoscopies, and alcohol and sleep disorders (Bloom 2002). Whether or not this makes any meaningful difference to the level and type of technical coding is beyond the scope of this paper; however, a different casemix in itself can neither compensate for nor justify the problem of poor clinical documentation faced by private sector coders.

One of the impediments to coding in this sector is a paucity of clinical information entered by doctors in inpatient medical records. This means that coders in many hospitals cannot abstract effectively from the full record and would not expect to find much clinical documentation of substance to support the final diagnosis (or diagnoses) recorded on the front sheet. The
impact on clinical coding of poor documentation practices has been reported elsewhere and is evident also in the public sector (Donoghue 1992; Chisholm et al 1994; HIMAA 1995; Callen et al 1997; McKenzie et al 2003; Cameron & Robinson 2004). The public sector, however, has the advantage of junior medical staff who have clearly defined clinical documentation responsibilities.

The initial Australian Coder Workforce Study of 1994 (HIMAA 1995) and the recent Australian Coder Workforce Study of 2002 (McKenzie et al 2003) revealed a pattern of deficiencies. Whilst the findings of the 2002 study indicated an improvement on those of the earlier study, the former revealed that approximately three-quarters of health information managers and coders identified incomplete medical record content as being the factor that exerted the most negative impact on their ability to code. This was followed closely by related deficiencies, specifically principal diagnosis not identified, complications and comorbidities not identified, and illegible medical record content (HIMAA 1995; McKenzie et al 2003). Cameron and Robinson (2004) reported that Victorian clinical coders identified several impediments to accurate coding, including identification of principal diagnosis, identification of complications and associated conditions, incomplete medical record content, and illegibility and ambiguity of medical record entries.

Other studies have identified similar problems faced by clinical coders, such as in the identification of principal and associated diagnoses, inconsistent or unclear documentation, and ambiguity of medical record content (Chisholm et al 1994; Donoghue 1992; Callen et al 1997).

One of the arguments in support of the electronic medical record is that it has the potential to reduce or eliminate at least some of these problems, the first and most obvious being illegibility and ambiguity of medical record entries.

Drivers of change in clinical coding practice
In the 1980s, the term clinical coder was not used in Australasia, nor was there a high demand for the services of specialist coders. Health information managers undertook coding as part of their professional role. In many small, remote public hospitals, and in private hospitals, untrained clerks coded at a basic level. Whilst there was a clear responsibility for completion of the coding, there was little real accountability for the quality of the coded data other than via the application of edits in the indexing software, which identified gross errors.

There are several identifiable changes in the Australian health care system that affected clinical coding directly and indirectly in the latter decades of the 20th century. Some of these are discussed below.

Health system payment reform
The introduction of health system reforms, such as the improvement of technical efficiency in hospitals through payment reform, has been responsible for key changes. This was effected through the introduction of casemix-based funding systems for public hospitals in some states in the early to mid-1990s (Duckett, in Bloom 2000). Casemix data, underpinned by clinical coding, are also used increasingly to plan and purchase health care, to compare the relative efficiency of health services, to project workforce demand, and to predict patterns of health service utilisation (Eagar, Garrett & Lin 2001).

Casemix-based funding has been an important driver of change in clinical coding and has raised the profile of coders whilst simultaneously creating a high degree of accountability for coding accuracy, and increased levels of coder productivity and efficiency not seen previously. In one pre-casemix study, workforce demand for health information managers and nosologists (as coders were known then) was predicted to increase, based on the projected importance and volume of coding once it became linked to funding (Robinson et al 1994).

A national focus on classification
Australia’s National Centre for Classification in Health (NCCH) was established in 1997. Its predecessors, the National Coding Centre and the National Reference Centre for Classification in Health, were established in 1994 and 1992, respectively (Roberts, Robinson & Williamson, in Gardner & Barraclough 2002). The NCCH has played a pivotal role in the development and regular updating and refinement of the Australian modification of the World Health Organization’s International Classification of Diseases: The International Statistical Classification of Diseases and Related Health Problems, Tenth Revision, Australian Modification (ICD-10-AM), third edition (NCCH 2002).

The NCCH is responsible also for the standardisation of coding practice and rules at a national level. This has driven what might be seen as a professional-cultural change in coders’ practice, knowledge, and currency. Previously, coders updated only when a new classification system or version was introduced. In order to code correctly, they are now required to keep up to date not only with new clinical developments and technologies, but also with the incremental changes to the classification and to the Australian Coding Standards that reflect these developments.

Hospital accreditation
In the past two decades, there has been an increasing nationwide focus on hospital accreditation, which, ostensibly through requirements for audits and other quality management practices, has contributed to an improvement in the quantity and quality of clinical documentation in hospital medical records. Logically, this would be expected to have the effect of supporting improved coding practice.

Quality management in healthcare
The application of industrial total quality management to the healthcare sector during the 1990s contributed to improved health information systems and documentation which have supported more sophisticated and reliable coding and an associated focus on quality-
related activities in the field of clinical coding. This has been effected through the impetus of accreditation as well as via sporadic efforts of senior staff in hospitals to improve the quality of care and service provision.

The establishment in 2000 of the Australian Council for Quality and Safety in Healthcare saw the development, as a key national priority, of the better use of data to identify, learn from, and prevent error and system failure. Coded data are necessary to identify the incidence and pattern of adverse events at hospital level and, through the state administrative (coded) datasets, at state and national levels (Duckett 2003). The added value of an accurate, coded hospital dataset for use in statistical comparison of mortality rates, at hospital and national levels, is evident when the operative mortality experience at the Bristol Royal Infirmary is considered (Bolsin 2003). This is reinforced in the recommendations of the subsequent British National Health Service Inquiry (Sweeting 2003).

Acuity of private hospital casemix
There was an increase in the complexity and acuity of private hospital casemix during the late 1980s and into the 1990s. This was supported by changes in private insurance payment systems; for example, the introduction of graded theatre fees, differential bed-day charges for advanced surgery, and fees for intensive care allowed for differential payments between hospitals according to their level of infrastructure and case complexity (Foley, in Bloom 2000). The net effect, over time, has been that private hospitals have been required to produce coded data, which has demanded increasingly more rigorous standards of clinical coding in order to meet the documentation and substantiation requirements of the health insurance funds.

Evidence-based medicine
There has been an increasing emphasis on evidence-based medicine in particular and, to a lesser extent, on evidence-based health care in general. This requires, among other things, sound information and good access to comparative morbidity and mortality data starting at the level of the clinician–patient interaction and finishing in the conduct and reporting of clinical trials (Frommer & Rubin, in Bloom 2000), and in the development and use of evidence-based clinical practice guidelines.

The development of practice guidelines by expert bodies is supported by the National Health and Medical Research Council (NHMRC) under the National Health and Medical Research Council Act 1992 through an approval process and the application of specific requirements and standards (NHMRC 2003).

The new public health
There has been a focus on the new public health, one of the three main components of which is known as public health intelligence. This has been described as the gathering and analysis of information about health, the causes of ill health, and the patterns and trends of health and ill health in populations (Lin & King, in Bloom 2000: 252).

Coding that is accurate and longitudinally consistent is needed for population-based health information, which, in turn, supports decision-making in public health policy, planning and practice.

Drivers of future change
Some reforms and changes are inevitable. Other changes that will impact upon clinical coding will mirror shifts in health policy driven by political, structural and economic influences; some of these will reflect international trends and it would be reckless to predict them far ahead. However, it is feasible to forecast some likely drivers of change that will affect clinical coding and the role of the coder.

The electronic health record
The development of an electronic health record (EHR) is a prerequisite to the use of an appropriate, electronically based nomenclature. The electronic health record infrastructure needs to support the nomenclature.

The Australian government has an ambitious strategic plan for the development of a summary electronic health record, which will afford clinicians and patients significant benefits, including improved accessibility of health information. It is likely that developments will be incremental and erratic rather than evenly paced. This is because of the complexity of clinical medicine and the resultant difficulty in developing and implementing a suitable architecture and associated prerequisites for robust and reliable electronic health information systems. Allocative decisions for health information IT development will become more important because of the massive costs involved in the development and implementation of a workable electronic health record system that can be applied across the health sector.

There is a disturbing history of failure of large-scale information technology projects and, anecdotally, this includes the health sector. These failures are not well documented, because the embarrassment of substantial cost over-runs is highly sensitive in an environment in which competing interests vie for a share of the health budget. Contributing factors include evidence of inadequate or inappropriate specification of requirements; the exclusion of the real experts (including health information managers) and users from the feasibility and planning stages; and inadequate understanding amongst non-clinicians of the immense complexity of clinical medicine and hospital systems, especially in acute care.

It is important, therefore, for the future of clinical coding and clinical coders that key players establish and maintain an active input. At hospital level, managers of Health Information Services and of coding units must become active leaders and participants in the development of these systems. Clinical coders also need to maintain an interest and input by virtue of their expert knowledge and status. Expert organisations, such as the NCCH, the University Departments or Schools of Health Information Management, and
others, must become involved in researching and planning for electronically embedded coding systems, and in informing national-level policy.

It can be reasonably assumed that there will be a continuing trend to improve the quality of health care because of the influence of the consumer movement and because of Australian government policy supporting the Australian Council for Quality and Safety in Healthcare. It is likely that progress will be uneven and fraught with difficulties as hospitals and states come to terms with the patterns of adverse events and how to minimise or prevent them.

It can also be assumed that there will continue to be a greater emphasis on the new public health. There is therefore likely to be a greater demand for improved accuracy and quality of coded data not only in those states where casemix-based funding demands highly accurate coding, but also nationally for use by epidemiologists, public health planners, researchers and policy makers.

An appropriate nomenclature for Australia

The adoption of a suitable and robust nomenclature, which incorporates the rich and complex language of clinical medicine, is necessary to fit an electronic environment. The choice of nomenclature, or reference terminology, will be critical to the utility of coded data and the role of the coder.

The implementation of this national policy decision needs to be informed by experts in coding and health information management. The National Health Information Standards Plan includes provision for expert advice in this regard by health classification experts and others (National Health Information Standards Advisory Committee 2001).

The likely candidate as reference terminology for the Australian electronic health record appears to be the American College of Pathologists’ Systematized Nomenclature of Medicine – Clinical Terms (SNOMED-CT). SNOMED-CT has a capability for providing a common language for capturing, sharing and aggregating health data across specialties and sites of care (National Health Information Management Group & Australian Health Information Council 2004: 79). It has been designed as a controlled clinical vocabulary suitable for use in an electronic health record environment. It is the result of a merger of the sophisticated pathology classification the Systematized Nomenclature of Medicine – Reference Terminology (SNOMED-RT) and Clinical Terms Version 3, the United Kingdom system known formerly as the Read Clinical Codes. The functionality of SNOMED-CT has been reported previously in this journal (Aschman 2002).

SNOMED-CT, however, has limitations, including the fact that it does not relate to the World Health Organization (WHO) endorsed classifications, which include the International Classification of Diseases (ICD) and the International Classification of Functioning, Disability and Health (ICF); nor does it support other classifications, such as the International Classification of Primary Care (ICPC). If selected for use in the Australian EHR environment, it will need to be adapted as an Australian Modified (AM) version for Australian clinical practice and conditions, as occurs with the ICD classification (National Health Information Management Group & Australian Health Information Council 2004).

Critical factors that will influence the direction of the change

Adopting a new role

Coders’ perceptions of their expanded advisory and analytical role and their collective ability to adapt their skills to a new way of doing things will be of critical importance.

The coding will be done within the system. The role of the coder will be to verify accuracy, application of standards, and mapping, and to analyse and report the coded data. This will require skills in data analysis and IT, as well as high-level competence in clinical coding.

Change management

The collective ability of clinical coders to prepare for and manage their workplace and role change will be critical to their long-term professional credibility and survival.

Working as a skilled member of the clinical team

Coding is a complex set of processes. It is dependent upon a core body of knowledge and improves with increased practical experience. Coders’ expertise and knowledge is special, and unique to them.

In order that clinical coders survive and thrive professionally in the future, there must be increasing and sustained recognition of their higher-level practical and analytical skills. This recognition needs to be promoted initially by the coders themselves. This does not apply to simple coding, specifically the ability to read a front sheet, consult an index, apply codes, and interpret and apply coding standards. It means that coders should participate as active and informed members of the clinical team.

