HL7: Who, What & What’s New

John Quinn
HL7 International CTO
Lahti Finland
May 23, 2011
Who is HL7
HL7 INTERNATIONAL IS A CONSENSUS DRIVEN STANDARDS ORGANIZATION
Consensus Driven Standards

- Are:
  - Volunteer-driven
  - Not full-time commitment by most
  - Marked by uneven levels of participation
  - Participant developers have unequal levels of understanding
  - Balloted with required resolution of negative ballots
  - Therefore they are also prone to compromise which often leads to ambiguity
Who is HL7 International?

- HL7 International is one of several American National Standards Institute (ANSI) -accredited Standards Developing Organizations (SDOs) operating in the healthcare arena. Most SDOs produce standards (sometimes called specifications or protocols) for a particular healthcare domain such as pharmacy, medical devices, imaging or insurance (claims processing) transactions.
- HL7 International’s domain is clinical and administrative data.
- Many of HL7’s Standards are also ISO TC-215 (Medical Informatics) Standards.
- ISO TC-215 both adopts specific HL7 International Standards and also works with HL7 International to jointly develop or modify HL7 standards.
Who is HL7 International?

- Like all ANSI-accredited SDOs, HL7 International adheres to a strict and well-defined set of operating procedures that ensures consensus, openness and balance of interest.

- A frequent misconception about HL7 International (and presumably about the other SDO) is that it develops software. In reality, HL7 International develops standards specifications, the most widely used being a messaging standard that enables the development of implementation guides (IGs) that can be implemented to facility disparate healthcare applications to exchange keys sets of clinical and administrative data in a pre-defined fashion.

- Members of Health Level Seven International are known collectively as the “Working Group”, which is organized into individual work groups. The work groups are directly responsible for the content of the our Products. Work groups can also serve as a source for exploring new areas that need to be covered by HL7 International’s published standards.
Headquartered in Ann Arbor, MI, HL7 International is like many other SDOs in that it is a not-for-profit volunteer organization. HL7 International also has an office in Brussels.

Its members—providers, vendors, payers, consultants, government groups and others who have an interest in the development and advancement of clinical and administrative standards for healthcare—develop the standards.

Currently

- Any interested person has the opportunity to define, ballot and negotiate the features of what will become an accredited.
- Members also have the right to a copy of completed HL7 IP and organizational members pay a higher membership yearly dues to have the right to distribute (or sub-license) HL7 IP that is imbedded in their products.
What is HL7 International?

- Members of Health Level Seven International are known collectively as the “Working Group”, which is organized into individual work groups. The work groups are directly responsible for the content of the our Products. Work groups can also serve as a source for exploring new areas that need to be covered by HL7 International’s published standards.
What is the Origination of the name HL7?

"Level Seven" refers to the highest level of the International Standards Organization (ISO) communications model for Open Systems Interconnection (OSI) (i.e., the Application Layer).
What is the Origination of the name HL7?

The application level addresses definition of the data to be exchanged, the timing of the interchange, and the communication of certain errors to the application. The seventh level supports such functions as security checks, participant identification, availability checks, exchange mechanism negotiations and, most importantly, data exchange structuring.
The OSI Model

Application
Presentation
Session
Transport
Network
Data
Physical

Application 1
Application 2

Logical Connection
Logical Connection
Logical Connection
Logical Connection
Logical Connection
Logical Connection
Physical Connection

HL7

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### HL7 International’s Work Groups*

<table>
<thead>
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<th>HL7 Work Groups:</th>
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<td>- Affiliate Due Diligence</td>
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<tr>
<td>- Anatomic Pathology</td>
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<td>- Architecture Review Board</td>
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<td>- Arden Syntax</td>
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<td>- Attachments</td>
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<td>- Child Health</td>
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<td>- Clinical Context Object Workgroup (CCOW)</td>
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<td>- Clinical Decision Support</td>
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<td>- Clinical Genomics</td>
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<td>- Education</td>
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<td>- Electronic Health Record</td>
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<td>- Emergency Care</td>
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<td>- Financial Management</td>
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<td>- Generation of Anesthesia Standards</td>
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<td>- Government Projects</td>
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<td>- Orders and Observations</td>
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<td>- Organizational Relations</td>
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<td>- Outreach Committee for Clinical Research</td>
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<td>- Regulated Clinical Research Information Management (RCRIM)</td>
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<td>- RIMBAA</td>
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<td>- Roadmap Committee</td>
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<tr>
<td>- Security</td>
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<tr>
<td>- Services Oriented Architecture</td>
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<tr>
<td>- Structured Documents</td>
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<td>- Technical Steering Committee</td>
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<td>- Templates</td>
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<td>- Tooling</td>
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<td>- Vocabulary</td>
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*includes Board Appointed Committees / Work Groups

