

# HIMAA/NCCH Conference

7 – 9 October 2014



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Clinical Coding Workshop

Darwin

Now that I have your attention, I promise to make it snappy...

24 September 14	Link to records for the Conference arrives
	<b>Preparation:</b> Five medical records (Renal) to be coded Eight medical records (Head Injuries) to be coded

The Royal Darwin Hospital kindly de-identified thirteen case histories and made them available to us for study purposes. We worked through them together during the Conference. They are now in the purple folder in a backpack at the bottom drawer of my desk for your perusal. The front sheets contain the correct answers. Feel free to remove these sheets initially if you would like to test yourselves. The records are well worth reading as this is material that does not normally come across our desks. The backpack also contains the Conference program plus assorted other pieces of information you may be interested in that I picked up from various sponsors' booths.

7 October 14	<b>Welcome to Country</b>
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**Gary Lang** of the Larrakia People welcomed Conference delegates to Country and on behalf of Elders past and present wished us safe travels on the land of his People.

7 October 14	<b>Formal Opening</b>
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**The Honourable Sally Thomas AC**, Administrator for the Northern Territory (NT), acknowledged health care services as one of the largest sectors of the NT economy where climate, geography and a large indigenous population all present significant challenges to the health care environment. NT health initiatives focus on critical care as well as trauma and disaster relief for South East Asian countries in the region. Research priorities are indigenous health and infectious diseases.

She told us that as health information managers we have a role to play in generating information on resourcing and maintenance of cost effectiveness. As coders we create the epidemiological data relevant to patients and families as we move forward into e-health. The NT first trialled 'My e-health' in Katherine summarising health information that aims to bridge the gap between health care and patients. She highlighted that we play a pivotal role in health care as we hold together a complex system. She congratulated us on the hard work we do and appreciated that we chose Darwin as the venue for our Conference. She encouraged us to also go out and see the parks, gardens and markets of Darwin and venture out to the country beyond with all its crocodiles, waterfalls and rock art so different from the rest of Australia. In thanking us for our contribution to the nation's health, she declared the Conference open.



Darwin Botanic Gardens

**Richard Lawrance**, HIMAA CEO, promptly attended to housekeeping by announcing a wifi password so that I was able to access the Conference program, speakers' profiles and much more via the HIMAA app on my tablet.

**Sallyanne Wissmann**, HIMAA President, went on to give the Welcome Address on behalf of HIMAA in posing the question:

Health Information Management (HIM) – why does it matter?

She revisited the premises of HIM restating that by definition Health Information Management is the umbrella for collecting and analysing data at facility, state and national levels which, in portraying the status of population health, relates back to each patient individually.

She illustrated the general interest in health data management by citing a few examples of stories that made the news recently:

- Woman dies post knee surgery (Brisbane) – paracetamol toxicity
- Woman's details released to ex-husband (NSW) – leading to \$40,000 compensation payout
- Narre Warren (Vic) medical centre breaches privacy laws keeping records in a shed

She put it to us that such headlines suggest that HIM professionals play an important role in creating and managing data in a way that helps improve outcomes for patients. In maintaining data integrity, confidentiality and security, they act as connectivity brokers in information management by ensuring that the right information is provided at the right time and to the right person.

She explained that the three tenets HIMAA has set itself in its strategic plan leading up to 2016 are:

1. positioning and advocacy on behalf of HIM professionals
2. educating people into the profession
3. growing its membership

and in reiterating that HIM is indeed important, she invited us to enjoy the Conference.



Amy Johnson



John McDouall Stuart

Streets in Darwin feature the names of local people of historical significance such as Lord Palmerston, aviatrix Amy Johnson, the first woman to fly solo from Australia to England only to be shot down over the Thames, and Scotsman John McDouall Stuart who led six successful inland explorations from South Australia to the NT without ever losing a single man.

**Associate Professor Joanne Callen**, the first Opening Keynote Speaker, has done much research into e-health and sees many opportunities. She considers such research a collaborative process to explore problems and possible solutions.

As she looked around, she saw fragmented workplaces where clarity and efficiencies need improving in order to achieve better outcomes for patients. Technology brings with it problems of its own and needs to be made to work for individuals.

She studied Electronic Medical Record (EMR) systems in ambulatory, rheumatology and emergency medicine settings as well as computer-ordering systems. She has also worked on Electronic Medication Monitoring Systems (eMMs) to be linked to health information systems.

She gathered seven different kinds of records health professionals were using in a hospital work environment which had taken the form of 'flintstone lists' and integrated them into an electronic environment of a shared drive for the department's information where test and laboratory results and the like could be accessed by all.

She devised a system in which drugs including toxic drugs such as methotrexate, administration routes, frequency, etc were all recorded electronically and could be followed up from an administrative angle as needed.

She initially found that doctors were reluctant to enter information because they were used to giving verbal orders to nurses. Nurses too were reluctant because they remained unconvinced that such a system saved time.

Professor Callen therefore resorted to engineering a timing data collection tool which recorded the time of tasks. She proved that with her electronic system nurses spent less time on medication monitoring and more time on patient care. She also found that they did less paperwork. Another important finding was that no patient was missed. Safety and efficiency had therefore both improved.

She then turned her attention to improving the delivery of care in an Emergency Department (ED) setting. This is a busy, team-based environment where health care professionals are lacking the continuous relationship with patients. Qualitative data are therefore based on perceptions.

Professor Callen put together an overview of patients' protocols, adverse reactions, last discharge date, discharge summaries and other hospital treatments with the aim of providing access to a clinical knowledge database containing specific clinical information for faster and better informed clinical decision-making in a collaborative environment.

She found that the electronic system

- enhanced coordination and communication within and outside the ED
- enhanced specialist consultations in as much as it facilitated 'virtual ward rounds' (e.g. pictures of wounds, etc)
- improved documentation of clinical information.

But while accuracy and quality of documentation improved and staff wrote more, expressed themselves better and used fewer abbreviations, the issue of workflow remained a difficult one because of increased task complexity. Writing up notes took up more time, there were duplicate tasks, not to mention computer issues in the form of hardware breakdowns and software that is not intuitive and user-friendly enough.

There is no doubt that in a conventional ED setting where triage requests a patient's record, this record takes its time arriving. A record that can be accessed electronically is available instantly although Professor Callen cautions that staff should be careful not to approach a patient with preconceived ideas. She found that junior doctors are more likely to read patients' previous results, discharge summaries and the like.

On the subject of missed test results she stated that 20.4% - 61.6% of test results are missed in hospital admissions. For ED patients the figure can climb as high as 75%, and this can be life-threatening especially when there is no follow up.