Educating clinicians

Coders have a responsibility to lead the new coding process. It is therefore they who should educate the clinicians who are the first point of contact in the continuum of clinical data from point of care through to the highest levels of health policy development, funding allocation, epidemiology and research.

The Good Clinical Documentation Guide, developed by the classification experts at the National Centre for Classification in Health at the request of the Clinical Casemix Committee of Australia, is indicative of a recognition of the need to assist clinicians to understand the connection between their clinical documentation, the coding process, and reliable coded data (National Centre for Classification in Health 2003; Roberts and Hanson 2003).

Managing the coding function

Proper management of the coding system is necessary for the development of coders’ career paths. Coding unit managers need to be excellent leaders. They have
to motivate their staff members and be innovative managers. Where managers take a structuralist approach and apply Taylorism (Taylor 1947) as their preferred management practice, for example, and have their coders sitting in a back room or basement, coding all day in a mechanistic manner, then not only are they poor managers, but their organisations will suffer and their coders will not be prepared for the coding role of the future. Managers should encourage their coders to interact routinely with clinical staff, for example via unit meetings and ward rounds, to attend grand rounds, and generally to operate at a highly visible level, regardless of whether the coders are physically located on the wards or in the Health Information Service. This conferring and teamwork, along with regular quality-focused reviews by way of internal audits, are equally important parts of the coding function as the practical coding.

The capacity of the embedded coding system to accommodate the needs of the multiple users of coded data will become increasingly important for the credibility of the system and the integrity and utility of the coded data. This includes, for example, the need to anticipate and control potential effects on continuity and consistency of reported coded data for epidemiological research. In the next couple of decades, changes in classification systems have to be planned carefully and implemented in such a way as to exert minimal impact on the usefulness of coded data for research. It is incumbent upon coders and those who make decisions to change from one classification system to another, or to update to another version of an existing classification, or to create or change coding standards, to do so in full and open consultation with the multiplicity of users of coded data, and to factor, in the potential adverse data-utility and financial effects.

The degree to which the embedded coding system can apply standards will be pivotal to the future role of clinical coders. One scenario is a mapping process whereby clinical data coded to a nomenclature will be mapped into a statistical classification. In today’s context, it is useful to consider the example of using a mapping table to convert codes in SNOMED-CT to ICD-10-AM, which the National Centre for Classification in Health is developing at the time of writing. If there is to be mapping from one classification to another, then the concept of mapping prompts the question: What happens to the coding standards? If standards are retained because they are considered to be essential for high quality coded data that accurately reflect Australian clinical practice, they will need to be applied at some point in the coding process. Some standards will be more amenable than others to functioning in an electronic medium. For example, where the standards involve decision-making based on the documentation in the record, such as sequencing of diagnoses, it is feasible that this level of application could be embedded into the electronic health record and applied as the next step in the process of conversion of free-text clinical information into coded data.

It can be assumed that, by 2020, many standards will be applied automatically within an electronic system. Inevitably, in order that some standards are applied correctly, an informed decision will be required that can be made only by a person with specialised knowledge. Therefore, some decisions in the coding process will have to be made by highly skilled human beings who are experts in clinical coding rather than via the application of artificial intelligence. An analogy might be drawn with decision-making in clinical medicine: whilst electronic systems can present an array of potential diagnoses, the particular level of knowledge, logic and intuitiveness of the individual clinician (in other words, the human element in clinical decision-making) will never be replaced. Decision-support systems in medicine are not new. It is important to acknowledge that they are for decision-support, and are not in themselves decision-making systems. Similarly, other types of decision support systems can be established and used in clinical coding.

**Critical issues**

There is a need for active research and debate to identify solutions to the following questions. When coding becomes automatic:

- Who will monitor the assignment of nomenclature codes to cases in hospitals?
- What is the role for clinical coders in this context? This needs to be identified and role ownership established.
- Will coding standards be used? It may be assumed that a set of rules is necessary to ensure consistency of data for end users, including funders.
- How, by whom, and at what point in the coding process will coding standards be applied in an electronic health record environment? One school of thought is that automatically allocated codes in a rich nomenclature (such as SNOMED-CT) will be mapped to ICD-10 or its successor for subsequent grouping for financial purposes. It is argued that clinical coders should apply the coding standards post-mapping and monitor, analyse and report on coded data; in doing this, they will be working with electronic health records.
- Who will be responsible for ensuring that the nomenclature is translated accurately, mapped to ICD-10-AM codes for subsequent translation into DRGs (ie,)?
- Who will be accountable for the quality of the grouped data, and hence for levels of reimbursement?
- If this continues to be health information managers/clinical coders in their business analysis role, what are they doing to plan and develop systems that ensure integrity and utility of the coded data?

**Factors that militate against a secure future for coders**

Those who do the coding, especially in hospitals with a high casemix complexity, are accountable for several critical functions that are fundamental to the financial viability of the organisation. These include:

- meeting externally imposed reporting deadlines;
- coding comprehensively and accurately;
- maintaining currency with the coding standards;
• applying an ethical and legal framework to their work; and
• coding with consistency to ensure that the data are useable longitudinally as well as for prospective comparative analyses, nationally and internationally.

These requirements, singly and in combination, constitute a particular challenge for coders in states with well-developed case-mix-based funding systems. It is this set of pressures that sometimes leads coders to focus only on the here and now (ie, on maintaining their output). In these situations, the big picture can be lost.

The expectation for increased productivity means that coders have to work harder and faster. There is little room for poor judgement or error. The coders’ professional and technical skills (ie, their background clinical knowledge, practical coding skills, professional judgment, and ability to communicate with medical staff who document in the record) are all crucial to their being able to achieve the increasingly higher levels of accountability expected of them professionally.

Predicted skill and knowledge requirements
It is unlikely, unless the complexity of coding and coding standards is dramatically reduced, that the higher-level decision-making processes undertaken by skilled coders will be replaced throughout the nation in the medium term. There will be a need for coders to implement and maintain automated coding and related decision support systems, in data interpretation and in other evolving areas that will be dependent upon health care data (Fenton, in La Tour & Eichenwald 2002; Beinborn 1999). This fits neatly into the role of the future clinical data specialist predicted by the American Health Information Management Association (2000).

In addition to maintaining competency and currency in their practical coding skills, the coder of the future will need to have a high level of knowledge of both clinical medicine and information technology. A strong IT literacy will be needed to operate effectively in the new coding environment. The clinical coder will need to be an active, albeit clinically peripheral, member of the clinical team via their professional consultation with clinicians. The coder will have to become the recognised and respected coding expert at the micro level in the ward, and at the macro level in the organisation. It will be essential to keep up to date with developments in classification systems and related developments.

The role of the coder should include monitoring, analysing and managing the coded data with the interests of the following stakeholders in mind:
• the organisation, for casemix and casemix-related financial reimbursement, where relevant;
• internal users of coded data, and researchers; and
• external (non-hospital) users of coded data.

Conclusion
The coding focus has shifted in recent years to include a strong financial imperative. However, the pressure to perform at maximum level to facilitate appropriate funding has detracted from some of the more traditionally key functions and applications of coded data. The public health profile of the community has suffered from poor quality coding systems in the past; this can occur, for example, through misinterpretation of trends due to inconsistencies and changes in classification systems over time. It is important when developing future policy, IT supporting systems and coding practices that the needs of the public and population health researchers are also recognised.

The nexus between good clinical care, well-written medical records, high-quality and consistent health classification systems and practice, and reliable morbidity data will become more important as electronic health record technology is developed further. The challenge for clinical coders is to be prepared for the inevitable changes in their role.

References
Reviewed articles


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Correction

Re: Acknowledgment

A profile of coding staff in Sydney metropolitan public hospitals
Health Information Management, Vol 32(2).

Jean McIntosh, Vera Dimitropoulos and Michelle Bramley

The authors would like to thank Adam Bennett, who collected the raw data used in this study for his thesis submitted for the degree of Bachelor of Applied Science (Health Information Management) (Honours) at The University of Sydney.
Valuing your past to provide a stronger future — a Queensland perspective on professional development at the state level

Michael Strachan, Janelle Meakin and Julia Carter

Historically, the Queensland Branch of the HIMAA (HIMAAQ) has had a strong commitment to providing local events and activities to members via a range of activities aimed at professional development and networking opportunities. Activities such as breakfast seminars, social nights, clinical advancement seminars and the HIM Student Mentor Program have formed a regular part of the landscape within Queensland. The HIMAAQ Executive had the forethought, in 1999, to recognise a need for a State Conference that does not replace but complements the annual National Forum.

In 1999, Andrew Kilsanin, Danica Humphreys and Kate Billington undertook a survey as part of their studies at QUT. Its purpose was to evaluate the need for a local state mini-conference. Methodology consisted of 105 telephone interviews with a diverse range of health professionals (including Health Information Managers) in the workplace, as well as 61 face-to-face interviews with students. 88% of respondents supported the concept of a local state conference. A range of other details regarding topics, price, time of year etc. was also covered during the interview process. The data from the survey set a sound foundation for the progression of the concept of a state event for the year 2000.

Although this did not eventuate in 2000, the newly-formed HIMAAQ Executive of 2002 recognised the strength of our past and that the wheel need not be reinvented when it comes to a good idea. It was agreed that the outcome of the earlier survey was still relevant, and that turning the concept into action was something that the state association should pursue.

Work towards the first HIMAAQ State Symposium began in March 2003, with a view to its launch on 31 October 2003. The Symposium provided the opportunity for local members to submit papers and address the needs of HIMAA members who had identified that more substantial opportunities were required at the state level for professional development, networking and further learning. A Clinical Advancement Seminar was to be held on the day prior to the Symposium to provide an opportunity particularly for rural Queensland Members to attend both events. These seminars have been very successful events for clinical coders for some years.

The theme for the Symposium was "Unity in Diversity", in recognition of the continuing trend for Health Information Managers (HIMs) to diversify into different roles within the health industry and, in some cases, completely outside health. Speakers with backgrounds in leadership, electronic health records and clinical risk management were invited to present on the day. A panel discussion at the end of the proceedings explored the very important topic of "Is there Death in Diversity?". The Symposium provided an opportunity for local HIMs and other health professionals to network and benefit from the insight of expert speakers.

The cost of attending the event was aimed at attracting HIM students, HIMAA Members and Non-members with a view to increasing local membership numbers by providing good value for money. HIMAAQ viewed the Symposium as a key activity for the Association to meet the needs that had been identified as important in the original survey. HIMAAQ views professional development within Queensland as responding to the concern with the health information management profession that there is limited contact with HIMs in non-traditional roles. This has implications for the professional development requirements of HIMs and, in particular, students of HIM, who tend to have a less-than-complete view of what the profession offers. The HIMAAQ Executive sees diversification as one of the reasons for the decline in student numbers and an increasing number of people leaving the mainstream of the profession.

HIMAAQ is making an effort to present a range of events and topics that will interest both the traditional and non-traditional health information management professional. This will give students the opportunity to network and learn about the whole spectrum of roles available. It will also give those professionals in traditional roles the opportunity to learn about other possibilities with the field.

Additionally, the results from a more recent survey (of both HIMAAQ Members and Non-members) have demonstrated that the main reason for non-renewal of membership was a perceived lack of value for money. To address this concern, HIMAAQ holds a combination of free events, discounted events, social nights and is endeavouring to involve HIMs from all areas of Queensland, both rural and metropolitan. This gives us the opportunity to engage with HIMs and continue to discover the specific needs and wants from HIMAA.

A future focus of the Queensland Branch of HIMAA in professional development will be to continue to try to interest and educate HIMs in the important area of health informatics. Many HIMs in the public and private health sectors have recognised the need to get involved and provide leadership in this emerging field. This is an important part of the HIM’s future skill set, and the local Association will be looking to facilitate and provide opportunities for developing these skills.

HIMAAQ sees diversity of the health information management role, especially in health informatics, and the provision of value for money in HIMAA membership, as key issues that are closely interwoven. As such, introducing State Symposia is a major strategy within Queensland designed to address each of these. Subsequent offerings will depend on their success in terms of attendance and participant satisfaction, as well as practical considerations such as financial viability.

