Health Informatics Standards Review for the M Community—1998 Update

by Arden W. Forrey

The November/December 1995 issue of *M Computing* contained a review of the Health Informatics Standards. This review will only update those points that have changed, since much of that information remains valid. The organization of that review separately developed the Content Standards and the Implementation Standards. This perspective remains particularly valid today, as will be noted below, but still remains difficult for many to embrace because of historical perspectives. It would be significant for the M community to take both the U.S. National and International standards and appropriately apply them to the M environment and demonstrate resulting superior quality software products that address users' documented requirements from the Content Standards. The benefit would be felt not only in the suppliers' pocketbooks but also in the users' testimonials. This contention can only be demonstrated by execution. The choice is the M Community's.

Content Standards

With respect to terminology, the initial effort on ICD-10 Procedure Coding System, noted in 1995, has been completed and the review of the pilot usage test has received high marks. Concurrently, the LOINC (Logical Observation Identifiers Names and Codes) terminology for "Laboratory" observations is now extended to "Logical" and it embraces clinical (particularly physiologic) observation terms. Moreover, the corresponding ICD-10 PCS (International Classification of Diseases Rev 10 Procedure Coding System) laboratory segment terms are based upon LOINC terms and can be cross mapped. Furthermore, the coming SNOMED (Systematized Nomenclature of Medicine) revision will also map LOINC terms into the P3 (Procedure) section to incorporate them so that there is now a good chance of convergence of these vocabularies. Thus, any of the three coding schemes should have a valid surrogate code for the same term (concept). Vendors or users can look forward to easy access to this vocabulary as a component of their patient care information environment.

The terminologies supporting data elements defined in the ASTM (American Society for Testing and Materials) E-1384 and E-1715 standards have now been extended within E-1633 in a fashion compatible with the corresponding "Master Tables" in HL7 v2.3, and active work with HL7 persists. Corresponding work with X12N with respect to PL 104-191 of 1996 Health Insurance Portability and Administrative Simplification Act (HIPAA) is also under way. But following the completion of administrative transaction standards, the effort shifts to the computer-based patient record which, in the Act, is the eventual target and the ultimate challenge. The ANSI HISB has an emphasis on Content Standards in Health Informatics and has been active in forming a new ISO Technical Committee (TC-215) on this subject. The ISO stipulation in its formation was that the implementation aspects be achieved via JTC1, and this objective will be met when the full TC first meets in late August 1998. The US TAG (Technical Advisory Group) has been formed and both the Secretariat for the TC and the US TAG Administrator was elected to be ASTM, which currently hosts the Technical Committee E-31, also on Health Informatics and a member of the ANSI HISB. A number of new Subcommittees of this body have recently been formed as noted in Fig. 1. These complement evolving clinical messaging capabilities in the Health Level Seven (HL7) organizational structure, shown in Fig. 2, which is coordinating with the Object Management Group component CORBAMed.

Implementation Standards

The work of JTC1/SC7 noted in the last review has now proceeded to include IS 12207 Software Life Cycle Processes and 15288 System Life Cycle Processes to coordinate fully the development of systems because, in all areas of information technology, the software and the hardware aspects have proceeded independently to the detriment of integrated systems. This conceptual structure to system evolution will be of major relevance

E-31.01 Medical Concept Representation
E-31.10 Pharmaco-Informatics
E-31.11 Computer-based Patient Record Portability
E-31.13 Clinical Laboratory Information Management Systems
E-31.14 Clinical Laboratory Instrument-Computer Interfacing
E-31.16 Electrophysiologic Data Transfer
E-31.17 Privacy/Confidentiality/Security
E-31.19 Structure and Content of the Computer-based Patient Record
E-31.20 Authentication
E-31.22 Medical Transcription
E-31.23 Modelling in Healthcare
E-31.24 Computer-based Patient Record Functionality

Fig. 1 ASTM Technical Subcommittees

SPECIAL INTEREST GROUPS:
Accountability
Automated Data
Claims Attachments
Decision Support (includes the original ASTM E-31.15 Subcommittee)
Home Health/Long Term Care
Image Management
Master Patient Index
Object Broker
Secure Transmissions
SGML/XML
Vocabulary

COMMITTEES:
Control/Query
Education
Implementation
Inter-Enterprise
Medical Records
Modelling and Methods
Order/Observation
Patient Administration/Financial Management

Fig. 2 HL7 Organizational Components

in healthcare information systems where an Enterprise approach must be taken, if the requirements are to be met by quality interoperable systems conforming to ISO 9000 concepts. The IEEE-CS (Institute of Electrical and Electronic Engineers - Computer Society) has produced a U.S. version of IS 12207 and a number of implementation guides. These should be carefully consulted by the M community. The MDC is also being asked to look at the way to formally represent how M systems conform to the Life Cycle approaches because conformance to these common conventions will be a benefit in the marketplace. M

Arden Forrey is a faculty research associate in the Dept. of Restorative Dentistry, School of Dentistry, University of Washington and has been that institution's representative to the MDC in past years. He has also been active in Health Informatics Standards within ASTM and represents the American Association for Clinical Chemistry on the ANSI Health Informatics Standards Board. He can be reached at 206-616-1875.