The problem calls for hybrid systems allowing for a multi-disciplinary management process. An electronic test result endorsement function needs to require doctors to acknowledge results and warn if there is no such acknowledgement. There also needs to be a warning tool for notification of an abnormal result.

Professor Callen looked into current practices of doctors informing their patients of results and found that there is automatic release of information irrespective of clinical review. She also encountered confusion as to who is responsible for notifying patients of results. Most doctors, however, are not comfortable with patients receiving abnormal results without clinical advice because they know very well that this causes anxiety and confusion among people who lack clinical knowledge.

**Professor Richard Madden** of the University of Sydney, Director of the National Centre for Classification in Health (NCCH), acknowledged the Larrakia People and spoke of looking forward to the opportunity to present the Conference in collaboration with Health Information Management Association Australia (HIMAA).

He introduced Dr Bedirhan Tevfik Üstün, Coordinator of Classifications, Terminologies and Standards, Health Statistics and Informatics at the World Health Organisation (WHO) for over 20 years.



The season was on the verge of changing from dry to wet. Within the next two weeks all these water lilies on the Mary River will have been washed away by floods. For about 120 years they will continue to re-sow. Birds lay their eggs on the lily leaves and stabilise their 'nests' with a few little twigs.

**Dr Üstün** joined us live by video link from his home town in Turkey and updated us on the progress of the revision of ICD-10. He confirmed that ICD-10 and ICD-10-AM are now very similar. He invited us all to contribute to the building process of our classification system which, of course, is a complex process that involves many partners, stakeholders, clinicians and coders. He assured us that WHO is conscious of quality aspects of the classification and endeavours to ensure that digitalisation will allow access to all. By the time ICD-11 will be released in 2017 it should serve as the common inter-language reference standard for mortality, morbidity, clinical care, research and public health.

By way of a little genealogy of ICD, Dr Üstün shared pictures of the London Bills of Mortality of 1664 with us. Back in the days of plague when life expectancy was all of 42 years, people generated the first health records by doorknocking to ask 'who died here recently and why?' and came up with such causes of death as 'struck by lightning' or 'dropped dead suddenly'. Between 1853 and today the classification has seen numerous revisions and added large numbers of codes.

As ICD-9 evolved into ICD-10, the list of more than 1,000 codes from different countries combined into an international list and broadened the process of including more professionals to include more views and become increasingly representative. As the classification grows ever more web-based, Dr Üstün compared it to a structured kind of Wikipedia with editorial oversight by scientific peers.

As for the content model of future classification, there will be new terms with new elements in ICD-11 but there will be common vocabulary that we can all share and which allows computer use. Field trials are under way for ICD-11 $\beta$  which is not finalised at this stage.

A feature of ICD-11 will be its internet platform with multi-lingual representations which will allow input from all stakeholders. Dr Üstün likened it to a library that represents the whole ICD universe and becomes a store of 'books of songs' like an ipod.

This will require linearizations (equivalent to song lists) for particular purposes such as reporting mortality and morbidity and must be accessible for multiple uses. Multiple categorisations will also be possible so that a disorder can be attributed to different linearizations for instance.

We will be able to 'zoom in' and 'out' depending on the level of detail required. This will allow for coding of specific detail such as cataracts with a plethora of possible variations.

The current status of development is that work is frozen as at 30.09.2014 to allow for work on > 10,000 definition errors, < 600 linearization errors and < 105 duplication errors of redundant codes.

In an effort to clarify parameters of codes, details will be expressed in a more user-friendly way and external cause codes will be extended by extension codes of various types. There will be a chain-code string style of a type code1/2/3/ capturing anatomical sites, severity and clinical information such as 'diagnosed by ECG'.

The objective is to achieve a seamless transition at national and international levels with Proposal Teams adding entities, deleting, updating and extending. A review process will be put in place to assure quality with a view to mortality linearization, morbidity linearization and primary care linearization. A mirror-coding review will assess if the same meaning of disorders such as blindness or paraplegia for example is retained across the classification. WHO endeavours to attribute credit to all input.

Meanwhile review of ICD-10 will continue while the final version of ICD-11 will be submitted for approval.

Dr Üstün ended on a picture of the glorious Barcelona Cathedral where workers were being asked 'what are you building?'

Some answered 'We are making bricks', some stated 'We are constructing a wall' while others knew 'We are building a cathedral'.

Dr Üstün invited us all to join in the building of Barcelona Cathedral!

7 October 14	<b>Session 2 - Coding Workshop 1: Trauma</b>
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**Dr Tulsi Menon**, Fellow of the National Critical Care & Trauma Response Centre of the Royal Darwin Hospital, gave us an overview of the hospital with its 350 beds for a population of 200,000 plus a sizeable tourist population.

Physical distances in the NT mean that the Trauma Service often does not see patients until days after their injuries first occurred. Care flights from Western Australia often come to Darwin too. Patients from East Timor's annual bike race also get transferred to Darwin. The Tacloban cyclone in the Philippines saw the Royal Darwin Hospital set up 'Camp Kookaburra' on site: a two-operating theatre, 34-inpatient bed facility complete with radiography services.

Since the Bali bombings the Hospital receives funding for trauma education. The NT has the country's leading death rate from external causes such as transport accidents, falls and assaults. Thirty-one per cent of the population are indigenous.

Dr Menon explained that the Trauma Service deals with minor, moderate as well as severe injuries. Patients may present with a primary head injury such as a blow to the head, but secondary presentation often occurs as a result of a primary blow. The latter cases tend to have long-term consequences.

She gave us some clinical background information useful for coding and discussed the physiology of head trauma starting with the anatomy of the scalp, skull, meninges and brain. She explained that the vascularity of the five layers of the scalp means that injury often leads to profuse bleeding which can cause shock. She pointed out the meninges which line the brain and consist of three layers – the dura mater, the arachnoid mater and the pia mater – and highlighted the importance of the brain stem area where sleep, alertness, breathing and heart beat are regulated.

Dr Menon spoke about the Monro-Kellie hypothesis which holds that there is a pressure-volume relationship between intracranial pressure (ICP), volume of cerebrospinal fluid (CSF), blood and brain tissue. There is equilibrium between these intracranial constituents. Thus, decrease in one should be compensated by the increase in another and vice-versa. Such initial compensation may give and in these cases, a patient deteriorates.

Head injury is classified in terms of penetrating or closed injury, severity and morphology. Concussion is the most common injury. It is mostly transient, recovery is quick and with rest, the patient will soon get better. At the other end of the spectrum there are diffuse axonal injuries (DAI) which are very severe and in which nerves are destroyed and a loss of consciousness leads to a vegetative state in which a patient needs to be ventilated. The brain stem and heart nevertheless are not affected and so the patient manages to stay alive.