Finally, there is a lot of value to be gained in learning from history so that we can build a strong future. It just goes to show that if the current leaders of the Branch Association had not valued the work of our preceding colleagues, we might not have had the inspiration to host the first HIMAAQ State Symposium.
Acknowledgment

The HIMAAQ Executive and Members are grateful for the work of Andrew Klisanin, Danica Humphreys and Kate Billington in undertaking the survey upon which our continuing professional development program has been built over the past several years.

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The value of continuing professional development

Rosemary Roberts

Personal reflections

Priceless! For me, continuing professional development (CPD) is an absolute must to provide context and stimulus for my everyday work. Maybe I’m old fashioned, but I particularly value face-to-face formal and informal education sessions with a variety of colleagues and associations. I find it extremely edifying to be exposed to the different perspectives that health and information technology (IT) professionals have of the role of health information managers (HIMs) and clinical coders and believe we should try and influence those perspectives. Because our role crosses over with that of so many other professionals, we have much to learn from (and to teach) members of those professions.

Health information management has changed so much since I graduated as a medical record librarian in the early 1960s. Apart from anything else, it has morphed from the librarian to the administrator to the manager. While this has been in line with changes in North America, it has also reflected the changing role of HIMs in Australia. As health information itself is such a growth industry, I don’t believe we’ve finished (or will ever finish) our development, and must constantly be re-creating ourselves to meet the needs of the current environment. The Information Age probably commenced at the time of the invention of Gutenberg’s printing press in 1450 and commentators have indicated that we’re probably about half way through this ‘Age’. In my professional life it’s been more like the Information Revolution — perhaps we should be making the comparison with something like the Industrial Revolution, which changed lives and directions worldwide!

Whatever the comparison, it is obvious to me that our basic education awards, and even postgraduate studies, are not enough. They, and we, must be constantly refreshed as new technologies become commonplace and we are confronted with new, and often better, ways of doing things. We must find a balance between doing things and talking about them. I’m not advocating that we spend all our time at conferences. I’m advocating an attitude, a receptivity to learning from and teaching others in a variety of ways. Carving out time for these CPD activities is now our greatest challenge.

Of the multitude of ways of consuming CPD, I value most relatively small participatory groups. I always enjoyed the stimulus of Journal Clubs but know of none operating now for HIMs. State branch meetings of HIMAA (at least in NSW) are few and far between. Perhaps it’s a question of geography, or of time, or of valuing the intellectual exercise of presenting ideas, criticising, improving. Perhaps we need a continuous quality improvement (CQI) process for our association and ourselves, because that is what I think CPD actually is, on an individual scale.

In my role as director of the National Centre for Classification in Health (NCCH), I speak at many conferences and seminars. While the process is time consuming, the discipline of preparing and delivering a paper is a CPD exercise in itself, and certainly makes one think about how to project the worth of what we do to a range of audiences.

CPD and health informatics

Apart from HIMAA offerings, I find that there is still a lot out there for those wanting to build on basic health information management skills. I still attend many of the health informatics meetings as a member of the Health Informatics Society of Australia (HISA) and am a founding fellow of the Australian College of Health Informatics (ACHI). I also find that some of the continuing education programs of the Australian College of Health Service Executives (ACHSE) are extremely relevant, with topics such as adverse event reporting, health information management, electronic health records, record linkage, patient identification and legal and privacy issues. They also cover more general topics such as managing change, the health workforce and structures of health services.

Clinical terminology developments

Meetings of clinical colleges sometimes reveal a new angle on health information management. It is, after all, clinicians who create medical records, and it is salutary to discuss with them the way in which records and health data can be built, accessed and retrieved for use at the bedside. More recently, the interest in health terminologies and health concept representation has raised the potential for multipurpose use of health concepts in patient records. By this, I mean using clinical terms for decision support at the bedside through access to the literature and to guidelines and pathways for treatment of specific conditions. These same terms can then be used to inform the data collected for reporting. Forging alliances with clinicians through these processes, I believe, is the way of the future in generating clinical interest in health information management through the realisation of shared benefit.

Health information management and health informatics

A big question for me, and I guess for the reader, is the conjunction or distinction between health information management and health informatics. I truly believe that it is the same discipline, and that we must learn to manage electronically what have traditionally been the patient medical record and the systems that support patient movement through the health services. A merger between existing professional organisations representing HIM and health informatics (HI) may be a boon for both. There would be safety in numbers, expertise would be concentrated, communication would be enhanced and health informaticians would be in a better position to mould health informa-
tion systems to support an electronic health record future.

Getting back to CPD, any liaison between HIMs and HI would be mutually beneficial. But to have CPD there must be a shared responsibility — between those who awarded the basic credential, the individual, the employer, the professional association and those offering postgraduate awards. Any mention of mandatory continuing education to maintain the currency of an award places the responsibility squarely with the originator of that award, but does not release those who consume the outputs of those courses, or with the individuals themselves. Unfortunately, the Health Information Management Association of Australia (HIMAA) does not provide the basic award — in Australia, it comes from the four universities with HIM undergraduate programs (the University of Sydney, La Trobe University, Queensland University of Technology and Curtin University of Technology). The Association regards itself as a professional organisation, but is not a college that can determine a membership or fellowship (except by virtue of requiring a HIM degree for prospective members and accrediting courses from which members will be eligible). Neither is it a society of members with mutual interests, and its offerings of CPD, as mentioned above, are not sufficient to maintain the breadth of even HIM interests, not to mention HI.

My belief is that the HIMAA has three choices:
1. Merge with a health informatics society such as the Health Informatics Society of Australia (HISA) and become an association of interested parties, offering more and a wider range of CPD.
2. Merge with an academic college such as ACHI or ACHSE and award fellowships and memberships so that the health information management credential can be used as a basis for continuing education and maintenance of skills. This could provide a career path from membership to fellowship, with recognition of qualifications and experience building on the initial award from a university.
3. Remain as is, and forge stronger links with other organisations with overlapping professional interests and requirements for membership. An umbrella group such as Healthcare Information and Management Systems Society (HIMSS) in the United States may indicate a union of interests. Joint conferences and continuing education programs with the range of skills and professions represented in the HIMAA current membership could only help in marketing the HIM profession and broadening the horizons of HIMAA members.

Conclusion
Whatever happens, a professional organisation has to reflect the identity of its members, lobby on their behalf, represent them on a national and international scale, and above all provide them with the means to continually reinvent themselves. That is what a career in HIM has meant to me — the opportunity to do different things in different environments and to use each stepping stone to influence the direction that the profession takes in this country. HIMs must be confident that their training has equipped them to do just that — to influence the future, not just let it happen.

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What role should HIMAA take in the continuing professional development (CPD) of health information managers?

Joy Smith

Introduction
The following article represents my own views on the matter of continuing professional development (CPD) and my professional association.

During my career as a Health Information Manager (HIM), I have been employed for a time as an educator and as a developer/manager of training programs. I have also been a member of the HIMAA Board of Directors and its counterpart at State Branch level. No doubt this experience has coloured my views, but, having also been a part of this profession and a member of HIMAA for the best part of thirty years, I have also spent a lot of time on the other side of the fence, as a professional who seeks to stay up-to-date in an ever-changing environment.

These views are not held out to have more credence than those of any of my colleagues. I do, however, believe that this is an area to which we, as individual professionals and as an organised group, must give more focus and I hope this will contribute to the deliberations.

What is CPD?
One useful definition of CPD is: ‘the systematic maintenance, improvement and broadening of knowledge, understanding and skill, and the development of personal qualities necessary for the execution of professional and technical duties throughout the individual’s working life’ (Engineering Council UK, 2004).

My assumption here is that, as members of HIMAA, we take a positive approach to our careers and generally agree that CPD is a good thing. But before we get headlong into developing a program or strategy to actualise it, let’s be clear about why it’s a ‘good thing’.

Why ‘do’ CPD?
To me, the objectives of CPD, as adapted from Lakeshore School Division No. 23 (1998), include:

- maintaining or increasing my level of technical and professional competence;
- extending my range of professional skills;
- developing new areas of expertise;
- promoting confidence and pride in my work;
- establishing links with fellow professionals;
- increasing my career options.

These may also be described as increasing my effectiveness, shaping my practice and increasing my income-earning capacity.

Aside from these personal benefits, there may also be other positive outcomes, for example:

- so that my employers, staff, peers, clients and the public can rely on my knowledge, skill and professional service;
- so that I can make a contribution to the advancement of my profession and the health industry, by adding to the body of knowledge and expertise, helping to raise professional standards, and helping to keep my profession dynamic;
- so that my profession’s public image is enhanced. Therefore, by my undertaking of CPD, benefits may be enjoyed not only by me as an individual, but also the organisations for whom I work, the staff who may depend on my leadership, my colleagues with whom I confer, my profession generally, and ultimately the public who accesses health services.

That sounds like a pretty ‘good thing’ to me!

Why not do CPD?
Just as we know that many health information managers avail themselves of opportunities that arise or devise plans to manage their own careers, there are also others who do not seem to become involved beyond achievement of their primary educational qualifications. Reasons for this non-engagement may include:

- a lack of professional identity or a lack of pride in the profession itself;
- lack of opportunities, perhaps related to residential location or absence of employer support;
- ignorance of available opportunities, which may translate as waiting to be served or to be told what to do;
- lack of incentives or the inability to relate ‘what’s in it for me?’;
- resistance to change, a common human foible; or perhaps even
- the inability to see the wood for the trees — becoming so caught up in operational responsibilities and the ever-growing responsibilities of our jobs that see us focused on achieving today’s tasks (or, if you are like me, perhaps clambering to catch up with yesterday’s!) instead of the future.

It may also be that some people believe that a three- or four- year investment in achieving their qualifications as a professional Health Information Manager is sufficient to arm them for the duration of their careers. Mark Twain supposedly once said ‘I have never let my schooling interfere with my education’ (Schmidt n.d.) meaning, I think, that he considered experience to be the key to his success in life rather than formal education.

So what is the value of the HIM undergraduate qualification?
I see graduation with a Bachelor’s degree in HIM as a launching pad rather than as a destination.

In all professions there is an acknowledged gap between theory and application and various strategies may be employed to bridge that gap. It is generally accepted, I believe, that the well-rounded professional has built on academic qualifications with field experi-
ence, continuing education (formal and/or informal) and an attitude that this is an ongoing venture.

**Whose responsibility is CPD?**

It is clearly in the interests of those who benefit from or depend on the skills of the professional to support or facilitate the honing of those skills. As mentioned above, this includes employers, staff, peers, colleagues, the public, and the profession as a whole, as represented by, in our case, the HIMAA. However, the old ‘you can lead a horse to water, but you can’t make him drink’ analogy applies here.

The primary responsibility for my own capabilities resides with me as an individual professional. I am the one who knows what I need to succeed in my current position, where the gaps in my armour are, where my interests lie, what aspirations I have for the future.

**Me**

I need to examine the following; not just once, but periodically:

- What exactly is my current role? Has it evolved or changed?
- Am I still competent to handle it?
- If not, what am I going to do about that?
- Is this still where I want/need to be?
- If not, where else do I want to be (next, and further down the track)?
- Am I competent for that?
- If not, what am I going to do about that?
- What do I need to do?
- Where can I get support and assistance?

If my response to these questions indicates that I am not thriving where I am and/or I’m not ready for the next step, then I owe it to myself and to the others around me to do something about it. Alternatively, if my response is that I am OK where I am and have no interest in going anywhere else, then perhaps no further action is needed for now (although I think that even on a treadmill, if you don’t keep moving you will slip backwards).

If I am a member of HIMAA, then I must also take into account the fact that I have agreed to abide by the Association’s code of ethics which includes:

- undertaking my professional duties in an efficient, proper and responsible manner
- not assuming the right to make determinations in professional areas outside the scope of my knowledge
- stating truthfully and accurately my professional credentials, education and experience
- seeking to maintain and improve professional knowledge and competence by undertaking appropriate study and participating in continuing education activities (HIMAA 1992).

