
IT-014 Health Informatics Committee

Australian Delegation Report – HL7 International Working Group Meeting – January 2009

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1 Introduction

The benefits that the Australian Healthcare Community derives from Australian representation at international meetings such as this HL7 International Working Group Meeting are significant and ongoing. It is recognised that it is vitally important to ensure that an Australian national position is represented at such meetings. The most effective way of achieving this is to ensure that a delegation is comprised of the appropriate mix of skills and expertise in order that priority areas are comprehensively addressed.

The Australian delegation at the HL7 meeting in January 09 also included representatives from NEHTA, whose contribution along with other employer funded representatives from the Australian team, was invaluable. This collaborative approach represents a very positive step in the national and public interest. Our common challenge and opportunity is to build on this engagement in a constructive and strategic manner.

This report identifies priority areas for such strategic engagement from all relevant parties who have an interest in the national e-health agenda.

This report provides an outline of the activities of HL7 internationally, the important actions and messages for the Australian Healthcare Community and considers the capacity of the Australian Delegation to engage in HL7 activities and identifies the meeting mechanism, thereby highlighting the issues relevant to achieving the defined objectives for international standards participation and influence at HL7.

This report is produced as a result of the input of the Australian Delegation and in particular those delegates co-funded by the Department of Health and Ageing without which support Australia's contribution and ability to respond to the issues discussed here would be severely hampered.

Information is presented by topic and highlights areas of specific concern to Australian stakeholders. Information is provided for contact to Australian expertise in each area for those who would like further information or to participate. Many of the issues will be discussed in detail at upcoming IT-014 subcommittee and working group meetings which are open to all interested parties.

For details of IT-014 subcommittees and working groups contact Renati Barel, Standards Australia (renati.barel@standards.org.au)

2 The Working Group Meeting International Attendance

Analysis of pre-registration documentation showed that this meeting had 456 participants from 17 countries. Additional attendees who did not pre-register brought the attendance to 506 people from > 20 countries. There were 12 Australians at this HL7 meeting all of whom have contributed to this report. The funding source for these delegates is indicated in Table 1 below.

Table 1 Delegation by funding source

Funding Source	Number
Full funding by employer: Private	2
Full funding by employer: States/Territories or National Initiatives	4
Part funding – DOHA through Standards Australia contract.	6
Total:	12

There were two first time attendees in the Australian delegation. The delegation's capacity to deliver the intended outcomes of participation, information distribution back in Australia and to influence developments to support Australian requirements is enhanced by a balanced delegation of experienced people along with "new blood" who can both challenge the processes and increase the pool of understanding of these complex issues in Australia. It should be noted, however, that true understanding of the processes and implications of standards development for e-Health, though enhanced, is not attainable through attendance at a single work meeting.

Figure 1 indicates the investment being made by the international community to participate in, learn from and influence the development of standards at this HL7 working group meeting. These figures represent the actual attendance as those people who had not registered 1 month in advance were not included in the official list of attendees.

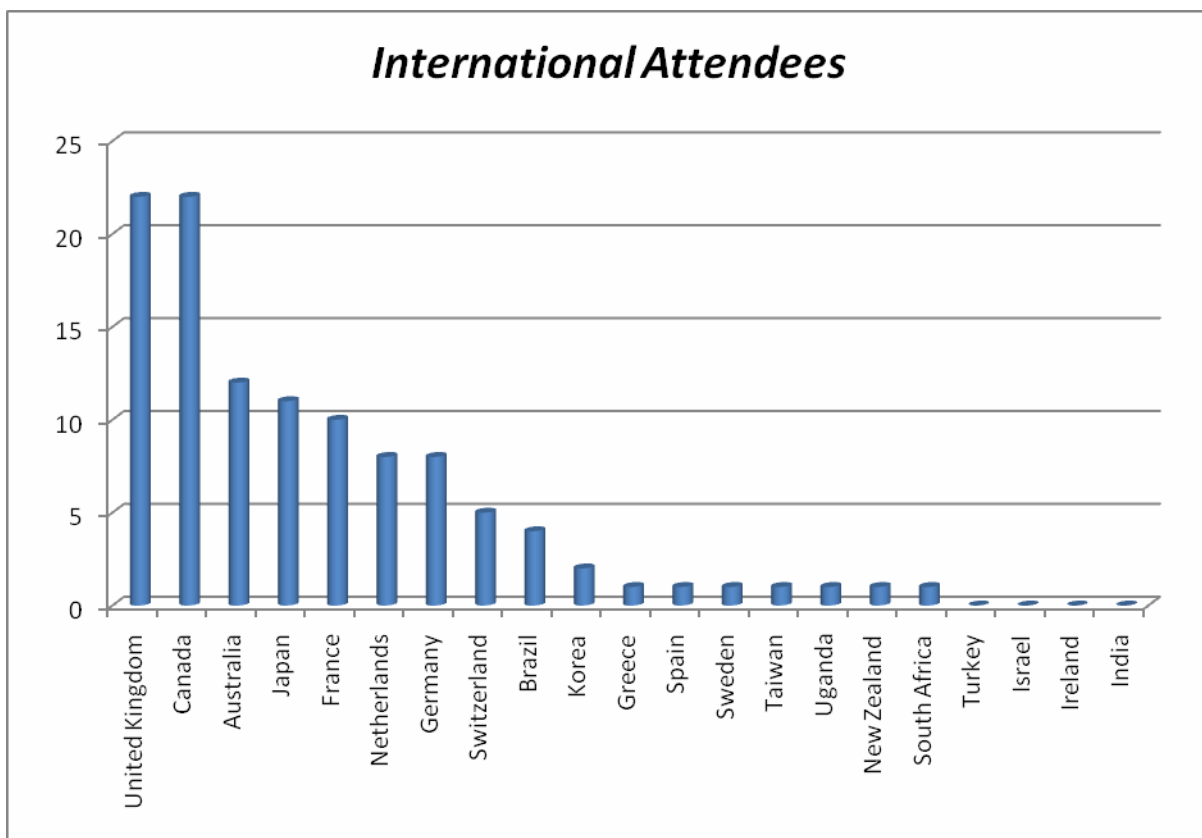


Figure 1 International Attendees

Attendance from the UK and Canada has been consistently high for several years and reflect their serious E-health initiatives. The delegations from Japan, Netherlands and Germany have also remained fairly consistent in size or scope. The size of the Australian delegation has increased over that of recent years which allowed improved coverage of relevant issues. The delegates from France and Switzerland have increased by more than 50% and the number of countries participating in the meeting has also increased (14 in May 2008 to 17 in Jan 2009).

The largest sector of those attending are those employed by vendor companies who support their staff attendance and often effectively fund HL7 work by allowing their employees to spend x days per week on HL7 related activities in addition to weekends and evening time. The next largest group are the government /semi-government agencies such as the National Library of Medicine, national programs in Canada, UK and other countries. The third group are expert consultants and academics from a wide range of countries largely there on behalf of national programs or large government agencies. Healthcare service providers attending are often representatives of clinical professional groups or large health care organisations seeking implementation solutions. It is relevant to note that Australian health care organisations rarely participate actively in standards development.

These international attendees are largely fully funded to attend by their employer, or they are funded as employees or consultants to national programs to influence HL7 developments, and return expertise to their own country. This fiscal support does not negate the voluntary nature of much of the work which is done on weekends and evenings, out of work time, but does indicate the value attached to the activities by employers and national programs.

Action required: The Australian contribution to, and learning from, the HL7 development processes needs to continue if existing gains are to be reinforced and future requirements influenced. The size and constitution of the delegation needs to be pro-actively planned well in advance, including consideration of skill extension and support.

3 Funding Contribution

Table 2 shows the result of analysis of the actual funding distribution for the DOHA sponsored members of the delegation.

Table 2 Summary of Cost Coverage

Funding Source	Percentage of funding provided at this meeting
DOHA	31.3%
Employers	33.4%
Volunteers	35.4%

Action Required: This meeting has generated a number of activities of significant concern to Australia which need to be progressed over the next few years. Consideration should be given as to how these activities will be appropriately funded.

4 Meeting Logistics

HL7 meetings have a heavy schedule of activities from breakfast meetings (7am) to late night sessions (it is not uncommon for these to finish after 10pm). The HL7 meeting is just that, a working meeting, rather than a conference and all attendees are active throughout the meeting time. Figure 3 shows some of the larger meeting groups of the 63 separate work groups, committees, board and council meetings. There are also concurrent tutorials offered in the educational track. At this meeting there were 34 tutorials and educational sessions. Shaded areas indicate groups where items of major Australian interest are being discussed. The number of concurrent sessions makes it impossible for a small delegation to effectively follow the issues and to influence change. The small delegation also impacts Australia's capacity to influence voting for positions of influence, resulting at this meeting in the failure of a candidate with strong understanding of Australia's requirements and situation to gain a co-chair position. It is worth noting that delegates funded by their employer, or individually to international meetings have no obligation to work with or relate information back to the Australian delegation, though some have done so in the past. It is clearly desirable that there be a cohesive Australian position.