Updated: 05/11
HL7 International’s Organization

International Council

HL7 International Board of Directors

Advisory Council

Chuck Jaffe MD
HL7 International CEO

International Council

John Quinn
CTO / Vice Chair

TSC Chair
Austin Kreisler

2 Representatives

TSC

Architecture Board
Charlie Mead

Mark McDougal
COO (AMG)

Operations
(AMG)

Foundation & Technologies
Woody Beeler

Structure & Semantic Design
Calvin Beebe

Domain Experts
Austin Kreisler

Technical & Support Services
Ken McCaslin

Work Groups

TSC

May, 2011
WHAT: HL7’S PRODUCTS
HL7 Has Over 100 Products

- HL7 International Started with and is traditionally thought of as “messaging”. For most of its life, however, HL7 International has also produced more than messaging standards.
  - Electronic Data Exchange in Healthcare Environments (i.e. “messaging”)
    - Version 2 & Version 3
  - Arden Syntax
  - GELLO
  - Visual / Context Integration (CCOW)
  - Version 2.x XML (XML encoding of HL7 International messages)
  - HL7 Version 3 Clinical Document Architecture (CDA)
    - Clinical Context Document Implementation Guide (CCD)
  - Electronic Health Record System (EHR-S) Functional Model
  - Personal Health Record System (PHR-S) Functional Model
  - Services (i.e., Services as related to a Services Oriented Architecture)

V2 is widely used in existing provider organizations
Facility for Clinical Summary Information Transfer (i.e., structured parseable documents).
Foundation for US NIST EHRS Certification requirements

Standard Expression Language for Decision Support

Specification covers the sharing of computerized health knowledge bases among personnel, information systems, and institutions.
History of HL7
(Through 2009)

1987 88 89 90 91 92 93 94 95 96 97 98 99 2000 01 02 03 04

Version 1.0 Published
Implementation Support Guide published
Version 2.0 Published
Version 2.1 Published
Charter member of ANSI HISPP
Version 2.1 Published
Version 2.2 Published
Version 2.2 ANSI
Version 2.2.1 Published and ANSI
PRA (CDA 1.0)
Version 3.0 1st published

2005 06 07 08 09 10 11

First Meeting Hospital
University of PA

Version 2.0 Published
Version 2.1 Published
Arden Syntax 2.0
Version 2.3 Published and ANSI
Version 2.3.1 Published and ANSI
CCOW

First work on SOA (Services) w/HSSP
Reorganizes
Hires CEO & CTO & starts work on SAIF
V2.6 Published
V2.7 Published

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Check on Concepts

For purposes of discussion:

- A standard is a framework for the definition of allowable interoperations (in content, process and terminology) among two or more interoperating Health IT applications.
The Dimensions of Clinical Interoperability

Terminology

Data

Process/Behavior

(D,P,T)

D

T

P
Check on Concepts

For purposes of discussion:

- An HL7 Implementation Specification is a precise definition of all expected behaviors of an interface among two or more interoperating Health applications that can be assigned to a software programmer.
- An Implementation Specification is testable for conformance across all specified conditions.
HL7 Version 2.x

- Most widely used HL7 Standard
  - First usable version 2.1 published in 1990
  - Current version is 2.7 published in 2010
  - Based on an implied informal data model
  - Supports messaging only (both push and query/update)
  - Encoding syntax is usually un-tagged delimited fields but a balloted implemented technology specification for XML encoding is available
  - Typically implemented within a provider institution or between a diagnostic service and a provider (e.g., labs)
  - Does not have a behavioral model
  - Is prone to wide use of "optionality" and "z-segments" in effect creating a "one-of" interface
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<td>12.</td>
<td>Patient Care</td>
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<td>Clinical Laboratory Automation</td>
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<td>16.</td>
<td>Non-US Claims  <em>(new to 2.6)</em></td>
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**Appendices:**

- **A.** Data Definition Tables
- **B.** Lower Layer Protocol
- **C.** BNF Definitions
- **D.** Glossary
HL7 International  Version 3
HL7 V3, in conjunction with terminology standards, is designed to help solve the harder problems...