**HIMAA**

According to HIMAA’s current mission statement (HIMAA n.d.), it strives ‘for the highest quality management of health information services, which we believe make a valuable contribution to the effectiveness of health care delivery in Australia’; and further, ‘we acknowledge that the quality of health information management depends on our members having high levels of knowledge, skills and commitment’.

The HIMAA’s mission statement and the associated objectives are very clear in giving a high priority to the advancement of its members. In fact, it pretty much boils down to being the reason the organisation exists at all.

**What does HIMAA do for me now?**

HIMAA has a long record of service to this profession. Among the list of services it currently provides are:

- publication of the HIM Journal containing high quality, peer-reviewed articles, reports, views and reviews
- offering of national conferences as well as high quality programs, providing ample opportunities for networking and social activities among attendees and putting a national face on the organisation
- offering web-based resources and electronic dissemination of information, latest information about the health industry and the profession, opportunities to participate in research and committee work, access to resources, employment opportunities and more, delivered regularly to members’ desktops or available on the HIMAA website
- construction of the framework on which communities can be built within the organisation through on-line, interactive forums for the exchange of ideas and communication between colleagues
- development of HIM competencies; in 2001, a set of HIM Competency Standards was produced by HIMAA’s Education Committee and includes standards applicable to HIM professionals of entry-level, intermediate and advanced standing; the Committee stated in its report that ‘whilst these competencies would still provide a guide for employers, the Committee’s primary intention for this component of the framework was to identify professional continuing education needs . . . In an ideal world, these intermediate and advanced competencies provide the framework for the development of post-graduate programs and HIMAA continuing education initiatives’ (HIMAA 2001).
- establishment of education services; while this may have initially been focused on support of health information management (eg. via clinical coding courses) rather than at members’ own CPD, even then it was successful as a financial support for the organisation in providing other services and in increasing the profile of HIMAA through its State Branches, offering a wide variety of regular CPD events which are targeted at national and local issues and forums for discussion of issues, more networking and social opportunities at reasonable cost.

**What should HIMAA be doing for its members?**

In my opinion, HIMAA is to be congratulated on what it is able to achieve with limited resources and a relatively small membership base. Just to have sustained
the national conferences and journals for decade after decade is no mean feat. Indeed, all of the services noted above are valuable and should be continued, although perhaps there is a need to approach them in a more strategic way; to maximise efficiency and effectiveness by ensuring that identified priority needs are targeted and that all initiatives are sufficiently resourced.

For example, geographical distance is often an obstacle to members’ access to CPD and other services. As indicated, there have been great strides made by HIMAA in the application of electronic communications; but could the technology be of even greater benefit, for example in the provision of educational programs? What better value would we all get if the reach of State Branch CPD events could be widened, intra- and inter- state? Full advantage could be taken of great presentations and activities which currently have a limited audience, or need to be replicated in other Branches. I think the State Branch activities fulfil a valuable separate role to the national conferences so I would see progress in this area neither as an alternative to the annual national event nor as a way of ‘nationalising’ all events.

An example I would use of an area requiring a more strategic approach to gain success is the HIMAA e-Forums. These were set up in mid-2002, and there are over twenty of them currently in existence, with the potential for new ones to be added as members require. However, the great majority of them have not been tapped since 2002 and the number of postings to all of the sites is very small. So the water’s there, HIMAA has told its members about it so we horses have been led to it, but so far it would seem that very few have taken a drink from it!

There are also other things that HIMAA could possibly be doing to boost its support of CPD, such as:
- boosting/extending course accreditation
- fostering and supporting relevant research
- encouraging reciprocal peer coaching and mentoring, and/or
- introducing credentialling.

Perhaps the most reasonable strategy is to take a multi-faceted approach, providing, facilitating and promoting lots of options to serve a variety of needs. This is not to be confused with the ‘scatter gun’ approach; targeting a wide range of identified interests and needs is not the same as dissipating resources on low priority or ill-conceived options.

I would like to see the HIMAA promoting meaningful intellectual, social and emotional engagement with ideas and between health information managers so that members discover and develop their personal strengths and competencies, while at the same time building an understanding of their positional power as professionals in the broader health system.

**How might HIMAA go about it?**

Firstly, HIMAA should adopt or develop a model to which all its ‘accredited’ CPD initiatives should comply. For example, it should be a model that incorporates and promotes not just the transfer of new information and knowledge, but also the development of practical understanding through observation, reflection on current practice in light of the new knowledge, translation of knowledge into plans and actions for improved practice, and then continued refinement of practice through sharing of expertise and practical wisdom with others.

All CPD activities offered or promoted by HIMAA should have clear sets of objectives and also a means for evaluating outcomes and processes. They should, as far as possible, require active rather than passive participation.

HIMAA should avoid being too prescriptive about what its members should participate in; it should still be the individual’s responsibility to choose. Some may aspire to higher qualifications which will deepen their knowledge in certain areas while others may broaden their horizons through other perhaps less formal means. Both paths are equally commendable.

HIMAA should not try to provide for all members’ needs in-house as this would be impractical and far too expensive. There is scope, however, for HIMAA to keep a watching brief (as it currently does) on what activities and events are being offered by others in the industry or wider community. This might, however, be developed further to provide some sort of review or rating system which could help members decide whether particular events were considered worthy of their investment, the level of challenge to be expected and its relevance to particular HIM roles. And, if we were to go down the ‘credentialling’ path, they might also be assigned points as a currency against which a member’s CPD efforts could be valued. The corollary to that is the requirement of a certain level of investment in order to retain (full) membership.

**Culture Change**

These are all things that a professional association like HIMAA should consider if it is to take an effective role in assisting its members to grow professionally. However, possibly of greatest importance is the creation or fostering of an environment in which HIMs (members) will automatically recognise the need for continued change; fostering of an environment in which individuals (members) will automatically recognise the need for continued growth.

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I would like to see the HIMAA promoting meaningful intellectual, social and emotional engagement with ideas and between health information managers so that members discover and develop their personal strengths and competencies, while at the same time building an understanding of their positional power as professionals in the broader health system.

**How might HIMAA go about it?**

Firstly, HIMAA should adopt or develop a model to which all its ‘accredited’ CPD initiatives should comply. For example, it should be a model that incorporates and promotes not just the transfer of new information and knowledge, but also the development of practical understanding through observation, reflection on current practice in light of the new knowledge, translation of knowledge into plans and actions for improved practice, and then continued refinement of practice through sharing of expertise and practical wisdom with others.

All CPD activities offered or promoted by HIMAA should have clear sets of objectives and also a means for evaluating outcomes and processes. They should, as far as possible, require active rather than passive participation.

HIMAA should avoid being too prescriptive about what its members should participate in; it should still be the individual’s responsibility to choose. Some may aspire to higher qualifications which will deepen their knowledge in certain areas while others may broaden their horizons through other perhaps less formal means. Both paths are equally commendable.

HIMAA should not try to provide for all members’ needs in-house as this would be impractical and far too expensive. There is scope, however, for HIMAA to keep a watching brief (as it currently does) on what activities and events are being offered by others in the industry or wider community. This might, however, be developed further to provide some sort of review or rating system which could help members decide whether particular events were considered worthy of their investment, the level of challenge to be expected and its relevance to particular HIM roles. And, if we were to go down the ‘credentialling’ path, they might also be assigned points as a currency against which a member’s CPD efforts could be valued. The corollary to that is the requirement of a certain level of investment in order to retain (full) membership.

**Culture Change**

These are all things that a professional association like HIMAA should consider if it is to take an effective role in assisting its members to grow professionally. However, possibly of greatest importance is the creation or fostering of an environment in which HIMs (members) will automatically recognise the need for continued growth.

What better value would we all get if the reach of State Branch CPD events could be widened, intra- and inter- state? Full advantage could be taken of great presentations and activities which currently have a limited audience, or need to be replicated in other Branches. I think the State Branch activities fulfil a valuable separate role to the national conferences so I would see progress in this area neither as an alternative to the annual national event nor as a way of ‘nationalising’ all events.

An example I would use of an area requiring a more strategic approach to gain success is the HIMAA e-Forums. These were set up in mid-2002, and there are over twenty of them currently in existence, with the potential for new ones to be added as members require. However, the great majority of them have not been tapped since 2002 and the number of postings to all of the sites is very small. So the water’s there, HIMAA has told its members about it so we horses have been led to it, but so far it would seem that very few have taken a drink from it!

There are also other things that HIMAA could possibly be doing to boost its support of CPD, such as:
- boosting/extending course accreditation
- fostering and supporting relevant research
- encouraging reciprocal peer coaching and mentoring, and/or
- introducing credentialling.

Perhaps the most reasonable strategy is to take a multi-faceted approach, providing, facilitating and promoting lots of options to serve a variety of needs. This is not to be confused with the ‘scatter gun’ approach; targeting a wide range of identified interests and needs is not the same as dissipating resources on low priority or ill-conceived options.

I would like to see the HIMAA promoting meaningful intellectual, social and emotional engagement with ideas and between health information managers so that members discover and develop their personal strengths and competencies, while at the same time building an understanding of their positional power as professionals in the broader health system.

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References


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This article is based on a presentation made by Joy Smith to the HIMAA National Continuing Professional Development Planning Event in Sydney, on 29 November 2002.
Evolution, not revolution: measurement and management of health outcomes in New Zealand through efficient use of national information systems

Raymond Patrick Delany

Abstract
The development of health information systems is not always successful, and there is an emerging perception that money and time that could be better directed to patient care are being wasted on these systems. This paper examines the difficulties faced in creating successful information systems in health services, and suggests strategies for overcoming these difficulties. The development of information systems is a precursor to the use of data in the management of processes which lead towards improved health outcomes. It is argued that before embarking upon difficult and costly new developments, researchers should treat existing sources of data as their first point of call, and New Zealand’s existing national data sources are described in detail. Ways in which these data are being used to develop outcome measures are discussed, and it is concluded that through a multidisciplinary approach existing resources could be utilised more efficiently and effectively to achieve this goal.

Introduction
Whether information systems can add value to, or be an instrument of change within, the health care (or any other) sector has been hotly debated over recent years. Both academic and industry literature is overflowing with stories of expensive failures in information systems (Heeks, Mundy & Salazar 1999; Myers and Olesen 1999; Joch 1995). This has led one researcher to remark with acerbity that:

... the Health IT literature is dominated with hopeful pilot case studies, subsequently overwhelmed with reviews of failures and with the occasional strategic vision document thrown in as to how it should be done right next time. (Orr 2000: 2).

In academic research one is expected to demonstrate familiarity with the existing body of knowledge before adding one’s own contribution.

If, as suggested above, the literature is dominated by accounts of failure, then it would hardly be surprising if such failure was seen to be the norm and this notion was then perpetuated in subsequent research. Indeed, the industry press and the mainstream media alike do seem to be gripped by the perception that information systems failure is common. This phenomenon is not restricted to the health sector, but seems rather to be a condition of large, complex bureaucracies of all kinds (Collins & Bicknell 1998; Glass 1998).

This paper explores two issues within the New Zealand context. First, the concept of obtaining good outcomes by the use and development of health information systems as a precursor to measuring outcomes in health services is examined. Second, the question of how existing sources of information can be more effectively utilised in this endeavour is considered. The paper concludes with suggested approaches that could be adopted to establish useful information linkages between datasets and the quality-of-care indicators that could result from these strategies.

Success and failure in information systems
There can be little doubt that throughout the world there continues to be difficulty in realising value in the development of information systems (Strassman 1997), and the health care sector is no exception. In fact the health sector has been referred to as... still a rather immature user of information technology compared to other parts of society (Klein 2002: 103), and the UK Audit Commission has remarked that:

Many [hospital] Trusts are held back by a vicious circle of poor understanding of information issues, negative attitudes and inadequate representation at the top of the organisation. (UK Audit Commission 1995: 41).

Perhaps of greater concern is the suggestion in the same report that in some cases as little as 10% of the facilities of information systems are being used.

Recent research within the New Zealand context has shown that similar issues abound in the primary care setting. It is much easier to find problems and difficulties than to find real benefits that can be attributed to information systems. Stebakova (2001) has concluded:

The results... within an Integrated Practitioner Association, and doctor’s attitude towards computerisation of General Practice suggest that the existing problems in information technology development within primary care mirror the general problems of computerisation of health care not only nationwide but also in other countries, eg, USA, United Kingdom, Canada and Australia. (Stebakova, 2001: 68).