This review of the very minimum of activities highlights the need for a delegation of at least 12 – 14 people to cover all the concurrent meetings. This level of participation is also in line with the number of experts sent by other countries with National E-Health programs - see Figure 1 above. It should be noted that the number of delegates is not determined by the size of a country's population nor by the size of their E-Health budget, but by the number of domains in which a country's national E-Health program has projects and activities. Active participation in the HL7 Working Meetings allows the delegates to report the latest developments and learnings of the other national programs back to their national programs as well as global best practices.

	Sun	Mon	Tue	Wed	Thur	Fri
Affiliates Council	X				X	
Anaesthesiology			X			
Architectural Review Board (ArB)	X		X	X	X	
Arden Syntax			X			
Attachments		X	X	X	X	
Cardiology				X		
Clinical Context Object Workgroup (CCOW)			X	X		
Clinical Decision Support		X		X	X	
Clinical Genomics				X	X	X
Clinical Interoperability Council					X	
Community Based Collaborative Care		X	X	X		
Detailed Clinical Models						X
Electronic Health Records	X	X	X	X	X	
Electronic Services				X		
Emergency Care			X	X	X	
Financial Management	X	X	X	X	X	X
HL7/CEN/ISO	X					
Health Care Devices		X	X	X	X	X
Imaging Integration			X	X		
Implementation conformance		X	X	X	X	
Implementation Technology Specification				X	X	
Infrastructure and Messaging		X	X	X	X	X
Laboratory		X	X	X	X	
Modeling and Methodology	X	X	X	X	X	X
Orders and Observations		X	X	X	X	X
Patient Administration		X	X	X	X	X
Patient Care		X	X	X	X	X
Patient Safety		X	X	X	X	
Pharmacy		X	X	X	X	X
Public Health Emergency Response		X	X	X	X	X
Regulated Clinical Research Information Management		X	X	X	X	X
Security			X	X	X	
Services Oriented Architecture		X	X	X	X	
Structured Documents		X	X	X	X	
Templates		X				X
Tooling	X		X		X	
Vocabulary	X	X	X	X	X	X

Figure 3: Meeting Schedule highlighting areas of major Australian interest

5 HL7 International

K. Veil and H. Grain

HL7 show increasing international positioning as indicated by meetings planned for the next few years, including:

- May 10 – 15 2009 the working meeting will be held in Kyoto, Japan with most committees expected to meet.
- May 2010 working meeting will be held in Brazil (most likely Rio) and the details will be confirmed in the next few months.
- 2011 working meeting planned for Australia, possibly January. Australian HL7 members will be involved in obtaining relevant information to inform HL7.org in order for the Board to assess this possibility.

A report of HL7 Australia activities was provided to the International Council Meeting on Sunday of this meeting.

Coordination of harmonised international standards activities in HL7 are still problematic. Issues arose at this meeting of the process within HL7 for participation in Joint Initiative Council approved projects, such as the development of the international health informatics glossary. Though this project was approved internationally and reported upon at the International Council Meeting on Sunday the Technical Steering Committee (TSC) of HL7 had not considered how to progress the matter. Full documentation on the project has been provided to the TSC who have now stated that they will look at future procedures. The specific issue of the glossary is being coordinated through the vocabulary work group and as such is progressing well (see vocabulary below).

Work on the HL7 Roadmap strategy continues and details may be found at:

<http://www.hl7.org/documentcenter/public/strategic/roadmap/RoadmapStrategies-V2.2.doc>

Tasks identified in support of the Roadmap are described at:

http://www.hl7.org/documentcenter/public/strategic/roadmap/Roadmap_Projects_%20All_Projects_Sorted_By_Tgt_Date_20090107.xls

HL7 has been actively involved in US national efforts to select appropriate standards via Health Information Technology Standards Panel (HITSP: <http://www.hitsp.org/>) and specific project activity to support this and other national initiatives. At this meeting there was clear collaboration with OMG (services) and the meeting was attended by the OMG CEO. Also evident was much discussion about the role of IHE (integrating the healthcare enterprise). Along with HL7 standards a number of IHE profiles (also drawing on HL7 standards) relating to electronic health record sharing have been formally endorsed by the US Health Secretary (in the week following the meeting).

Longstanding issues such as the relationship between CEN EHR representation formats (CEN 13606) and OpenEHR and HL7 appear to be still very much unresolved. In the past Australia has taken the lead in participation in such issues (for example: data types) as we are likely to get caught in the crossfire.

Actions required:

1. Commence planning for Kyoto WGM, this includes identification of funding mechanism, and delegation selection as soon as possible so that those delegates may prepare and attend relevant teleconferences pre-meeting. **Standards Australia and DOHA**
2. Prepare "2011 WGM" proposal for HL7 Headquarters. A volunteer taskforce to support this activity will be created by HL7 Australia. **This clearly requires further discussion with key stakeholders to determine if and how they may support this proposal.**

5.1 HL7 Global Board Meeting

Tina Connell-Clark and Klaus Veil

The HL7 Global Board met on Tuesday 13 January 2009 from 3:30pm to 10pm and started its session with informative presentations by ISO TC 215 (Audrey Dickerson) and the Object Management Group (OMG - Richard Soley). A report on recent deliberations of the HL7 Advisory Council (AC) was given by AC chair Sam Brandt. The AC continues to encourage HL7's focus on stakeholder-oriented and effective standards development.

The Board received an update from the committee working on the internationalisation of the HL7 organisation (aka the "OMOV Committee") which has run its course and recommended either the dissolution or new tasking of the committee. The Board tasked the committee to develop recommendations for the membership and fee structures for HL7 Inc and the Affiliates.

The Board heard a report with in-depth analysis from the Education Committee regarding the local US Education events where attendance has reached a plateau.

The Treasurers report was then given. HL7 Inc's finances are sound with the 2008 reserves at a record level. However, a number of new initiatives in 2009 (Marketing staff, Tooling development, SAEAF roll-out, etc.) are expected to consume the reserves to a minimum level. The Board may consider again increasing membership and Working Meeting fees to cover this.

The project for an accelerated rollout of the HL7 Services-Aware Architecture (SAEAF) was approved by the Board; project initiation will occur within the next 3 months with the project expected to be completed within 18 months.

Board Member Don Simborg outlined a compelling plan for HL7 to leverage the Obama US administration's stated plan to implement electronic health records for all Americans within 5 years. There was extensive discussion on this issue and Don's plan will be further developed.

Actions required:

1. Continue to monitor the direction of the HL7 Global Board
2. HL7 Australia to review Simborg plan and consider local relevance.

6 Architecture Review Board (ArB)

G. Grieve, A. Bond and P. Maclsaac

HL7 has established an Architecture Review Board to provide a consistent framework across the organisation for both products (standards and other products) and processes. This builds on the previous HL7 Development Framework (HDF). ARB wiki is at: http://wiki.hl7.org/index.php?title=Architecture_Board (username: wiki password: wikiwiki)

The primary activity at this meeting has related to the rollout of the Service-Aware Enterprise Architecture Framework (SAEAF). This is a set of basic principles that will guide the HL7 Work Groups (= committees) towards producing more coherent specifications more quickly. Initiation and roll-out of SAEAF has commenced and the Work Groups are starting to understand and engage with the ideas in it although some (expected) consternation is occurring. The ArB spent most of this meeting managing this, spreading information, and explaining how things will and won't change. This work will produce outcomes in the medium term.

The second major piece of work relates to the behavioural framework, how to manage the question of who says what and when in healthcare. HL7 is grappling with several problems:

While we all agree that content needs to be exchanged, there are a wide variety of workflow contexts in which this has to occur. These contexts include:

- a) Workflow that is entirely clinical and human managed, and the systems merely exchange documents. Roughly referred to as Document focused.
- b) the desire to describe a set of contents and the operations that may be performed on that content, but to leave it to the implementing institution to decide how to deploy these operations in the context of their business. Roughly equivalent to Services in HL7.
- c) That the standard should be fully prescriptive about the workflow (or choreography). Roughly equivalent to the traditional view of Messages in HL7.

The level of prescription about the operations and choreography around the content is dependent upon both the domain (clinical discharge/referral vs Prescriptions, for instance) and the customer (Canada Infoway, UK NHS or NEHTA, compared with vendors and local hospitals who may have a very different view of what is achievable. Larger customers prefer more optionality.)

Whatever mechanism of those described above is used to deal with this sliding scale it needs to be applicable to end users, so they can simply extend the system to make their own fully bound contracts.

There is a desire to use an existing standard but do not believe that there is anything suitable currently available. Currently WS-CDL and the CDL author are being used as part of the team, but it is not clear whether this is the correct answer. Other options have also been considered including BPMN, BPEL, and SoaML, but most of these are trying to solve related problems, not the actual problem expressed here.

A fully specified workflow is a very verbose thing. The verbosity is a problem for both those who specify and those that use the standards. This is a problem that HL7 has never really solved, and it seems that other industries have not solved this problem either. One option being considered is to define a few patterns, and require all the domains to use them if they specify any behaviour.

The following candidate patterns are available:

- Publishing a state machine (i.e. ADT messages, result reporting)
- Managing a state machine (EIS, registries)
- Request/Fulfilment (prescription / dispense, scheduling)
- Query

Probably most of the requirements are combination of these. This is a straw man list at this point and further discussion will be ongoing. In addition, Richard Soley from OMG was present at this meeting. There was a flurry of action on the relationship between OMG and HL7 and we can look forward to some significant announcements relating to joint activities, and a greatly improved relationship in the future.