Pressure on the brain leads to oedema while focal intracranial lesions tend to bleed. Extradural haemorrhages (EDH) can often be drained quickly and do not lead to brain damage. Subdural haemorrhages (SDH), on the other hand, get closer to the brain and since there was no protection from the dura, there tends to be more underlying brain damage. If a subarachnoid haemorrhage (SAH) is mild, patients will still do reasonably well. In severe cases the outcome is often poor although to some extent this depends on the presentation.

The Glasgow Coma Scale is used to assess the level of consciousness after six hours of injury. It rates eye, verbal and motor response on a scale of 3 - 15. It is only used in the context of assessing a level of consciousness and plays no part in formulating a diagnosis as such.

Symptoms trauma physicians look for are lethargy, vomiting, paralysis, irritability, amnesia, numbness, blown pupils and reaction to bright light. Dilated pupils would suggest that there is coning of the brain in which the temporal lobe herniates. This causes respiratory problems and affects nerves which typically criss-cross.

Dr Menon explained that the first priority of a trauma response team will be to lift the head up, remove constrictions and ventilate a patient who has sustained a head injury.

Seizures are more likely to occur with severe injuries. If they occur early (within a week of injury) after trauma, oedema or concussion, the prognosis generally is good. Seizures that occur late (more than seven days after injury) suggest that the brain is restructuring nerves after injury but this is not happening in a normal and orderly way. Such patients will end up needing long-term medication.

Dr Menon went on to explain the two types of post-traumatic amnesia (PTA). Retrograde amnesia (recollection of past events) does not predict an outcome. Antegrade amnesia is the inability to make new memories. Patients with short-term amnesia will recover fully while those with long-term amnesia will not be able to return to work and normal lives. Patients with PTA also tend to have increased chances of developing Parkinson's and Alzheimer's disease.

Equipped with all this knowledge we discussed the Head Injury case histories which had been supplied prior to the Conference. **Lyn Williams**, Training Manager – Education Services and **Ragni Lal**, Team Leader – Clinical Coding of HIMAA acted as facilitators of this exercise.

I discovered that I had misfired on a few external cause codes and without wanting to make excuses, I realised that I had managed to lead myself astray with the help of Codefinder. I found that if you look up the different scenarios in the Table of Land Transport Accidents in the Alphabetic Index instead, it is actually hard to get them wrong.

As you code these charts yourselves, bear in mind that in most, if not all, cases these patients were retrieved by the Royal Flying Doctor Service and were not seen to in Darwin until hours after their injuries first occurred.

7 October 14	<b>Session 3 - Classification &amp; Terminologies</b>
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**Associate Professor Graeme Miller** and **Dr Julie Gordon**, both of the University of Sydney, spoke about promoting interoperability in Australian health care of classifications and terminologies in order to be able to exchange and use information across the health care system.

‘Semantic interoperability’ was their buzz word which aims to process meaning across systems. For this to happen, we need clinicians to put clinical and reference information into the system. Coders have a role to play in as much as information that we enter needs to be understood by patients since they will be able to access their data. Terminology needs to be interfaced in order to be understood by all. Clinical interface terminology is distilled out of general language used initially. Clinicians will set the language that reflects their assessment.

Systematized Nomenclature of Medicine - Clinical Terms (SNOMED CT) will act as reference terminology as it is already a systematically organized computer-processable collection of medical terms providing codes, terms, synonyms and definitions used in clinical documentation and reporting.

Semantic interoperability requires an adaptation to local scenarios and language as well as automated mapping to reference terminology and clinical classification.

Professor Miller’s efforts to achieve this have thus far concentrated on general practice. With 85% of the population visiting a general practitioner at least once a year, he sees this as the area with the greatest potential to extract data.

Dr Gordon went on to elaborate that while ICD-10 and SNOMED CT are used in hospitals, The International Classification of Primary Care (ICPC-2) is used in general practice. Though it is not widely used, it allows general practitioners to capture symptoms and diagnoses at the point of care. Specialists on the other hand use 11 different systems into which they enter free text by hand so that much work remains to be done in an effort to standardize recording.

Allied health professionals are not recording their observations according to any system so that much information in this area is lost altogether. At the centre of all this is a patient at the mercy of the health care system.

The problem with SNOMED CT is that it contains more than 300,000 concepts which are rarely used and as a nomenclature system, it is not suitable for analysing data for statistical health information.

So to arrive at a workable system, general practitioners started with everyday concepts that represented the reason for care and worked towards an optimisation of mapping in general practice:

- reason for the encounter
- health issues

(these are the equivalent of PD and OD in coding terms).

General practitioners built their own reference set by collecting terms that were mapped to SNOMED and which were referenced to ICPC-2 which is also used by HIMs. So far 4,119 concepts have been mapped to ICPC-2 and ICD-10 and efforts are under way to fine-tune these concepts to prevalence in Australian administration. While all this will inevitably lead to a more extensive version of SNOMED, shorter picklists and user friendliness should also result from this endeavour.

After seven years of work on semantic interoperability much has been achieved but more work has yet to go into achieving applicability across specialties.

And Dr Gordon stressed that just putting a tool out there is not enough. A terminology tool needs to be maintained: new diseases will arise (H1N1), we develop new procedures, names may change over time (scarlatina), our understanding of disease processes may need updating (e.g. helicobacter pylori rather than stress causes stomach ulcers) and we may need to retire outdated terms. And of course trained staff and specialised tools are required for maintenance.



Wangi Falls in Litchfield National Park

**Natasha Donnelly**, project officer of the Commonwealth-funded National Maternity Data Development Project, aims to help develop nationally consistent and comprehensive maternal and perinatal morbidity and mortality data collection in Australia. At the moment there is a lack of definition across a variety of models of care in use this country. A Cochrane review has found that a number of different models are workable, but in order to arrive at better data it is desirable to settle on a defining model.

Literature review has shown that simple naming systems would not work. They also do not allow to incorporate continuity of care which is important to outcomes. Her development project therefore focusses on building the Nomenclature for Models of Care (MoC DSS) which will incorporate types of patients and care.

**Anne Elsworthy**, Classification Support Manager at NCCH, closed the segment by asking

‘Are we on the right road with the Australian Classification of Health Interventions (ACHI)?’

ACHI is based on item numbers ending on a -00 extension and ordered according to a hierarchy of anatomy, procedure type and severity. ACHI is updated in line with MBS item numbers every two to three months and it has served us well. Nevertheless, its structure is self-limiting and it is hard to expand. Blocks are limited and it is not easy to add to them. Granularities are inconsistent. And although there is a great deal of specificity (nine MBS item numbers were expanded to 34 codes for cataracts for instance), only a limited number of codes are actually used.