- V3 is designed to be “scalable”*;
- Designed using a formal object oriented design methodology
  - not ad-hoc;
- Based on central consistent models
  - Reduces ambiguity
  - Ensures consistency across the standard
  - Enables mapping to and convergence with other healthcare standards;
- Designed so that the ability to specify your conformance is built in;
- Designed for universal application
  - global standard adaptable to local needs;
- More than messages (documents, etc);
- Vocabulary rigorously defined
  - Enables communication across entities and affiliations;
- Industry standard technology for implementation & transport XML, SOAP/WSDL

A message is generated and sent from the sending application to the receiving application

```xml
<!-- Example payload for Emergency Encounter Started (PRPA_MT403001) -->
<encounterEvent classCode="ENC" moodCode="EVN">
  <id root="2.16.840.1.113883.19.3.2409" extension="12345" displayable="true" />
  <code code="EMER" codeSystem="2.16.840.1.113883.5.4" codeSystemName="ActCode" displayName="emergency" />
  <statusCode code="active" />
  <effectiveTime>
    <low value="20050927095000" inclusive="true" />
  </effectiveTime>
  <priorityCode code="EM" codeSystem="2.16.840.1.113883.5.7" codeSystemName="ActPrior" displayName="emergency" />
  <confidentialityCode code="N" codeSystem="2.16.840.1.113883.5.25" codeSystemName="Confidentiality" displayName="normal" />
  <reasonCode code="MEDNEC" codeSystem="2.16.840.1.113883.5.8" codeSystemName="ActOther" displayName="Medical_Necessity" />
  <subject typeCode="SBJ">
    <patient>
      <id root="2.16.840.1.113883.19.3.2409" extension="444551234" displayable="true" />
      <addr use="HP">
        <streetAddressLine>2222 Home Street</streetAddressLine>
        <city>Ann Arbor</city>
        <state>MI</state>
        <postalCode>99999</postalCode>
        <country>USA</country>
      </addr>
      <patientPerson>
        <name>Adam A Everyman</name>
        <administrativeGenderCode code="M" codeSystem="2.16.840.1.113883.5.1" codeSystemName="AdministrativeGender" displayName="Male" />
        <birthTime value="19550304" />
      </patientPerson>
    </patient>
  </subject>
</encounterEvent>
```
V3 Messaging Characteristics

- Often Event Driven
  - Concerned about what event (called “Trigger Event”) caused the message to be transmitted
  - Concerned about the time the event occurred, when the message was created, and who it is going to.

- Vehicle of communication
  - A notification, request, or response.
  - Not a static record/document.
  - Only exists in the messaging context – does not persist over time.

- Implies Dialogue
  - Defines the expected set of responses from the receiving application.

- Machine processable
  - Designed to be machine processable, not human readable.
V3 Messages Support…

- Person registry queries and responses
- Request/response for insurance authorization
- Notification of an adverse event (to public health authority)
- Notification of a finalized lab result.
- Pharmacy order fulfillment request/response
- Notification of Care Transfer

And much more…
V3 also provides Document Standards

- A standard for document sharing
- Facilitates document exchange and reuse

CDA (Clinical Document Architecture)
V3 CDA Documents

- Expected to persist overtime – a static object
- Can be authenticated
- Has an owner (steward)
- Is considered whole (not a snapshot)
- Can be transmitted by encapsulating within a V3 message.
- Can exist in non-messaging contexts.
- More oriented towards readability by people, not machines.
Structured Documents: CDA and more...

- **CCD** – Continuity of Care Document
  - CDA implementation of the Continuity of Care Record (CCR) for Clinical Summary Information. (ONC’s IG for CCD is sometimes referred to as HITSP’s C32.

- **SPL** – Structured Product Labeling
  - the structure and semantics of the content of authorized published information that accompanies any medicine licensed by a national or international medicines. An HL7 and ISO Standard. Created by the US FDA.