Another major architecture project (sponsored by Financial Management TC) is Medicaid Information Technology Architecture Project. This establishes a current and future state business architecture for US Medicaid program. <http://mita.wikispaces.com/?responseToken=7be07a8438937372722bb636e1ee3aee> This is of particular interest for the methodology rather than the specific content which relates to US health claims and payments systems.

Action required: Support OMG/HL7 interaction (more symbolic than anything else)

Groups to whom this may be of interest: Everyone & NEHTA, Standards Australia IT-014, Health Informatics committee, State Departments, Medicare Australia, HealthCare Organisations and other specifiers.

Australian organisations from whom a domain-expert would be appropriate: NEHTA

7 Certification, Compliance and IHE

K. Veil, V. McCauley, P. MacIsaac and A. Bond

This meeting had an increased focus on joint IHE and HL7 issues and the number of workgroup participants who participate in both organisations, however IHE co-participants are somewhat unrecognised as there is no formal “badging” or identification. Specific issues re IHE have been mentioned in other areas of this report. IHE and HL7 have a formal MOU and the issue of collaboration and coverage of mutual interests are happening, however it appears to be in a somewhat uncoordinated way, however on balance with a great deal of openness and positive collaboration. HL7.org CEO Charles Jaffe was recently elected to the Board of IHE International.

Identification of the clear synergies between standards implementation, standard architectures for delivering specific outcomes (IHE, HITSP, Canada Infoway), and the underpinning standards developed by groups such as HL7, DICOM, IEEE need to be given more attention. As there is the potential for misunderstanding, overlaps and turf disputes. The joint HL7/IHE whitepaper on services will help with this, however more focus on organised participation by IHE at HL7 meetings needs to be considered.

Meetings were held with the IHE Board members and the remaining administrative questions resolved. The approval of IHE Australia is expected at the next IHE International Board meeting in February.

Observations were made regarding how IHE (mainly in the US) executes its processes. However, these processes do not necessarily affect how we conduct IHE business in Australia nor which profiles we test against. The establishment of IHE Australia may offer the potential to have national certification approaches including coordinated international profiles of use without having to take up IHE profiles and approaches that are inappropriate for Australia

Action required: IHE Board Meeting February 2009 watching brief

Groups to whom this may be of interest: NEHTA, HL7 Australia

8 Clinical Decision Support

McIntyre and V. McCauley

GELLO/Virtual Medical Record sessions had significant contributions from the software vendor - Medical-Objects who have fixed the BNF and provided examples for the GELLO language and will also provide appropriate VMR examples and bring the example VMR up to the current version of the RIM and use current datatypes.

The ballot of GELLO V1.1 with the language updates was approved and is planned to occur after the Kyoto meeting. This standard will also include an appendix as a usage guide and this will feature example GELLO from industry projects.

The Australian experience of a real implementation of the standard creates some confidence that the standard is implementable. There will be outreach to many workgroups at Kyoto to explain the features of GELLO V1.1.

There is also an attempt to get OMG to add some missing features to OCL 2.1 as OCL currently does not have what is needed.

Andrew McIntyre of Medical Objects has been given carriage by the CDS committee of revisions to the GELLO version 1 decision support language. GELLO is an HL7 specific derivative of OCL, the OMG standard for describing and performing functions on objects. GELLO uses as its base objects the HL7 Reference Information Model (RIM). Andrew presented at the this session his proposal for enhancing the current GELLO specification for GELLO version 1.1. Unfortunately another member of the committee is producing a specification for the next version of GELLO – version 2. Hence there is some conflict between where Andrew would like to see the language go and where version 2 is currently going.

The Committee was only willing to accept changes which fixed issues that have been discovered on 1.0 and not proposed enhancements – a service pack approach. These included changes to the Backus Normal Form (BNF) (the formal specification of a computer language) to disambiguate some statements, corrections of examples with typographical errors and removal of the Context statement which is redundant and incompatible with OCL.

In particular, a proposal to allow GELLO 1.1 to access the current HL7 Common Terminology Service to resolve terminology synonyms and perform terminological reasoning (e.g. Allergy to Penicillin implies allergy to amoxicillin) was rejected despite its clear merit.

Australian implications

It is possible that this proposal may be able to be brought forward as part of the move to SAEAF and this should be a focus for future Australian participation.

9 Clinical Interoperability Council

V. McCauley and D. Rowed

This group had its path mapped out several meetings ago (Phoenix May 2008) and was reported in detail in the Delegates' Report on the September, 2008 HL7 WG meeting (Vancouver). A fourth co-chair has been elected, Steven Bentley, a GP working in CfH who is due to take up leadership of CfH's Logical Record Architecture project.

Information is available at: <http://wiki.hl7.org/index.php?title=CIC>

The group is proceeding with its objective of engaging non-technical, non-HL7 clinicians. To this effect it has commenced having meetings for such new members during the WG week and is developing requirements to address the needs of its member domains. It then meets jointly with Patient Care to determine how Pt Care work meets its requirements.

Most work to-date consists of data set identifications and review, with some workflow analysis. Output is to the Clinical Domain Analysis section of the V3 Ballot where main contributions have been Cardiology and Tuberculosis, both being at *Informative* status at this stage. Methodology includes developing Domain Analysis Models (DAMs) in areas including Cardiology, TB, Privacy Policy and Consent Directives, and taking these through DCMs and HL7 messaging structures (R-MIMs).

A potential concern is that privacy and consent appears in several areas of HL7 and other standards group activity and that a common model may be useful. This issue is also discussed under security. Further information at: <http://www.hl7.org/v3ballot/html/dams/uvpr/docs/eConsent%20Domain%20Analysis.pdf>

Groups to whom this may be of interest. HL7 Australia, NEHTA , State Jurisdictions

Discussion suggest that the major issue is what formalism should be adopted for representing clinical information in a format that can be imported to HL7 artefacts but readily accessible by clinicians. Some initial work in this area has been going on in the Detailed Clinical Modelling group.

10 Clinical Document Architecture (CDA)

G. Grieve and V. McCauley

Requirements continue to be gathered for CDA Release 3 and proposals can be made at www.HL7.org/memonly/cdasub.cfm

CDA Release 3 ("CDA R3") will be developed in parallel with CCD Release 2 which will be based on CDA R3. CDA R3 will incorporate the new datatypes and ITS (Grahame Grieve's work).

Submission of proposals for CDA Release 3:

<http://www.hl7.org/index.cfm?p=285&userName=AffiliateLogin&CFID=337465&CFTOKEN=92417316>

A whole session was spent discussing terminology - ostensibly in the context of a US Realm specific Public Health document but the debate became considerably wider. For HL7 the debate was very contentious and chaired by the incoming HL7 Chair Bob Dolin. The Regenstrief Institute (LOINC), IHTSDO (SNOMED) were represented at the meeting.

The outcomes were:

- use LOINC for Laboratory results (no-one and no country suggested otherwise - SNOMED in current form is not suitable for a broad lab terminology)
- for clinical: If concept only in one then use it. If concept in clinical LOINC and SNOMED then publish and preferably incorporate both in data.

Stan Huff (Intermountain Healthcare, Salt Lake City) suggested that the agreement with IHTSDO to harmonise LOINC and SNOMED may be signed in April 2009. It will then take at least 2 years work to develop a workable map between both terminologies.

11 Clinical Statements

V. McCauley

The clinical statement is common pattern of HL7 V3 (a DMIM) which is used by the Patient Care, Structured Documents and Orders and Observations Committees to express rich clinical content. It has been developed over 3 years and allows nearly any clinical statement to be encoded in its rich, recursive structure. At present it has passed ballot as a DSTU but did not have a specific "home" or owner within HL7. This has resulted in the recent formation of the Clinical Statement work group with representation from the technical and clinical content committees. Its workspace can be found at http://wiki.hl7.org/index.php?title=Clinical_Statement_Harmonization_Project

This WGM was the first meeting of the working group. Isobel Freaan (who still regards herself as an honorary Australian despite her move to the UK) is the publishing facilitator for this group.

The major issues dealt with were the process required to move the Clinical statement to a Normative ballot and extension/harmonisation of the clinical statement for use in public health and laboratory. Details of all the proposals and their disposition can be found on the wiki at http://wiki.hl7.org/index.php?title=Clinical_Statement_Change_Requests.

These included

- Add support for lab. test kit IDs to be recorded - accepted
- Enable data enterer to be a device as well as a person to support transcription devices and lab. Automation - accepted
- Add optional "activity time" for public health reporting – some further work needs to be done to define what this is in all cases. Not accepted at this stage
- For public Health, allow investigated person to be the subject of a clinical statement – accepted

12 Community Based Collaborative Care

M. Walker

The Community Based Collaborative Care Committee is still dominated by consent, which leaves little window for other activities to be performed.

Action: Form another Committee to pursue interests outside of the traditional Domains and cater for Australian Development & Requirements.