It is difficult to add specific new procedures because there are not enough residual codes and this is a source of frustration to coders who are then forced to relegate procedures to non-descript ‘other procedures’.

The good news is that we will soon have procedure codes for those atrial appendage excisions we never knew how to deal with. We will also be able to satisfactorily capture fiducial markers into the lung. Destruction procedures on various sites are also being added to ACHI.

There are band aid solutions such as removing diagnostic terms associated with procedures or renumbering blocks but even they are limited.

What’s the answer? An international Classification of Health Interventions (ICHI) is on the drawing board. It would involve an overlap of procedures on different body systems that has greater international comparability. While WHO is supportive of the idea, stakeholder support is required to get it off the ground.

Suddenly there was a complete change of pace. Gone were the Powerpoint slides packed with information, gone the formal delivery of speeches. In blew **Jenny Gilder**, Senior Vice President of HIMAA.

She turned the focus on us, made us all introduce ourselves and invited us to discuss the issues we see for coders. Not surprisingly there were coders from all over the country. There was also a strong contingent from New Zealand and even a representative from Qatar who got the prize for 'most travel miles' in the room.

As a representative of HIMAA, clinical coder education is a topic Jenny is passionate about. Special interest groups (SIGs) within HIMAA are developing senior associateships and introducing auditing benchmark tools within the framework of their planning process. A credentialling process will see coders undergo further training and development.

A big issue is maintaining a supply of coders as the workforce ages. It generally takes six to 12 months for a coder to be able to work unsupervised, and it does not help that coders are not mentored the way doctors and nurses are. Since coders do not have the culture of learning and supervision, they will need to become advocates of their own profession and diversify their task set to appeal to the younger generation. In the private sector in particular there is no support with clerical staff often being trained to code in order to be able to cover both clerical work and coding.

Yet coding affects funding. So don't coders deserve to be trained well? Training nurses to become coders is not ideal given that there are plenty of coders out there who have undertaken studies and cannot find work because of a lack of experience. Coding courses may need to incorporate a hospital placement which would enable new coders to list some experience on their résumés and get a foot in the door. This would require experienced coders to take on mentoring roles in addition to their own workload. It would also require supervision by the hospital since volunteering students would need to be carefully checked by their employers so that bad habits are not allowed to take hold. Insurance may also be an issue for the hospital as an employer.

HIMAA endeavours to support coding graduates who have passed their exams but have not yet found work by supplying them in the interim with more practice material, and it is for this reason that HIMAA is constantly trying to source a supply of medical records from all states for such purposes.



Magnetic and cathedral termite mounds in Litchfield National Park

The reality is that coders work in an environment which has changed from being run by clinicians to being run by Accounts and KPIs so that coding has become critical to the billing process. While training should be offered at hospital expense and by professional bodies, it is up to coders to provide ideas and feedback on what is needed in the way of training (e.g. Grand Rounds). Coders also need to take responsibility for their own personal development and keep educating themselves. Remote coding is on the horizon but has hurdles to overcome in the way of workplace, health and safety issues, privacy concerns and professional indemnity. At the very least changes in work practices such as flexible workstations enabling coders to work while alternating between sitting and standing are needed.

HIMAA is involved in rewriting the code of ethics for HIMs and coders and advocates that auditors are credentialled and have in turn passed their courses with qualifications to show for them so that the auditing process can become one in which all parties involved benefit from the experience.

8 October 14	<b>Session One - Coding Practice</b>
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In her lecturing capacity at The University of Sydney, **Vera Dimitropoulos**, Executive Manager Classification Development – NCCH, is involved in developing curriculum and teaching health information management and health informatics students in health classifications and health information systems. She gave the keynote speech ‘Coding of Additional Diagnoses: it should not have to be so difficult!’

ACS0002 has been under continuous scrutiny since the first Edition of ICD-10-AM. Its intention is to avoid the coding of conditions not relevant to a current episode of care. It has been so determined to achieve this that even diabetes coding was dropped for some time at the expense of underreporting. Other chronic conditions probably also merit re-evaluation. Smoking was for a long time a more major health issue than it is thought to be nowadays. Questions are being asked if mandatory coding of smoking status should be reviewed.

The impression has emerged that minutiae are probably being over-coded while chronic conditions are under-represented. Documentation also has a role to play in getting the picture right. Sometimes stringent criteria can make us lose our way. As coders, we pick through records for minor issues while ignoring underlying chronic conditions such as chronic obstructive pulmonary disease (COPD) which clinicians would no doubt prefer us to capture.

To overcome the issue coders require the confidence to exercise their coders’ creed and trust their knowledge and judgement. They also need to educate clinicians with regard to documentation, and auditing needs flexibility around minor codes. However, to avoid the ‘washing out’ of codes, parameters are required. These could take the form of lists of conditions that require mandatory coding such as chronic conditions, dementia, epilepsy, etc.

The idea of an extension of condition of onset flags (COF) has been discarded because contamination of data is likely and resources would be needed to ensure all sites submit such data. It has not been ruled out that COFs could be extended at a later stage. To reduce noise in instructions, 'code also' advice will be amended.

Most importantly, we can expect supplementary codes for a range of disorders in the form of U-codes which will capture chronic conditions which are not necessarily treated in any given episode of care. A new Standard will give instructions on coding and education will underpin this. In a scenario where a chronic condition is treated/investigated/monitored, we will therefore continue to code it the way we already do. In instances where such a chronic condition is not treated/investigated/monitored and therefore does not qualify for coding under ACS 0002, we will in future assign a U-code to capture that the condition exists.

There are suggestions that perhaps transplant patients should be flagged in the same way and this may be considered in future. There is no doubt that U-codes will remove coder burden. When we find ourselves desperately looking for excuses to code a condition that we know ought to be coded, along come heaven-sent U-codes which give us the option to capture such a condition that we did not have before. I say 'bring them on'!

Questions were raised if perhaps we might overuse these U-codes, but Vera assured us that these codes will not map and therefore do not have the potential to distort the picture for research and classification.

Coders will continue to need education and go through the same decision processes. To this end clear guidelines on chronic conditions are what we need.



'Salties' in the Adelaide River where we also saw wild buffalos, egrets, eagles and a jabiru in the process of killing a snake. Crocodiles are their own worst enemies as they eat each other, but there are also plenty of birds that will make a meal of a small crocodile.

**C Davis** presented a 'Diabetes Coding & Documentation Audit'

This was a diabetes coding audit undertaken at Monash Health, Victoria and is based on 193,000 admissions across 40 sites which looked at establishing when diabetes mellitus is coded and when it should be coded.

