Report to HL7 Australia:

HL7 Working Group Meeting —Cleveland USA
27th April to 2nd May 2003.

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Background:

HL7 Australia, with funding from the Commonwealth, sent a delegation to attend this meeting as part of an ongoing commitment to ensure Australia's needs are met in the development, understanding, and application of HL7 and related standards.

The members of this delegation each had specific objectives related to their represented domains.

I was nominated to attend by IT 14/6/6 whose objectives were agreed by the committee. These centred on:

- Clinical Messaging –particularly Discharge and Referral
- Clinical Decision Support.

Where possible the delegates also supported other members and the general objectives of the group.

My work involved attending Technical Committee (TC), and Special Interest Group (SIG) meetings between 8.30 am and 5pm.
Two additional evening meetings took place to further the Australian work on Discharge Referral.
These took place between Sunday 27th April and Thursday 1st May, 2003.
I also attended a workshop on the HL7 version 3 Tools from 3pm to 10 pm on Sunday 27th April.

HL7 work takes place at Technical Committees (TCs) and Special Interest Groups (SIGs) which the TCs sponsor. These groups develop the standards for their domains.

The groups covering my areas of work, and which I attended comprised the following TCs and SIGs:

- Patient Care (TC),
- Orders and Observations (TC, in joint session with Patient Care).
- Structured Documents (TC),
- Clinical Decision Support(TC),
- Arden Syntax (SIG),
- Clinical Guidelines (SIG),
- Community Based Health (SIG, in joint sessions with Patient Care), and
- Electronic Health Records (SIG, in joint sessions with Clinical Decision Support).

The session times, detailed agendas and minutes of these meetings are available at the particular TC / SIG sections on the HL7 website www.hl7.org.

Main Points from the meetings in relation to IT14 /6/6 objectives:

Referral / Shared Care Communications:

Version 2 Referral message:

This was further refined and considered finalised to Australian requirements at a meeting of the Australian and New Zealand team on the Thursday evening. The HL7 international interest in this is mainly confined to the North American HMO representatives on the Community Based Health SIG, however other groups are using a very limited form of it. Referral communication needs the capacity to include extracts and additional summaries from any part of the health record and thus stretches HL7 Version 2 to its limits; it is however required by Australian stakeholders who are implementing applications requiring this depth. It is also being used, with slight modification, in our Health Connect trials. The problems are in representing complex, interrelated clinical concepts in the contexts of history, plans, goals, pathways –all in the one message. These contexts cannot be inferred from the message trigger as they can in simple messages.

At the out-of-session meeting we finalised recently detected problems of this contextual and historical representation in the message, most notably with procedure information. After the meeting, it was considered ready

for final edit and Australian Committee ballot. This will be followed by an Australian proposal to HL7 US for extensions in version 2.6.

Version 3 Referral Message:

We were able to secure two quarters (=1/2 day) at the Patient Care TC for work on Referral.

Prior to this meeting we have been leading discussion on the HL7 listserver around definition and mood codes for Referral. Representing this accurately is a prerequisite for precise modelling as required by V3. Since first presenting our Referral requirements at Patient Care and Orders and Observations TCs well over a year ago, we have been arguing that HL7's recommended mood codes, variably of 'Order' or 'Intent', for Referral are inappropriate. Referral is a multi-faceted event taking in notions of intended care transfer, introduction, notification and request. We currently have a working definition of this as 'Request for Care'.

The concept and terminology of 'Order' is entrenched at HL7. At the Patient Care TC we developed use cases around Orders and Requests. We then took this work to the Orders and Observations TC arguing for either a separate mood code for Request or changing Order to Request. The latter was agreed by the ***OO*** TC. This was later thought to require extensive editing of the specification and maybe even a re-ballot of the RIM. I expect difficulties from some sections of the HL7 community over this, but it is fundamental to our notion of Referral, Shared and Co-ordinated Care.
This does however stop short of a separate mood code for Referral.

Heath Frankel of IT 14/6/6 presented the UML domain model on which we have been working in accordance with the HDF methodology, and which we had further refined at the special meeting on the preceding Monday night. The TC then went on to develop a storyboard for Referral and to develop an Activity Diagram to represent the responsibilities, key events, and triggers, as required by the HDF. The RMIM for Referral which had also been refined on the Monday night was also worked though.

It was agreed that we would develop this work over the following weeks for inclusion in the V3 ballot. This was to be via the HL7 listserver, and at IT 14/6/6.

Our IT 14/6/6 V3 Referral Messaging project has been joined by the UK, Netherlands and Finland.

Version 3 CDA Referral Document

IT 14/6/6 has also been working on a Clinical Document Architecture (CDA) representation of Referral in cooperation with the Structured Documents TC. At this TC we worked through our change requests to the CDA specification. The TC is committed to taking a CDA Referral requirements through to the coming ballot. Most notably we require changes to the header specification and reference to the intended transport mechanism in the body. These are substantial changes to the specification and the TC planned to work with us on the proposals over the following weeks.