Groups to whom this may be of interest: All Australian E-Health groups and organisations

13 Detailed Clinical Models (DCM)

D. Rowed and H. Grain

The Detailed Clinical Model (DCM) project is undertaken jointly by Patient Care and Templates and hosted by Patient Care where most of the work is done. DCM is also an ISO WG1 work item and William Goossen, co-chair of Patient Care is also leading the ISO work. This is now an ISO WG1 work item, but the bulk of development has been from Patient Care to-date. The focus in the Patient Care work group is on the usage and implementation of SNOMED-CT.

The project aims to produce key UML “neutral” models for basic care concepts which cover the specific modelling of different standards organizations, most notably at this stage, HL7 and openEHR. It is hoped that transforms can be developed that operate between these, and rudimentary work from the Netherlands to effect part of this, was presented at Patient Care.

Patient Care spent much of the week on DCM. The final scheduled DCM meetings with Templates and Vocabulary were on the last morning of the meeting.

Australian Implications

The extension of DCM activity into terminology and information structure has the potential to influence national initiatives and it would therefore seem that NEHTA should be aware of and contribute to these discussions and developments.

13.1 Shared Artefact Repository

The Shared Artefact Repository Initiative will be undertaken jointly – with members of the open health tools initiative. The Scope Statement is in preparation. The decision on what goes into the work is still to be made, but it will not be all encompassing but centres on the process of registering a template and the metadata required for registration to support later development of a tool that supports the business requirements.

The document covers templates from the point of view of content, additional constraints either in v3 information structures or other structures from a business aspect. DCM is within that, and it is recognised that this is a subcomponent of a fully fledged content registry. It is intended to include: what is required to register pieces of work, what is the metadata on the work to be registered, and what are the approval states that they need to go through to be accommodated in a registry. It is not in scope to define the searching, design tool processes.

13.2 Requirements for Tooling

Ideally the requirements for tooling for this activity could be expressed as a service, where we could produce a healthcare template service specification as well as the open source requirements. This is attended to be a safe, aware project but not an early adopter project.

There is a desire to see the tool available for design time and run time situations. Assurance was given that issues such as these were included when parsing out the processes in tooling. It is necessary to identify the length to which the NHS work will satisfy the design and registry requirements for templates before we start building anything else.

13.3 Definition of components in a DCM

A list of “top 10” models has been put forward and developed over several recent meetings. These models cover : weight, height, heart rate, temperature, blood pressure, respiratory rate, Apgar score, Barthel index, Braden score, Glasgow Coma Scale. To be added to this Emergency and Patient Care are looking at *Pain measurement/assessment* and, driven from Netherlands, *care components for diabetes management*.

A presentation was made by Patient Care which identified UML based representation of requirements including the need to include a level of detail that is clinically relevant, meets medico-legal requirements as a minimum, provides modelling guidance and is able to handle simple cases simply.

Initial work was done in *Visio* while new work is being done in the proprietary *Enterprise Architect* tool and models will be exchanged in XMI (XML Model Interchange) format.

Dipak Kalra (UK) responded that the spirit behind the UML approach within DCM is to be neutral of many of the existing knowledge representation formats but also to be as generic as possible to support re-use by e.g.: OpenEHR archetypes and HL7 templates. This provides challenges to the use of UML representation. The desired result has to be transparent, neutral and traceably usable by the existing developments. This is not a green field environment. Each 'camp' has a range of reasons for their favourites, the work and challenge of a neutral form is partly one of inspecting these to identify the requirements each of these has sought to meet and me sure in the UML representation these requirements are carried forward and met. The neutral form has to be defensible in a traceable way as well as transparent.

The current work does not appear to represent the various existing models. There is a need to indicate the trace of each element of functionality required, particularly if this to be successful at ISO. Dipak Kalra has offered to assist in this process. The repository must be able to store and provide access to the views and include information about the persons or groups that created the model and the approval process on the quality of the content, clinical and technical or governmental users/backers. Knowledge of governance is a core requirement.

Details are available on the wiki page under tooling. These details will be used as source documents as we go through the architecture project for open health tools and will be used in alignment initiatives.

Considerations

- The project is not yet well-organised in terms of a having reliable location and consistent formats for all its artefacts.
- Incorporation of terminology is predictably problematic and the Terminfo work at HL7 will provide guidance on how to manage these clashes with intrinsic information structures. DCM terminologies being used in work so far are mainly using SNOMED and LOINC. Neither is being found fit for all purposes. For example work on Assessment Scales has found LOINC more suitable than SNOMED. It is expected that DCM work will involve a large number of change requests to both IHTSDO (SNOMED) and LOINC.
- There is no comprehensive governance structure in place to manage content and broadly engage the clinical community.
- It is debatable how well the modelling process can work with UML being expected to represent the different content in a clean and meaningful way that can be reviewed by clinicians.
- This work effectively duplicates what openEHR has done with archetypes and over 800 archetypes have been developed. It is hard to see how HL7 and ISO will be able to author and verify the large number of DCMs that will be needed without adopting the archetype methodology (which was the approach initially accepted when the DCM project was initiated).
- The openEHR Clinical Knowledge Manager (CKM) was demonstrated within Patient Care to the DCM group as well as Clinical interoperability Council with a view to their adopting it as a working tool, methodology and process to immediately address these barriers.

Actions Required:

1. Due to the need to focus work and to build upon existing learning in this area it would seem appropriate for Australia to support a harmonised approach which builds upon the openEHR learning and processes if we are to continue providing resources to the project. This can easily manage DCMs at the archetype level and can be configured to produce the UML required by DCM.
2. On the invitation of Mark Shafarman, David Rowed led discussion at the DCM meeting on the Friday, on the CKM. The emphasis was the on the readiness of the CKM to support the governance, business processes, authorization, quality assurance and clinician engagement which has become recognized as critical by all the groups thinking about artifact repositories.

This is a significant discussion that has the potential both to make the current situation worse and to lead to a more harmonised approach in this difficult area. Australia should actively watch this activity. It would seem to our advantage to encourage and support a harmonised approach. A possible approach is to ensure there is an archetype for each DCM model and the CKM can export that as UML to enable DCMs and HL7 Static Models to be built on such a base.

The Archetypes and the UML generated from the CKM would be the openEHR sides of the DCM, the archetypes could be seed models and surrogates for the DCMs and HL7 models, and used to seed discussion threads etc within the CKM and thereby provide much of the governance missing from that project.

OpenEHR were invited to join the CKM as registered users. After the meeting I received several requests for openEHR Archetype the site address, as well as for the presentations. I have requested that the co-chairs put aside time for wider sessions at Kyoto. This will apply to joint sessions of Patient Care, with DCM and with the CIC on the Tuesday, and Wed Q1.

14 Electronic Health Record (EHR)

R. Barel and M. Walker

There was discussion on the new joint project: *Business requirements for an e-Health Enterprise Architecture for the Global South* (Proposed by Beatriz Leao (Brazil), TC215 WG8 Vice Convenor). Chris Bailey (WHO) and Ed Hammond (HL7) are also interested in this work item. Chris Bailey is in talks with the Rockefeller Foundation in the hope of obtaining funding. The proposal for this work item will go to ISO TC 215 WG8 *Business Requirements for Electronic Health Records*.

The EHR-S Functional model was discussed. This item is currently with ISO Central Secretariat in preparation for ballot. The ballot is expected to go out for combined HL7/ISO DIS ballot by March/April 2009.

Action: Australia should watch this item and ensure that Australian Comments are sent to ISO/HL7. Note: HL7 ensures that all comments are resolved before they publish a document.

Groups to whom this may be of interest: IT-014-09 Electronic Health Records

Australian organisations from whom a topic specific representative would be appropriate:

- Australian Vendors of Electronic Health Record Systems
- NEHTA
- IT-014 Health Informatics Committee

14.1 Personal Health Records

PHRS was approved by ANSI as a Draft Standard for Trial Use (DSTU).

Child Health Functional Profile was approved by ANSI as a Standard.

Discussion occurred on two new work items that came out of the last ISO TC 215 WG8 meeting in Istanbul and are on the agenda for the next ISO TC 215 WG8 in April 09.

- Definition, Scope and Context of Personal Health Records
- Business requirements for Personal Health Records

Considerations:

When PHR was created in around 2004 it was a strictly a V3 Message only Domain. To even mention V2 was heresy. This approach has changed significantly and represents another example where V2.x is the go because V3 is too hard, too expensive and requires too much expertise.

Action: Australia should watch the PHR work items.

Groups to whom this may be of interest:

- IT-014-09 Electronic Health Records Sub Committee at Standards Australia
- ISO TC215 WG8 Business Requirements for Electronic Health Records Working group
- HL7 International – Electronic Health Records Working Group

Australian organisations from whom a topic specific representative would be appropriate

- NEHTA
- IT-014 Health Informatics Committee

14.2 EHR Interoperability Group

51 of the 56 EHR Requirements for interoperability were mapped from the Reference profile for CDA. There are 5 outstanding requirements in the EHR Interoperability model that need to be resolved. The interoperability model DSTU is nearing the end of its first 2 years so they need to decide whether to renew for another 2 years.

