Implementation Guide for CDA Release 2: Reporting Death Information from the EHR to Vital Records, Release 1

HL7 Draft Standard for Trial Use Implementation guide: US Realm

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Acknowledgments

This document contains specifications for using HL7's Clinical Document Architecture for reporting birth and fetal death information to vital records.

The content defined within this implementation guide is drawn from the US Standard Certificate of Death as revised November 2003.

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Chapter

1

INTRODUCTION

Topics:

- Overview
- Approach
- Scope
- Audience
- Organization of This Guide
- Use of Templates
- Conventions Used in This Guide
- HL7 Modeling Conventions

Overview

This US Realm implementation guide (IG) specifies a standard for transmitting death related information from a clinical setting to a vital statistics registry

Approach

The document focuses on the use case describing the communication of that portion of the death record collected by clinicians to appropriate local, state, and territorial vital statistics agencies using the HL7 Clinical Document Architecture. The goal of the implementation guide is to provide safe, reliable delivery of relevant clinical information to vital records. The use case supported by this implementation guide does not cover the data that is reported by funeral directors.

This use case is not intended to cover reporting to national public health agencies (NCHS).

The following assumption is a precondition for the use of this implementation guide: The data requirements for clinician supplied death information for items to be completed by the medical certifier according to the Edit Specifications for the U.S. Standard Certificate of Death. The jurisdiction may have additional data requirements and edit specifications that will be addressed at the jurisdictional level.

This project supports reusability and ease of data collection through a standard data representation harmonized with work developed through Health Information Technology Expert Panel (HITEP), and balloted through Health Level Seven (HL7).

Scope

This specification covers the provision of death reporting data to the applicable jurisdictional vital reporting agency within the United States. This is a US realm specification.

Audience

This guide is designed for use by analysts and developers who require guidance on how best to use the HL7 Clinical Document Architecture for providing death related information. Users of this guide must be familiar with the Clinical Document Architecture, and with the HL7 Version 3 models that it relies on. This guide is not intended to be a tutorial on that subject.

Organization of This Guide

The requirements as laid out in the body of this document are subject to change per the policy on implementation guides (see section 13.02" Draft Standard for Trial Use Documents" within the HL7 Governance and Operations Manual, http://www.hl7.org/documentcenter/public/membership/HL7_Governance_and_Operations_Manual.pdf).

Templates

Templates are organized by document (see Document Templates), by section (see Section Templates), and by clinical statements (see Clinical Statement Templates). Within a section, templates are arranged hierarchically, where a more specific template is nested under the more generic template that it conforms to. See Templates by Containment for a listing of the higher level templates by containment; the appendix Templates Used in This Guide includes a table of all of the templates Organized Hierarchically.

Vocabulary and Value Sets

Vocabularies recommended in this guide are from standard vocabularies. In many cases, these vocabularies are further constrained into value sets for use within this guide. Value set names and OIDs are summarized in the table Summary of Value Sets. Each named value set in this summary table is stored in a template database that will be maintained by CHCA.

Use of Templates

When valued in an instance, the template identifier (templateId) signals the imposition of a set of template-defined constraints. The value of this attribute provides a unique identifier for the templates in question.

Originator Responsibilities

An originator can apply a templateId to assert conformance with a particular template.

In the most general forms of CDA exchange, an originator need not apply a templateId for every template that an object in an instance document conforms to. This implementation guide asserts when templateIds are required for conformance.

Recipient Responsibilities

A recipient may reject an instance that does not contain a particular templateId (e.g., a recipient looking to receive only CCD documents can reject an instance without the appropriate templateId).

A recipient may process objects in an instance document that do not contain a templateId (e.g., a recipient can process entries that contain Observation acts within a Problems section, even if the entries do not have templateIds).

Conventions Used in This Guide

Conformance Requirements

Conformance statements are grouped and identified by the name of the template, along with the templateId and the context of the template (e.g., ClinicalDocument, section, observation), which specifies the element under constraint. If a template is a specialization of another template, its first constraint indicates the more general template. In all cases where a more specific template conforms to a more general template, asserting the more specific template also implies conformance to the more general template.

An example is shown below.

Template name

```
[<type of template>: templateId <XXXX.XXX.XXX>]
```

Description of the template will be here

- 1. Conforms to <The template name> Template (templateId: XXXX<XX>XXX>YYY).
- **2. SHALL** contain [1..1] @classCode = <AAA> <code display name> (CodeSystem: 123.456.789 <XXX> Class) **STATIC** (CONF:<number>).
- 3.

Figure 1: Template name and "conforms to" appearance

The conformance verb keyword at the start of a constraint (SHALL, SHOULD, MAY, etc.) indicates business conformance, whereas the cardinality indicator (0..1, 1..1, 1..*, etc.) specifies the allowable occurrences within an

instance. Thus, "MAY contain 0..1" and "SHOULD contain 0..1" both allow for a document to omit the particular component, but the latter is a stronger recommendation that the component be included if it is known.

The following cardinality indicators may be interpreted as follows:

- 0..1 as zero to one present
- 1..1 as one and only one present
- 2..2 as two must be present
- 1..* as one or more present
- 0..* as zero to many present

Value set bindings adhere to HL7 Vocabulary Working Group best practices, and include both a conformance verb (SHALL, SHOULD, MAY, etc.) and an indication of DYNAMIC vs. STATIC binding. The use of SHALL requires that the component be valued with a member from the cited value set; however, in every case any HL7 "null" value such as other (OTH) or unknown (UNK) may be used.

Each constraint is uniquely identified (e.g., "CONF:605") by an identifier placed at or near the end of the constraint. These identifiers are not sequential as they are based on the order of creation of the constraint.

- 1. SHALL contain [1..1] component/structuredBody (CONF:4082).
 - a. This component/structuredBody SHOULD contain [0..1] component (CONF:4130) such that it
 - **a. SHALL** contain [1..1] Reporting Parameters section (templateId:2.16.840.1.113883.10.20.17.2.1) (CONF:4131).
 - b. This component/structuredBody SHALL contain [1..1] component (CONF:4132) such that it
 - **a. SHALL** contain [1..1] Patient data section NCR (templateId:2.16.840.1.113883.10.20.17.2.5) (CONF:4133).

Figure 2: Template-based conformance statements example

Keywords

The keywords SHALL, SHALL NOT, SHOULD, SHOULD NOT, MAY, and NEED NOT in this document are to be interpreted as described in the *HL7 Version 3 Publishing Facilitator's Guide*:

- SHALL: an absolute requirement
- SHALL NOT: an absolute prohibition against inclusion
- SHOULD/SHOULD NOT: valid reasons to include or ignore a particular item, but must be understood and carefully weighed
- MAY/NEED NOT: truly optional; can be included or omitted as the author decides with no implications

XML Examples

XML samples appear in various figures in this document in a fixed-width font. Portions of the XML content may be omitted from the content for brevity, marked by an ellipsis (...) as shown in the example below. The reader should note that, currently, the examples are based on fixed strings placed within the appropriate location of the XML document. Future releases of this guide are expected to contain a more realistic example.

```
<ClinicalDocument xmlns='urn:h17-org:v3'>
...
</ClinicalDocument>
```

Figure 3: ClinicalDocument example

XPath expressions are used in the narrative and conformance requirements to identify elements because they are familiar to many XML implementers.

HL7 Modeling Conventions

Participations, Roles and Entities

Recording information about the person or organization that participates in an act is an important feature of the CDA structure. To cite the most salient examples, the CDA document header has information about the document author, its custodian, and the associated person - the "record target". Some of the other observations or acts within the Implementation Guide, also include participations such as "location". According to the HL7 Reference Information Model, this information is captured in a specific way. For example, a "Person", playing the role of "Assigned Entity", participates in the document as its "Author". In each case, the relevant information is spread across three implementation guide elements: there is a participation, a role, and an entity. In some cases, the names are very similar, so that it looks as if information is being repeated.

