The good, the not so good, and lessons learned.

HL7 – 25th Anniversary
Past, Present and Future

W. Ed Hammond, Ph.D., FHL7, FACMI, FAIMBE, FIMIA
Before HL7 ...

• 1983 – Discussions within American Association for Medical Systems Informatics (AAMSI) about standards
• SCAMC panel – moderated by Clem McDonald
• STATLAN – Don Simborg (Simborg Systems) and Tom Pirelli (Enterprise Systems) [early 1980s]
The creation …

• March 29, 30, 31 at Penn Towers Hotel, sponsored by the Hospital of the University of Pennsylvania
• Seventy-five people on attendance list; host was Sam Shultz
• Problem to be solved: interfacing departmental systems with components of a hospital information systems to create a single integrated system
• Goal: establish a de facto standard that was easy to implement and could be used immediately
  – Version 1 in 6 months; evaluate for 6 months [v1 Oct ‘87]
  – Demonstrate in 2nd year
Key persons at beginning

- Don Simborg – stayed in background
- Wes Rishel – writer and architect
- Sam Shultz – leader, visionary, driver
- First WG included Dave Carson, Ken Clarke, Richard Cline, Gary Ford, Jim Gabler, Michael Glickman, Jay Gore, Ed Hammond, David Kingdom, William Lachenauer, John Quinn, Wes Rishel, Sam Shultz, David Snyder, and Chris White
- Executive Committee members 1st 5 years included Dave Carlson, John Quinn, Jeff Gautney Mike Glickman, Ed Hammond, Sam Shultz, Frank Cavanaugh, Sue Campbell, Jeff Spears, Scott West, Phillip Bartleson, David Kates, Tom Pirelli, Philip Caillouet, Wes Rishel, Landen Bain
The early years …

- Initially, our biggest problem was explaining to people what HL7 stood for
- Almost immediately, HL7 drew barbs and praises from the press.
  - Simborg wrote letter to editors of Computers in Healthcare challenging editorial about HL7
  - Hammond wrote letter to National Report on Computers & Health
  - Bill Childs Editor/Publisher U.S. Healthcare strong supporter
- Mixed response from vendor community
- Governed by Executive Committee (7-10 persons)
Key roles …

- Sam Shultz and Mike Glickman major role in survival by doing marketing and recruiting membership
- John Quinn and Wes Rishel provided technical leadership
- Phil Caillouet wrote 1st Bylaws
- Early work groups meetings had attendance of 10-15 people
- Big debate was tags vs. positional-defined data elements with hierarchical delimiters as separators.
Keys to success ...

- Early meetings of HL7 were sponsored by organizations; everybody paid their own expenses. There was no budget until 1991. Sue Campbell was 1st Treasurer.
- Revenue for 1991 was $149,349.
- There were no official minutes and no formal membership.
- On September 19, 1991, HL7 signed an agreement with CHIM (Rich Correll) to take over administrative and management support for HL7. Mark McDougall was named the first (and only) Executive Director of HL7.
The Demonstrations

• Marketing was key. Vendor support was critical as were hospitals

• Feb ‘89 – 1st demo at HIMSS Anaheim
• Jul ‘89 – 2nd demo at AHA Chicago
• Feb ‘90 – 3rd demo at HIMSS New Orleans
What I like about SDOS is …

- ASTM and HL7 were friends and worked together
- ASC X12 was the challenger “We are ANSI”.
- IEEE MEDIX provided an academic approach compared to the practical approach of HL7. About half of the participants were members of both groups
- ACR – NEMA did imaging and worked together with HL7
- Created organizations to harmonize standards
  - HISCC (ACR-NEMA, ASTM, HL7, IEEE MEDIX, X12)
  - HISPP (ANSI) – lead by Clem McDonald
  - HISB (ANSI) – Lead by Peter Waegemann (ADA, ASTM, CAP, HIBCC, HL7, IEEE, NCPDP, NCCLS, UCC, X12)
  - HITSP
  - HITSC
- Excellent relationship with CEN; shared ideas
But some things did work …

• Georges De Moor shared early modeling work done in CEN with HL7
• Joint Working Group for a Common Data Model lead by Woody Beeler – IEEE. HL7 was probably largest participant. Woody subsequently joined HL7, served as chair, and continues to provide strong leadership for v3 and other HL7 activities. [Time frame 1993-1994.]
• v3 1st mentioned in 1991 by Peter Spitzer, Chris White
• Rishel appoint head of v3 committee to define policy and approach to v3.
Laying the plans for the future

• HL7 Executive Retreat held in Chicago, Il on Sept 7-8, 1990/
• Seven members of executive committee in attendance
• Categories of future directions included Mission (11 items), Consumers (2 items), Process (25 items), Services (7 items), and Positioning (9 items).
• Vote was favor/oppose/abstain
Mission 1/2

