4.4 CDA Context

CDA context is set in the CDA header and applies to the entire document. Context can be overridden at the level of the body, section, and/or CDA entry.

4.4.1 Overview of CDA Context

A document, in a sense, is a contextual wrapper for its contents. Assertions in the document header are typically applicable to statements made in the body of the document, unless overridden. For instance, the patient identified in the header is assumed to be the subject of observations described in the body of the document, unless a different subject is explicitly stated, or the author identified in the header is assumed to be the author of the entire document, unless a different author is explicitly identified on a section. The objective of the CDA context rules is to make these practices explicit with relationship to the RIM, such that a computer will understand the context of a portion of a document the same way that a human interprets it.

At the same time, there is no guarantee that machine processing will identify a mistaken application of contextual rules. If a physician records an "outside diagnosis" in narrative but does not nullify the "informant" context, machine processing will not identify the switch in attribution. This is a special case illustrating the limits of automated validation of electronic records and would apply regardless of the context inheritance mechanism. In other words, from some errors of encoding, there is no recovery other than human review.

CDA's approach to context, and the propagation of that context to nested document components, follows these design principles:

* The CDA Header sets context for the entire document. A propagating value specified in the document header holds true throughout the document, unless explicitly overridden. This principal applies to both Participations and to designated attributes of the CDA Header. Contextual header components (i.e., those that have propagating values) include:
  + Author
  + Confidentiality
  + Data enterer
  + Human language
  + Informant
  + Legal authenticator
  + Participant
  + Record target
* Context components that can be overridden at the level of the document body include:
  + Confidentiality
  + Human language
* Context components that can be overridden at the level of a document section include:
  + Author
  + Confidentiality
  + Human language
  + Informant
  + Subject
* Context components that can be overridden at the level of a CDA entry include:
  + Author
  + Human language
  + Informant
  + Participant
  + Subject
* In principle, context propagates from outer tags to nested tags. Context that is specified on an outer tag holds true for all nested tags, unless overridden on a nested tag. Context specified on a tag within the CDA body always overrides context propagated from an outer tag. For instance, the specification of authorship at a document section level overrides all authorship propagated from outer tags.
* Context is sometimes known precisely, and is sometimes unknown, such as in the case where a document is comprised of a large unparsed narrative block that potentially includes statements that contradict outer context. Because CDA context always propagates unless overridden, the representation of unknown context is achieved by overriding with a null value.

4.4.2 Technical Aspects of CDA Context

* + The root class of CDA is the ClinicalDocument Act. The new Core Principles of HL7 v3 describe context as follows: “the context of particular Act is defined as the set of ActRelationship and Participation relationships that are properties of that Act, whether they stem directly from the Act in question or were conducted to it across an ActRelationship leading into the class.”
  + CDA R3 uses the new RIM context mechanism and defaults the context conduction to be vocabulary-based (as specified in model entry point: "Property-contextConductionStyle: V").
  + CDA R3 uses the value of the "conductible" property of the code asserted for the given element's typeCode (i.e., the typeCode of ActRelationship or Participation); the attributes blockedContextActRelationshipType, blockedContextParticipationType and actAttributeContextBlockedInd of ActRelationships), and constrain the RIM context model by assigning fixed values to these attributes in the header, to accomplish the design objectives below.
  + CDA extends the context propagation property to designated attributes of the CDA Header, which also propagate through any ActRelationship for which actAttributeContextBlockedInd ="false". For example, in all CDA R3 ActRelationship’s hanging off the ClinicalDocument class, actAttributeContextBlockedInd is set to “true” and context propagation is blocked. However, in the component ActRelationship from Clinical Document to Body Choice, from Structured Body to Section and from Section to RIMStub, actAttributeContextBlockedInd is set to “false”, so context conduction is enabled.
  + Note that according to the new RIM conduction rules:
    - If the actAttributeContextBlockedInd attribute is true, act attribute values are not conducted across this act relationship. If false, the values of Act attributes having a "conductible" property of "true" will conduct.
    - Conducted Act attribute values are treated as propagating and overriding.