Multiplicity within Act Relationships and Participations

A key task for the implementation guide is to convey information about which items are optional and which are required. You can see this information next to the elements within the document by viewing the statements of multiplicity, e.g., 0..1, and by reviewing the conditional expressions, SHALL, SHOULD, MAY. While reviewing the document it is important to keep in mind that much information is captured as an observation. In the typical case, there will be an observation that is associated, as an entry, with the document body. In each case, there is an act relationship class that associates the observation with the document body. The relevant multiplicity is captured within the document body section, and shows whether the observation is required or not, and whether it repeats. However, within each observation, the multipicity indicates that, if the observation is present, it must have a value for code, for value, for class code, for mood code.

Chapter

2

DOCUMENT TEMPLATES

Topics:

 Reporting Death Information from a clinical setting to Vital Records This section contains the document level constraints for CDA documents that are compliant with this implementation guide.

Reporting Death Information from a clinical setting to Vital Records

[ClinicalDocument: templateId 2.16.840.1.113883.10.20.26.1]

- 1. SHALL contain exactly one [1..1] templateId () such that it
 - **a. SHALL** contain exactly one [1..1] @root="2.16.840.1.113883.10.20.26.1"
- 2. SHALL contain exactly one [1..1] @classCode="DOCCLIN" (CodeSystem: 2.16.840.1.113883.5.6 HL7ActClass)
- **3. SHALL** contain exactly one [1..1] **@moodCode=**"EVN" *Event* (CodeSystem: 2.16.840.1.113883.5.1001 HL7ActMood)
- **4.** SHALL contain exactly one [1..1] code/@code="69409-1" U.S. standard certificate of death 2003 revision (CodeSystem: 2.16.840.1.113883.6.1 LOINC)
 - The .code value indicates that the document contans death information.
- 5. SHALL contain exactly one [1..1] confidentialityCode, where the @code SHALL be selected from (CodeSystem: 2.16.840.1.11.3883.5.25 Confidentiality)
 - An indication of the level of confidentiality with which the document needs to be managed.
- 6. SHALL contain exactly one [1..1] id
 - Provide the identifier assigned to the document by the healthcare provider acting as a custodian of the information.
- 7. SHOULD contain exactly one [1..1] languageCode, where the @code SHALL be selected from (CodeSystem: 2.16.840.1.113883.11.11526 HumanLanguage)
 - The language used for text within the document.
- 8. SHALL contain exactly one [1..1] realmCode/@code="US" (CodeSystem: 1.0.3166.1 Country (ISO 3166-1))
- 9. SHOULD contain zero or one [0..1] title
 - Provide a title for the death information document.
- 10. SHALL contain exactly one [1..1] effectiveTime
 - The point in time at which the document was completed.
- 11. SHALL contain exactly one [1..1] custodian

The custodian represents the organization that is in charge of maintaining the document. The custodian is the steward that is entrusted with the care of the document. Every CDA document has exactly one custodian.

- a. This custodian SHALL contain exactly one [1..1] assignedCustodian
 - a. This assigned Custodian Contains exactly one [1..1] represented Custodian Organization
 - a. This represented Custodian Organization SHALL contain exactly one [1..1] name
 - b. This represented Custodian Organization SHALL contain exactly one [1..1] id
- 12. SHALL contain exactly one [1..1] component
 - **a.** Contains exactly one [1..1] *Death Report Document Body* (templateId: 2.16.840.1.113883.10.20.26.1.1)
- 13. SHALL contain exactly one [1..1] author

The author participation contains information about the person who authored the document.

- a. This author SHALL contain exactly one [1..1] @typeCode="AUT"
- **b.** This author **SHALL** contain exactly one [1..1] **time**

The date/time of authorship is required by CDA. It may be set equal to the document creation date/time.

c. This author SHALL contain exactly one [1..1] assignedAuthor

a. This assigned Author SHALL contain exactly one [1..1] @classCode="ASSIGNED"

INLINE

- **b.** This assigned Author **SHALL** contain exactly one [1..1] **id**
- c. This assigned Author SHALL contain exactly one [1..1] assignedPerson
 - a. This assignedPerson SHALL contain exactly one [1..1] @classCode="PSN"
 - b. This assignedPerson SHALL contain exactly one [1..1] @determinerCode="INSTANCE"
 - c. This assignedPerson SHALL contain exactly one [1..1] name

Provide the name of the clinician authoring the report.

14. SHALL contain exactly one [1..1] recordTarget

The recordTarget participation contains information that directly refers to the deceased.

- a. This recordTarget SHALL contain exactly one [1..1] @typeCode="RCT"
- b. This recordTarget SHALL contain exactly one [1..1] patientRole
 - a. This patientRole SHALL contain exactly one [1..1] @classCode="PAT"
 - b. This patientRole SHALL contain at least one [1..*] id

One or more identifiers may be provided. Social Security Number of the decendent is required, and must be provided if it is available. If SSN is not available, a null flavor must be provided. Additional identifier types are allowed. Note, when including US Social Security Number as the patient identifier, the OID value to be used for the II root is 2.16.840.1.113883.3.184.

c. This patientRole SHOULD contain exactly one [1..1] addr

Street address, city, state and zip code are expected.

- **d.** This patientRole **SHALL** contain exactly one [1..1] **patient**
 - a. This patient SHALL contain exactly one [1..1] @classCode="PSN"
 - **b.** This patient **SHALL** contain exactly one [1..1] **@determinerCode="INSTANCE"**
 - c. This patient SHALL contain exactly one [1..1] administrativeGenderCode, where the @code SHALL be selected from (CodeSystem: 2.16.840.1.113883.5.1 AdministrativeGenderCode)
 - **d.** This patient **SHALL** contain exactly one [1..1] **name**
- e. This patientRole SHALL satisfy: Value patient.id root with 2.16.840.1.113883.4.1 (US Social Security Number)

Reporting Death Information from a clinical setting to Vital Records example

Error: Missing Runtime Class

Chapter

3

SECTION TEMPLATES

Topics:

• Death Report Document Body

Death Report Document Body

```
[Section: templateId 2.16.840.1.113883.10.20.26.1.1]
```

- 1. SHALL contain exactly one [1..1] templateId () such that it
 - **a. SHALL** contain exactly one [1..1] @root="2.16.840.1.113883.10.20.26.1.1"
- 2. SHALL contain zero or one [0..1] code, where the @code SHALL be selected from (CodeSystem: 2.16.840.1.113883.6.1 LOINC)
 - A code to indicate this is the section containing death reporting information.
- **3.** Contains zero or one [0..1] text
 - Contains, as text entries that can be rendered using a browser, the content of the structured information from the entries within the section.
- 4. SHALL contain exactly one [1..1] entry
 - **a.** Contains exactly one [1..1] *Date and Time of Death* (templateId: 2.16.840.1.113883.10.20.26.1.13)
- 5. SHALL contain exactly one [1..1] entry
 - The report is expected to capture information about the physical location of death, either as an address or as a description.
 - **a.** Contains exactly one [1..1] *Location of Death* (templateId: 2.16.840.1.113883.10.20.26.1.10)
- **6. SHALL** contain zero or one [0..1] **entry**
 - **a.** Contains exactly one [1..1] *Certifying Death* (templateId: 2.16.840.1.113883.10.20.26.1.7)
- 7. SHALL contain exactly one [1..1] entry
 - **a.** Contains exactly one [1..1] *Manner of Death* (templateId: 2.16.840.1.113883.10.20.26.1.11)
- 8. SHALL contain exactly one [1..1] entry
 - Note, the entry is required if the person is female and in the age range 5 to 75 years. In other cases, e.g., male decedent, the nullFlavor "NA", should be provided.
 - **a.** Contains exactly one [1..1] *Pregnancy Status* (templateId: 2.16.840.1.113883.10.20.26.1.12)
- 9. SHALL contain zero or one [0..1] entry
 - **a.** Contains exactly one [1..1] *Tobacco Use* (templateId: 2.16.840.1.113883.10.20.26.1.14)
- 10. SHOULD contain zero or one [0..1] entry
 - **a.** Contains exactly one [1..1] *Injury* (templateId: 2.16.840.1.113883.10.20.26.1.9)
- 11. SHALL contain exactly one [1..1] entry
 - **a.** Contains exactly one [1..1] *Death Causal Information* (templateId: 2.16.840.1.113883.10.20.26.1.6)
- 12. SHALL contain exactly one [1..1] entry
 - **a.** Contains exactly one [1..1] *Autopsy Performance* (templateId: 2.16.840.1.113883.10.20.26.1.2)
- **13. MAY** contain zero or one [0..1] **entry**
 - **a.** Contains exactly one [1..1] *Autopsy Results* (templateId: 2.16.840.1.113883.10.20.26.1.3)
- 14. MAY contain zero or one [0..1] entry
 - **a.** Contains exactly one [1..1] *Coroner Referral* (templateId: 2.16.840.1.113883.10.20.26.1.5)
- 15. SHALL contain exactly one [1..1] entry
 - a. Contains exactly one [1..1] Coroner Case Transfer (templateId: 2.16.840.1.113883.10.20.26.1.4)
- **16. SHALL** contain exactly one [1..1] **entry**
 - **a.** Contains exactly one [1..1] *Death LocationType* (templateId: 2.16.840.1.113883.10.20.26.1.8)