- **HQMF** – Health Quality Measures Format
  - a standard for representing a health quality measure as an electronic document.
Reference Information Model: (RIM)—Food for Thought

- V3 Messages and Documents are derived from the RIM
- Other objects could also be created from the RIM.
- Do you have an application for the RIM?
- Some vendors are making their internal data models consistent or “mappable” with the RIM. They are better prepared for V3 communication.

RIMBAA
(RIM Based Application Architectures)
Workgroup...for those interested in RIM based application and database design.
WHAT’S NEW
Check on Concepts

HL7 is moving to apply its now balloted SAIF (Services Aware Interoperability Framework) Book to how and what it creates for “standards”.

This will occur over time and it just now being tested in Orders & Observations Work Group’s V3 Development.
Check on Concepts

Over time, the plan is that each standard will have:

- A Defined scope of Static Information Model (including terminology binding requirements);
- A Defined scope of Dynamic/Process Model supported;
- A Defined requirement for Governance;
- A Defined set of requirements for Conformance Testing.
Some New Topics From Orlando

- Addressing the complexities of using the RIM...or how do we take the value of the RIM and apply it to off-the-shelf tools using UML instead of HL7’s Model Interchange Format.

  ✓ We’ve worked with OMG, NHS and US Dept. of Veterans Affairs for over two years to understand the problem and the values and disadvantages the current RIM brings

  ✓ Graham Greave of Australia made a bold suggestion to treat the RIM as an Ontology in an Ontology Tool such as OWL (some food for thought at the moment).
THANK YOU...

QUESTIONS?
Appendices

Acronyms

Glossary
<table>
<thead>
<tr>
<th>Acronym</th>
<th>Description</th>
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<tbody>
<tr>
<td>ADA</td>
<td>American Dental Association</td>
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<tr>
<td>ACR</td>
<td>American College of Radiology</td>
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<tr>
<td>AHA</td>
<td>American Hospital Association</td>
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<tr>
<td>AHIC</td>
<td>American Health Information Community (an advisory board within DHHS)</td>
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<tr>
<td>AHIMA</td>
<td>American Healthcare Information Management Association</td>
</tr>
<tr>
<td>AHRQ</td>
<td>Agency for Health Research and Quality</td>
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<td>AMA</td>
<td>American Medical Association</td>
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<td>AMIA</td>
<td>American Medical Informatics Association</td>
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<td>ANA</td>
<td>American Nursing Association</td>
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<td>ANSI</td>
<td>American National Standards Institute</td>
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<td>ASC X12</td>
<td>Accredited Standards Committee X12 – for business transactions</td>
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<td>ASC X12N</td>
<td>Accredited Standards Committee X12N – for insurance and reimbursement data interchange</td>
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<tr>
<td>ASC Z80</td>
<td>Accredited Standards Committee Z80 – for Optometry</td>
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<td>ASN.1</td>
<td>Abstract Syntax Notation One</td>
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<td>ASTM</td>
<td>American Society for Testing and Machinery—A US based SDO</td>
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<tr>
<td>CAP</td>
<td>College of American Pathologists</td>
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*Courtesy of Ed Hammond, PhD 1999, with some updates from John Quinn, 2007*
# Some Acronyms*

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Description</th>
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<tr>
<td>CCHIT</td>
<td>Certification Commission for Health Information Technology</td>
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<td>CCOW</td>
<td>HL7 Clinical Context Object Workgroup (now Clinical Context Management)</td>
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<tr>
<td>CDC</td>
<td>Centers for Disease Control and Prevention</td>
</tr>
<tr>
<td>CEN</td>
<td>Comité Européen de Normalisation (EU Standards Body)</td>
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<tr>
<td>CENELEC</td>
<td>European ` for Electrotechnical Standardization</td>
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<td>CHIA</td>
<td>Canadian Health Informatics Association</td>
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<tr>
<td>CIHI</td>
<td>Canadian Institution for Health Information</td>
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<td>CMA</td>
<td>Context Management Architecture</td>
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<td>CMET</td>
<td>HL7 Common Message Element Type—reusable message components such as data types</td>
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<tr>
<td>CMS</td>
<td>DHHS Centers for Medicare and Medicaid Services (was HCFA)</td>
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<tr>
<td>COM</td>
<td>Component Object Model</td>
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<tr>
<td>CORBA</td>
<td>Common Object Request Broker Architecture</td>
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<td>CorbaMed</td>
<td>OMG group working on health related projects</td>
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<td>CPRI</td>
<td>Computer-based Patient Record Institute</td>
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<td>CPT</td>
<td>Common Procedural Terminology. A systematic listing and coding of procedures and services performed by physicians. A five-digit code with modifiers, used for Billing Owned &amp; maintained by AMA.</td>
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<td>CTS</td>
<td>HL7 Common Terminology Services</td>
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* Courtesy of Ed Hammond, PhD 1999, with some updates from John Quinn, 2007
Some Acronyms*