Groups to whom this may be of interest:

- NEHTA
- IT-014 Health Informatics Committee, particularly IT14/06 and IT14/09

Australian organisations from whom a topic specific representative would be appropriate

- NEHTA
- IT-014 Health Informatics Committee

15 HL7 Standards and Interoperability

J. Davis and K. Veil

The Working Meeting was very focussed on V3 and Clinical Document Architecture (CDA). In particular the extent of the V3/CDA take up. Attempts to implement V3/CDA are occurring and the learning from these exercises is considerable. In particular the apparent result that V3 is not producing a more consistent implementation than that of V2. The experience of broader 'use' of V3/CDA is something that needs to be considered in Australia. The implications of V3 and CDA is a point for discussion and speculation, particularly if Australia remains with V2.x (especially V2.3.1!).

HL7 V2.7 is under ballot and work on HL7 V2.8 has been approved by the HL7 Board. There is concern that there may be no further releases past V2.8 to force a move to V3. This is discussed further under V2.x activity and roles.

There is increased use of OBX segments as "Z segments" in V2.x (eg. in prescription messages) as a solution to messages where there are insufficient defined data items. This seems unlikely to promote interoperability others are unlikely to define the data in the same way.

Discussion on the introduction of null value flavours as defined for HL7 V3 into HL7 V2.7 or V2.8 is ongoing. This hasn't yet been agreed; one suggestion is that this could be achieved via escape sequences. Some vendors supporting both V2.x and V3 want to be able to send the same null value in both the V2.x and V3 messages.

Open questions

- Are all HL7 datatypes able to support escape sequences?
- If implemented in HL7 V2.7 or V2.8 will vendors also use in earlier versions of HL7 2.x?

Considerations:

- Discussion needs to be held to determine where Australia is likely to head in the future with regard to HL7 version and CDA.
- In addition if HL7 V2.x is, in the medium term, expected to be the Australian standard discussions should be held to determine where OBX segments are being used as "Z" segments and a consensus of specific definitions for each use agreed to assist in interoperability. These should then be incorporated into the HL7 specific standards for the message types.

Action required: Review V2.x vs V3 vs CDA issue at IT-014-06-04/05/06 meeting Feb 2&3

Groups to whom this may be of interest: NEHTA

Australian organisations from whom a domain-expert would be appropriate: NEHTA

16 Infrastructure and Messaging Working Group (InM) – Data Types

G. Grieve and J. Davis

Discussion involved introducing null value flavours as defined for HL7 V3 into HL7 V2.7 or V2.8. One suggestion is that this could be achieved via escape sequences. Some vendors supporting both V2.x and V3 want to be able to send the same null value in both the V2.x and V3 messages.

Considerations

- If implemented in HL7 V2.7 or V2.8 are vendors likely to also pass in earlier version of HL7 2.x?
- Are all HL7 data types able to support escape sequences?
- What will messaging software and clinical software do if they receive these escape sequences?

Actions required

- If the motion is agreed the following will be required:
- Investigation into the impact this could have on the messaging and clinical applications should this be implemented.

Australian organisations from whom a topic specific representative would be appropriate:

Messaging vendors, clinical application vendors, HL7 expert

16.1 Data Types

The formal responsibility for data types is moving from INM to MnM. This is the first of a series of committee adjustments prompted by the SAEAF organisation and architectural vision. The datatypes are going out for one last ballot cycle, before the ISO datatypes are finalised. The exact dates are not yet clear. In addition, INM has just registered the mime types application/hl7-v2, application/hl7-v2+xml, application/hl7-v3+xml, and application/hl7-spl+xml with IANA. The INM chapters of V2.7 have all passed ballot.

Data Type ballot reconciliation discussions were positive and most comments were resolved with the exception of some issues that relate to name/identification. There is some proposals for very substantive change in V2.8, particularly the introduction of V3 nullFlavors to V2.8 (see also above). This would result in a series of sweeping changes to V2.x, which may stretch the definition of backwards compatible (quite a lot). Opinions on the question of nullFlavors or substantial change to V2.8 are welcome (to grahame@kestral.com.au).

17 Medication Management (Pharmacy)

P. MacIsaac

With the approaching finalisation and completion of the Australian Medicines Terminology, and renewed focus on e-prescribing this is again an issue of vital interest to Australia. Pharmacy group have continued to

focus on V3 message development and the description of a model for describing medications (and a more general product description model).

There was active participation by European IHE representatives who reported on work underway to develop an IHE profile to manage e-prescribing. A white paper is being drafted to explore this. Contacts: François Macary (also active in IHE laboratory working group)

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This IHE work has the potential to provide an open standard architecture or framework based for e-prescribing in both hospital and community settings using underpinning standards such as HL7. At present this work is being focused on European input.

Actions required:

1. Investigation of how the AMT model relates to the HL7 medicines model, Consideration of Australian involvement in IHE pharmacy working group and more active engagement in ISO TC 215 working group 6 (pharmacy)
2. The old issue of messages vs documents arose in pharmacy and orders and observations working groups, somewhat driven by the IHE focus on document management. Generating discussion at orders and observations about the use of documents as orders – position reaffirmed that documents do not contain sufficient information or context to allow automated response from receiving system. Complex systems such as e-prescribing or e-ordering in the community will most likely require the use of messages (orders), documents (rendering orders for human readability and persistence if needed) and services (referral hubs, workflow management).

Groups to whom this may be of interest. IT14-6-4 NEHTA, DoHA, MSIA, IHE Australia

Australian organisations from whom a topic specific representative would be appropriate. Standards Australia, IHE.

18 Organisational Relations

Tina Connell-Clark, Andy Bond, and Klaus Veil

A number of meetings with the HL7 Global leadership were facilitated for NEHTA including:

- Ed Hammond, Chairman, HL7
- Charles Jaffe, CEO, HL7
- Dr Ken Lunn, Director Data Standards & Products, NHS Connecting for Health
- Dennis Giokas, CTO Canada Health Infoway, inc

NEHTA also met with:

- Bernd Blobel, University of Regensburg Medical Center an active contributor to international standards development in the security and role based access areas
- Richard Soley, CEO of OMG
- Gaby Jewell of Cerner Corporation
- Charlie Bishop, PM Integration for iSOFT an IBA Company amongst many others.

Actions required:

1. Follow up discussions as necessary
2. K. Veil has explored an invitation for Charles Jaffe to visit Australia in the next few months and has received a tentative confirmation.

19 Patient Care and Patient Referral

M. Walker and D. Rowed

The Patient Care Work Group develops and manages balloting of Version 3 standards in the Care Provision section of the ballot. This is the largest clinical section of the V3 ballot and a very large component of the overall ballot. The group handles information structures, communications and interactions involved in clinical care. Pt Care has 3 Co-Chair positions, only two now being filled. At this meeting there were no contenders for the third position which had become vacant.

The Work Group also has responsibility for HL7 Version 2 Patient Care Messages (Ch 12 of the V2 standard), but defers to Australia for all this work. David Rowed is its active Ch 12 editor and virtually all this work is done in Australia through IT 14/6/6. The Version 2 Referral standard (Ch 11) was handled by Patient Care but is now managed by Max Walker of DHS Victoria and again work is done via IT14/6/6.

Considerations

The use of version 2 vs version 3 in messaging, and the place of CDA and Archetyped data are important considerations in appreciating the importance of Australia's driving the V2 standard and leveraging of more advanced content standards (openEHR archetyped data, CDA documents). This is undergoing constant debate in Australia and we continually raise this at HL7 International.

19.1 V3 Ballot

Patient Care has moved all its completed material in the V3 ballot to DSTU status and is extending the time that material remains as DSTU. This strategy minimizes the reconciliation work involved at each meeting, reduces time pressures, while benefiting from user experience, by soliciting ballot votes. This is a pragmatic recognition of the complexity and breadth of its work.

The main overall topics currently in DSTU in the Care Provision section of the V3 ballot are :

- Care Structures including Care Statement: an extension of the Clinical Statement Pattern which allows for care provided across multiple and varied targets of care (e.g. group or environmental entities), and other re-usable artefacts such as blood pressure, heart rate, weight, allergy, assessment scales.
- Care Record which covers EHR extracts as used in collaborative exchanges such as discharge summaries, as well as record queries
- Care Transfer which includes Discharge Referral and communications effecting responsibility repartitioning.
- Allergies and Intolerances.

Presentations on the HSSP Human Services Directory Project were given. Discussions on the clarification and definition of Profiles for the HSSP project, in particular the PASS element occurred in which Australia figured prominently.

Issues with the Consent Directive Domain Analysis Model ("DAM") ballot is also being resolved in CBCC and will require further clarification and coordination to ensure that Australia's requirements are adequately met.

19.2 Practical application of V3 standards to support collection of family history information

During the breakfast session at workgroup meetings there are now presentations which focus on the use of HL7 standards. An outstanding presentation was given on the use of a US Dept of Health sponsored website for consumers to collect their family history data in a structured way and have this stored on the individuals computer in a V3 message format developed by the Clinical Genomics group. A practical demonstration was shown of how this data can be imported into a clinical genetics risk management

application (used in a genetic counselling clinic. With the standard basic skeleton of the family history collected, the clinical system was able to add specialised data required for assessment. The time savings in not having to collect this baseline data was stated to be 15 minutes per first consultation. Copies of the two presentations are at www.hl7.org (on the home page in workgroup section).

Groups to whom this may be of interest: MSIA, State Jurisdictions, HL7 Clinical Interoperability Council.