With respect to successful outcomes in obtaining better information, as opposed to data (Isaac 2002), a superficial scan of the history of health information systems in New Zealand is no more encouraging. The Wave Report, published by the Ministry of Health in 2001, outlined a series of significant structural issues concerning health information in the New Zealand context, and made 79 recommendations along eight separate workstreams (Ministry of Health 2001). Of necessity, such a broad coverage of the issues cannot concentrate on any single area, and the Wave Report...
does not explore in any length the causes of failures. The writers of the report seem to be aware of potential future problems with strategy implementation when they indicate that if the recommendations are not acted upon rapidly...the sector will be writing another large-scale sector information strategy in five years time (Ministry of Health 2001: 63).

Unfortunately, it is precisely this desire to undertake significant change in a short period of time that often creates problems in the first place, and it is easier to devise strategy than to implement it. It has been reported that over 90% of people surveyed in a business context had been involved in developing a strategy, while less than 35% had successfully implemented one (Kaplan & Norton 1992). The Wave Report itself refers to the health sector as being awash in strategy. Researchers have noted that the successful implementation of health information systems is not an impossible task, but it does require considerable expertise as well as patience and tenacity over time (Gamm et al 1998; Gordon & Geiger 1999). Others have suggested that the definition of success is in itself problematic, since conditions that existed when the success was declared can rapidly change (Larsen & Myers 1999).

The above observations indicate that the difficulty of merely creating an information system in the first place is so great that the ability to make use of it subsequently is impaired, almost as if the original purpose of the system becomes forgotten in the process of building it. People and organisational problems of this nature are not new, nor are they technological (Lorenzi et al 1997). Even with good intentions, failure to understand the complexity of the health sector and the different needs of groups within it can lead to imperfect outcomes in the development of information systems (Myers & Young 1997).

On a more optimistic note, a growing body of evidence indicates that it is possible to obtain good results in this area. Recent studies demonstrate that improvements in the quality of care result from the availability of better information, which, in turn, is derived from better information systems (Gordon & Geiger 1999; Chu 2002; Ondo et al 2002; Nahm & Poston 2002).

**Health informatics and information management**

Health informatics has been described as an evolving discipline that sits at the intersection of rapidly changing fields of health and information systems. As such, the discipline lacks a single, standardised definition. Nevertheless, Ball provides a useful working definition of health informatics as the demonstration of how organisations can use IT to bring their strategic goals from theory into practice (Ball 2002: 41).

Lorenzi (2000) has defined the cornerstones of health informatics as comprising:
- structures to represent data and knowledge
- acquisition and presentation of data
- management of change
- integration of information.

Lorenzi notes that these cornerstones extend well beyond the skills associated with traditional data processing and information systems and acknowledges that human factors, not technical considerations, constitute the greatest obstacles to informatics success (Lorenzi 2000: 204). Gardner has reinforced this view by stating: The success of a project is perhaps 80% dependent upon the development of the social and political interaction skills of the developer, and 20% or less on the implementation of the hardware and software technology (Gardner 1998: 41).

Smaltz (2000) has established the fact that leaders in the development of health informatics need to have, in addition to credentials in the technology arena, the ability to develop metrics for determining the value of enterprise processes. This role Smaltz calls that of the informaticist, a role crucial to the achievement of good information systems outcomes. This view is reinforced by Ball’s statement that [v]alue resides in the relationship between cost containment, customer service and satisfaction, and superior clinical results or outcomes (Ball, 2002: 41).

The role of the health informaticist in New Zealand is problematic. The discipline has not, until recently, been well supported in academia. Membership in the professional societies has been limited, and New Zealand has not been particularly visible in international health informatics issues, despite considerable success in certain key areas, for example the establishment of the National Health Index (NHI). Consequently, the number of properly trained and knowledgeable health informatics workers in New Zealand is insufficient to fulfil the demand for these skills.

Skilled health information managers are in short supply. This is partly an economic issue; the relatively small New Zealand population will not support large numbers of highly specialised knowledge workers in any field. It is also an issue of perceived value; District Health Boards striving to remain fiscally responsible and live within their means are forced to make hard choices about what will be supported and what cannot be supported. The value created by the health information manager is realised primarily in the long term, and it can be difficult for a small number of specialists to communicate and justify their needs. Information managers tend to be more oriented toward informatics than technology, but there is generally a greater understanding of, and sympathy for, the latter in the ranks of executive management. As a result, the role of the health information manager has not been well established in New Zealand or has been eroded in favour of the role of the information technologist. Information technology managers are in general less effective than information managers, and their roles in organisations are of necessity limited to the implementation of technology.

The true health informaticist has an effective understanding of how the health care system works, combined with knowledge of how information technology can be deployed to enhance that system. This concept has equal application in the delivery of clinical care and the management of public health in the widest sense.

Improvements in informatics will ultimately support improvements in health outcomes. It is thus necessary to have an adequate synthesis of health care knowledge and information systems knowledge, as illustrated by the model in Box 1.
**Gaps in the jigsaw**

The healthcare system in New Zealand has for years been attempting to bridge some very large gaps in information availability. Box 2 shows a model that could be used as a *roadmap* of the types of information required to effectively manage the health of a national population.

Unfortunately, the current situation in New Zealand resembles the illustration in Box 3.

<table>
<thead>
<tr>
<th>1: Dimensions of successful systems outcomes</th>
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<tr>
<td>Informatics initiatives will not be completed</td>
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<td>Initiatives will not start</td>
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<thead>
<tr>
<th>LOW</th>
<th>HIGH</th>
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<tr>
<td>Understanding of health care</td>
<td>Understanding of information systems</td>
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<th>2: Model for key information components of public health management</th>
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<td>Primary care contacts</td>
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<td>Practitioners</td>
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<td>Births</td>
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<th>3: Current state of information model in New Zealand</th>
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<tr>
<td>Primary care contacts</td>
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<tr>
<td>Practitioners</td>
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<th>4: Collection model for contract-based data sets</th>
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<tr>
<td>Hospitals</td>
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<tr>
<td>Data Warehouse</td>
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<td>Ack/Error</td>
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</table>

There is no consistent national data collection for primary care contacts or outpatient events. Gaps also exist in other areas, for example prescriptions, laboratory test ordering and information on other diagnostics. The data do exist, but they are held in different systems that do not interface well (Ministry of Health, 2001), and are either coded inconsistently across the sector or not coded at all. This problem is exacerbated by the considerable variety of systems in use in public hospitals. Orr (2000) has observed that problems arise when we try to cross large gaps between current states and future states in a single bound. Instead, we should attempt to make a number of small incremental steps, each valuable in itself, but contributing to a bridge that crosses the gap.

The following sections discuss the existing information systems and data available in the New Zealand environment. It is argued that when seeking information, existing sources of data should be sought first, and approaches that might facilitate this are suggested.

**Existing sources of data**

No statistician would claim that it is feasible to obtain a perfect data set. Bulk data is by its very nature cumbersome, prone to error and incomplete; nevertheless it cannot be concluded that it is useless. It is therefore necessary to understand the nature of data as *indicator* rather than *fact*, although it is commonly assumed that it is not possible to make good decisions in the absence of indisputable data. In health care, this assumption has led to the development of new information systems which are seen as fundamental to the management of the sector. Because health statistics are used to inform key policy initiatives, the fact that strategic managers are accustomed to making decisions from imperfect data needs to be taken into account. In addition, there is a risk that researchers will draw inappropriate conclusions from inherently biased data. Hence there is a need for two levels of data: current data on which management decisions which do not require a high level of rigour are made; and rigorous data used for drawing conclusions relevant to clinical purposes. These levels of data can be derived from the same source, and this is the path taken by the national data collection strategies in New Zealand.

For many years, the New Zealand Ministry of Health and the Health Funding Authority and its predecessors have invested considerably in the collection and dissemination of public health-related data. In recent years, the chief vehicle for this work has been
Data Cleaning of Diseases and Related Health Problems are classified using the WHO International Classifications for these data sets, can be found online at www.nzhis.govt.nz.

In general, data within the NZHIS collections are claim-based data. NZHIS is responsible for the collection and dissemination of health-related data and operates the National Health Information Service (NZHIS). The NZHIS data collections fall approximately into four categories:

- demographic register (National Health Index)
- contract-based data
- data processed from manual sources
- claim-based data.

The NZHIS data collections fall approximately into four categories:

- Contract-based data sets are derived directly from hospital information systems in both public and private hospitals. Hospitals are required under their contracts to provide these data. The model is illustrated in Box 4.
- Contract-based data sets are derived directly from hospital information systems in both public and private hospitals. Hospitals are required under their contracts to provide these data. The model is illustrated in Box 4.

**National Health Index**

The National Health Index (NHI) is the cornerstone of health information in New Zealand. It was established to provide a mechanism for individually identifying every health care user (HCU) by assigning each a unique number (known as the NHI number). As a registration system, the NHI includes only information needed to identify health care users, such as name, address (including domicile code), date of birth, sex, and ethnicity. Coverage is estimated to be 98% of the population.

The unique identifier provided by the NHI is a significant national asset. New Zealand is one of the few countries that has a unique identifier in place for all health users nationally, and was the first country in the world to implement this national unique identifier in 1992. The benefits of a standard unique identifier are well documented. The US Department of Health and Human Services has identified 30 criteria for evaluating a unique identifier (US Department of Health and Human Services, 1998). The New Zealand NHI easily qualifies on 29 of these, with the 30th (cost efficiency) being questionable, and that only in recent years given the steep fall in technology costs since the current NHI was implemented.

**Contract-based data**

Contract-based data sets are derived directly from hospital information systems in both public and private hospitals. Hospitals are required under their contracts to provide these data. The model is illustrated in Box 4.

Box 5 lists the collections that are contract based.
Making use of existing data

As has been observed in the UK, the investment of scarce resources in developing new data sets may not be the most effective way of improving measurement of outcomes. Information can be improved using currently available data (UK Audit Commission 1995).

New Zealand already holds a vast mountain of information in the national systems alone. Roughly 70% of laboratory results are sent from community laboratories by electronic messaging to general practitioners.

In addition, practice management software is currently estimated to be in use by 80% of general practices for patient administration. Approximately 50% of general practitioners are using software for clinical purposes, such as the electronic generation of prescriptions and electronic recording of details of patient health encounters. Electronic claims from primary care providers number approximately 66 million per year, excluding Accident Compensation Corporation claims.

Box 10 shows the level of electronic information available for research today. It is acknowledged that there are a number of problems and issues with all of this data. However, creating new information systems is difficult and the risk of failure and the cost involved are high. New developments will not necessarily solve this problem. A better use of resources might be to delve into this mountain of treasure and start to make more efficient use of that which already exists. To facilitate this, resources need to be allocated to increasing the availability of the data. This is partly a technological issue, but mostly an issue of governance and accountability, especially with regard to the issue of privacy.

There are numerous examples of the use of the national data sets by researchers to contribute to the body of knowledge. For example, data from NZHIS have been used in a range of studies, both in New Zealand and overseas, including one (published in the Journal of the American Medical Association) which examined a possible link between vasectomy and prostate cancer (Cox et al 2002; Blakely et al 2002).

The Royal New Zealand College of General Practice (RNZCGP) Research Unit, based in Dunedin, has conducted a preliminary study which demonstrates how primary and secondary data from different sources can be linked using an encrypted NHI number to understand primary/secondary utilisation patterns. Use of encrypted NHI preserves the confidentiality of individual patient records, while allowing the benefit of unidentifiable data analysis (Tomlin, 2002).