- DAM  HL7 Domain Analysis Model (see HL7 HDF)
- DCOM  Distributed Component Object Model
- DES  Data Encryption Standard
- DHHS  Department of Health and Human Services
- DIM  Domain Information Model
- DIN  German standards organization
- DISA  Data Interchange Standards Organization. The secretariat for ASC X12.
- DMIM  Domain Message Information Model
- DOD  Department of Defense
- DRG  Diagnostic Related Group
- DSM-IV  Diagnostic and Statistical Manual of Mental Disorders; American Psychiatric Assoc.
- EPA  Environmental Protection Agency. Has data registry.
- EU  European Union
- EWG  UN/EDIFACT Working Group
- FDA  Food and Drug Administration
- FDIS  ISO Final Draft International Standard
- GEHR  Good European Health Record

* Courtesy of Ed Hammond, PhD 1999, with some updates from John Quinn, 2007
Some Acronyms*

- HCFA  Health Care Financing Administration (now CMS)
- HCPCS  HCFA Procedure Coding System
- HDF  HL7 Healthcare Development Framework
- HEDIS  Health Employers Data and Information Set
- HHCC  Home Health Care Classification. Virginia Saba's code set for home care.
- HHS  Health and Human Services (sometimes used instead of DHHS)
- HIBCC  Health Industry Business Communications Council
- HIMA  Health Industry Manufacturers Association
- HIMSS  Healthcare Information and Management Systems Society (a trade group)
- HIPAA  Health Insurance Portability and Accountability Act of 1996
- HIT  Health Information Technology
- HITSP  Healthcare Information Technology Standards Panel (owned and organized under ANSI)
- HL7  Health Level Seven International
- HMD  HL7 Hierarchical Message Definition
- HMO  Health Maintenance Organization
- HOST  Healthcare Open Systems and Trials
- HPCC  High Performance Communications and Computing
- HTML  Hyper-Text Markup Language

*Courtesy of Ed Hammond, PhD 1999, with some updates from John Quinn, 2007
Some Acronyms*

- ICD  International Classification of Disease
- ICD9  Diagnostic and procedure codes, current version in the US is ICD9-CM
- ICD9-CM  ICD9 with Clinical Modification
- ICD10  Latest version of ICD implemented in most countries
- IDL  Interface Definition Language
- ICNP  International Classification for Nursing Practice
- IEC  International Electrotechnical Commission
- IEEE  Institute of Electronic and Electrical Engineers
- IETF  Internet Engineering Task Force
- IHS  Indian Health Service
- IMIA  International Medical Informatics Association
- IOM  Institute of Medicine
- ISSB  Information Systems Standards Board
- ISO  International Standards Organization (part of the UN in Geneva Switzerland)
- ITSEC  Information Technology Security Evaluation Criteria
- ITU  International Telecommunication Union

* Courtesy of Ed Hammond, PhD 1999, with some updates from John Quinn, 2007
Some Acronyms*

- JAHIS  Japanese Association for Medical Informatics
- JCAHO  Joint Commission on Accreditation of Healthcare Organizations
- JIRA  Japan Industries Association of Radiation Apparatus
- LOINC  Logical Observations, Identifiers, Names and Codes
- MDF  Message Development Framework
- MEDCIN  Nomenclature for healthcare. Produced by Medicomp.
- MEDINFO  World Medical Informatics Conference; every 3 years; sponsored by IMIA.
- MEDIX  Medical Data Interchange Standard (IEEE)[P1157]
- MEDRA  Medical Dictionary for Drug Regulatory Affairs
- MeSH  Medical Subject Heading
- MGMA  Medical Group Management Association
- MIB  Medical Informatics Bus (IEEE)
- MOU  Memorandum Of Understanding
- MPI  Master Patient Index or Master Person Index
- MPL  Master Patient (Person) Locator
- MSHUG  Microsoft Healthcare User Group