17. SHALL contain exactly one [1..1] entry

a. Contains exactly one [1..1] *Pronouncing Death* (templateId: 2.16.840.1.113883.10.20.26.1.15)

Death Report Document Body example

```
<section xmlns="urn:hl7-org:v3">
 <templateId root="2.16.840.1.113883.10.20.26.1.1"/>
 <id root="MDHT" extension="1171305826"/>
 <code codeSystem="2.16.840.1.113883.6.1" codeSystemName="LOINC"/>
 <title>TEXT FOR TITLE</title>
 <entry>
   <observation/>
 </entry>
  <entry>
    <observation/>
 </entry>
  <entry>
   <observation/>
 </entry>
 <entry>
    <observation/>
 </entry>
 <entry>
    <observation classCode="OBS">
      <templateId root="2.16.840.1.113883.10.20.26.1.12"/>
      <id root="MDHT" extension="946945791"/>
      <code code="69442-2" codeSystem="2.16.840.1.113883.6.1"</pre>
 codeSystemName="LOINC" displayName="Timing of recent pregancy related to
death"/>
      <effectiveTime>
        <low value="2013"/>
        <high value="2013"/>
      </effectiveTime>
   </observation>
 </entry>
 <entry>
    <observation classCode="OBS" moodCode="EVN">
      <templateId root="2.16.840.1.113883.10.20.26.1.14"/>
      <id root="MDHT" extension="1224422446"/>
      <code code="69443-0" codeSystem="2.16.840.1.113883.6.1"</pre>
 codeSystemName="LOINC" displayName="Tobacco Use"/>
      <effectiveTime>
        <low value="2013"/>
        <high value="2013"/>
      </effectiveTime>
    </observation>
 </entry>
 <entry>
    <organizer classCode="CLUSTER" moodCode="EVN">
      <templateId root="2.16.840.1.113883.10.20.26.1.9"/>
      <id root="MDHT" extension="1410419243"/>
      <code code="LOINC TBD" codeSystem="2.16.840.1.113883.6.1"</pre>
 codeSystemName="LOINC" displayName="Injury Cluster"/>
      <statusCode code="completed"/>
      <effectiveTime>
        <low value="2013"/>
        <high value="2013"/>
      </effectiveTime>
      <component typeCode="COMP">
        <observation classCode="OBS" moodCode="EVN">
```

```
<code code="11374-6" codeSystem="2.16.840.1.113883.6.1"</pre>
codeSystemName="LOINC" displayName="Injury incident description"/>
       </observation>
     </component>
     <component typeCode="COMP">
       <observation classCode="OBS" moodCode="EVN">
         <code code="69444-8" codeSystem="2.16.840.1.113883.6.1"</pre>
codeSystemName="LOINC" displayName="Did death result from injury at work"/>
       </observation>
     </component>
     <component typeCode="COMP">
       <observation classCode="OBS" moodCode="EVN">
         <code code="69448-9" codeSystem="2.16.840.1.113883.6.1"</pre>
codeSystemName="LOINC" displayName="Injury leading to death associated with
transportation event"/>
       </observation>
     </component>
     <component typeCode="COMP">
       <observation classCode="OBS" moodCode="EVN">
         <code code="69451-3" codeSystem="2.16.840.1.113883.6.1"</pre>
codeSystemName="LOINC" displayName="Transportation role of decedent"/>
       </observation>
     </component>
   </organizer>
</entry>
<entry>
   <organizer classCode="CLUSTER" moodCode="EVN">
     <templateId root="2.16.840.1.113883.10.20.26.1.6"/>
     <id root="MDHT" extension="1611111556"/>
     <code code="69453-9" codeSystem="2.16.840.1.113883.6.1"</pre>
codeSystemName="LOINC" displayName="Cause Of Death"/>
     <statusCode code="completed"/>
     <effectiveTime>
       <low value="2013"/>
       <high value="2013"/>
     </effectiveTime>
     <component typeCode="COMP">
       <sequenceNumber value="1"/>
       <observation classCode="OBS" moodCode="EVN">
         <code code="21984-0" codeSystem="2.16.840.1.113883.6.1"</pre>
codeSystemName="LOINC" displayName="Cause of Death"/>
       </observation>
     </component>
     <component typeCode="COMP">
       <observation classCode="OBS" moodCode="EVN">
         <code code="69441-4" codeSystem="2.16.840.1.113883.6.1"</pre>
codeSystemName="LOINC" displayName="Other Significant Condition"/>
       </observation>
     </component>
   </organizer>
</entry>
<entry>
   <observation classCode="OBS">
     <templateId root="2.16.840.1.113883.10.20.26.1.2"/>
     <id root="MDHT" extension="529162223"/>
     <code code="21986-5" codeSystem="2.16.840.1.113883.6.1"</pre>
codeSystemName="LOINC" displayName="Autopsy Status"/>
     <effectiveTime>
       <low value="2013"/>
       <high value="2013"/>
    </effectiveTime>
     <performer typeCode="PRF">
       <assignedEntity classCode="ASSIGNED"/>
     </performer>
```

```
</observation>
 </entry>
 <entry>
    <observation classCode="OBS">
      <templateId root="2.16.840.1.113883.10.20.26.1.3"/>
      <id root="MDHT" extension="405081341"/>
      <code code="69436-4" codeSystem="2.16.840.1.113883.6.1"</pre>
 codeSystemName="LOINC" displayName="Autopsy results available"/>
      <effectiveTime>
        <low value="2013"/>
        <high value="2013"/>
      </effectiveTime>
    </observation>
 </entry>
 <entry>
    <observation classCode="OBS">
      <templateId root="2.16.840.1.113883.10.20.26.1.5"/>
      <id root="MDHT" extension="1538389362"/>
      <code code="69438-0" codeSystem="2.16.840.1.113883.6.1"</pre>
 codeSystemName="LOINC" displayName="Coroner Referral Reason"/>
      <effectiveTime>
        <low value="2013"/>
        <high value="2013"/>
      </effectiveTime>
   </observation>
 </entry>
 <entry>
    <observation classCode="OBS">
      <templateId root="2.16.840.1.113883.10.20.26.1.4"/>
      <id root="MDHT" extension="308450280"/>
      <code code="LOINC TBD" codeSystem="2.16.840.1.113883.6.1"</pre>
 codeSystemName="LOINC" displayName="Coroner Assignment"/>
      <effectiveTime>
        <low value="2013"/>
        <high value="2013"/>
      </effectiveTime>
   </observation>
 </entry>
 <entry>
    <observation/>
 </entry>
</section>
```

Chapter

4

CLINICAL STATEMENT TEMPLATES

Topics:

- Autopsy Performance
- Autopsy Results
- Certifying Death
- Coroner Case Transfer
- Coroner Referral
- Date and Time of Death
- Death Causal Information
- Death Location Type
- Injury
- Location of Death
- Manner of Death
- Pregnancy Status
- Pronouncing Death
- Tobacco Use

This section of the Implementation Guide details the clinical statement entries referenced in the document section templates. The clinical statement entry templates are arranged alphabetically.