19.3 V2 Ballot

Patient Care met with Community Based Health, including representatives members from Standards Australia's IT 14/6/6, to resolve ballot responses on HL7 Version 2.7 Chapter s 11 and 12 (Referral and Patient Administration). The 3rd round of Ballot reconciliation was conducted. This work covers Australia's requirements which have led to new content to support EHR type data needed in Referral and Collaborative Care messaging. All issues were resolved.

Actions: Clarification on comments made by Frank Oemig (HL7 Germany) must be sought & dealt with. Chapters updated and documentation submitted to HL7 HQ.

Groups to whom this may be of interest: IT-014, HL7 Aus, NEHTA, DoHA & the other Jurisdictions.

19.4 Patient Care Terms and Glossary

Consideration of the processes for management of the Patient Care glossary which does not currently define key Patient Care concepts was undertaken. The ISO open terminology management project was presented by Heather Grain (Australia), and this was accepted as a potential way of standardizing terms. Patient Care needs to work out where in HL7 ballot documents its key concepts (eg: Problems, Diagnosis, Goal) should be defined. The ISO registry offers another possibility and Patient Care is interested to include its terms there.

Reconciled ballot comments on DSTU items.

19.5 Public Health and Emergency Response

Public Health & Emergency Response are doing a project on Vital Statistics (and, of course Vital Records) which has a thrust of getting the data from its original owner, i.e. source it from the source. This is of particular interest in the context data collections.

Actions: Participation in this would be useful to Australia to extend skills and influence outcomes.

Groups to whom this may be of interest: Jurisdictions.

19.6 Adverse Reactions

Work is progressing on refining these DSTU items as well as developing querying and other messaging use around this.

19.7 Allergy / Intolerance Concern RMIM

This DSTU item is being harmonized with similar work from other groups and being brought into line with requirements coming forward to clarify differences in recording state from events, and methods of assessment as part of definition, as well as uncertainty modelling.

19.8 The Care Record Structures

The Care Record structures (in DSTU) are being reviewed for use in the Virtual Medical Record project used in Clinical Decision Support. This involves a standardized interface into an EHR built on any suitable architecture rather than a persistent record system as might be inferred from its name. Gello queries and Guidelines are represented within this process. Patient Care is collaborating on this project.

Problem, Diagnosis, Condition, Concern and their Tracking is being re-worked as result of DSTU balloting and harmonization. Concern Tracking is in DSTU status and manages these.

There is still disagreement on definitions of Problem and Diagnosis with pragmatic clinicians using the terms interchangeably and differing nursing vs medical boundaries between diagnoses and problems compounded

by further jurisdictional variances. This always delays progress at meetings by causing predictable rounds of preliminary discussions.

Care Provision models *Problems* by "*Concerns*" which relate to *Conditions* and observations. Care Structures modelling covers their tracking through time. This has been under very active review on the PC lists and will continue. The use cases coming from early implementers are revealing significant gaps which PC is addressing. These include problem severity, state including activity/inactivity, staging (as in cancer diagnosis) and linkages between states. Diagnosis states and contexts are important to hospital-based US clinicians who want descriptors / modelling of *past diagnosis*, *chronic diagnosis*, *nursing diagnosis*, as well as universally used operational concepts of differential diagnosis and provisional diagnosis.

Assessment scales are in DSTU and ballot responses with persuasive change requests were resolved and work taken forward. Key implementers' scales used are Barthel index, Apgar and Braden scores. There is confusion among some ballot reviewers as to when to use an Assessment Scale vs. an observation-derived variable or structure (eg Bone Mineral Density - BMD and Body Mass Index - *BMI*).

Care Plan structures are still being developed with a view to going to DSTU later. The RCRIM group is working with PC on this and sees it as delivering on their requirements especially as it supports their need for tracking clinician adherence to plans.

Care Transfer (in DSTU) extensions for new trigger Events (*Suspend Care Transfer Request*, *Resume Care Transfer Request*, *Nullify Care Transfer Request*) remains on hold. It was originally requested by a group from Canada who are not active with it but at the meeting Emergency Care indicated its importance and they will take this through further development to DSTU regardless.

[*The Order Sets* Project of CDS has been worked on with Patient Care, but there was no progress with PC at this meeting as CDS did not present at the joint session scheduled for this.]

20 Service Oriented Architecture (SOA)

G. Grieve, V. McCauley, A. Bond and P. MacIsaac

The SOA working group is the HL7 International side of the Health Services Specification Project (HSSP). In addition it provides Service oriented input and expertise to other HL7 Committees and Working Groups. Current HSSP work can be viewed on the HSSP wiki <http://hssp.wikispaces.com>

20.1 Health Services Specification Project

The HSSP was established 2 years ago as a collaboration with the Object Management Group (OMG) to provide a general framework for Service Architecture specification in the Health arena. The two specifications used to initiate the project were the Entity Identification Service (EIS) and the Retrieve, Locate, Update Service (RLUS). EIS is a specification of a service to manage identity of persons (patients, providers) and organizations within Healthcare while RLUS is used to find and update health record information. Since then work has started on two further services – a Human Services Directory Service (HSDDS) being led by Max Walker from the Victorian DHS and a Clinical Decision Support Service (CDSS) being led by Prof. Kensaku Kawamoto of Duke University, Division of Clinical Informatics.

Considerable progress has been made in recent months with many stakeholders now realising the difference between Provider Directories & Service Directories. We are now aiming for Ballot at the May WGM.

Actions: Submit Ballot Notification. Update Document to Ballot Standard (including Profiles).

20.1.1 The HSSP Process

Service specification in HSSP is initiated at HL7 with registration of a formal HL7 project. A detailed platform independent specification is then developed by HL7 using the standard balloting process for a Draft Standard for Trial Use (DSTU). Once the specification has passed ballot it is handed to OMG where a task force is formed including at least 2 health software companies prepared to implement the specification. A platform dependent specification is then completed and implemented by at least 2 vendors. Feedback from the implementation experience informs the specification in a feed back loop which usually has at least 2 iterations. The completed specification is then balloted and goes through a detailed independent analysis similar to a thesis defence. After passing OMG final ballot it is handed over to a Finalisation Task force for

documentation completion and is placed in a formal standards maintenance process. The output of the OMG work is then handed back to HL7 for final ballot as a normative Standard.

20.1.2 Current HSSP component service status

The current status of these services is as follows:

- Entity Identification Service (EIS) – completed OMG Finalisation Task Force processing and due to be handed back to HL7 within 4 weeks for inclusion in the ballot documentation for a normative ballot at the HL7 May meeting. EIS incorporates person, provider and organisation identity. EIS represents the first output of the HSSP.
- Retrieve, Locate, Update Service (RLUS) – has been handed to the OMG Finalisation Task Force and is expected to be ready for HL7 final ballot at the September WGM
- Health Services Director Service (HSDDS) – Specification in HL7 to be completed for the May WGM for ballot as DSTU. Modelling is complete and associated documentation is in progress.
- Clinical Decision Support Service (CDSS) – completed HL7 DSTU ballot, OMG platform dependent specification to be completed by July 2009 with possible final HL7 Ballot at HL7 January 2010 WGM.

A session was spent discussing issues that have arisen with the OMG specification of the CDSS. In particular, how the data payload should be specified and the need for a registry of supported payload specifications. OMG has found a way to specify the payload in a technology agnostic manner so that HL7 Clinical Document Architecture (CDA), CCD (Clinical Care Document – a constrained version of CCA implementing the ASTM Clinical Care record – CCR), OpenEHR/CEN 13606 Archetypes/Templates, HL3 V3 and V2 messages can all be supported. It was agreed that a registry of supported payloads would be required and the possibility of using the existing OpenEHR clinical knowledge registry will be explored before commencing work on a specific new registry for these artifacts known collectively as Semantic Specifiers.

20.2 The Practical Guide for SOA in Healthcare – part I

This document was released in December and can be accessed at <http://hssp.wikispaces.com/practicalguide>. It documents the HSSP process and the Service Development Framework (SDF) used by HSSP. It is a remarkably accessible document. The second (and final part) of this document was reviewed at the WGM and is expected to be released in time for the May WGM. It will contain more detail about how a platform independent service can be developed into a particular service instance implementation

20.3 The Service-Aware Enterprise Architecture Framework (SAEAF)

At the Working Group meeting in May last year (Phoenix) to which there was only 1 formal Australian delegate, it was announced that HL7 had made the strategic decision to adopt a whole of Enterprise Service aware Architecture. External funding from the Rockefeller foundation was provided and monthly out of cycle meetings produced the initial draft Service Aware Enterprise Architecture Framework which was presented at the September meeting (Vancouver). This has since undergone further refinement via a series of Telephone Conferences and 3 out of cycle meetings in November 2008. Whilst this process has been led by the Architecture Review Board (ArB) established principally for this purpose, the SOA group has been intimately involved both through its representation on the ArB and via teleconferences and Working Group meetings. The outcome of this process has been the finalized SAEAF document available from the HL7 web site. This document is one to read and weep! It is the first complete framework that integrates message and electronic document paradigms under a Services Framework as well as the long worked on Dynamic behavioural model. It is highly technical and explaining both its contents and implications took considerable time at this WGM including an afternoon with all members of the Technical Steering Group.