From ICD-10-AM 6<sup>th</sup> edition coders were instructed not to code diabetes irrespective of relevance. This led to under-reporting of a condition which nearly always meets the criteria of ACS 0002 anyway. Change was implemented in 2012 and coders were re-educated.

The Monash audit set out to establish how well the change was understood and followed. The aim of the audit was to ensure that diabetes mellitus would be coded whenever documented.

The audit revealed 59 instances where diabetes was not documented and 51 instances where it was documented but not coded. Coders then received further education. A subsequent audit found 79 charts missing documentation of diabetes on the part of clinicians with 49 cases of diabetes having been missed by coders.

The audit left no doubt that

- documentation was poor and inconsistent
- diabetes was often documented in one episode of care but not subsequently although it was not established if this may have been due to steroid-induced conditions, life-style changes or lack of documentation
- it was difficult in many cases to ascertain what type of diabetes a patient had and the audit advocated clinician review to establish this
- clinicians need to be educated to document properly
- coders should not assume that the coding of a previous episode was necessarily correct and carry it over
- coders require further education on where to look for clues and what types of information to look for
- factors impacting were time pressures and new staff.

**K Bates** presented 'Coder Clock' – a clinical abstraction tool which she developed as a quick guide for daily reference which takes the shape of a booklet for looking up basic patient information. She finds this tool helpful particularly when training new staff as it enables them to confidently look up information. It also serves the purpose of identifying weaknesses coders might have in the training process.

**Professor Anthony Maeder**, Professor in Health Informatics at the University of Western Sydney (UWS), previously Research Director of the CSIRO eHealth Research, launched the UWS HIM degree course. It offers cross-over specialisation for people with knowledge in health and information technology. It is a three-year full time course with a work experience component and can be undertaken on a part-time basis. It is delivered in a combination of on-line components and face-to-face interaction with core HIM units. Scholarship opportunities are available.

**Jill Burgoyne**, coding Auditor/Educator NT Department of Health, gave the keynote address introducing this segment of the Conference entitled 'Off the beaten track – coding workforce issues in the NT'.

Before highlighting issues affecting the coder workforce of her Territory, Jill set the scene with a snapshot of the population of the NT. While the NT is the third-largest state, it has a sparsely populated land mass with a population of only 235,000 which makes up just 1% of the Australian population. Fifty-six per cent of Territorians live in Darwin and 30% are indigenous people.

The NT has five main hospitals which are in Darwin, Katherine, Nhullumby, Tennant Creek and Alice Springs. It is to such a widespread area that patients have to be retrieved and delivered from remote areas.

Dialysis episodes far outstrip any other kind of treatment patients receive, and the indigenous population is hugely over-represented in this segment where there is a high burden of disease generally, alcohol consumption, injuries, sepsis, diabetes and kidney disease.

The NT coding workforce is plagued by constant backlogs due to a lack of coders so that timeliness of availability of data was lacking and external companies were hired to clear the backlog in addition to coders physically travelling great distances to cover all bases.

The driving force behind getting the job done is activity-based funding and clinicians needing access to health data.

The NT has 14.5 coders and since their services and opportunities are lacking, they established a coders' forum by coders for coders to support each other and carry out monthly audits of their work. Many coders travel long distances and the forum helps them with housing assistance. It also attends to training and mentoring of new coders. Its challenge is to retain its workforce, open career pathways, provide coding exchanges and find coders willing to travel. Electronic records and remote coding will overcome many of these obstacles and perhaps contribute to closing the gap of indigenous health.

**Nicole Stanzer** of Northern Sydney Local Health District (NSLHD) spoke about 'Transforming the clinical coding workforce' in Sydney over the past four years.

The District comprises five acute hospitals with 11,260 inpatient separations monthly including major trauma admissions.

Coding in the state of NSW was in poor shape: when NSW lost its HIM course, it became reliant on HIMAA while having to contend with a retiring and poorly performing workforce. There was a backlog of six months of work as coding was not classified as 'frontline'. Positions could not be advertised externally due to a freeze, there were no trainee positions available and there was heavy reliance on external coding companies.

Activity-based funding meant that coding became flavour of the month. It moved out of the basement and on to the executive floor because it had become apparent that money needed to be thrown at it, and so funding was put into coding. Still coders were not attracted to the positions opening up and staff dissatisfaction rates and turnover were high.

Nicole took on the Workforce Project which looked into why NSW was not getting and retaining coders. She looked at their education and pay-scales (award-based) and soon realised that the challenge would be

- six-week deadlines
- a lack of education
- no training and support of coders
- a lack of career progression opportunities
- poor documentation.

A snapshot of the coder population of NSW revealed

- 100% are female
- 64% work part-time
- 52% have more than 10 years of experience
- 60% are over 40 years of age
- 24% of coding positions were vacant.

She set about to find out what coders want. She found that there are different drivers motivating the workforce but all wanted decent conditions.

Her recommendation therefore was:

- to remove administrative tasks
- to establish a casual pool of coders for backup
- to regrade the pay-scale
- to improve working conditions by providing a quiet work environment, new equipment, continuing education, flexible hours, work-from-home options, training programs.

Despite implementation of her recommendations NSW was still not attracting coders. Nicole then suggested:

- to award recognition
- to help coders achieve work/life balance
- to increase pay.

In 2012 came the breakthrough: remote coding due to scanned records finally delivered on flexibility and became the big game changer. But new flexible workstations for coders working in-house also made a difference because it enabled coders to alternate between sitting and standing at work.

Remote coding in particular has turned coding in NSW into a success story. One hundred per cent success has been achieved in recruitment, positions no longer need

to be readvertised and retention rates are excellent. Coders are required to sign confidentiality statements and provide their own hardware which assessors inspect. Their output is monitored and if targets are not met, they need to work in-house. Coders have achieved a 10-day turn-around time at a smaller than 3% error rate.

Where to from here for NSW? Nicole envisages a state-wide extension of remote coding and hopes her state will continue to strive to be the best.

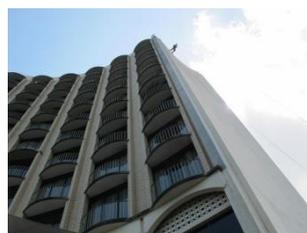
**Julie Brophy** reported on 'New and emerging training pathways' from a Victorian perspective.

The problem in Victoria is that the state is not producing a work-ready workforce and has a health service which does not have the resources to train coders. Ninety-three per cent of the coder workforce in Victoria is female and metro-based with 52% working full-time and 63% degree-qualified. Vacancy rates sit at 15%.