Autopsy Performance

[Observation: templateId 2.16.840.1.113883.10.20.26.1.2]

Information on the performance of an autopsy. Minimally, information on whether or not an autopsy was performed is recorded.

- 1. SHALL contain exactly one [1..1] templateId () such that it
 - **a.** SHALL contain exactly one [1..1] @root="2.16.840.1.113883.10.20.26.1.2"
- 2. SHALL contain exactly one [1..1] @classCode="OBS" Observation (CodeSystem: 2.16.840.1.113883.5.6 HL7ActClass)
- **3. SHALL** contain exactly one [1..1] **@moodCode="**EVN" *Event* (CodeSystem: 2.16.840.1.113883.5.1001 HL7ActMood)
- **4. SHALL** contain exactly one [1..1] **code/@code=**"21986-5" *Autopsy Status* (CodeSystem: 2.16.840.1.113883.6.1 LOINC)
 - The code value notes that autopsy status information is provided.
- 5. SHALL contain exactly one [1..1] effectiveTime
 - If an autopsy is performed, this field is valued with the date and time the autopsy was begun and completed. Start date/time for the autopsy is recorded using the low property of the interval data type, while the completion date and time are recorded using the high property of the data type. Note, normally only the completion date and time will be provided.
- **6. SHALL** contain exactly one [1..1] **value** with data type BL
 - An indicator that tells whether an autopsy was performed.
- 7. SHALL contain zero or one [0..1] performer
 - a. This performer SHALL contain zero or one [0..1] @typeCode="PRF"
 - b. This performer SHALL contain zero or one [0..1] assignedEntity
 - a. This assigned Entity SHALL contain zero or one [0..1] @classCode="ASSIGNED"
 - b. This assignedEntity SHALL contain zero or one [0..1] assignedPerson
 - a. This assignedPerson SHALL contain zero or one [0..1] @classCode="PSN"
 - b. This assignedPerson SHALL contain zero or one [0..1] @determinerCode="INSTANCE"
 - c. This assignedPerson SHALL contain exactly one [1..1] name

This field is valued with the name of the person who performed the autopsy.

vsdr::Autopsy P	erformance						
cda::observation	n[cda:templateId/@	root = 2.16.840.1	.113883.10.20.26	5.1.2]/			
Name	XPath	Cardinality	Severity	Nullable	Data Type	Conformance	Value(s)
classCode	@classCode	11	SHALL	NO	ActClassObservat	on	ALRT
moodCode	@moodCode	11	SHALL	NO	x_ActMoodDocui	nentObservation	DEF
code	code	11	SHALL	NO	CD		LOINC 2.16.840.1.113883 21986-5
effectiveTime	effectiveTime	11	SHALL	YES	IVL_TS		
value	value	11	SHALL	YES	BL		
autopsy Performance	autopsy Performance	11	SHALL	YES	Autopsy Performance		

vsdr::Autopsy Performance								
cda::observation	[cda:templateId/@	root = 2.16.840.1.1	13883.10.20.26.1.2]/				
Name	XPath	Cardinality	Severity	Nullable	Data Type	Conformance	Value(s)	
autopsyPerformer	autopsyPerformer	01	SHALL	YES	AutopsyPerformer			

Autopsy Performance example

```
<observation xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"</pre>
xmlns="urn:hl7-org:v3" classCode="OBS">
 <templateId root="2.16.840.1.113883.10.20.26.1.2"/>
 <id root="MDHT" extension="893413231"/>
 <code code="21986-5" codeSystem="2.16.840.1.113883.6.1"</pre>
 codeSystemName="LOINC" displayName="Autopsy Status"/>
 <effectiveTime>
    <low value="2013"/>
    <high value="2013"/>
 </effectiveTime>
 <value xsi:type="BL"/>
 <performer typeCode="PRF">
    <assignedEntity classCode="ASSIGNED">
      <id root="MDHT" extension="138020152"/>
      <assignedPerson classCode="PSN" determinerCode="INSTANCE"/>
    </assignedEntity>
  </performer>
</observation>
```

Autopsy Results

Observation: templateId 2.16.840.1.113883.10.20.26.1.3

The template contains information regarding the availability of results from an autopsy.

- 1. SHALL contain exactly one [1..1] templateId () such that it
 - **a. SHALL** contain exactly one [1..1] @root="2.16.840.1.113883.10.20.26.1.3"
- 2. SHALL contain exactly one [1..1] @classCode="OBS" Observation (CodeSystem: 2.16.840.1.113883.5.6 HL7ActClass)
- **3. SHALL** contain exactly one [1..1] **@moodCode=**"EVN" *Event* (CodeSystem: 2.16.840.1.113883.5.1001 HL7ActMood)
- **4. SHALL** contain exactly one [1..1] **code/@code="**69436-4" *Autopsy results available* (CodeSystem: 2.16.840.1.113883.6.1 LOINC)
 - A code that indicates that information about the availability of autopsy results is provided.
- **5. SHALL** contain exactly one [1..1] **value** with data type BL
 - An indicator that tells whether an autopsy report is available for the deceased.
- **6.** MAY contain zero or one [0..1] entryRelationship

The autopsy report may be provided if it is available.

- a. This entryRelationship SHALL contain exactly one [1..1] @classCode="OBS" Observation (CodeSystem: 2.16.840.1.113883.5.6 HL7ActClass)
- **b.** This entryRelationship **SHALL** contain exactly one [1..1] **@moodCode="**EVN" *Event* (CodeSystem: 2.16.840.1.113883.5.1001 HL7ActMood)
- c. This entryRelationship SHALL contain exactly one [1..1] code/@code="18743-5" Autopsy Report (CodeSystem: 2.16.840.1.113883.6.1 LOINC)

The code value indicates that the observation contains the autopsy report.

d. This entryRelationship **SHALL** contain exactly one [1..1] **value** with data type ED

The content of the autopsy report.

vsdr::Autopsy Results cda::observation[cda:templateId/@root = 2.16.840.1.113883.10.20.26.1.3]/									
classCode	@classCode	11	SHALL	NO	ActClassObservat	on	ALRT		
moodCode	@moodCode	11	SHALL	NO	x_ActMoodDocur	mentObservation	DEF		
code	code	11	SHALL	NO	CD		LOINC 2.16.840.1.113883 69436-4		
value	value	11	SHALL	YES	BL				
autopsy Report	autopsy Report	01	MAY	YES	Autopsy Report				
autopsy Results	autopsy Results	01	MAY	YES	Autopsy Results				

Autopsy Results example

Certifying Death

[Observation: templateId 2.16.840.1.113883.10.20.26.1.7]

The template contains information on the certification of the person's death. This information may not be available if a case has been assigned to the coroner or medical examiner.

The certifying physician certifies or reports the cause of death. In addition the certifying physician is responsible for including additional items, e.g., pregnancy status, tobacco use. In most cases, a physician will both pronounce death and certify or report the cause of death. A different physician will pronounce death only when the attending physician is unavailable to certify the cause of death at the time of death and if State law provides for this option. If an inquiry is required by a State Post-Mortem Examinations Act, a medical examiner or coroner is responsible for determining cause of death.

