

## Standards Category: Information Content Standards

**Information Content Standards** specify the content of information exchanges.

**First level information content standards** define the structure and organization of content in the electronic message (string of data) or document (structured representation of data). The Health Level Seven (HL7) Reference Information Model (RIM) represents the first level information content standard. The RIM is a pictorial representation of the application domain data organization that identifies the lifecycle of events. RIMs are shared models of data organization between domains and are the models from which all domains create information exchange standards. The RIM expresses the data content needed in a specific clinical or administrative context and provides an explicit representation of the semantic and lexical connections that exist between the information carried in the fields of HL7 version 3 (v3) messages,, HL7 CDA documents and HL7 FHIR resources (below). The RIM is essential to increasing precision and reducing implementation costs.

**Second level information content standards** define a ‘package’ of standards (data vocabularies/terminologies/classifications, data types, document structure), for example:

- ✚ **HL7 Continuity of Care Document (CCD)** is an Extensible Markup Language (XML)-based standard to specify the encoding, structure, and semantics of a clinical document for health information exchange. The CCD was a joint effort of HL7 and the American Society for Testing and Materials (ASTM) International. The CCD represents a harmonization of ASTM’s Continuity of Care Record (CCR) and HL7’s Clinical Document Architecture (CDA).
- ✚ **HL7 Clinical Document Architecture (CDA)** is an XML-based description of the document that comprised of the document header – collection of metadata (when it is written, who wrote it, for what organization, which patient it applies to, and the visit/encounter for which it describes the service) and the document body with a structured format (sections, templates, entries) that can be processed by machine, and unstructured text (scanned or word-processed documents).
- ✚ **HL7 Fast Healthcare Interoperability Resources (FHIR)** are sets of modular components that are suitable for use in mobile phone apps, cloud communications, Electronic Health Record (EHR)-based data sharing and server communication. FHIR resources share (a) a common way to define and represent content components, building them from data types that define common reusable patterns of elements; (b) a common set of metadata; (c) a human readable part (narrative).

### Resources

Boone K. *Health Information Technology Standards and Systems Interoperability Course. Lecture 7: Information Content Standards.* Opencourseware. Johns Hopkins University. URL:

<http://ocw.jhsph.edu/index.cfm/go/viewCourse/course/InfStandards/coursePage/lectureNotes/>

Boone K. *The CDA™ Book.* Springer-Verlag, London. 2011

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Information content standards are developed by Standards Development Organizations (SDOs).

Information Content Standards			
Standard Development Organizations		Domains	Website
HL7	Health Level Seven	Healthcare, Public Health	<a href="http://www.hl7.org/">http://www.hl7.org/</a>
ISO	International Organization for Standardization, <i>Technical Committee 215 Health Informatics, Workgroup 3: Semantic Content</i>	Healthcare, Public Health	<a href="https://www.iso.org/committee/54960.html">https://www.iso.org/committee/54960.html</a>

### ISO Technical Committee on Health Informatics (ISO/TC 215) Workgroup 3: Semantic Content develops standards for

- ✚ Data, information and knowledge representation in health domain
- ✚ Implementation and use of terminological resources in health information systems
- ✚ Workforce for development, implementation and operation of terminological resources in healthcare and public health

#### ISO/TC 215 WG3: Semantic Content Standards

(Selected Publications: TR – Technical Report, TS – Technical Specification)

ISO Number	Title
ISO 13119	Clinical knowledge resources -- Metadata
ISO 13120	Syntax to represent the content of healthcare classification systems -- Classification Markup Language (ClAML)
ISO 13940	System of concepts to support continuity of care
ISO 17115	Vocabulary of compositional terminological systems
ISO/TR 12300	Principles of mapping between terminological systems
ISO/TR 12309	Guidelines for terminology development organizations
ISO/TR 12310	Principles and guidelines for the measurement of conformance in the implementation of terminological systems
ISO/TS 13582	Sharing of Object Identifier (OID) registry information
ISO/TS 17117	Controlled health terminology -- Structure and high-level indicators
ISO/TS 17439	Development of terms and definitions for health informatics glossaries
ISO/TS 22789	Conceptual framework for patient findings and problems in terminologies
ISO 1828	Categorial structure for terminological systems of surgical procedures
ISO 16278	Categorial structure for terminological systems of human anatomy
ISO 18104	Categorial structures for representation of nursing diagnoses and nursing actions in terminological systems

#### Resources

ISO/TC215 Website at ISO: <https://www.iso.org/committee/54960.html>

ISO/TC215 Website at AHIMA: <http://www.ahima.org/about/global?tabid=ISO>