The SAEAF process has led to widespread speculation about reorganization of the HL7 committees and Working Groups to better reflect the SAEAF structure. These rumours have included absorption of SOA into the ArB. However at the joint ArB/SOA meeting an agreed division of responsibilities in the form of a RACI chart was agreed and is available on the SOA wiki. Despite that it is probable that there will be some reorganization in future.

The ArB is currently wishing to undertake two alpha projects to test the completeness and validity of the SAEAF. It is likely one will involve messaging and a second either a service or a CDA project.

20.4 Relationship of HL7 and OMG

One of the concerns arising from the HL7 adoption of SAEAF, was that service development work be undertaken more in HL7 Committees and lead to a weakening of ties with OMG despite the fact that the HSSP process has been working well.

The CEO of OMG attended the HL7 meeting taking part in a number of SOA and ArB committees and attending the HL7 Board meeting on Wednesday evening. From these discussions the outcome is that ties with OMG will in fact be strengthened with increased OMG representation at HL7 and increased HL7 representation at OMG. A further 2 year bilateral agreement is to be signed to formalize and extend the current arrangements.

The Clinical Decision Support Service specification is being worked on at OMG but will not be complete until July/August 2009. The Record, Locate, Update Service (RLUS) is currently at the Finalisation Committee in OMG but will probably not go to normative ballot in HL7 until September 2009. Considerable time is being consumed in discussing the HL7 wide SAEAF process to move the organisation to a service oriented approach. The draft document presented at Vancouver has been released in its final form and its implications for the Working Groups structure and the standards development process are being considered and absorbed. Services for financial, terminology and other committees are under discussion.

The opportunity of the SAEAF and future impact on the HL7 work program, the HL7 SOA framework and future service specifications and related Open Health tools (OHT) architecture implementation is being reviewed for Australia's national program.

Implications for Australia

Careful consideration and response to the ballot of this document must be considered in Australia, from the national, state, healthcare and vendor community to ensure that the needs of this disparate community are met by the intended standard.

Wiki: <http://hssp.wikispaces.com/?responseToken=af7a313c427d50b1208d2a286e9fc357>

Has just released a first version of a Practical Guide to SOA in Healthcare
<http://hssp.wikispaces.com/PracticalGuide>.

A whole session was devoted to discussion of the format for development of a white paper on the relationship between IHE and HL7 SOA. A number of IHE leaders participated by teleconference. It is clear that there is some misunderstanding on both sides about the role and outputs of both organisations. The white paper should assist in remedying this by collaborative work.

Project leader: Alean Kimak akirnak@swpartners.com

Groups to whom this may be of interest: IHE Australia, HL7 Australia, NEHTA, State Health Departments, Software Vendors

Australian organisations from whom a topic specific representative would be appropriate: IHE Australia, HL7 Australia, Software Vendors, Government (as payors).

21 Security / Privacy / Access Control

21.1 Digital Signatures

J. Davis

The security working group are considering the production of a white paper covering digital signing for CDA until requested that it also cover messaging. Unfortunately the HL7 Message version being covered will only be HL7 V3, it appears that HL7 V2.x messages are not in scope for the security working group. It is not known whether the standard defined for V3 could then be applied to V2.

There is a need to establish if this is also going to cover HL7 V3 requirements and whether the same standard can then be applied to V2.x.

Assuming that the V3 defined standard is appropriate for V2 messages it does not look as though this standard will be defined and available in the short term.

The V3 standards once defined may not be appropriate for V2 messages.

Actions required:

1. Monitor any standards for digital signatures being defined or proposed for CDA and HL7 V3 messages to see if any of this information is applicable to V2 messages.
2. There needs to be consideration of how to uniformly apply digital signatures in V2 messages among the Australian community whilst keeping in mind how the Security Working Group are progressing with the digital signatures white paper.

Groups to whom this may be of interest: Messaging vendors, clinical application vendors, standards groups

21.2 Privacy Policies Control and Consent Directives

H. Grain

Community-Based Collaborative Care (CBCC) are addressing vocabulary requirements of HL7 models for electronic privacy policies and consent directives (e-policy and e-consent) – the Consent Directive Domain Analysis Model (DAM). Vocabulary harmonisation proposals are being prepared and will need to be carefully reviewed to ensure that they reflect Australian requirements.

Considerations

This work may prove useful but is currently being lead by US where the thinking is significantly less mature than in Australia. This is an area where our active participation can assist in educating and modifying our vendors to meet our requirements.

Actions required: Monitor standards produced for privacy policy and consent directives to ensure suitability for Australian requirements.

Groups to whom this may be of interest: NEHTA, State Health Departments, Health Consumers, Software Vendors, Healthcare Organisations

22 Structured Documents

V. McCauley, G. Grieve and P. MacIsaac

The Structured Documents committee is in charge of the HL7 Clinical Document Architecture (CDA). CDA has so far been through 2 release. Release one specified detailed document header information using the HL7 Reference Information Model (RIM) but the document body was mainly text. Version 2 provided the capability of expressing richly encoded clinical content in the body (including but limited to the clinical statement) and a process for deriving a human displayable document.

22.1 CDA Release 3

The committee is now forming the likely inclusions for CDA R3 with a view to an initial ballot at the May WGM. Requirements continue to be gathered for CDA Release 3 and proposals can be made at www.HL7.org/memonly/cdasub.cfm. CDA Release 3 (CDA R3) will be developed in parallel with CCD Release 2 which will be based on CDA R3. CDA R3 will incorporate the new datatypes and ITS, work lead by Grahame Grieve of Australia.

At this meeting it was decided to include the following in R3

- Release 2 of the HL7 V3 Datatypes – this is work that was commenced at Standards Australia IT14-9-2 with a special project grant from DoHA. It has since been completed and promoted by Grahame Grieve and accepted as a common set of datatypes at ISO, CEN and HL7. This is the “Philosophers stone” which is the foundation of harmonization at the root level between ISO, CEN/OpenEHR and HL7. It will enable inter-conversion between standards from each of these groups.

- Release 2 of the HL7 V3 runtime specification (ITS). This is based on the release 2 datatypes but in addition enables for the first time automatic complete generation of messages and CDA documents from HL7 models using the current HL7 tool set.
- Release 2 of the Clinical Care Document (CCD), the HL7 implementation of the ANSI Clinical Care Record (CCR) will be based on CDA R3
- There will be separate Universal (International) and USA Realm CCD specifications.
- Inclusion of the enhanced Clinical Statement
- Develop and include a repository of Templates used to constrain CDA such as those used to create CCD.

The Committee intends to take CDA R3 direct to a normative ballot without an initial DSTU. The Structured Documents wiki has been set up to solicit input for other possible inclusions in R3.

22.2 Terminology in CDA

A session was devoted to discussing the Terminology to be used in future development of CDA. There were multiple champions of LOINC and SNOMED present at a standing room only event chaired by the HL7 incoming Board Chair, Bob Dolin. In addition there were members from many of the international affiliates

Outcomes:

- LOINC is the only terminology with adequate coverage of the pathology laboratory domain. There is no enthusiasm for extending SNOMED into this area and no country at the meeting (including USA, Canada, UK and many Europeans) is considering anything but LOINC
- Where there is a code in only clinical LOINC or only in SNOMED then it should be used
- Where there are equivalent codes in LOINC and SNOMED then both will be published in CDA specifications and both should where possible be used in data exchanges.

Stan Huff suggested that it was possible that an agreement would be signed between IHTSDO and the Regenstrief Institute (home of LOINC) in April 2009. However, even if that occurred, it would take a minimum of 2 years to complete a mapping of equivalencies between LOINC and SNOMED. In a personal communication after the meeting, he expressed surprise that NeHTA were considering developing laboratory reporting codes in SNOMED and suggested that doing so would actually slow the completion of the SNOMED/LOINC mapping process.

22.3 Carriage of CDA in messages

A discussion took place as to how CDA should be moved between enterprises. The current CDA specification describes a method for transmission using an HL7 V2 message and placing the CDA as a MIME type within the message OBX segment. Implementation experience with this approach has shown it to work but difficulties are encountered if images are included in the CDA (the OBX segment has a maximum size of 64K bytes) and where cross enterprise exchange is occurring. The Integrating the Health Enterprise (IHE) Cross Enterprise Document Exchange (XDS) profile is the recommended approach for CDA document containing images or for inter-enterprise exchange
Show me your CDA and online CDA products and services

Two new initiatives have been launched. "Show me your CDA" is an area where implementers can see other implementations and exchange ideas.

CDA – Online tools. New registry of CDA products and services guide (Martin Entwistle leads this for HL7 marketing group). Also "show me your CDA" www.showmeyourcda.net
An online registry of CDA products and services is in late development and due for deployment in a few weeks – see <https://www.phddotnet.com/cdareport/Home.aspx>

A key decision to move to develop CDA release 3 as a precursor to updating the Continuity of Care Document type (CCD) has been made. The CCD is the common template for development of many types of clinical documents relating to patient health data exchange. The SD working group has been collecting new user requirements-not many as yet.

Unfortunately Australia may not be well placed to contribute to this work as little work on CDA implementation has occurred here (although HL7 has been making an effort on education for several years). Some CDA work has been occurring in the background at NEHTA in relation to the discharge summary, however this has not yet been made available for public discussion. We have however done a lot of work on a HL7 v2 referral message designed for similar use cases as the CCD and this could be the basis for analysis of requirements and input. Also could be an opening for harmonisation with OpenEHR templates and CEN record extracts.