- 1. SHALL contain exactly one [1..1] templateId () such that it
 - **a. SHALL** contain exactly one [1..1] @root="2.16.840.1.113883.10.20.26.1.7"
- 2. SHALL contain exactly one [1..1] @classCode

- 3. SHALL contain exactly one [1..1] @moodCode
- **4. SHALL** contain exactly one [1..1] **code/@code="**69437-2" *Death Certifier* (CodeSystem: 2.16.840.1.113883.6.1 LOINC)
- 5. SHALL contain exactly one [1..1] effectiveTime
 - Provide the date and time at which the death certificate was signed. A value is required if the case has not been assigned to a coroner/medical examiner.
- **6. SHALL** contain exactly one [1..1] **performer**
 - a. This performer SHALL contain exactly one [1..1] @typeCode="PRF"
 - b. This performer SHALL contain exactly one [1..1] assignedEntity
 - a. This assignedEntity SHALL contain exactly one [1..1] @classCode="ASSIGNED"
 - **b.** This assignedEntity **SHALL** contain exactly one [1..1] **addr**

The postal address used to locate the clinician or coroner at the time of death certification. The element is required if the death has been certified.

c. This assignedEntity SHALL contain exactly one [1..1] code, where the @code SHALL be selected from (CodeSystem: 2.16.840.1.114222.4.11.6001 Certifier Types)

A coded value that indicates the role played by the person certifying the death. E.g., coroner, physician.

- d. This assignedEntity SHALL contain exactly one [1..1] assignedPerson
 - a. This assignedPerson SHALL contain exactly one [1..1] @classCode="PSN"
 - b. This assignedPerson SHALL contain exactly one [1..1] @determinerCode="INSTANCE"
 - c. This assignedPerson SHALL contain exactly one [1..1] name

This field is valued with the person who signed the death certificate. The full name of the certifier is required.

A value is required if the case has not been assigned to a coroner/medical examiner.

e. This assignedEntity SHALL contain at least one [1..*] id

One or more identifiers for the certifying clinician. The state license number is required. Provider NPI may be added as well.

Certifying Death example

Error: Missing Runtime Class

Coroner Case Transfer

[Observation: templateId 2.16.840.1.113883.10.20.26.1.4]

An observation to indicate whether or not the case has been transferred to a coroner or medical examiner for investigative purposes.

- 1. SHALL contain exactly one [1..1] templateId () such that it
 - **a.** SHALL contain exactly one [1..1] @root="2.16.840.1.113883.10.20.26.1.4"
- 2. SHOULD contain exactly one [1..1] @classCode="OBS" *Observation* (CodeSystem: 2.16.840.1.113883.5.6 HL7ActClass)
- **3. SHALL** contain exactly one [1..1] **@moodCode=**"EVN" *Event* (CodeSystem: 2.16.840.1.113883.5.1001 HL7ActMood)
- **4.** SHALL contain exactly one [1..1] code/@code="LOINC TBD" Coroner Assignment (CodeSystem: 2.16.840.1.113883.6.1 LOINC)
- **5. SHALL** contain exactly one [1..1] **value** with data type BL
 - An indicator that tellss whether the case was transferred to a coroner or medical examiner.

6. MAY contain zero or one [0..1] entryRelationship

The coroner case identifier may be provided, if the case has been transferred to the coroner or medical examiner.

- a. This entryRelationship SHALL contain exactly one [1..1] @classCode="OBS" Observation (CodeSystem: 2.16.840.1.113883.5.6 HL7ActClass)
- b. This entryRelationship SHALL contain exactly one [1..1] code/@code="69452-1" Coroner-medical examiner case number (CodeSystem: 2.16.840.1.113883.6.1 LOINC)
- c. This entryRelationship **SHALL** contain exactly one [1..1] **value** with data type II

The identifier assigned to a case of death by the coroner or medical examiner.

vsdr::Coroner	Case Transfer								
cda::observation[cda:templateId/@root = 2.16.840.1.113883.10.20.26.1.4]/									
Name	XPath	Cardinality	Severity	Nullable	Data Type	Conformance	Value(s)		
classCode	@classCode	11	SHOULD	NO	ActClassObservat	on	ALRT		
moodCode	@moodCode	11	SHALL	NO	x_ActMoodDocur	nentObservation	DEF		
code	code	11	SHALL	NO	CD		LOINC 2.16.840.1.11388 LOINC TBD		
value	value	11	SHALL	YES	BL				
coroner Case	coroner Case	01	MAY	YES	Coroner Case				
coroner Case Transfer	coroner Case Transfer	11	SHALL	YES	Coroner Case Transfer				

Coroner Case Transfer example

Coroner Referral

[Observation: templateId 2.16.840.1.113883.10.20.26.1.5]

The template contains information regarding the referral of a case to the coroner or medical examiner.

- 1. SHALL contain exactly one [1..1] templateId () such that it
 - **a. SHALL** contain exactly one [1..1] @root="2.16.840.1.113883.10.20.26.1.5"
- 2. SHALL contain exactly one [1..1] @classCode="OBS" Observation (CodeSystem: 2.16.840.1.113883.5.6 HL7ActClass)

- **3. SHALL** contain exactly one [1..1] **@moodCode=**"EVN" *Event* (CodeSystem: 2.16.840.1.113883.5.1001 HL7ActMood)
- **4.** SHALL contain exactly one [1..1] code/@code="69438-0" Forensic medicine Referral note (CodeSystem: 2.16.840.1.113883.6.1 LOINC)
- **5. SHALL** contain exactly one [1..1] **value** with data type ED
 - A note that is intended to record the reason the case was forwarded to a coroner or medical examiner.

vsdr::Coroner R	eferral								
cda::observation[cda:templateId/@root = 2.16.840.1.113883.10.20.26.1.5]/									
Name	XPath	Cardinality	Severity	Nullable	Data Type	Conformance	Value(s)		
classCode	@classCode	11	SHALL	NO	ActClassObservat	on	ALRT		
moodCode	@moodCode	11	SHALL	NO	x_ActMoodDocur	nentObservation	DEF		
code	code	11	SHALL	NO	CD		LOINC 2.16.840.1.113883 69438-0		
value	value	11	SHALL	YES	ED				
coroner Referral	coroner Referral	01	MAY	YES	Coroner Referral				

Coroner Referral example

Date and Time of Death

Observation: templateId 2.16.840.1.113883.10.20.26.1.13

The template provides information about the decedent's date and time of death.

- 1. SHALL contain exactly one [1..1] templateId (2.16.840.113883.10.20.24.1.3) such that it
 - **a. SHALL** contain exactly one [1..1] @**root**="2.16.840.1.113883.10.20.26.1.13"
- 2. SHALL contain exactly one [1..1] @classCode="OBS" Observation (CodeSystem: 2.16.840.1.113883.5.6 HL7ActClass)
- **3. SHALL** contain exactly one [1..1] @moodCode="EVN" *Event* (CodeSystem: 2.16.840.1.113883.5.1001 HL7ActMood)
- **4. SHALL** contain exactly one [1..1] **code/@code=**"31211-6" *Date of Death* (CodeSystem: 2.16.840.1.113883.6.1 LOINC)
- 5. SHALL contain exactly one [1..1] effectiveTime with data type TS

- Provide the date and time of death if it is known.
- **6.** MAY contain zero or one [0..1] text
 - Provide information relevant to the date/time of death in cases where the point in time can in no way be established. If needed, supplemental text may be added to indicate that date/time information, while present, is approximate.

Date and Time of Death example

Error: Missing Runtime Class

Death Causal Information

[Organizer: templateId 2.16.840.1.113883.10.20.26.1.6]

The template contains information provided by the clinican to indicate the cause or causes behind the person's death. The information includes the chain of events that directly caused the death, and includes other significant conditions contributing to death. There may be up to four causal elements provided, along with a single statement of the other significant conditions.

- 1. SHALL contain exactly one [1..1] templateId () such that it
 - **a. SHALL** contain exactly one [1..1] @**root**="2.16.840.1.113883.10.20.26.1.6"
- 2. SHALL contain exactly one [1..1] @classCode="CLUSTER" (CodeSystem: 2.16.840.1.113883.5.6 HL7ActClass)
- **3. SHALL** contain exactly one [1..1] **@moodCode=**"EVN" *Event* (CodeSystem: 2.16.840.1.113883.5.1001 HL7ActMood)
- **4. SHALL** contain exactly one [1..1] **code/@code=**"69453-9" *Cause Of Death* (CodeSystem: 2.16.840.1.113883.6.1 LOINC)
 - A code that indicates that death causal information is provided.
- 5. SHALL contain exactly one [1..1] statusCode/@code="Active" (CodeSystem: 2.16.840.1.113883.5.14 ActStatus)
 - An indication of the status of the death causal information organizer.
- 6. SHALL contain [1..4] component

Up to four events - diseases, injuries, or complications may be entered to record the cause of death. The immediate cause of death and the underlying cause of death must be reported.