Bearing in mind that new graduates need 12 - 18 months of training before they can work unsupervised, new pathways for entry level coders are needed. Hospitals in Victoria rely on the Certificate IV in Clinical Classification which is available across Australia as a starting point to prepare coders to arrive with a basic set of skills that eases the burden on health services. The course works well for everyone: employers appreciate that they can depend on consistency of training with the Certificate course while coders know there is an alignment between their training path and the job they are being prepared for.

Course modules specifically target coding, abstracting, code assignment and participation in audits. All modules are compulsory components of the course. The course stipulates basic entry level requirements upon which coders can expand if they wish to specialise in areas such as ophthalmology or ENT. The course is continually updated to reflect constant changes to coding and provides students with mentoring in a simulated work environment. Students code a minimum number of records and require a minimum accuracy of 80% within a set timeframe in their assessment. They need to demonstrate the use of reference materials.

Hospitals appreciate that the pressure is taken off them to train new coders when resources are already stretched.



Snapshots from the hotel window.

Darwin people are very used to the sight of all things military and so it was probably only tourists like us who were surprised to see Australian, American and Chinese forces practising their abseiling along the wall of our hotel.

**C Davis and J Ross**, a health information manager (HIM) and a coder from Monash Health Services, entertained us with 'A tale of two coders' which described how they both came to work together in the same office via circuitous routes. They told their stories with the help of photos of the milestones of their lives (big hair in the 80s, student days, weddings, children, etc.).

Monash Health consists of 40 health sites (six of them are public, one is private) and employs 43 coders (20 of them full-time). Twenty-six are HIM-qualified. They surveyed their fellow HIMs and coders and found that while levels of expectation were similar among both groups, HIMs were looking for more career progression opportunities and wanted more feedback than coders. Both wanted more education.

The qualities that all thought were most important for coders were:

- the ability to concentrate for long periods
- the ability to work autonomously
- detail-orientation.

The qualities that were thought to be most important for HIMs were:

- leadership skills
- maturity/life experience
- ambition.

All agreed that they were keen to further their knowledge without any desire to get into 'gory hands-on medical stuff'.

A **HIMAA** representative closed the segment by introducing a number of HIMAA initiatives:

- The 6<sup>th</sup> edition of their dictionary of abbreviations with more than 10,000 entries is now available at \$89 for members and \$14 as a download.
- A credentialing scheme revision that serves as quality assurance to position the profession and enhance a practitioner's own image as well as demonstrating currency of credentials to employers. A total of 150 points are required per two-year cycle and the scheme is open to non-members.
- A Draft version of the Intermediate and Advanced Coding Competency Standard is to be released for revision and input of academic working groups.
- Working groups and committees are defining various areas of the Strategic Plan.

**Nina Lean**, of the The Coding Company, launched 'Bridging the Gap' – a clinical coder mentoring program which they will roll out shortly in collaboration with HIMAA.

It is a program designed to better prepare coders who have undertaken accredited coding courses for the workplace and assist with ongoing education. Sessions will be delivered online via the Coding Company's or HIMAA's website using TurboCoder and Clinical Coding Assistant software.

Nina gave us a practical demonstration on actual clinical records of how the course will teach coders to read and interpret clinical information and extract maximum possible information for coding purposes. Different segments will focus on a range of disease processes and health procedures.

This is exactly what I have been looking for. No one has ever done this for me and so I will definitely sign up as I reckon it's my best bet for getting to the bottom of those CABGs. And who knows – there might even be hope for deciphering spinal surgery hieroglyphics...

Anyone interested will find a flyer with further information and Nina's contact details in the backpack.

8 October 14

**Session Three – Plenary:  
International Health Information Practice**

Having heard about coding in different states of Australia, it was now time to broaden the field and take an international perspective.

**Dr Olafr Steinum** of the Nordic Centre for Classifications in Health has been involved in casemix development and the training of coders in Sweden and Norway since 2000. He posed the interesting question 'Should clinical data be coded by clinicians or coders?'

Not wanting to be pelted with tomatoes, he pre-empted the answer unequivocally and with a resounding vote of confidence for coders!

Nevertheless he used the question to launch into the David and Goliath battle of coding in Sweden where they aim for the best but quality of data is not good.

Sweden has a population of 9.5 million people. They all have a unique identification number for social security purposes, taxation and health care. The country is divided into 21 independent regional country councils that are strong and powerful while the Swedish government is weak and ineffectual. The counties all have different models of health care. There are in excess of 1.5 million hospital separations per year. Sweden started using ICD-10 in 1997 and supplements this with a second Nordic DRG-system adapted from the American health care system.

Coder education was first trialled in Gothenburg, and 'the idea caught on because clinicians liked the idea of having good data to play with'! However, the very same clinicians seemed perplexed at the process of coding. It was doctors after all that had personal knowledge of their patients and never mind that they had no knowledge of coding. Coders only worked from documentation – without knowledge of the patients and without medical background.

The prerequisite for coding in a Swedish hospital is a minimum of five years of work in the clinical field with sound working knowledge of anatomy and physiology. Basic training focusses on diagnosis assignment, and coders code from the Tabular, not the Index, because this has not been translated into Swedish yet. In short – doctors felt that only doctors could possibly be capable of such feats!

Swedish Health Care publishes regional comparisons of the performance of the various counties. Naming individual hospitals, they compare their performance on such matters as joint replacements versus fixation and adverse events. When they looked into whether their data are correct or complete, they discovered a 20% error rate.

To analyse what went wrong, they challenged doctors with a choice of principal diagnosis for coding purposes for a neutropenic sepsis patient presenting post chemotherapy for lymphoma. The doctors coded nine different scenarios and arrived at a proud grand total of six DRGs!

In their defence the doctors noted that the classification index was not correct and thought that this was largely responsible for their mistakes. They also admitted that they don't have time to read 'excludes' notes. By this time I was enjoying myself so much I couldn't wipe the smirk from my face any more ...

It was put to the councils that perhaps it was time to start looking at training coders. Some councils were in favour, others decided against training coders. Once they started losing money, the idea of training coders took hold. Until coders arrived on the scene, there had been no recording in Sweden of such diagnoses as anaemia or post-surgical complications. Coders are now being credited with paying attention to such 'details' and are appreciated for capturing data that doctors were not interested in or forgot about. Dr Steinum tells us doctors now love coders but for political reasons will not support them.

Let's not forget that although Sweden is a country with many social initiatives to commend it, we really do many things very well in Australia. As for Dr Steinum with his self-deprecating humour, he was easily the most entertaining of all speakers.

**Sherine Koshy**, Corporate Director HIM Coding, Pennsylvania Medicine, painted a picture of coding in the US that began with the startling admission 'we are a bit behind': coders in the most advanced country in the world are using ICD-9 to code but will catch up to ICD-10 by the end of this month!