*Courtesy of Ed Hammond, PhD 1999, with some updates from John Quinn, 2007
Some Acronyms*

- NANDA  North American Nursing Diagnoses Association
- NCHS   National Center for Health Statistics
- NCCLS  National Committee for Clinical Laboratory Standards
- NCPDP  National Council for Prescription Drug Programs
- NCVHS  National Committee for Vital and Health Statistics
- NDC    National Drug Codes. Produced by the FDA.
- NEMA   National Electrical Manufacturers Association
- NHS    National Health Service – UK
- NHS CT National Health Service Clinical Terms (formerly Read Codes)
- NIC    Nursing Intervention Classification
- NILT   Nursing Intervention Lexicon and Taxonomy
- NIST   National Institute of Standards and Technology
- NLM    National Library of Medicine
- NOC    Nursing Outcomes Classification
- NPRM   Notice of Proposed Rule Making
- NUBC   National Uniform Billing Committee
- NUCC   National Uniform Claims Committee

* Courtesy of Ed Hammond, PhD 1999, with some updates from John Quinn, 2007
Some Acronyms*

- OMAHA  System Nursing Codes
- OMG     Object Management Group
- ORB     Object Request Broker
- PACS    Picture Archiving and Communication System
- PCDS    Patient Care Data Set. Judy Ozbolt, Vanderbilt.
- PHS     Public Health Service
- PRA     Patient Record Architecture
- PSRO    Professional Standards Review Organization
- READ    Clinical codes with a bias for primary care. Now part of NHS SNOMED CT.
- RIM     Reference Information Model
- RMIM    Refined Message Information Model
- RSA     Algorithm for encrypting / decrypting data. Developed by Ronald Rivest, Adi Shamir, and Leonard Adleman
- RSNA    Radiological Society of North America
- SCAR    Society for Computer Applications in Radiology
- SDO     Standards Development Organization
- SGML    Standard Generalized Markup Language

* Courtesy of Ed Hammond, PhD 1999, with some updates from John Quinn, 2007
Some Acronyms*

- SCAR  Society for Computer Applications in Radiology
- SDO  Standards Development Organization
- SGML  Structured Graphical Markup Language
- SNOMED RT  Systematized Nomenclature of Medicine Reference Terminology
- SNOP  Systematized Nomenclature of Pathology
- SQL  Structured Query Language
- TC 215  ISO Technical Committee 215 – Healthcare Information
- TC 215 WG1  Working Group 1: Modeling Coordination and Health Records
- TC 215 WG2  Working Group 2: Messaging and Communications
- TC 215 WG3  Working Group 3: Health Concept Representation
- TC 215 WG4  Working Group 4: Security
- TC 215 WG5  Working Group 5: Health Cards

* Courtesy of Ed Hammond, PhD 1999, with some updates from John Quinn, 2007
Some Acronyms*

- TC 251  CEN Technical Committee for Medical Informatics
- TC 251 WG1  Healthcare Information Modeling and Medical Records
- TC 251 WG2  Healthcare Terminology, Semantics and Knowledge Bases
- TC 251 WG3  Healthcare Communications and Messages
- TC 251 WG4  Medical Imaging and Multimedia
- TC 251 WG5  Communication with Medical Devices
- TC 251 WG6  Healthcare Security, Privacy, Quality and Safety
- TC 251 WG8  Intermittently Connected Devices (including Cards)
- TCP/IP  Transmission Control Protocol/Internet Protocol
- Terminfo  An HL7 International General Approach to resolving issues related to the interface between HL7 International Information Model and terminologies or code systems
- TR  ISO Technical Report
- TS  ISO Technical Specification
- UCC  Uniform Code Council
- UCDS  Uniform Clinical Data System
- UMDNS  Universal Medical Device Nomenclature System
- UML  Unified Modeling Language
- UMLS  Unified Medical Language System

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Some Acronyms*

- UN/EDIFACT United Nations Electronic Data Interchange For Administration, Commerce and Transport
- UNIX Open Systems Operating system
- UPC Universal Product Code. From UCC.
- URL Universal Resource Locator (e.g., http://www.hl7.org)
- USHIK US Health Information Knowledgebase; Data Registry
- US/TAG United States Technical Advisory Committee
- VA Veterans Administration
- WEDI Workgroup on Electronic Data Interchange
- WHO World Health Organization
- WS-I Web Services Interoperability Organization
- www World Wide Web
- W3C World Wide Web Consortium. Definers of HTML & XML among other things
- XML Extensible Markup Language

* Courtesy of Ed Hammond, PhD 1999, with some updates from John Quinn, 2007
D. Glossary

Abstract Message
The basic level of definition of the abstract message associated with a particular message. The abstract message defines the data fields that will be sent within a message, the valid response messages, and the treatment of application level errors or the failure of the underlying communications system. An HL7 abstract message is defined in terms of HL7 segments and fields, as described in Section 3.4.6.