Additional causes of death up to two may be recorded. These are entered in a defined sequence, and the order of each is recorded using sequence number. In addition, the approximate time interval from onset until death is captured as well. this information is captured in the related Component Death Cause Interval observation. The act relationship sequence number value is used to associate the time between onset and death with the relevant event.

- a. Such components **SHALL** contain exactly one [1..1] @typeCode="COMP"
- b. Such components SHALL contain exactly one [1..1] sequenceNumber
- c. Such components SHALL contain exactly one [1..1] observation
 - a. This observation **SHALL** contain exactly one [1..1] **@classCode="**OBS" *Observation* (CodeSystem: 2.16.840.1.113883.5.6 HL7ActClass)
 - **b.** This observation **SHALL** contain exactly one [1..1] **@moodCode="**EVN" *Event* (CodeSystem: 2.16.840.1.113883.5.1001 HL7ActMood)
 - c. This observation SHALL contain exactly one [1..1] code/@code="21984-0" Cause of Death (CodeSystem: 2.16.840.1.113883.6.1 LOINC)

An indication that the observation contains information regarding a specific cause of death.

d. This observation **SHALL** contain exactly one [1..1] **value** with data type CD

In order to comply with NCHS edit specifications, the entry is descriptive text with a maximum length of 120 characters. Death causes are ordered sequentially with the immediate cause of death given the sequence number "1", and the underlying cause of death being given the highest sequence number among the set of cited causes. Each cause of death is associated with a numeric observation Death Cause Interval which captures the approximate interval between the onset of the death cause (condition) and death. This linkage is implemented through the use of actRelationship.sequenceNumber.

- e. This observation SHALL contain exactly one [1..1] componentDeathCauseInterval
 - a. This componentDeathCauseInterval SHALL contain zero or one [0.1] @typeCode="COMP"
 - b. This componentDeathCauseInterval SHALL contain zero or one [0..1] sequenceNumber
 - c. This componentDeathCauseInterval SHALL contain zero or one [0..1] observation
 - a. This observation SHALL contain exactly one [1..1] @classCode="OBS" Observation (CodeSystem: 2.16.840.1.113883.5.6 HL7ActClass)
 - b. This observation SHALL contain exactly one [1..1] @moodCode="EVN" Event (CodeSystem: 2.16.840.1.113883.5.1001 HL7ActMood)
 - c. This observation SHALL contain exactly one [1..1] code/@code="69440-6" Disease onset to death interval (CodeSystem: 2.16.840.1.113883.6.1 LOINC)

An indication that the observation contains information regrading the interval between disease onset and time of death.

d. This observation **SHALL** contain zero or more [0..*] **value** with data type ED

A measure of the time interval between the onset of the disease, injury or complication, and the person's death. The data to be included will vary from statements of time intervals to text statements such as "many months", "days", "unknown".

Each death cause interval value is associated with a cause of death observation Cause of Death - that identifies the condition associated with the time interval. This linkage is implemented through the use of actRelationship.sequenceNumber.

- 7. SHOULD contain zero or more [0..*] component
 - a. Such components SHALL contain exactly one [1..1] @typeCode="COMP"
 - b. Such components SHALL contain zero or one [0..1] observation
 - **a.** This observation **SHALL** contain exactly one [1..1] **@classCode="**OBS" *Observation* (CodeSystem: 2.16.840.1.113883.5.6 HL7ActClass)
 - **b.** This observation **SHALL** contain exactly one [1..1] **@moodCode="**EVN" *Event* (CodeSystem: 2.16.840.1.113883.5.1001 HL7ActMood)
 - c. This observation SHALL contain exactly one [1..1] code/@code="69441-4" Other Significant Condition (CodeSystem: 2.16.840.1.113883.6.1 LOINC)
 - **d.** This observation **SHALL** contain exactly one [1..1] **value** with data type ED

Descriptive text that provides information on a significant condition or conditions that contributed to death, but did not result in the underlying cause that is elsewhere described. In order to comply with NCHS edit specifications, the maximum length of the significant condition descriptions, across the set of encapsulated date values, is 240 characters.

vsdr::Death Causal Information								
cda::organizer[cda:templateId/@root = 2.16.840.1.113883.10.20.26.1.6]/								
Name	XPath	Cardinality	Severity	Nullable	Data Type	Conformance	Value(s)	
classCode	@classCode	11	SHALL	NO	x_ActClassDocum	entEntryOrganizer	BATTERY	
moodCode	@moodCode	11	SHALL	NO	ActMood		APT	

vsdr::Death Caus	vsdr::Death Causal Information									
cda::organizer[cda:templateId/@root = 2.16.840.1.113883.10.20.26.1.6]/										
Name	XPath	Cardinality	Severity	Nullable	Data Type	Conformance	Value(s)			
code	code	11	SHALL	NO	CD		LOINC 2.16.840.1.113883 69453-9			
statusCode	statusCode	11	SHALL	YES	CS		ActStatus 2.16.840.1.113883			
cause of Death	cause of Death	11	SHALL	YES	Death Causal Information					
componentCause	componentCause	14	SHALL	YES	ComponentCause					
componentOtherS	graificeantErtrOditionS	ghificantCondition	SHOULD	YES	ComponentOtherS	ignificantCondition				

Death Causal Information example

```
<organizer xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"</pre>
xmlns="urn:hl7-org:v3" classCode="CLUSTER" moodCode="EVN">
 <templateId root="2.16.840.1.113883.10.20.26.1.6"/>
 <id root="MDHT" extension="2116192100"/>
 <code code="69453-9" codeSystem="2.16.840.1.113883.6.1"</pre>
 codeSystemName="LOINC" displayName="Cause Of Death"/>
 <statusCode code="completed"/>
 <effectiveTime>
   <low value="2013"/>
    <high value="2013"/>
 </effectiveTime>
 <component typeCode="COMP">
    <sequenceNumber value="1"/>
    <observation classCode="OBS" moodCode="EVN">
      <code code="21984-0" codeSystem="2.16.840.1.113883.6.1"</pre>
 codeSystemName="LOINC" displayName="Cause of Death"/>
      <value xsi:type="CD" code="1400900308"/>
    </observation>
 </component>
  <component typeCode="COMP">
    <observation classCode="OBS" moodCode="EVN">
      <code code="69441-4" codeSystem="2.16.840.1.113883.6.1"</pre>
 codeSystemName="LOINC" displayName="Other Significant Condition"/>
      <value xsi:type="ED">Text Value</value>
    </observation>
 </component>
</organizer>
```

Death Location Type

[Observation: templateId 2.16.840.1.113883.10.20.26.1.8]

This template makes it possible to record the type of location, e.g., hospital inpatient room, at which the person died.

- 1. SHALL contain exactly one [1..1] templateId () such that it
 - **a. SHALL** contain exactly one [1..1] @root="2.16.840.1.113883.10.20.26.1.8"

- 2. SHALL contain exactly one [1..1] @classCode="OBS" Observation (CodeSystem: 2.16.840.1.113883.5.6 HL7ActClass)
- **3. SHALL** contain exactly one [1..1] **@moodCode**="EVN" *Event* (CodeSystem: 2.16.840.1.113883.5.1001 HL7ActMood)
- **4. SHALL** contain exactly one [1..1] **code/@code="**58332-8" *Location of Death* (CodeSystem: 2.16.840.1.113883.6.1 LOINC)
- 5. SHALL contain exactly one [1..1] **value** with data type CD, where the @code SHALL be selected from ValueSet <code>DeathLocationTypeCodes</code> STATIC
 - A code value to indicate the type of location where the patient died.

