

Report on HL7 Working Meeting, April 27 – May 2, 2003 Cleveland, Ohio, USA: Clinical Guidelines and Decision Support

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My particular brief in attending the Cleveland meeting was to report on the Clinical Decision Support Technical Committee and Clinical Guidelines SIG. The former met on Monday for a tutorial on use cases and RIM modelling and all Wednesday as a committee. The clinical guidelines SIG met all day Thursday.

General impression

This was my first encounter of a HL7 working meeting and, like other first-timers; I found much of the discussion arcane. Extracting past presentations and documents from the HL7 and related web sites helped the learning process, as did attending tutorials and asking questions. However, there is a great need for one whole first (or last) day overview of the work going on in each technical committee and SIG. While a separate two day HL7 educational meeting is proposed for Chicago in June 2003, attending additional meetings has major cost considerations for international members and it would be preferable to attach an educational overview to the working meetings. If there are major misconceptions in what follows it is likely to be because of my ignorance or misunderstanding. I would welcome any corrections that people think are required.

Clinical Guidelines and Decision Support Technical Committee and SIG

It quickly became apparent that these groups contained several sub-groups with alternative approaches to key issues that have yet to be reconciled. For example, ARDEN syntax is a procedural language used to write reusable medical logic modules. The main application is to trigger alerts based on information extracted from patient records (e.g. warn about a high serum potassium). It was said to have a development path that will make it object orientated and ultimately allow it to interact with a “virtual” medical record (VMR) rather than having to write discrete code to extract the necessary data from individual data bases (as is presently the case). However, GELLO (more recently developed and still being defined) is already an object orientated language which works with a VMR model and would appear to have a wider scope than ARDEN syntax. There was a particularly arcane session on other candidate languages for decision support such as OCL, OWL, ASN:1, etc. The only conclusion that I could draw about such matters is that there is, as yet, no conclusion to be drawn!

There was similar divergence with respect to guideline representation languages. The Yale group¹ were still developing GEM and have produced an elaborate XML Schema of their efforts, along with tools such as GEM CUTTER to assist the transformation of GEM encoded guidelines into executable forms. The UK SCHIN group² (and others) argued that GEM was unable to cope with the realities of clinical guidelines and, as a consequence, they were developing their own architecture. GLIF³ was not mentioned at this meeting and its current status appeared uncertain. Another US approach presented at the meeting was the SAGE⁴ project (working on four guidelines). A further group, IMKI⁵, was also reported to be developing their own tools for development, dissemination and implementation of decision support rules. All the above groups appeared to be focusing on complex algorithmic decision

¹ <http://ycmi.med.yale.edu/GEM/>

² <http://www.schin.ncl.ac.uk/cpga/>

³ <http://www.glif.org/>

⁴ <http://www.sageproject.net/guidelines/guidelines.htm>

⁵ <http://www.imki.org/>

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support interacting with sophisticated hospital information systems, not yet a common environment in Australia.

There was a group at Intermountain Health Care (Roberto Rocha et al.) who were working on a simpler application they called an “Infobutton”. Their concept was a common API that would serve as an interface between a requesting clinical application and a knowledge repository in order to pass patient and query specific information in one direction and appropriate knowledge fragments back (their presentation is attached in this zip package).

I supported the concept of developing standard links to and from an electronic guideline resource (“active guidelines” in Therapeutic Guidelines Ltd. Terminology). The aim of the link in would be to “open the book at the right page” and possibly fine-tune guideline recommendation by passing patient &/or query specific parameters (e.g. age, weight, sex, allergy status, etc.). The role of a link out would be to populate a prescription or pathology order form with guideline recommendations (if so desired). I agreed to participate in a small group to further explore these concepts.

There was discussion about alternative strategies required to support doctors who did not have time to look up guidelines during brief consultations. There was general agreement that tracking a doctors actions (by accessing guidelines in the background) and presenting a self-audit report of discrepancies from recommended practice (at a convenient time) was a useful approach. The aim was both to encourage the physician to reflect and possibly improve his or her practice and also provide feed back to the guideline developers in order to improve subsequent versions of the guidelines. Samson Tu (Stanford) talked about a controlled clinical trail of such methodology at Veterans Administration Hospitals (targeting hypertension). He is going to send me some material about this.

All the above highlighted the need to focus the work of the Clinical Decision Support Technical Committee and Clinical Guidelines SIG on practical (and common) use cases as well as high powered hospital information systems. I circulated some information from WHO about a new Guidelines International Network (GIN) and argued that simple decision support implementations should be on the agenda because, while the bulk of the world did not yet have multi-million dollar hospital information systems, they were getting PCs, open source software and basic electronic guidelines. Ian Purves (SCHIN) also had some involvement with GIN and supported this concept.

The group received a tutorial from Charlie Mead on the HL7 Health Development Framework (HDF) methodology (story boards, static and active activity diagrams, and term glossaries), which could help resolve the impasse between the competing approaches described above. It would also provide a mechanism for Australasian requirements to be accommodated. Both David Rowed and I agreed to participate in these developments.

I exchanging information (attached) with the following participants and, hopefully, I’ll receive more information in return.

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In addition to the above I also attended the following meetings and tutorials:

- International Affiliates meeting
- Standards in clinical decision support Arden Syntax tutorial
- Vocabulary terminology tutorial
- Clinical document architecture (CDA) tutorial.

Acknowledgments

Finally, I would like to express my appreciation to HL7 Australia and Therapeutic Guidelines Limited for co-financing my participation in this meeting and also the Australian Health Insurance Commission (HIC) for allowing me a break from my Pharmaceutical Policy Consultancy in Croatia.

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