- Support
  - Open systems
  - Become self-sufficient financially, administratively, professionally
  - Create 501c3 to receive grants, other funding
  - Promote increased rate of implementation (6/0/1)
  - Recognizes that change in technologies and HL7 committed to adopting to those changes (6/0/1)
  - Become permanent interim standard (5/0/1)
  - Become source for professional education (5/2)
Mission 2/2

- Oppose
  - Expand from exclusive development of health transaction standards into healthcare database standards (2/4/1)
  - Become a clearinghouse for HIT standards (2/5/0)
  - Become a professional society (1/4/2)
  - Become a library of HIT standards (1/5/1)
Consumers

• Support
  – Allow purchase of standard by non-members but should include access to standards as part of membership fee
  – Recognize information services vendor as primary consumer (6/1/0)
Process (1/4)

• Support
  – Maintain, expand and adapt existing standard.
  – Create policy for evolution of successive versions allowing backwards compatibility where economically reasonable
  – Become more prescriptive (given industry clout)
  – Encourage increased functional rigor – more clearly defined content
  – Focus on usability and understandability by application programmers
  – Strive for increased breadth of coverage in all areas of healthcare
  – Examine and reevaluate number and structure of meetings
  – Develop formalized balloting procedures
  – Develop appropriate dues structure to generate funds necessary to conduct business
Process (2/4)

• Support
  – Define role of Industry Advisory Board (6/1/0)
  – Engage in lobbying efforts with Congress (6/1/0)
  – Promote and host joint meeting with other SDOs (6/1/1)
  – Pursue sensitivity to international issues (5/1/1)
  – Assess positions of critics with view of offering considered responses (6/1/1)
Process (3/4)

- Mixed
  - Incorporate other existing standards (5/2/0)
  - Hire Exec Director (4/0/3)
  - Encourage more hands for more throughput by developing more leadership positions (4/2/1)
  - Affiliate with ASTM (4/0/3)
  - Explore relationship with COS and OSF (4/0/3)
  - Seek to be known as cost effective and to be recognized as such in vendor contracts (3/0/4)
Process (4/4)

- Seek sanctioning by other SDOs if program certification is sanctioned (2/4/1)
- Seek to be the single meeting, if one could attend only one standards meeting (0/2/6)
- Merge with ASTM (0/7/0)
- Merge with *bona fide* SDO (0/7/0)
Services

• Support
  – Develop methodology for verification of claimed implementation of standard
  – Encourage of users of protocol to present papers
  – Provide implementation support services to membership
  – Publish newsletter

• Split
  – Methodology for certification (4/3/0)

• Oppose
  – Publish formal journal (3/3/1)
  – Develop standard vocabulary (3/4/0)
Positioning

• Support
  – Encourage convergence of protocol specification with MEDIX; view such convergence as effort requiring effort by both HL7 and MEDIX
  – Increase participation in HISCC
  – Produce a version of protocol that’s compliant with OSI
  – Converge protocol specification with ASTM (6/0/1)
  – Mount publicity campaign aimed at domestic government agencies and international standards committees, especially Europe (6/0/1)
  – Seek to influence system design (6/0/1)
  – Have regular meetings with MEDIX (6/1/0)
Highlights

- Hiring of Mark McDougall (exec dir) and later Karen van Hentenryck and great staff
- V2 adoption – verified by HIMSS survey 85% hospitals
- Migration from Exec Com to Board
- Development of CDM, RIM, MDF
- V3 messaging
- Internationalization of HL7 through affiliates
- IHIC
- SGML/XML Kona (PRA) join HL7; stimulus and leadership for CDA
- EHR functional model
- RWJ grant for reorganization leading to TSC
- Hiring CEO and CTO
- CDC, VA, FDA engagement
- Tutorials

Duke Center for Health Informatics
More Highlights

• ANSI Accreditation
• CCOW moves into HL7
• More than messaging – decision support, EHR, regulatory standards, CTS, other
• Engagement with clinical community; pediatrics, anesthesiology, cardiology, obstetrics, CIC, CIIC
• Claims attachment
• HL7 becomes ISO Partner in Pilot Program
• Advisory Committee
• Ambassadors and Distance Learning
• Harmonization efforts RIM and vocabulary
• Work with CDISC and creation of RCRIM
Summation

• HL7 is volunteers! Its membership is the hardest working group of people I have ever known. They start early and work late. They can argue and disagree but still respect opinions and persons. HL7 is truly open. Anyone can come to HL7 with an idea and see it developed into a standard.

• Lessons – improve process; produce standards faster; avoid silos; don’t get caught up in the nitty-gritty; argue only about important things; compromise when result can still be accomplished; understand what international means.

• Future – Get ahead of the curve; open to clinical community - from basic science to clinical research to patient care to communities and public health to populations and remember all include individuals.
HAPPY 24\textsuperscript{TH} HL7 INTERNATIONAL

The best is yet to come!
Sometimes history must wait for the future!