The University of Pennsylvania Health System includes the University of Pennsylvania Medical School as well as multiple hospitals and primary care facilities, and what it may lack in the classification department, it amply makes up for in the progressive way it

works and organises processes. The Penn has its own academy to train coders. All of them work remotely and this has freed up space and simultaneously reduced medical record staff by a third.

Pennsylvania Medicine still uses paper as a starting point. Once a patient is discharged, the paper chart is brought in for scanning. The scanning process is done by a third party vendor in the Cloud. Coders then have five days to catch up with the chart before it needs to be forwarded to Accounts for billing. Paper gets destroyed after six months.

There are six coders responsible for in-patient admissions, three code out-patient admissions and 75% of work gets outsourced.

The Penn uses OnBASE by Hyland, a system into which medical records are scanned and which has workflow applications for coders and clinicians all over the country. It also has a viewing portal for patients to access their own information, and you will find further information in the Conference backpack.

It can equally be accessed for medico-legal purposes. OnBASE facilitates communication by enabling coding queries from coders directly to clinicians with the help of a simple 'chart view and search' function.

There are coding queues which let coders know what needs coding as a matter of priority. Auditing queues alert auditors to coded charts they need to check urgently.

**S Paterson** of Hamad Medical Corporation (HMC), the largest non-profit healthcare provider in Qatar, shared the health information challenges Qatar faces. HMC is the umbrella for eight hospitals in Qatar plus numerous day facilities. It has 2,100 overnight admissions with 193,500 in-patient admissions per month although it is thought that these figures under-represent actual levels by something like 20%.

Development in Qatar has been as rapid as it has been dramatic. Back in 2011 the government mapped out major health reforms, projects and capital works with multiple key drivers. One of these is clinical documentation improvement. Coders use ICD-10 7<sup>th</sup> edition and are now undergoing HIMAA courses as the local system of local coders being trained by experienced coders without education has not served the country well. HMC has just two experienced coders, and recruiting more people into the organisation is a frustrating and lengthy process.

Health information management uses manual information systems which are data-rich but information-poor. Duplicate records present further challenges.

There are cultural obstacles to change management, and validation processes through IT departments have yet to be established. CERNER is having a field day sorting out the many issues.

**Dr Paul Lawton**, nephrologist at the Royal Darwin Hospital, discussed our renal case histories with us.

**Susan Claessen** of HIMAA Education Services facilitated discussion of the coding exercises.

Dr Lawton described the NT as having the highest prevalence of dialysis-dependent patients in the world. Over the course of the past 10 years there has been an increase in dialysis dependence in all states of Australia, but while such patients are generally aged 70 and above, in the NT they are middle-aged. And while there are substantial numbers of indigenous people in densely populated NSW, Victoria and Queensland, the NT faces the greatest challenges in this segment of the population because it is spread out across a wide area of northern Australia.

Most separations in the NT are for dialysis admissions. According to 1996/97 data end-stage kidney disease cost the NT \$78,600 per patient per year for day haemodialysis admissions, and this figure excludes overnight stays.

Undoubtedly a large number of admissions in the NT happen for social reasons. If a patient with kidney disease presents in hospital late at night, it does not matter that dialysis can wait till morning. Public transport stops at 10 p.m. and people can't afford a taxi to get home. Nor do they know anyone who has a car that could give them a lift home. There also may not be anyone who can care for them. You simply have to admit them.

Aboriginal patients require dialysis on average 17 years earlier than other Australians. While living in remote areas is undoubtedly a factor, survival rates of indigenous people living close to wealthy suburbs of Sydney are also worse than other Australians'.

Dr Lawton painted a grim picture of poor living circumstances which endanger patients. Running water, toilets and showers are not available to more than 50% of the indigenous population. He showed impressions of the abject misery and squalor indigenous Australians live in. He also shared photos of a Western Desert initiative which raised \$1.4m for four Aboriginal paintings. The money was put towards trucks and shipping containers which were modified into dialysis units that can bring dialysis closer to patients' homes.

Dr Lawton suspects that skipping dialysis is a common problem everywhere but nowhere is it more prevalent than in the NT where mental health and drug problems add to the burden of disease. Skipping dialysis significantly increases the risk of death, the risk of hospitalisation and the risk of developing other diseases.

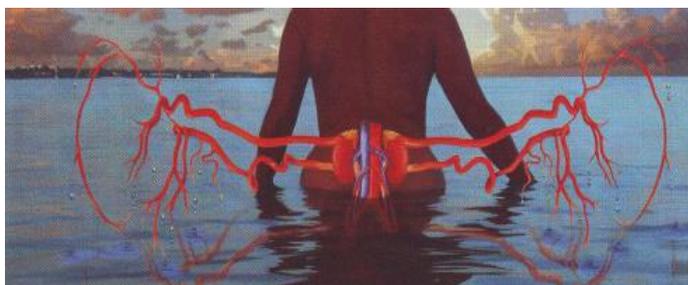
Still Dr Lawton does not use the term 'non-compliance' that coders tend to reach for to capture such scenarios. He recoils at its pejorative association and prefers to think in terms of a 'lack of concordance'.

'When you take into consideration the rigors and relentlessness of the gruelling regime, why wouldn't you skip dialysis?' he asks. Dialysis is carried out three times a week, there are dietary and fluid restrictions, medicines to take, there are difficulties engaging with the health system, there is social dislocation due to remoteness and there is the indigenous/non-indigenous/foreign health workers cultural divide. There is also a lack of communication between clinicians and patients which ideally should lead to agreement on treatment on a mutual basis.

Dr Lawton had taken the trouble of reading our renal case histories and we appreciated that he was able to shed light on specific cases.

As far as the coding exercises were concerned, I found that I had far more codes than everyone else because I had trawled every record for every Panadol and Shaw's cocktail to justify coding headaches and constipation. I learnt two things:

1. Keep your eyes on the big picture and don't sweat the little stuff.
2. Code 'fluid overload' sparingly in the setting of dialysis. The majority of CKD patients will have this.



**Get well soon! A diagnosis** .....

The realisation of Chips Mackinoly and Therese Ritchie's latest collaboration came about while the artists were on different sides of the world. For over six months—between Darwin and Italy where Mackinoly is currently based—the pair has been working on their new series of portraits, Get well soon! A diagnosis.

Ritchie describes the content of the 14 portraits in the exhibition as "some pretty comfortable Australians in some pretty uncomfortable situations."

The work is a twist in the ongoing relationship between Indigenous and non-Indigenous health.

"You don't have to look too hard to see how appalling Aboriginal health is," says Ritchie. "People aren't making the link between racist policies and the health of Aboriginal people. That's why we decided to create a 'fresher' look in this series."

