Designation: E 1715 – 01

An American National Standard

Standard Practice for An Object-Oriented Model for Registration, Admitting, Discharge, and Transfer (RADT) Functions in Computer-Based Patient Record Systems[1]

This standard is issued under the fixed designation E 1715; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon (ϵ) indicates an editorial change since the last revision or reapproval.

1. Scope

1.1 This practice is intended to amplify Guide E 1239 and to complement Guide E 1384 by detailing the objects that make up the reservation, registration, admitting, discharge, and transfer (RADT) functional domain of the computer-based record of care (CPR). As identified in Guide E 1239, this domain is seminal to all patient record and ancillary system functions, including messaging functions used in telecommunications. For example, it is applicable to clinical laboratory information management systems, pharmacy information management systems, and radiology, or other image management, information management systems. The object model terminology is used to be compatible with other national and international standards for healthcare data and information systems engineering or telecommunications standards applied to healthcare data or systems. This practice is intended for those familiar with modeling concepts, system design, and implementation. It is not intended for the general computer user or as an initial introduction to the concepts.

2. Referenced Documents

2.1 *ASTM Standards:*

E 1238 Specification for Transferring Clinical Observations Between Independent Computer Systems[2]

E 1239 Guide for Description of Reservation/Registration-Admission, Discharge, Transfer (RADT) Systems for Automated Patient Care Information Systems[2]

E 1384 Guide for Content and Structure of the Electronic Health Record (EHR)[2]

E 1633 Specification for Coded Values Used in the Electronic Health Record (EHR)[2]

E 1639 Guide for Functional Requirements of Clinical Laboratory Information Management Systems[2]

E 1744 Guide for View of Emergency Medical Care in the Computerized Patient Record[2]

F 1629 Guide for Establishing and/or Operating Emergency Medical Services Management Information Systems[3]

2.2 *ANSI Standard:*

ANSI X3.172 Dictionary of Information Systems[4]

2.3 *IEEE Standard:*

IEEE 1157.1 Trial Use Standard for Healthcare Information Interchange—Information Modelling (6 June 1994)[5]

2.4 *Other Document:*

HL-7 v2.4 Data Communication Standard[6]

3. Terminology

3.1 *Definitions*—General terms are defined in accordance with ANSI X3.172.

3.2 *Definitions of Terms Specific to This Standard:*

3.2.1 *functional domain, n*—that area of activity that encompasses a given function. **(HL-7, v2.4)**

3.2.2 *healthcare domain, n*—that functional domain encompassing all aspects of the delivery of health care, both preventive and corrective, to patients, and the management of resources enabling that care to be delivered. **(HL-7, v2.4)**

4. Background

4.1 *Object Representation of RADT Processes*—Guide E 1239 provides the experiential background of the functions in RADT. These functions are common to all systems that deal with patient data. The minimal essential data elements for RADT were identified and characterized partly in Guide E 1239. Table 1 of that guide identifies a logical data structure for the data elements, but it does not relate these elements to constituent "entities" or "objects" in the sense that they are now used in analysis. Entity-relationship modeling is one major technique used **(1)**[7] to establish the conceptual" things" and their relationships involved in this overall functional

[1] This practice is under the jurisdiction of ASTM Committee E31 on Healthcare Informatics and is the direct responsibility of Subcommittee E31.19 on Computer–Based Patient Record Content and Structure.

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[2] *Annual Book of ASTM Standards*, Vol 14.01.

[3] *Annual Book of ASTM Standards*, Vol 13.01.

[4] Available from American National Standards Institute, 11 W. 42nd St., 13th Floor, New York, NY 10036.

[5] Available from IEEE, 445 Hoes Lane, P.O. Box 1331, Piscataway, NJ 08855-1331.

[6] Available from Health Level Seven, 900 Victors Way, Suite 122, Ann Arbor, MI 48108.

[7] The boldface numbers in parentheses refer to the list of references at the end of the standard.

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