Death Location Type example

Injury

[Organizer: templateId 2.16.840.1.113883.10.20.26.1.9]

The template includes information, only provided if relevant, on an injury that contributed to the person's death.

- 1. SHALL contain exactly one [1..1] templateId () such that it
 - **a. SHALL** contain exactly one [1..1] @root="2.16.840.1.113883.10.20.26.1.9"
- 2. SHALL contain exactly one [1..1] @classCode="CLUSTER" (CodeSystem: 2.16.840.1.113883.5.6 HL7ActClass)
- **3. SHALL** contain exactly one [1..1] **@moodCode**="EVN" *Event* (CodeSystem: 2.16.840.1.113883.5.1001 HL7ActMood)
- 4. SHALL contain exactly one [1..1] code/@code="71481-6" Did the death of this person involve injury of any kind? (CodeSystem: 2.16.840.1.113883.6.1 LOINC)
 - An indication that the person's death resulted from an injury.
- 5. SHALL contain exactly one [1..1] statusCode, where the @code SHALL be selected from (CodeSystem: 2.16.840.1.113883.5.14 ActStatus)
- 6. SHALL contain exactly one [1..1] component
 - a. This component **SHALL** contain exactly one [1..1] @typeCode="COMP"
 - **b.** This component **SHALL** contain exactly one [1..1] **observation**
 - **a.** This observation **SHALL** contain exactly one [1..1] **@classCode="**OBS" *Observation* (CodeSystem: 2.16.840.1.113883.5.6 HL7ActClass)
 - **b.** This observation **SHALL** contain exactly one [1..1] **@moodCode="**EVN" *Event* (CodeSystem: 2.16.840.1.113883.5.1001 HL7ActMood)
 - c. This observation SHALL contain exactly one [1..1] code/@code="11374-6" Injury incident description (CodeSystem: 2.16.840.1.113883.6.1 LOINC)
 - **d.** This observation **SHALL** contain exactly one [1..1] **text**

A text description of how the injury occurred.

e. This observation **SHALL** contain exactly one [1..1] **value** with data type BL

An indicator that tells whether the death resulted from an injury.

- f. This observation SHALL contain exactly one [1..1] participant
 - a. This participant SHALL contain exactly one [1..1] @typeCode="LOC"
 - b. This participant SHALL contain exactly one [1..1] participantRole
 - a. This participantRole SHALL contain exactly one [1..1] @classCode="ISDLOC"
 - b. This participantRole SHALL contain exactly one [1..1] addr

The street address for the place where the injury occurred.

- c. This participantRole SHALL contain exactly one [1..1] scopingEntity
 - a. This scopingEntity SHALL contain exactly one [1..1] @classCode="PLC"
 - b. This scopingEntity SHALL contain exactly one [1..1] @determinerCode="INSTANCE"
 - c. This scopingEntity SHALL contain exactly one [1..1] desc

A description of the type of place where the injury occurred. Possible entries are "at home", "farm", "factory", "office building", "restaurant".

g. This observation SHALL contain exactly one [1..1] effectiveTime

A record of the date and time that the injury occurred.

- 7. SHALL contain exactly one [1..1] component
 - a. This component SHALL contain zero or one [0..1] @typeCode="COMP"
 - **b.** This component **MAY** contain zero or one [0..1] **observation**
 - **a.** This observation **SHALL** contain exactly one [1..1] **@classCode=**"OBS" *Observation* (CodeSystem: 2.16.840.1.113883.5.6 HL7ActClass)
 - b. This observation **SHALL** contain exactly one [1..1] **@moodCode="**EVN" *Event* (CodeSystem: 2.16.840.1.113883.5.1001 HL7ActMood)
 - c. This observation SHALL contain exactly one [1..1] code/@code="69444-8" Did death result from injury at work (CodeSystem: 2.16.840.1.113883.6.1 LOINC)
 - **d.** This observation **SHALL** contain exactly one [1..1] **value** with data type BL

An indicator that tells whether or not the injury occurred while the person was at work. Required if the decedent suffered an injury leading to death.

- 8. SHALL contain exactly one [1..1] component
 - a. This component **SHALL** contain exactly one [1..1] @typeCode="COMP"
 - b. This component SHALL contain exactly one [1..1] observation
 - **a.** This observation **SHALL** contain exactly one [1..1] **@classCode="**OBS" *Observation* (CodeSystem: 2.16.840.1.113883.5.6 HL7ActClass)
 - **b.** This observation **SHALL** contain exactly one [1..1] **@moodCode="**EVN" *Event* (CodeSystem: 2.16.840.1.113883.5.1001 HL7ActMood)
 - c. This observation **SHALL** contain exactly one [1..1] **code/@code=**"69448-9" *Injury leading to death associated with transportation event* (CodeSystem: 2.16.840.1.113883.6.1 LOINC)
 - **d.** This observation **SHALL** contain exactly one [1..1] **value** with data type BL

An indicator that tells whether the injury leading to death was associated with a transportation event. Required if the decedent suffered an injury leading to death.

- 9. MAY contain zero or one [0..1] component
 - a. This component SHALL contain zero or one [0..1] @typeCode="COMP"
 - **b.** This component **SHALL** contain zero or one [0..1] **observation**

- a. This observation **SHALL** contain exactly one [1..1] **@classCode=**"OBS" *Observation* (CodeSystem: 2.16.840.1.113883.5.6 HL7ActClass)
- **b.** This observation **SHALL** contain exactly one [1..1] **@moodCode="**EVN" *Event* (CodeSystem: 2.16.840.1.113883.5.1001 HL7ActMood)
- c. This observation SHALL contain exactly one [1..1] code/@code="69451-3" Transportation role of decedent (CodeSystem: 2.16.840.1.113883.6.1 LOINC)
- **d.** This observation **SHALL** contain exactly one [1..1] **value** with data type CD, where the @code **SHALL** be selected from ValueSet *TransportationRelationshipsToDeath* 2.16.840.1.114222.4.11.6005 **STATIC**

A coded value that states, if the injury was related to transportation, the specific role played by the decedent, e.g. driver, passenger.

Required if the decedent suffered an injury leading to death.

Injury example

```
<organizer xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"</pre>
xmlns="urn:hl7-org:v3" classCode="CLUSTER" moodCode="EVN">
 <templateId root="2.16.840.1.113883.10.20.26.1.9"/>
 <id root="MDHT" extension="865953997"/>
 <code code="LOINC TBD" codeSystem="2.16.840.1.113883.6.1"</pre>
 codeSystemName="LOINC" displayName="Injury Cluster"/>
 <statusCode code="completed"/>
 <effectiveTime>
   <low value="2013"/>
   <high value="2013"/>
 </effectiveTime>
  <component typeCode="COMP">
    <observation classCode="OBS" moodCode="EVN">
     <code code="11374-6" codeSystem="2.16.840.1.113883.6.1"</pre>
 codeSystemName="LOINC" displayName="Injury incident description"/>
     <text>Text Value</text>
     <effectiveTime>
        <low value="2013"/>
       <high value="2013"/>
     </effectiveTime>
     <value xsi:type="BL"/>
      <participant typeCode="LOC"/>
    </observation>
 </component>
  <component typeCode="COMP">
    <observation classCode="OBS" moodCode="EVN">
      <code code="69444-8" codeSystem="2.16.840.1.113883.6.1"</pre>
 codeSystemName="LOINC" displayName="Did death result from injury at work"/>
     <value xsi:type="BL"/>
    </observation>
 </component>
 <component typeCode="COMP">
    <observation classCode="OBS" moodCode="EVN">
      <code code="69448-9" codeSystem="2.16.840.1.113883.6.1"</pre>
 codeSystemName="LOINC" displayName="Injury leading to death associated with
 transportation event"/>
     <value xsi:type="BL"/>
    </observation>
 </component>
 <component typeCode="COMP">
    <observation classCode="OBS" moodCode="EVN">
      <code code="69451-3" codeSystem="2.16.840.1.113883.6.1"</pre>
 codeSystemName="LOINC" displayName="Transportation role of decedent"/>
      <value xsi:type="CD" code="1570993903"/>
```

```
</observation>
</component>
</organizer>
```

Location of Death

[Observation: templateId 2.16.840.1.113883.10.20.26.1.10]

This template contains information to document where the death occurred.