Our IT 14/6/6 CDA Referral Document project has now been joined by the UK and Finland.

It is IT 14/6/6's intention to employ a common development pathway for developing Referral under V3 messaging and CDA. The Structured Documents TC is pessimistic about the success of this approach citing application roles, and V3 message wrapper requirements as breaking this. We consider that the clinical information content and its formal representation in terms of the RMIM and vocabularies to be the major part of the work and will be developed prior to wrapping as a V3 message payload or organising as a CDA document, --itself wrapable as a message payload or otherwise communicated.

Clinical Decision Support

The Clinical Decision Support TC oversees the Clinical Guidelines, Arden Syntax, and EHR SIGs

Arden Syntax is a robust standard of limited but incompletely explored applicability for our requirements. Indeed it is the only significant Clinical Decision support standard in existence. For a long time we have been advocating a requirements-driven approach to the next generation of HL7 standards particularly in the area of guideline representation where there have been alternative approaches from the US GEM and the UK Clinical Practice Guidelines Architecture (CPGA) specifications. We have been advocating that the HDF methodology be adopted for these areas at HL7 and we have requested the HDF team expedite this. We

have now been successful, and adoption of this methodology commenced at the meeting. We will undertake to be part of a requirements clarification group looking at Guidelines.

The work to develop Arden as a fully object oriented specification, obeying RIM semantics, continued at the SIG. It remains unclear as to how the RIM will need to be extended to enable this.

HL7 Message Development Tooling

I attended this Sunday evening workshop at which we worked through the tools and artefact repositories developed by HL7 to computer assist the definition of Version 3 messages. This covered the Rose Tree tool together with programs to drive the Visio drawing program, and integrate with XML Spy and the Access database of HL7 modelling, Vocabulary and design artefacts. The end results of these applications are Visio diagrams of RMIMS and XML schema message specifications.

This was a very valuable workshop which will greatly aid IT 14/6/6 's development of Referral messages and CDA documents.

Conclusion:

Our work in Clinical Messaging and Decision Support is now bringing HL7 to a position of meeting our requirements for patient care –based standards. The work areas at HL7 address those of our standards requirements, but developing the solutions requires ongoing commitment from both domain and HL7 experts.

The outstanding, recently recognised Version 2 problems for the Referral message were considered resolved in readiness for committee ballot at IT 14/6/6. We can now develop formal extension requests for Version 2.6 based on this.

To take communications for Shared Care and its component, Referral to its full capability and maximum reliability there is no doubt that we need to have Version 3 and / or CDA representations. Our work at IT 14/6/6 has laid the groundwork for both of these. We have done substantial further development at the meeting, resolved existing problems and we have a clear path forward for IT 14/6/6 and for our international collaborators. Our lead in this area has been recognised by UK, Netherlands, and Finland joining our effort, and by both the Patient Care

and Structured Documents TCs pushing to have Referral requirements included in the coming Version 3 ballot.

Our work at past Clinical Decision Support TC and Guidelines SIG meetings has resulted in an acceptable methodology being initiated. In adopting the HDF and moving forward on requirements development, Clinical Decision Support and Guidelines are in a position to develop in a way which will support our needs. Our involvement in this will safeguard its direction.

The Version 3 RIM is now a balloted standard, and the development tools are at a stage of refinement and member understanding where they will be useful to our work at IT 14/6/6.

Recommendations:

1. We should prepare change requests for HL7 Version 2.6 to incorporate our extensions to the Referral message. Most notably these cover the Provider, Problem, Goal, Pathway segments and the approach to contextual representation. This should be done through IT 14/6/6 and the Community Based Health SIG at HL7 which has agreed to work with us on this.

2. IT 14/6/6 should continue development of the Version 3 message and CDA implementation of Discharge and General Referral and Shared Care. We should work to develop the Referral requirements for inclusion in the coming V3 ballot in both the message and CDA forms as requested and supported by the Patient Care and Structured Documents TCs.

3. We should use the development tools at our meetings in order to collectively improve capability and increase our effectiveness in specification development.

4. Heath Frankel should be supported for ongoing attendance at RIM Harmonisation meetings, noting the benefit to HL7 Australia, and via his Patient Care Facilitator role, to IT 14/6/6 projects in particular.

5. Australian Decision Support stakeholders should take advantage of the opportunity to direct HL7's capability via our taking part in the HDF and requirements work.

6. HL7 Australia should continue to ensure the dissemination of knowledge gained at these meetings through presentations and workshops at its summit and other meetings. Further input from our stakeholders should be sought at the Australian meetings, and new attendees for the international sessions sought.

7. It is important that we now avail of the opportunities which we have been creating at HL7 in its new patient care based areas: — Version 3 clinical communications, Clinical Decision Support and Electronic Patient Records.

David Rowed.