Work is being carried out by the Clinical Analysis unit of NZHIS, in collaboration with other Ministry of Health staff and overseas researchers, to extract higher value from the existing collections. The following are examples of this work.
### 9: Claim-based data sets

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maternal and Newborn Information System</td>
<td>The Maternal and Newborn Information System (MNIS) contains data relating to maternity services provided under either section 51 of the Health and Disability Act 1993 or section 88 of the New Zealand Public Health and Disability Act 2000, and inpatient health data from the NMDS. Before 1 July 2002, approximately 70% of pregnancies were recorded (the other 30% were funded through non-standard contracts). From October 2002, all pregnancies are recorded in the MNIS. The MNIS also contains census and geographical information provided by Statistics NZ. The MNIS contains information from March 1998. The data in the MNIS are loaded from the HealthPAC maternity claims system, and the data quality of clinical information provided is variable. The clinical meaning of many of the input records must be inferred, as the records relate to payment for a service rather than to a clinical treatment. Data quality is expected to improve in the future.</td>
</tr>
<tr>
<td>Pharmaceutical Information Database (PharmHouse)</td>
<td>The PharmHouse contains claim and payment information from pharmacists for subsidised prescriptions that have been processed by HealthPAC. The PharmHouse holds over 270 million claims. Approximately 3.5 million rows of data are added each month. The collection was started on 1 July 1992. Records from before 1996 have been archived, but can be made available on request.</td>
</tr>
<tr>
<td>Laboratory Claims Data Warehouse</td>
<td>The Laboratory Claims Data Warehouse (Labs) holds data on the primary-care laboratory tests. This data set contains claim and payment information for laboratory tests that have been processed by HealthPAC. It also contains laboratory test information from Pegasus IPA providers. In October 2002, this amounted to over 56 million. Labs was established in 2000 and contains data from July 1997.</td>
</tr>
<tr>
<td>Immunisation Data Warehouse</td>
<td>The Immunisation Data Warehouse (Imms) was created for use by Ministry of Health policy analysts to measure the actual coverage against the target of 95% of 2-year-olds being fully immunised. Imms contains data on claims from GPs and clinics for subsidised (and some non-subsidised) immunisation visits. The primary focus is on children under the age of 2 years. In October 2002, Imms held over 1.2 million rows of data on vaccine dispensing and visits. Data collected after 1999 are all at a detailed level, and include provider, patient, and immunisation detail.</td>
</tr>
</tbody>
</table>

### In-depth Analysis – Fracture of Neck of Femur Part II

The results of this analysis are currently undergoing clinical validation. Surgeons nominated by the New Zealand Orthopaedic Association are assessing work in progress, as well as providing continuing consultation. The objective is to add value to the data collected in the NMDS and assist clinicians with decision making and the identification of areas for improvement. There is evidence of large variation in clinical practice and inconsistent outcomes in terms of complications and deaths.

### Cancer Survival Analysis

A feasibility assessment of cancer survival analysis, both relative and cause-specific, is fully completed. The New Zealand Cancer Registry holds over five years of data with robust information regarding clinically relevant prognostic factors. The records can be linked to the NZ Mortality Registry, which contains reliably coded information on the underlying cause of death.

### Clinical Benchmarking Data

This benchmarking and performance initiative has been undertaken with the aim of improving quality and cost-effectiveness of health care services, as well as the achievement of better health outcomes. The indicators representing the main aspects of health care are calculated at a Diagnostic Related Group (DRG) level from the hospital discharge data in the NMDS. Data are distributed annually to all District Health Boards, which are encouraged to monitor their performance against benchmarks determined for the same groupings (e.g., tertiary hospital in relation to all tertiary hospitals). The benchmarks are set at either the 20th or the 80th centile. This approach provides an indication of possible issues and potential areas of improvement that may be worth looking at in more detail.

### Multi-dimensional approach – a template for success

To achieve successful outcomes in health informatics, it is necessary to have an adequate synthesis of health-care knowledge and information systems knowledge, as illustrated by the model in Box 1. How then can we achieve progress in an action-oriented way? If the merit of the model shown in Box 1 is accepted, it becomes necessary to establish adequate synthesis of healthcare knowledge and information systems knowledge to achieve progress.

An example of what can be achieved is illustrated by the Elective Services Performance Indicators website (www.electiveservices.govt.nz/). This initiative uses the data from the National Booking Reporting System (NBRs) and the National Minimum Dataset (NMDS), among other sources, and delivers a series of key performance indicators using business intelligence technology tools. The data provided by NZHIS and other Ministry units, combined with the knowledge of the health care domain provided by the Clinical Ser-
10: Volumes of health transactions and percentages processed electronically

<table>
<thead>
<tr>
<th>Service</th>
<th>Annual volume</th>
<th>% Electronic</th>
</tr>
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<tbody>
<tr>
<td>Immunisation</td>
<td>142,800</td>
<td>95</td>
</tr>
<tr>
<td>Pharmacy</td>
<td>41,538,000</td>
<td>97</td>
</tr>
<tr>
<td>Maternity</td>
<td>414,000</td>
<td>34</td>
</tr>
<tr>
<td>General</td>
<td>6,808,000</td>
<td>97</td>
</tr>
<tr>
<td>Medical</td>
<td>17,602,800</td>
<td>100</td>
</tr>
<tr>
<td>Total</td>
<td>66,505,600</td>
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</table>

... the offer of preventative service is regarded with extreme suspicion, fearing that a paternalistic medical profession is taking away people's freedom of choice. If the popular view remains "Privacy at all costs", then it must be recognised that one of those costs is ineffective and inefficient Public Health systems.

Barriers and enablers

Performance indicators in health care must be developed within the constraints of consumer privacy and information security. New Zealand has comprehensive privacy legislation and regulation with regard to health information; despite this, the level of consumer concern around privacy is considerable. This has been highlighted by Professor Jocelyn Chamberlain in a review of Breastscreen Aotearoa, in which she wrote that:

The gulf between the desire of the consumer for total privacy and the desire of clinicians and researchers to make use of individual data for the public good is considerable. The result is that the latter groups are reluctant to engage in constructive discussion on the issues. This reluctance is understandable, given the general lack of awareness in the general population of basic scientific methods and issues. However, unless such debate takes place, some consumers will remain uninformed, suspicious and hostile towards initiatives designed to improve outcomes for all.

One possible avenue to overcoming these concerns is the adoption of alternative strategies to the centralised collection of data. The RNZCGP Research Unit is one such alternative. For nearly five years, this unit has maintained a richly detailed database of activities in general practice. Data are supplied from a limited number of practices as extracts from the GP Practice Management Systems (PMS). Because it is attached to the University of Otago, ethical considerations regarding privacy are easier to manage. Close working relationships between public and academic organisations on this model may be one means to overcome privacy concerns.

Conclusion

Significant improvements in the measurement of health outcomes do not necessarily require extensive monetary investment. History has demonstrated that large investments in new information systems do not necessarily pay off as expected, or that they benefit only in the long term.

Although there are problems with many of the existing data sets, there are also very useful sources of data that are currently underutilised. At the national level, New Zealand holds two years of mental health contact data, nearly five years of laboratory tests, 10 years of pharmaceutical dispensing data, 17 years of hospital discharge information, 30 years of mortality data and over 50 years of cancer diagnoses. We have robust technology and governance mechanisms for protecting individual privacy while allowing analysis of these data to the most sophisticated degree. Few other countries in the developed world can boast as much. It is a national treasure and an epidemiologist's dream.

Researchers, clinicians, administrators and educationalists must work together with skilled health information managers to achieve the best outcomes. Evidence indicates that where this multi-dimensional approach is used, the outcomes are very worthwhile indeed.

Acknowledgments

This paper is a revision and extension of a presentation entitled 'The Frightening Truth about Data?' given to the Health Sciences Research Centre at Victoria University on 31 October 2002. I would like to acknowledge the contribution of Vladimir Stevanovic and Tatiana Stebakova in assisting with the preparation of this material, and to Dr Lou Gallagher and Jim Fraser who reviewed the early drafts.

References


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Reports

HIMAA continuing professional development planning day

Background

Although held some time ago, the most recent of the Health Information Management Association of Australia (HIMAA) national continuing professional development (CPD) planning events provided an excellent opportunity for leaders of the Association to consider the current state of professional development within HIMAA. Under discussion were the challenges the organisation was facing, along with potential strategies which might address this important aspect of maintaining a vital profession.

The planning day was held on Friday 29 November 2002, in the conference room of the Macquarie Hospital in North Ryde. It was convened by Vice-President Anne Marie Hadley and facilitated by the Manager of HIMAA Education Services, Melinda Lewis. Attendees included HIMAA board members, State Branch presidents, as well as a number of invited guests and speakers.

Summary of proceedings

Purpose of the day

• To provide a forum to allow state representatives, key stakeholders and the national office to meet with the HIMAA board to discuss and raise issues in relation to members’ professional development and continuing education needs; and
• to pose recommendations for HIMAA conferences and CPD to include the HIMAA business plan for 2003 and into the future.

Key outcomes

Following vigorous discussion among all participants, some key messages emerged.

As an association:

• We must maintain our reputation within the health industry as the group that understands the information landscape, who knows the best information resources, how to use the resources, what their strengths and weaknesses are and how much they cost;
• We need to be vibrant — to be seen as a progressive organisation, consolidating current territory and broaching new frontiers; we must act as magnets to attract people to us;
• We must create opportunities to network and to learn;
• We are committed to providing professional development activities at state and national levels;
• We need to create a culture of CPD within the profession;
• We need to give greater value. This can be achieved through models and structures whereby members can report their professional development and continuing education activities and receive due credit for it — that is, certification (which must be voluntary);
• We must form alliances and collaborate with universities and other relevant organisations;
• We need to ensure that the clinical coder and health information management competencies remain dynamic — they must change and grow to maintain currency and relevance;
• We need regular, high profile exposure within the health care, health records, clinical coding and health informatics fields;
• We must increase our membership as a proportion of professionals in the field, and CPD is a vehicle for achieving this;
• We should be aware that CPD is a means for increasing revenue for the Association to help fund other member services.

As individual health information managers (HIMs):

• We must continue to develop and maintain our expertise in evaluating information systems and resources.

Outline of the day’s presentations

Each state presented a 15-minute PowerPoint presentation on their state’s perspective on professional development and continuing education. It included:

• Outline of activities provided during 2002
• What worked and what did not
• Costs incurred/profit gained
• Member feedback from activities to date
• State and national roles in providing professional development
• Mentor program
• State views on a national HIMAA conference.

Australian Capital Territory

The ACT has a small member base of eleven, although 24 HIMs were identified in the region. Main issues reported were that since so many worked outside the HIM traditional role, it was hard to provide formal continuing education seminars of interest to everyone. In previous years, they had held meetings in conjunction with presentations by guest speakers. Grand rounds also worked well as an information-sharing exercise; however, any other initiatives were difficult to schedule, as HIMs are busy and cannot spare the time to meet regularly.

Organising conferences is difficult for a small branch, and hence many HIMAA members were exhausted by the experience and some had even discontinued HIMAA membership. There have been no profits gained at the local Association level. There is no mentor program, although one La Trobe University student recently completed a placement. Mixed views about a joint Health Informatics Society of Australia / HIMAA conference were offered, and biennial sharing was...
suggested. It was also considered as inadvisable for any such conference to clash with other events, such as casemix conferences, in future.

New South Wales

There were two full-day seminars held in 2002, with a nominal fee for members and free participation for health information management students. Each event covered a range of themes and one event was scheduled to coincide with a NSW Branch meeting.

While the factors necessary to make a seminar successful were suggested to include relevancy, experienced speakers and practical topics, it was also highlighted that some NSW members expect to receive continuing education for free or for a nominal cost. There was a perception that HIMAA membership should be inclusive of free professional development events. It was thought that a national conference should continue to be specific to the health information management profession even if it was aligned to other events.

Tasmania

A complement of only four full members and one associate member makes it difficult to conduct formal education events; hence, there were no educational activities arranged in 2002. There is more reliance on national events as an alternative, as well as regular communications via e-mail and the Internet.

Queensland

Graduate dinners and mentor programs continued to work well, with good attendances. Breakfast forums seem to have lost momentum and were to be reviewed in 2003, with the suggestion to reduce the number per year. Clinical advancement seminars continue to address coding issues, although they are information and not as interactive for participants. The degree of involvement from the audience depends on the ability of the invited clinicians who speak at these events. A Joint Records Management Association of Australia / HIMAA Queensland event in 2002 was not successful, although it is understood that there were no health information management papers included in the program and advance marketing was not well done.

In relation to joining HIMAA, members are asking “What’s in it for me”? They are seeking value for money, and it was mentioned that some thought membership benefits had regressed since the Association ceased to publish a paper health information management journal.