Abstract Syntax Notation One (ASN.1)
ASN.1 is a data definition language that allows formal definitions of information structures to be employed in a manner that is independent of any implementation constraints. It may be used to create complex hierarchical structures from basic primitive types.

ACK
General Acknowledgment message. The ACK message is used to respond to a message where there has been an error that prevents an application processing or where the application does not define a special message type for the request.

Acknowledgment - Accept Level
The receiving system confirms the message to safe storage in a manner that releases the sending system from any obligation to relay the message. A response is returned to the initiator indicating successful receipt and secure storage of the information.

Acknowledgment - Application Level
The appropriate application on the receiving system receives the transaction and processes its correctness. The receiving system returns an application-dependent response to the initiator.

ACR/NEMA
American College of Radiology and the National Electrical Manufacturers Association: The American College of Radiology formed a relationship with the National Electrical Manufacturers Association in 1982 to develop a standard for digital imaging and communications in medicine (DICOM). The purpose of the standard was to promote a generic digital imaging communications format, facilitate the development and expansion of imaging archiving and communication systems (PACS), allow the creation of diagnostic information databases for remote access, and help ensure that
HL7 Healthcare Development Framework (HDF)
ISO TC 215 Joint Initiative for Global Standards Harmonization Health Informatics Document Registry and Glossary

http://www.skmtglossary.org/

If you have interest, you can use this link to obtain a username & password and then access to the above ISO Document Registry and Glossary.
Here are some definitions of organizations that have been mentioned in this presentation.

- **American National Standards Institute (ANSI)**:
  - The Institute oversees the creation, promulgation and use of thousands of norms and guidelines that directly impact businesses in nearly every sector. ANSI is also actively engaged in accrediting programs that assess conformance to standards – including globally-recognized cross-sector programs such as the ISO 9000 (quality) and ISO 14000 (environmental) management systems.

- **Standards Development Organizations (SDOs)—not healthcare specific**:
  - Any organization whose primary activities are developing, coordinating, promulgating, revising, amending, reissuing, interpreting, or otherwise maintaining technical standards that address the interests of a wide base of users outside the standard-developing organization*.

*Wikipedia
Glossary

**ONC**

- The Office of the National Coordinator (ONC) for Health Information Technology is an organization in the US Department of Health and Human Services reporting to the DHHS Secretary. ONC is designated in several laws by the US Congress to distribute funds and manage initiatives to meet requirements for the development, deployment and use of health information technology by providers, and public health agencies through inducement of financial incentives and, eventually, financial penalties.
Glossary

- **International Standards Organization (ISO) Technical Committee (TC) 215 (Health Informatics):**
  - ISO is an organization of the United Nations headquartered in Switzerland. Its governance structure is similar to the UN’s where each country has one vote. The secretariat for ISO TC 215 is held by the American National Standards Institute (ANSI).
  - ITC 215’s domain of work is standardization in the field of information for health, and Health Information and Communications Technology (ICT) to promote interoperability between independent systems, to enable compatibility and consistency for health information and data, as well as to reduce duplication of effort and redundancies.
  - The domain of ICT for health includes but is not limited to:
    - Healthcare delivery;
    - Disease prevention and wellness promotion;
    - Public health and surveillance;
    - Clinical research related to health service.
EU’s CEN (Comité Européen de Normalisation) TC251

(CEN Technical Committee 251) is a workgroup within the European Union working on standardization in the field of Health Information and Communications Technology (ICT) in the European Union. The goal is to achieve compatibility and interoperability between independent systems and to enable modularity in Electronic Health Records systems.

- Workgroups establish requirements for health information structure in order to support clinical and administrative procedures, technical methods to support interoperable systems. In addition they establish requirements regarding safety, security and quality.*

*wikipedia