"Our idea for Get well soon! A diagnosis is really quite simple and I suspect that the images may upset some people ... or not. All Chips and I would like is for people to come and see for themselves."

**WHEN:** Thu 2 – Sat 11 Oct | Opening Thu 2 Oct, 6-8pm  
**WHERE:** Gallery Two Six, Catterthun Street, Winnellie  
**COST:** Free  
**INFO:** 0419 884 388

Indigenous health was also the subject of an exhibition of the Darwin Fringe Festival during Conference week.

**Vera Dimitropoulos** returned with 'Australian Consortium for Classification Development – we are driving down the information highway' to detail the updating and refining of ICD-10-AM/ACHI/ACS and pre-edition initiatives.

The driving force behind Vera's work is the fact that current complexities of classification do not accurately reflect costs.

To work towards remedying the situation, she distributes links to stakeholders to invite them to contribute and give feedback via Sharepoint documents which she updates to new platforms. She works on electronic data extracts, mapping tables and vendor specifications so that they can develop their grouping and coding tools. She spoke of AR-DRG development phases with the ability to split adjacent DRGs. 'Current case complex terminology' assigns weighting to each diagnosis. 'Episode clinical complexity' allows for cost variation within AR-DRGs. This means that Z-codes, symptom codes and manifestation codes will not be included in DRGs.

There will be an evidence-based approach to case complexity processing so that each diagnosis will have the ability to have a case complexity assigned to it and this was not the case in the past.

Vera explained that her working group arrived at almost seven million complexity level scenarios on the matrix of DRGs. The principal diagnosis will drive the DRG while other diagnoses may be additional cost drivers. A diagnosis may have many concepts which are currently not fully captured. All aspects will be built in to arrive at a much higher cost, but multiple diagnoses have a diminishing effect which will even out cost as they will take patient characteristics into account. We may look forward to implementation of an update on 1 July 2016.

**Anne Elsworthy** wrapped up the debate on 'What to expect in 9<sup>th</sup> edition ICD-10-AM/ACHI/ACS' from 1 July 2015.

We may look forward to 117 new diagnosis codes and 65 new ACHI codes. The major differences will be:

- the supplementary U-codes which will allow us to capture chronic conditions even if they are not treated in an episode of care (ACS 0003)
- a reclassification of sepsis
- a review of the rehabilitation standard and subacute care (respite care, palliative care, convalescence, long-term nursing care)
- a revision of ACS 0909 Coronary artery bypass grafts, ACS 0934 Cardiac revision/reoperation procedures, ACS 0940 Ischaemic heart disease

- an update on guidelines for ulcers and injuries with 5<sup>th</sup> character site codes, facial droop post CVA, food challenges, Raynaud's with/without gangrene, differentiation of failed and difficult intubation
- cystic fibrosis manifestations will be coded in line with other chronic conditions.

There will also be 55 minor updates such as revisions to tabular notes. ACHI changes will be made in line with MBS item codes. We can expect more accurate bronchoscopy procedure coding and the ability to code new cardiac interventions.

ACS 0049 will specify disorders which must never be assigned in Australia and ACS 1521 'Conditions complicating pregnancy' will be revised.

Education will be available between April and June 2015.

**Joanne Fitzgerald**, Manager Classification Development of the Independent Hospital Pricing Authority (IHPA) delivered 'From clinical coding to the National Efficient Price'.

Where hospitals estimated dedicated staff resources and equipment to arrive at costings in the past, activity-based funding is the funding model of the future.

It uses coded data to more accurately estimate the cost of procedures such as transplants and allied health. It also enables hospitals to get paid on their level of service. It sets the benchmark for what it costs to deliver care. It uses classification of coded data and DRGs to estimate costing and pricing of services. Subacute classification of such areas as geriatric management and cognitive impairment will be used for a splitting to help inform the total picture of a clinical scenario. There is also development under way on non-admitted patients' classification which we have not seen in the past. Prices are based on costs assessed plus a loading if appropriate depending on policy decisions. Radiotherapy for instance will attract a loading compared to non-radiotherapy.

From a coding perspective we must remember that the condition onset flags we set have a cost impact on nosocomial diagnoses and cost increases because of the length of stay.

**Vera Dimitropoulos**, in closing, reminded us that coded data have many uses that take patients' characteristics into account but are not only used for funding. Underpinning it all is adequate documentation.

**Ralph La Tella**, HIMAA Information Services Officer, presented a Professional Development Workshop entitled 'Introduction to Database Systems for HIMs'.

Ralph started his professional life as a lawyer, then changed direction into the information technology field. As he graduated with an IT degree, a friend turned to him for help with designing a database for a hospital. Ralph realised that he knew nothing about how hospitals work, and his IT knowledge alone wasn't going to get him there. So he enrolled in a HIM course. Let's just hope that his friend waited patiently for his database...

His dilemma illustrates a point: IT people understand information technology while HIMs involve themselves in health information management, but it is really HIMs that are in the best position to bridge the divide. Given that database managers earn substantially more than HIMs, database management could also potentially add value for HIMs in earnings terms.

To this end HIMAA is developing a course entitled 'Fundamentals of Database Systems for HIMs' for which they will take enrolments shortly. Those of you interested in doing such a course as we move forward into e-health will find an application form in the Conference backpack. In Ralph you would have a teacher who is both knowledgeable and passionate about his subject matter.

Ralph gave us an overview of different databases used in healthcare and explained their structures. He explained how to use open source database tools and apply their functionality to a project. Using SQL, the most popular database product, he showed how to create, modify and manipulate data in a health care setting. He detailed parts of a database and the importance of breaking them down into components as atomicity requires fields to be broken up into the smallest logical components so that you can extract such minutiae like streets, suburbs and post codes for instance.

He then demonstrated how to model a simple database and query multiple tables allowing different kinds of users in the health care setting to extract the information they need (e.g. accounts, medication queries, medical history).

Three simple commands form the basis of SQL queries: SELECT – FROM – WHERE. The principle of this IBM-structured query language is CRUD: create – update – delete.

As a farewell gift Ralph gave us a MySQL workbench on a USB stick to experiment with. He also presented us all with a certificate for those who collect professional development points.



Health Information Management Association of Australia Limited  
A.B.N. 54 008 451 910

## *Certificate of Participation*

Awarded to

***Angela Lai***

***Professional Development Event***

***Introduction to Database Systems for HIMs***



*9<sup>th</sup> October 2014*

*Health Information Management – a Strategic Asset*

Well, I admit that wasn't snappy, but it was in fact only half of what was on offer because the Conference was divided into a HIM stream and a coding stream. And unfortunately I could only be in one place at any one time!

Thank you to HIMAA and NCCH for their first joint effort at broadening our horizons.