Debate about an annual conference was also mixed, with no clear preference for a combined or separate event. What was deemed important was the relevance of the topics, as well as ensuring presenters of high calibre and reputation in their fields.

South Australia

There are 30 members in South Australia who, along with other interested non-HIMs, attend HIMAA organised seminars from time to time. The SA branch has developed a business plan to further refine state educational events. Five activities had been conducted over the previous year, with half of them achieving nominal financial benefit or break-even status. Several events were free for members. Opening sessions up to all interested parties worked well and ensured better profit-making opportunities for the Branch.

National conference preferences included: interactive formats, reasonable cost, focus on quality not quantity, and a suggestion for the introduction of a smaller seminar series using videos in remote states and territories.

Victoria

This state branch has 311 members and an eight-member executive committee to administer the largest state membership base. A number of subcommittees and special interest groups exist which align HIMs to their specific areas of interest and expertise.

At least one of the five educational events in the last 12 months was offered free to members. Producing a quarterly newsletter is an informational and marketing tool used in Victoria to generate sponsorship dollars while keeping members informed at a state level. Promotion of the health information management profession was seen as crucial, hence marketing letters had been sent to chief executive officers throughout Victorian hospitals in recent months. The Victorian executive actively and continuously seeks sponsorship and uses paper advertising alongside e-mail and the Internet as forms of marketing. Seminars generally break even or make profit and the current revenue level of this state branch is very healthy. Unlike the NSW experience, members in Victoria seem willing to pay a premium price for their seminars, with the average registration fee being $100.

Western Australia

Thirty-two members make up the Branch at present, although it is disheartening to know so many senior HIMs have left the flock and are not active in HIMAA activities. Breakfast seminars and the graduate dinner are popular events and it seems to work better to combine educational events with social activities. A case studies continuing education initiative introduced a few years ago has been burdensome to administer in recent times. Members have become so busy that the state branch did not receive the responses needed to make this a core part of continuing education. No profits were made in 2002, although all events were subsidised and relied totally on sponsorship.

The main view of members about a national conference was that it should be affordable, perhaps held every second year, and be transparent in its affiliations (eg, HIC 2001 was not obvious to members as being a HIMAA event).

Views from other attendees

Rosemary Roberts spoke on behalf of the National Centre for Classification in Health and as a Life Member of HIMAA in suggesting what role HIMAA should play in professional development and the continuing education of HIMs.

Ms Roberts believes that HIMAA should focus on its strengths and use them to achieve immediate short-term possibilities. HIMAA is not a formal registration
In Ms Roberts’ view, HIMAA should focus on:

- Accreditation of graduate courses in universities across Australia;
- Using members’ expertise in consulting;
- Working on further development of HIM competencies and content of courses;
- Investigating continuing education points as a basis for ensuring HIMs keep abreast of the latest knowledge in the field, such as is seen in the American Health Information Management Association model;
- Using our reputation and history as a basis for our future existence;
- Using our experience in clinical coder education and extending this to coder certification programs;
- Building alliances and relationships with comparable organisations.

HIMAA should also be aware of other organisations that possibly overlap in their quest to be experts in health information management. The Australian College of Health Informatics is a new organisation whose primary commitment is to produce expertise in health informatics.

Joy Smith, an educator at Queensland University of Technology, outlined her ideas from a tertiary education perspective on what CPD is and what it should mean to members.

Joy Smith offered her view on the reasons why many HIMs do not participate in CPD, which she believes may include:

- lack of professional identity;
- lack of opportunity or accessibility;
- ignorance of what’s available;
- lack of incentive (eg, while employment is available);
- resistance to change; and perhaps even
- laziness, meaning that some may find themselves in a comfort zone or rut and no longer individually seek to address the issues listed above.

Mrs Smith stated that most responsibility lies with individuals to continually hone and extend their skills; however, employers should support their efforts, since they also benefit directly from them.

Going on to suggest ways HIMAA might develop a model of CPD, Mrs Smith stated her belief that it is important to create the culture of CPD within HIMAA, and, once this has been achieved, true health information professionals will naturally accept the need to join and participate.

[For further reading on this topic, see also the articles by Rosemary Roberts and Joy Smith published elsewhere in this issue.]

Electronic health records

Professor William Beer made a lunchtime presentation from the University of Texas Medical Centre, where he has worked for the last 20 years championing the development of an electronic medical record.

Prof Beer shared with the group his experiences in linking veterans’ medical records across several states and counties throughout the United States of America.

SWOT analysis — pathways and options

Strengths, weaknesses and opportunities were identified throughout the day and a listing was posted. The pathways and options session saw the larger group divide into three key areas to explore options and make recommendations back to the larger group.

Subgroups were:
1. Conference options — in the short and long terms
2. CPD as value — models/structures and credentials
3. CPD content areas and delivery modes.

A member of each subgroup reported outcomes back to the larger group, enabling further discussion and development among all participants.

At the end of the day

The final outcomes of these sessions were to be used to set directions and formulate recommendations for HIMAA’s CPD program for 2003-2005.

The day closed with an overview and comment from Robina McCarthy, President of the HIMAA Board of Directors.

Acknowledgment

The HIMAA Board and the organisers gratefully thank Leanne Holmes for undertaking recording duties for the CPD planning day.

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The health sector is moving at a pace on the development of the use of mobile technology and, from an information management perspective, it is crucial that decisions made regarding this form of technology are completed within an environment that is not only ready for the technology but that will also develop structures to support the technology.

The m-health conference was organised by the International Quality and Productivity Center (IQPC) at The Boulevard in Sydney in March 2004. It was designed to showcase the latest advances made in wireless technology in health care and provided participants with thought-provoking strategies for advancing the way in which clinical information and data are collected in the health sector. Now, more than ever, there is a need for improved quality of patient care; health outcomes are mirrored in the standard of data and the technology used to collect these data. Development, implementation and evaluation of an appropriate and effective infrastructure to support wireless, telehealth or mobile technology is crucial and must include an ability to feed and extract data from a centralised information system.

Clinician buy in of new technology is a challenge to the viability of a project; hence, clinician involvement is essential and must be coupled with a supportive executive committee or service leaders, and a demonstrated commitment to implementation and support from the information technology (IT) department.

Conference participants were exposed to a number of projects highlighting the work being carried out across Australia in the areas of aged care, emergency medicine, community nursing, allied and community care, neurology and stroke, telepsychiatry, paediatrics, general practice, pharmacy, surgery, pathology and orthopaedics. In most presentations, reference was made to the use of personal digital assistants (PDAs), tablet personal computers (PCs), and wireless laptops, as well as a number of more high tech hardware and software being trialled across the nation. The message was that the way forward has to include entering data regarding the care and services provided to patients at the point of care. This view was balanced by Ralph La Tella, from the Health Information Management Association of Australia, who provided an educative view on the range of choice of PDAs available and, more importantly, how best to use the PDA to support at point-of-care.

A presentation on the technological solution for 1000 district nurses in Victoria offered conference participants a view on successful use of tablet PCs, which connect remotely to the office system via General Packet Radio Services (GPRS) mobile data. This illuminating project has revolutionised the way in which district nurses at the Royal District Nursing Service provide care to their patients.

Ian Cash, from the Royal District Nursing Service, demonstrated how the tablet PC allows the district nurse to log on to the system remotely, update patient records, access a patient’s history whilst in the patient’s home, and also to manage their appointments.

Dr Pat Cregan gave a presentation on the application of ultra-broadband internet for use in the critical care environment and the use of the VICCU (Virtual Critical Care Unit) as trialled in the Wentworth Area Health Service in NSW. This project is creating a technology to alleviate the problems incurred by multiple, small isolated hospitals where the issue is a lack of both skilled staff and a critical mass of patients to maintain staff skills. The use of this telehealth package provides staff at Blue Mountains Hospital with a mechanism for care of critically ill patients by trained staff at Nepean Hospital via the use of a cart that has been designed to be used in the treatment room. The cart has been designed in conjunction with the Commonwealth Scientific and Industrial Research Organisation (CSIRO).

Laurie Wilson, from the CSIRO, described a home monitoring project, a way to alleviate the pressures of health care delivery in the future. The CSIRO is developing systems to provide home-based health care service delivery. A system called PERSiMON is a device worn by the patient; reports are fed back to the system, which utilises Bluetooth wireless protocols. The data are fed through the internet to a database that can be accessed by the authorised health professional.

The VOCERA system, as trialled by Blacktown Hospital Emergency Department, is a voice-activated device that has revolutionised the way in which staff work within the department. This wireless communication tool contacts staff by button activation followed by voice on a pendant worn on the lapel or around the neck. This device eliminates the need to pick up a telephone and transmits messages for assistance. This is especially useful in a hospital emergency department, where telephoning staff or services can mean delays in patient care.

Innovation in provision of telehealth services is occurring in most states, and the value of this technology is seen in its ability to enhance the delivery of clinical services rather than replicating them. Telehealth tends to be more useful in rural and remote areas, and is a proven method that saves time and money to both the patient and the health service.

The use of a contact centre in aged care services was the focus of a presentation by David Meldrum, from the Advanced Care Community Association in Adelaide. This centre aims at coordinating community services to provide safe alternatives to unnecessary hospitalisation of the elderly. The service highlights the need for networked services linked to a central database, developed on a stable platform.

Central data base development to support service delivery, as well as data collection and reporting, was also presented by Dr Ping Yu, from Wollongong University, and Deborah Oong, from the New South Wales
Health Department. This information strategy was coupled with the use of PDAs in the orthopaedic ward at Flinders Medical Centre in South Australia, as well as e-prescribing with pharmacy services at Peninsula Health in Victoria and pathology services in remote Queensland.

The challenge for the information management and information technology practitioner will be to keep in step with the advances where emerging technologies are improving health care delivery and practice.

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Professional development — South Australian branch of HIMAA update

Robyn Pooni

Professional development is the central focus of the South Australian Branch of HIMAA (HIMAA SA): the general meetings, targeted professional development activities, electronic communication and the HIMAA SA web page are some examples of the types of professional development opportunities provided to members.

The Branch organises four general meetings a year and an annual general meeting is held in the latter part of the year. The general meetings are an ideal opportunity for members to network face-to-face, exchange information and learn of HIMAA national developments. Detailed minutes are kept of each meeting and are distributed, benefiting those members who are unable to attend the meetings.

The appointed Professional Development Facilitator coordinates targeted professional development activities that are responsive to member needs. Member opinions are sought at general meetings to determine what professional development topics are of interest, the preferred timing of sessions, along with discussion of associated costs.

Generally, professional development activities take the form of information sessions or workshops. Some of the more recent activities include software demonstrations, an off-site storage solution presentation, rehabilitation facility tour, a human resource management workshop, a HIMAA competency standards workshop, and a career-planning workshop.

A feedback questionnaire is circulated at each professional development activity for all participants to complete. The results of the questionnaire are reported to members at the following general meeting. The feedback received is used by the Branch Executive to review the professional development program.

The professional development sessions are a tangible benefit of HIMAA membership, and sessions are provided free of charge to members. The small size of the South Australian Branch means that, at times, sessions are also made available to non-members for a nominal fee on a cost-recovery basis.

The South Australian Branch Executive would like to thank its members for supporting professional development initiatives and looks forward to continuing to provide interesting and relevant events into the future.

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Masterclass Education Program of the Clinical Coders’ Society of Australia Ltd (CCSA)

Lesley Ward

My involvement with the CCSA began in 1997, when I joined as a member. In mid-1998, I noted that there was a Board vacancy for South Australia and decided to apply for the position. I had no idea what was involved in being a Board member at that time.

To begin with, my input purely involved attending six-weekly teleconferences. But, after a while, I asked myself what I could do for our CCSA South Australian members and decided that running education sessions for our rural and remote coders would be a good place to start. So, the CCSA Masterclass was born!

For the past couple of years, I have travelled to places such as Whyalla, Port Lincoln, and the Clare and Barossa valleys to conduct education sessions for clinical coders who may not otherwise get an opportunity to code the types of cases that other coders in major teaching hospitals see regularly. I get to meet coders from all areas of South Australia and they broaden their skills with some tricky coding — it is a win–win situation for all involved.