Informal discussions were held as to whether IHE should submit CDA document instance types to HL7 for formal input and perhaps balloting. IHE has developed a substantial set of CDA documents for a range of roles such as personal health record summary, hospital discharge summary and so on. This needs to be followed up with IHE international.

Groups to whom this may be of interest: IT14-6, NEHTA and MSIA

23 V2.x and V3 Patient Administration

K. Veil

V2.7 is ready for publication as soon as all negative ballots are resolved; reports from the chapter editors present at the V2.x Publishing Committee meeting were encouraging, but the TSC/CTO will make the final decision. The V2.x Publishing Committee established a tentative publication timetable that would see V2.7 ready for formal release in May/June 2009

The next V3 release will be the "2009 Normative Edition", which is also expected to be published 2nd Quarter 2009.

Actions required:

1. Advise Australian e-health community of standards to be released. (HL7 Australia)
2. Consider proposal to IT-014-06 for localisation of V2.7.

24 Safety and Human Factors

P. MacIsaac

Firstly the NHS has recognised that formal approaches to development of safe and usable systems are needed along with processes to support their safe deployment and rapid recognition and rectification of problems. A clinical IT safety unit operates under direction of Dr. Maureen Baker. The objective of these workshops are to pave the way for formal training of HL7 leaders (co-chairs and above) to support awareness of safety issues in the standards development process and providing skills and tools to support this. Detailed workshop notes have been provided (available on request) and there is the opportunity to collaborate with the NHS on reusing these materials.

The second stream of this work is to identify how IT can impact on improving patient outcomes (arguably the major driver for IT system deployment). The significance of the NHS work is to recognise the potential for quality and safety management to be closely aligned with IT deployment in the organisational structures of healthcare delivery organisations.

While there is growing interest in human factors in health IT in Australia, there is much to learn from this NHS work.

Groups to whom this may be of interest: MSIA, Standards Australia, jurisdictions and healthcare provider organisations, DOHA and State Jurisdictions

25 Vocabulary

H, Grain and P. Maclsaac

The Core Principles Document is being produced to inform those producing standards of the correct process and terms used in HL7 standards making. This document is being refined to support facilitators and technical committees to consistently apply vocabulary to message and model specifications. It was agreed that an additional piece of work is required to provide guidance and consistent approaches for implementers and affiliates to support implementation conformance.

Constraint Vocabulary is being developed and it was agreed that a mechanism to allow constraint of value sets and their bindings is required.

Compositional Grammar: IHTSDO is consulting HL7 about the grammar of terminology messages and considerable effort has been put into this at this meeting.

Code Conformance: rules have been established to support identification of maximum data sets and specification of minimum sets for a purpose that clarify whether a receiving system will accept, ignore or reject content.

SNOMED-CT/LOINC: when a new concept is identified in LOINC, IHTSDO will be informed and updated SNOMED-CT to ensure that concepts (at least those developed in the future) will be able to pass through mapping without degradation and messaging processes can be consistent. It is recognised that it will take some time to affect changes for existing concepts.

Code System vs Identifiers: this discussion is still in progress but there are issues around the process of management for valuesets that can be both codesystems and identifiers.

Much of this groups work relates to supporting the internal vocabulary processes of HL7, however discussion of key topics often emerges in the context of binding vocabularies to HL7 messages and documents and the discussion of good terminology practice. Two important issues arose;

1. discussion of LOINC and SNOMED and relative roles currently of these in particular use cases such as pathology.
2. how to use SNOMED in HL7 version 3 (the Terminfo paper). This has been at DSTU stage and will now go to ballot in the next round.
3. The use of post-coordination and compositional grammar for SNOMED-CT. A new version of the paper on this has been released by IHTSDO. This is key for use of SNOMED in V3 structures as much of the complexity will be handled using the CD data type and SNOMED post coordination grammar. Even if not particularly focused on HL7 v3 this work is important for terminology implementation.

Considerations:

The issues raised at this meeting represent issues of implementation and governance of terminologies in clinical systems and in administrative systems. Many of these issues are not well thought through in Australia, or at least they are not clearly represented in our e-health initiatives as issues to be resolved.

Action: Consider how these issues impact the implementation of clinical terminology in our e-health systems and the modifications needed in vendor products to support them.

Groups to whom this may be of interest. NEHTA, Health Department Implementers, Health Care Organisations, MSIA and terminology implementers

25.1 Terminfo

Terminfo documentation provides implementation and messaging guidance for V3 terminology support. There has been little contribution of late, and this was of concern to the community at the meeting – however the intent to ballot the document as Normative was strongly supported as a mechanism to progress work that

was seen as both useful in and of itself but also highly instructive. The intent to consider how these issues can be addressed in V2 was still an issue but one to be considered as a result of ballot comments.

Action: Australian needs to consider this document at ballot and to represent any concerns or request regarding V2 requirements.

26 SDO Harmonisation

R. Bareil, H. Grain and K. Veil

The Joint Working group on SDO Harmonisation met on Sunday 11 January 2009. There were 60 attendees from Australia, Brazil, Canada, Finland, France, Germany, Greece, India, Japan, Korea, Sweden, Switzerland, The Netherlands, United Kingdom, United States, EU, CEN TC251, CDISC, HL7, ICH, IHTSDO and ISO TC 215. The Joint Initiative Council, which represents the leadership of the involved SDOs also met during the meeting.

There continued to be major input and collaboration from the significant national programs such as the UK Connecting for Health (standards development, tooling, safety and risk management), Canada Health Infoway (standards development), Netherlands NICTIZ (standards development). While taking some new forms (eg tooling and safety) this participation has been a very consistent feature at HL7 over many years. This involvement is driven by self interest as these countries are actually trying to drive e-health expansion and implement common systems and gain as well as contribute from involvement.

26.1 Processes for harmonisation

Ballot cycle coordination –A process to harmonize the balloting cycles across the 5 Standards development organizations is required and will be considered.

Processes for management of the harmonised glossary (discussed below) need to be established.

The council is undertaking a review and update of JIC project proposal template. The format for JIC standards was discussed and it was agreed that the JIC needs to find a common ground that meets the needs of all SDO's.

Discussion on JIC project proposal for Identification of Medicinal Products (IDMP) – It was noted that HL7 have done a lot of work in this area and would like to use their work as a basis rather than start from scratch. It was agreed that it is not possible to go forward with a JIC Agreement if there is not consensus on the model.

A new work item *IHT/SDO/ISO Medical device term coordination* was proposed by Todd Cooper at the Joint Working Group (JWG) on SDO Harmonisation meeting (11 January 2009). JWG Co Chair, Melvin Reynolds reported on the new work item at the Joint Initiative Council Meeting (14 January 2009). The HL7 Anaesthesia working group is proposing to host a meeting on this work item at the next IHTSDO meeting (2-5Apr09). They will be inviting Continua and other relevant stakeholders to the meeting.

26.2 Work program activities

A coordinated open web based Standards Document Register and Health Informatics Glossary is in final testing and documentation both on management processes and a user guide is being prepared ready for each contributing organisation to load their glossary information. It is intended that a 'clean up process will then be undertaken'. Canada is providing some limited financial support to this activity which is being lead by Canada (for the document register) and Australia (for the glossary).

13606 and HL7 V3 implementation guide project – This project was approved by Joint Initiative Council and is awaiting funding or volunteer availability and confirmation of a lead (ISO/HL7/CEN)

Data Types – There was discussion on the publication process and a possible move to publishing as HTML as this publication will need to be renewed every year.

Individual Case Safety Report is on schedule to be published

IDMP – Discussed whether this should be a Joint work item and agreed to continue the discussion on the formal approval of Identification of Medicinal Products (IDMP) as a joint work item at a later date.

The JWG are awaiting acceptance of the (ISO TC215 WG1) votes for the Clinical Data Modeling work item at the Edinburgh ISO/CEN meeting.

IHT/SDO/ISO Medical device term coordination was proposed as a new work item at the Joint Working Group (JWG) on SDO Harmonisation meeting (11 January 2009) and will be taken forward to the JIC for approval on the work program.

Actions required:

1. The ISO TC 215 WG8 Secretariat, Renati Barel, Australia will explore possibilities for a working group website for TC215 WG8 with Standards Australia. Options in order of preference include:
 - a) Website hosted by Standards Australia. Resource implications of this option require further discussion.
 - b) Website hosted by Brazil (Beatriz has offered to assist if we cannot provide a site)
 - c) Sharepoint site (as used by TC 215)

Groups to whom this may be of interest: IT-014-09 Electronic Health Records – mirror group to ISO TC 215 WG8

2. The JWG Secretariat will ensure that the human tree guideline is posted on website and we invite suggestions for additions to the diagram
3. All members will send inconsistencies, gaps or overlaps in standards to the JWG Secretariat
4. The JWG Secretariat will submit the Entity Name Harmonization project (using the Joint initiative task group template) to the JIC for approval and inclusion on the joint work program.
5. The JWG secretariat will liaise with the JIC Secretariat to add the IHT/SDO/ISO Medical device term coordination work item to the JIC agenda for consideration.