HL7 International Health Level Seven Introduction

NAPHIT Leadership Forum Webinar

HL7 Ambassador Presentation
On
Health Informatics & HL7
By

Gora Datta
USA, Feb 25, 2010
This presentation is being delivered by an authorized speaker of HL7, called an HL7 Ambassador. The HL7 Ambassador personally participates and contributes to the HL7 standards in HL7 Technical committee meetings and can speak first hand about the standard.
Your Ambassador Today

Gora Datta
gora@cal2cal.com

HL7 Ambassador
CoChair EHR Interoperability
USA Expert & ISO/TC215 PHR Task Force Lead
Group Chairman & CEO, CAL2CAL Corporation
Topics

- Need for electronic Healthcare Information Exchange
- Role of Healthcare Standards and benefits
- What is HL7 and examples of standards
Healthcare Information Exchange

Why can’t we make this happen?

- Mary Lim has been a healthy young woman who has never been hospitalized.

- However, recently she attended her employer’s health screening, and they found that she has high blood pressure.
1. Mary decides to visit her neighborhood GP, Dr. Steven Lam, at Lam Clinics.

2. At the clinic, Susan Quek, the clinic’s nurse, queries her EMR system for her details.

3. Not finding her name, Susan registers Mary in her system.

4. Dr. Steven sees Mary and, after identification of multiple problems, creates a referral letter in the EMR for Mary. Dr. Steven also authorizes Dr. Peter Tan of Eastern Hospitals to see the referral letter.

5. Susan arranges for a visit with the Eastern Hospitals.
Healthcare Information Exchange

Why can’t we make this happen?

1. Mary **arrives** at Dr Peter’s office at one of the Eastern Hospitals.

2. Dr. Peter **retrieves** the referral letter using his own EMR.

3. Dr. Peter runs a standard **blood test** for hypertension and found Mary to be a type 2 diabetic.

4. Dr. Peter **updates** Mary’s medical records in his EMR with a consultation letter back to Dr. Steven.

5. The updated information is **accessible** by Dr. Steven as well as to other physicians who might take care of Mary in the future.
Why can’t we make this happen?

• When Mary gets home, she shows her two medical letters to her mother so that she can share what the doctors said.
Global Healthcare Trends

- **Rising cost of healthcare**
  - Under or not insured
  - Aging population
  - High cost of chronic care
  - Demand on public health hospitals
  - System and organizational inefficiencies

- **Paper to Electronic Records**
  - Better clinical outcomes
  - Cost effective

- **Public Health**
  - Prevention efforts
  - Bioterrorism and pandemic events: Anthrax, Avian Flu, TB, etc.

- **Consumer Empowered**
  - Personal Health Records empowers consumers to manage their own health
  - Patients and providers seeking greater access and control over information

- **National-Regional IT Networks**
  - Canada, Finland, Denmark, Austria, USA, UK, Australia
  - Government-selected Healthcare Standards
  - Emerging government-sponsored conformance testing

- **Biotech Era**
  - Personalized medicine is beginning to emerge, e.g., genomic data and test for cancer drug
Goal: Standards are an enabler for interoperability of electronic healthcare information

- Improve quality of care
- Electronic documents provide value to clinicians
- Ensure clinicians have latest knowledge
- Improve patient safety
- Minimize preventable errors
- Improve public health reporting
- Supports Lifetime EHR
- Eliminate duplicate medical tests
- Lower cost of HC delivery
- Empower patient to manage their own health
The Business Case

• **Patients:** interface with provider, payer, pharmacy, pharmacy benefits manager; reduce office waiting time; reduce paperwork; populate PHR’s; self-manage healthcare

• **Healthcare Providers (primary and ancillary):** modularization; apples-to-apples comparisons; simplify interfaces; purchasing incentives; access to best practices; access patient data; streamline workflow

• **Vendors:** System definition / scope / profiles; RFP’s; best-of-breed collaboration; certification
The Business Case

- **Payers**: Pay for performance; value-add services (e.g., Care Management); reduce costs
- **Governments**: public health data; identify fraud and abuse; quality assurance; compliance; reduce costs
- **Quality-Oversight / Accreditation organizations**: consent-based collection of raw data for analysis and reporting; identify providers that are outliers
- **Standards Development organizations**: reduce overlap and duplication; identify gaps
HL7 provides standards for interoperability that improve care delivery, optimize workflow, reduce ambiguity and enhance knowledge transfer among all of our stakeholders, including healthcare providers, government agencies, the vendor community, fellow SDOs and patients. In all of our processes we exhibit timeliness, scientific rigor and technical expertise without compromising transparency, accountability, practicality, or our willingness to put the needs of our stakeholders first.
HL7 Membership

- Worldwide
- 1800 organizations plus 1000 individuals

2007 figures. Based on the “average 3 individuals per org rule”
Stakeholder Location

2007 figures. Based on the “average 3 individuals per org rule”
HL7 -- What’s in a Name?

- A generic, universal standard for data exchange in healthcare
- Domain Experts plus Computer Science-Engineering

ISO-OSI Communication Model

1 Physical
2 Data Link
3 Network
4 Transport
5 Session
6 Presentation
7 Application
HL7 has produced a family of Standards for

- Patient Administration and Demographics
- Orders and Results for: Clinical Lab/Pathology, Imaging (radiology, ultrasound, etc.)
- Signs and Symptoms, Diagnosis and Treatments
- Clinical Research (e.g. Genomics) and Public Health/Disease Surveillance
- Scheduling and managing healthcare resources
- Claims and Reimbursements
- Pharmacy prescriptions, dispensing and administration
- Patient Care messages, Clinical Documents (referrals, H&P, Summary record, etc.)

Sharing and re-use of information from many healthcare domains:

- Within hospitals
- Between hospitals
Interoperability

• “Ability of two or more systems or components to exchange information and to use the information that has been exchanged”


  – Interoperability requires standards for both:
    • Syntax (exchange)
    • Semantics (meaning)
Importance of Information Model

Semantic variants: exchange of information (models)

EDI / XML / Web Services / PDF
Syntax variants: exchange of symbols
Healthcare Information Interoperability *Means*

- Enabling the sharing and re-use of *healthcare information*, especially
  - Clinical information

  *And healthcare-related information, including*
  - research, clinical trials, administrative, financial, resource utilization, public health, supply chain

- HL7 standards are all based on the sharing and re-use of Healthcare information
  - Using Messaging, Clinical Documents, and Services
Summary

• There are benefits for electronic healthcare information

• Standards are critical for exchanging healthcare information

• HL7 is the key organization for producing relevant healthcare standards used by hospitals globally
How to get more info on HL7

- Web site:
  - [http://www.hl7.org](http://www.hl7.org)

- International Affiliates
  - [http://www.hl7.org/Special/committees/international/intl.htm](http://www.hl7.org/Special/committees/international/intl.htm)

- Education and Tutorials
  - [http://www.hl7.org/education/index.cfm](http://www.hl7.org/education/index.cfm)

- How to request and HL7 Ambassador speaker
  - [mailto:hq@hl7.org](mailto:hq@hl7.org)

- Contact info for HL7 HQ
  - [mailto:hq@hl7.org](mailto:hq@hl7.org)