The Masterclass program in South Australia would not be as successful as it has been without the support of employers. My employer, the Royal Adelaide Hospital, has agreed to allow me training leave on the days that I conduct the classes. The program is seen as an important educational avenue for rural and remote clinical coders, and the involvement of its Coding Manager (me!) is also seen as a plus for the profile of the hospital.

The Regional Health Areas also support the program by paying the travel costs of the CCSA Masterclass Facilitator and some also pay for participant attendance fees.

The Masterclasses were originally intended to promote CCSA membership as well. For this reason, attendance in South Australia for current CCSA members is free. Others pay a fee for attendance, which covers costs associated with producing materials for the class.

The local Regional Health Area provides a guest speaker for each class who is usually a medical officer specialising in the topic of the day. The guest speaker is provided with a question sheet prior to the day. This question sheet is collated from entries made on the participants’ attendance forms. On the day of the class, the guest speaker answers the preset questions and also provides information on topics that arise during the coding portion of the class.

Classes run along the following lines:

1. Medical record abstracts and discharge summary samples are provided to participants prior to the day of the class
2. Coding outcomes and issues are then presented and discussed during the class, with slides and handouts
3. The guest speaker usually makes a presentation after lunch
4. The remainder of the day is usually taken over by the Regional Health Information Manager to conduct a regular coding staff meeting.

Topics covered so far have included:
- obstetrics
- diabetes
- gastrointestinal disease
- cardiovascular disease
- orthopaedics
- trauma and injury
- mental health
- oncology, and
- plastic surgery.

The Masterclasses have recently been extended in South Australia, and this expansion has been possible due to the involvement of other CCSA members who have volunteered their time to facilitate classes on behalf of the CCSA.

I would like to particularly thank CCSA members Nicky Moshos (Coding Manager, Women’s and Children’s Hospital) and Andrew Lubke (Regional Health Information Manager, Barossa Area Health Services) for assisting in this further development of the Masterclass Program. Their involvement is very much appreciated both by CCSA and the participants of the classes.

Currently, the CCSA Masterclass Program is being run in South Australia and Western Australia. This year, we hope to extend the Masterclasses into New South Wales, with the support of the CCSA Board member for that state, Filippa Pretty.

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Working in Vanuatu

Introduction
On the eve of 2001 I was making the usual New Year’s resolution to lose weight and get fit. At that time I had no idea (nor had even considered) that I was to spend a third of that year living and working in a developing country as an advisor on matters related to health records and health information. The personal and professional challenges that this experience provided have profoundly changed me, giving me a new respect and appreciation for others who live and work in places where access to healthcare is often a privilege rather than a right.

Background
Vanuatu is a country made up of a group of more than 80 islands in the South Pacific Ocean, about three-quarters of the way from Hawaii to Australia. It has a population of a little less than 200,000 spread throughout the islands. The official languages are Bislama (a form of pidgin English), English and French. As a result of previous colonisation by both Britain and France, about 70% of the population speak English and about 30% speak French. Vanuatu achieved independence in 1980, and now operates a parliamentary republic government system. The Ministry of Health runs the national health system, which includes 5 hospitals and approximately 100 health centres, dispensaries and aid posts scattered throughout the islands. The average life expectancy for Ni-Vanuatu people is less than 62 years and the infant mortality rate is 58.11 deaths/1,000 live births (Central Intelligence Agency, 2003).

For a number of years the Australian Government has funded a Health Sector Project in Vanuatu to assist with the Comprehensive Reform Program currently being implemented throughout the country. Previous consultancy services had been provided for the medical records and health information management aspects of the project.

Discussion
Vanuatu’s health system has a strong history of clinical coding using ICD-9 and later ICD-10, undertaken by one of their senior Statistics Officers, who has attended training conducted by Sue Walker from the National Centre for Classification in Health (NCCH). This coding was done centrally from a discharge notification slip that denoted the diagnoses and procedures, which was then sent to the Ministry of Health offices for coding. Prior to my arrival, a group of Statistical Officers had undergone in-house coder training, and the coding is now being done on site at each of the hospitals.

There are many limitations to the collection and maintenance of good medical records and health information in Vanuatu:
- There is a lack of funding allocated for the provision of medical record folders or appropriate stationery to ensure records are stored in a retrievable form.
- Poor physical conditions for storage of paper records can result in the destruction of records by water damage from cyclones. Records are also vulnerable to the effects of high levels of humidity, and damage by voracious rodents and insects.
- In a multi-name society there is a high rate of duplication of records and it is difficult to retrieve them.
- When writing clinical notes health professionals are using both French and English, which creates reading difficulties for non-bilingual staff.

However, there are some benefits in this small, community-focused population:
- There is no privacy legislation to hinder data linkage across hospitals; thus, a national patient record numbering system has been introduced;
- Continuity of care is facilitated by the fact that many of the patients in their community are known by most hospital staff.

My role was to provide advice and support at the national level, with some involvement at the hospital level, on matters related to health records and health information. This included work on the design of forms, including a consent form, some basic medical terminology training for clerical staff, writing the first draft of a national health data dictionary and writing of policies regarding information management issues. The focus of AusAid programs is on capacity building of local staff, rather than going in and fixing things. This is to ensure that local staff have the knowledge and skills to continue the work commenced in the program, and the ability to adapt to changing circumstances. Sometimes this required sitting on your hands and letting local staff learn through experience, regardless of success or failure.

The greatest challenge by far was adapting to the local culture. The Pacific Island timelines are a lot more flexible than the high-pressure deadlines we work to in Australia, and it was often necessary to book a week in advance to meet with Ministry staff, who would sometimes either cancel or not show up for the meeting. A plethora of aid agencies has offered assistance to Vanuatu, with little coordination between the programs being provided, and this has led to duplication of effort and to conflicting advice. This has also resulted in some resistance by Ministry staff to international advisers, and a feeling that they do not need assistance.

However, on the whole, the Ni-Vanuatu people were friendly and appreciative of the assistance offered, particularly at the hospital level. The staff were generally not as highly educated and were paid less than their Australian counterparts. They appreciated the assistance with some of their daily work and were keen to be involved in determining more effective ways to undertake some of this work.

I had the pleasure of visiting all five hospitals during my time there, some of which required flying in very small planes and island hopping via many small
landing strips to reach the destination. When I arrived at the smallest of the hospitals, Lolowai, I found they had no power or water supply, as the generator had broken down and the water pump had just failed. They could not afford to fix or replace the generator, so they remained without power for a number of months. So, although they had been provided with a computer, printer and fax machine, they were unable to use them. On the return flight from Lolowai, half the passengers on the plane were off-loaded in one remote location to allow a pregnant woman with cerebral meningitis to be transported to the larger hospital centre.

Conclusion
In retrospect, the temptation is to think that I did not achieve a great deal in the time spent in Vanuatu, but that would be assessing my work using Western standards. The real value in this type of work is the establishing of good relationships with local staff and the provision of advice and support, rather than in the number of papers or policies written. One of the greatest lessons I learnt was that what is best practice here in Australia is not necessarily the correct approach in a developing country; it is wrong to insist that they conform to our norms. The best approach to adopt if working in a similar scenario is to learn and adapt to the local culture, and to facilitate and assist the local staff to determine the most appropriate approach to meet their own particular needs.

On a personal level, my family and I had the opportunity to experience a very different culture and standard of living. The Ni-Vanuatu people were welcoming and friendly, and taught us how to lead a more relaxed lifestyle. The priority they place on family and friends above their commitment to work was one that most Australians I know could well learn from, as I did.

References

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What do other organisations do about continuing professional development?

Here is just a small selection of links to websites from other Professional Associations and organisations. No judgment is made about whether their approach to continuing professional development (CPD) is better or worse than our own. The purpose of this list is merely to give members an idea of the value that is placed on CPD in other organisations, the commitment required by other professions to their members, and the variety of strategies that are in place.

All links were active when last accessed on 7 September 2004.

**Australian Library and Information Association (ALIA)**


‘The ALIA continuing professional development [CPD] scheme maintains and broadens your knowledge and skills and assists in the development of personal qualities in order to enhance your career-long professional performance, and to have that commitment recognised by others. By taking a structured approach to your professional development, you demonstrate a formal commitment to enhancing your professional practice. The ALIA career development kit will help you develop a structured approach.

‘Within the ALIA CPD scheme, a points-based system allows you to structure your CPD so that you will have an appropriate mix of activities over a three-year period.’

**Optometrists Association of Australia (OAA)**

http://optometrists.asn.au/information/cpd

CPD is obligatory in this Association. This may be achieved through a wide range of activities from lectures and seminars to participation in a journal club, to participation in voluntary eye care projects, and participation in ‘education relevant to optometric practice (other than direct patient care)’.

Penalties exist for not doing sufficient CPD, including removal of name from the list used to refer the public to optometrists (including the search facility on the website) and also higher excess payment on professional indemnity insurance claims. The site also provides information to (prospective) CPD providers.

Members keep their own records of points accumulated for participation based on a schedule provided by OAA, submit them to the organisation, and then can check via the website for verification of their acceptance. Once they have achieved the required number of points for a year, a certificate is issued by OAA.

**Local Government Managers Australia, Queensland Branch (LGMA)**

http://www.lgmaqld.org.au

This organisation requires all its members and affiliates to commit to a CPD program. This may include structured (e.g. participation in accredited conferences) and unstructured (e.g. reading of journals and other publications) activities of the member’s choice, although there is a certain ratio to be achieved in accumulating the required number of CPD hours over a three year period. Those people located in rural areas are able to claim a higher ratio of unstructured activities due to lack of access to structured events. Members submit a registration form periodically to indicate what they have done and how many hours they claim for those activities.

**OT Australia (Australian Association of Occupational Therapists)**


The website includes a list of accredited CPD events, both local and international, from which members seeking to maintain accreditation may choose. A policy on mentoring/supervision as a CPD activity is included.

**Australian College of Health Service Executives (ACHSE)**

http://www.achse.org.au

The CPD Program is a major component of the College’s activities. Members are encouraged and in some cases required to undertake CPD (in the order of 25 hours per year). Much of the CPD program is provided through the activities of the State Branches. The National website includes listings of all upcoming CPD events, with links to State sites for further information.

Members are required to select and choose CPD activities of interest and keep records of their participation for audit purposes.

**CPD – Online Continuing Professional Development**

http://www.onlinecpd.net/index.asp?menu=1&content=

This is a Welsh organisation providing online CPD for engineers. They offer ‘convenient access to high quality interactive multimedia resources, reference information and collaborative communication systems, designed to meet the professional development requirements of the region’s engineering industry’.

**HIMAA**

http://www.himaa.org.au/HIMAA2_MAIN.htm or go to the HIMAA Home page and click on ‘HIMAA On-line Resources Centre’.

The HIM Resource Centre is a section of the HIMAA’s website. It includes links to a large number
of organisations relevant to health information managers, including some of those listed above, and is a ready source of information about CPD programs. For instance, the **Australian Association of Social Workers** site (www.aasw.asn.au) includes a documented policy on CPD and also a detailed logbook which outlines the rating system for CPD events, and provides guidance for planning and evaluating individual programs and a place for recording of activities undertaken. This information is then submitted at the time of membership renewal.

An Internet search on ‘Continuing Professional Development’ in Australia will elicit in the order of 16,000 responses. Why not take the time to have a look at what others are doing in this area so that you can participate in future deliberations of the HIMAA.

It is your career, after all.
In April 2004, Angela Randall, President of the HIMAA, was awarded Honorary Membership of the Korean Medical Record Association in appreciation of her contribution towards the development and education in medical record management and training in South Korea.

Immediate Past President of the Korean Medical Record Association and Director of the Medical Record Department of Samsung Hospital in Seoul, Ms Jin Sook Suh, made the presentation on behalf of the President, Ms Sun Won Seo.

Angela has contributed to medical record development in South Korea for the past 15 years and has visited her friends and colleagues there more than 20 times over that period. Current endeavours include the preparation of a bid to host the IFHRO 2007 Congress in Seoul.

It is understood that Angela is the only non-Korean to ever receive Honorary Membership status.

This is a great honour for Angela and HIMAA.

Congratulations, Angela!