- 1. SHALL contain exactly one [1..1] templateId () such that it
 - **a.** SHALL contain exactly one [1..1] @root="2.16.840.1.113883.10.20.26.1.10"
- 2. SHALL contain exactly one [1..1] @classCode="OBS" Observation (CodeSystem: 2.16.840.1.113883.5.6 HL7ActClass)
- **3. SHALL** contain exactly one [1..1] **@moodCode=**"EVN" *Event* (CodeSystem: 2.16.840.1.113883.5.1001 HL7ActMood)
- 4. SHALL contain exactly one [1..1] code/@code="LOINC TBD" Location of Death (CodeSystem: 2.16.840.1.113883.6.1 LOINC)
- **5. MAY** contain zero or one [0..1] **text**
 - Information about the place where death occurred. It is provided if no address can be.
- **6. SHALL** contain exactly one [1..1] **value** with data type AD
 - The mailing address for the place where the person died. This attribute is collected if the person died at a home, a health facility, or other location with a postal address.

vsdr::Location	of Death						
cda::observation[cda:templateId/@root = 2.16.840.1.113883.10.20.26.1.10]/							
Name	XPath	Cardinality	Severity	Nullable	Data Type	Conformance	Value(s)
classCode	@classCode	11	SHALL	NO	ActClassObservat	on	ALRT
moodCode	@moodCode	11	SHALL	NO	x_ActMoodDocui	nentObservation	DEF
code	code	11	SHALL	NO	CD		LOINC 2.16.840.1.11388: LOINC TBD
text	text	01	MAY	YES	ED		
value	value	11	SHALL	YES	AD		
location of Death	location of Death	11	SHALL	YES	Location of Death		

Location of Death example

```
</effectiveTime>
<value xsi:type="AD"/>
</observation>
```

Manner of Death

[Observation: templateId 2.16.840.1.113883.10.20.26.1.11]

This template contains information on the manner in which the death occurred.

- 1. SHALL contain exactly one [1..1] templateId () such that it
 - **a.** SHALL contain exactly one [1..1] @root="2.16.840.1.113883.10.20.26.1.11"
- 2. SHALL contain exactly one [1..1] @classCode="OBS" Observation (CodeSystem: 2.16.840.1.113883.5.6 HL7ActClass)
- **3. SHALL** contain exactly one [1..1] **@moodCode=**"EVN" *Event* (CodeSystem: 2.16.840.1.113883.5.1001 HL7ActMood)
- **4. SHALL** contain exactly one [1..1] **code/@code=**"69449-7" *Manner of Death* (CodeSystem: 2.16.840.1.113883.6.1 LOINC)
- 5. SHALL contain exactly one [1..1] value with data type CD, where the @code SHALL be selected from (CodeSystem: 2.16.840.1.114222.4.11.6002 Manner Of Death)
 - A coded indication of the manner in which the person died.

vsdr::Manner of Death cda::observation[cda:templateId/@root = 2.16.840.1.113883.10.20.26.1.11]/								
Name	XPath	Cardinality	Severity	Nullable	Data Type	Conformance	Value(s)	
classCode	@classCode	11	SHALL	NO	ActClassObservat	on	ALRT	
moodCode	@moodCode	11	SHALL	NO	x_ActMoodDocui	nentObservation	DEF	
code	code	11	SHALL	NO	CD		LOINC 2.16.840.1.113883 69449-7	.6.1
value	value	11	SHALL	NO	CD		Manner Of Death 2.16.840.1.114222	.4.11.60
manner of Death	manner of Death	11	SHALL	YES	Manner of Death			

Manner of Death example

Pregnancy Status

[Observation: templateId 2.16.840.1.113883.10.20.26.1.12]

This template contains information on the pregnancy status of the deceased.

- 1. SHALL contain exactly one [1..1] templateId () such that it
 - **a. SHALL** contain exactly one [1..1] @root="2.16.840.1.113883.10.20.26.1.12"
- 2. SHALL contain exactly one [1..1] @classCode="OBS" Observation (CodeSystem: 2.16.840.1.113883.5.6 HL7ActClass)
- **3. SHALL** contain exactly one [1..1] @moodCode="EVN" *Event* (CodeSystem: 2.16.840.1.113883.5.1001 HL7ActMood)
- **4.** SHALL contain exactly one [1..1] code/@code="69442-2" Timing of recent pregancy related to death (CodeSystem: 2.16.840.1.113883.6.1 LOINC)
- 5. SHALL contain exactly one [1..1] value with data type CD, where the @code SHALL be selected from (CodeSystem: 2.16.840.1.114222.4.11.6003 Pregnancy Statuses)
 - A code that provides information regarding whether or not the person was pregnant at the time of her death, or whether she was pregnant around the time of death.

 Required if the person is female and in the age range 5 to 75 years.

vsdr::Pregnancy	vsdr::Pregnancy Status						
cda::observation[cda:templateId/@root = 2.16.840.1.113883.10.20.26.1.12]/							
Name	XPath	Cardinality	Severity	Nullable	Data Type	Conformance	Value(s)
classCode	@classCode	11	SHALL	NO	ActClassObservat	on	ALRT
moodCode	@moodCode	11	SHALL	NO	x_ActMoodDocur	nentObservation	DEF
code	code	11	SHALL	NO	CD		LOINC 2.16.840.1.113882 69442-2
value	value	11	SHALL	NO	CD		Pregnancy Statuses 2.16.840.1.114222
pregnancy Status	pregnancy Status	11	SHALL	YES	Pregnancy Status		

Pregnancy Status example

Pronouncing Death

[Observation: templateId 2.16.840.1.113883.10.20.26.1.15]

The template contains information on the pronouncing of the person's death.

In most cases, a physician will both pronounce death and certify or report the cause of death. A different physician will pronounce death only when the attending physician is unavailable to certify the cause of death at the time of death and if State law provides for this option.

Note, information on the pronouncing physician is only provided when the pronouncing physician and the certifying physician are different persons.

- 1. SHALL contain exactly one [1..1] templateId () such that it
 - **a. SHALL** contain exactly one [1..1] @root="2.16.840.1.113883.10.20.26.1.15"
- 2. SHALL contain exactly one [1..1] @classCode
- 3. SHALL contain exactly one [1..1] @moodCode
- **4. SHALL** contain exactly one [1..1] **code/@code="**LOINC TBD" *Death Pronouncer* (CodeSystem: 2.16.840.1.113883.6.1 LOINC)
- 5. SHALL contain exactly one [1..1] effectiveTime
 - Provide the date and time at which the decedent was pronounced dead.
- **6.** MAY contain zero or one [0..1] **pronouncer** with data type *Pronouncer*

Pronouncing Death example

Error: Missing Runtime Class

Tobacco Use

[Observation: templateId 2.16.840.1.113883.10.20.26.1.14]

this template includes information about the deceased's use of tobacco.

- 1. SHALL contain exactly one [1..1] templateId () such that it
 - **a. SHALL** contain exactly one [1..1] @root="2.16.840.1.113883.10.20.26.1.14"
- 2. SHALL contain exactly one [1..1] @classCode="OBS" Observation (CodeSystem: 2.16.840.1.113883.5.6 HL7ActClass)
- **3. SHALL** contain exactly one [1..1] @moodCode="EVN" *Event* (CodeSystem: 2.16.840.1.113883.5.1001 HL7ActMood)
- **4. SHALL** contain exactly one [1..1] **code/@code=**"69443-0" *Tobacco Use* (CodeSystem: 2.16.840.1.113883.6.1 LOINC)
 - A coded indication of the extent of the person's use of tobacco. The data is captured if tobacco use may have contributed to their death.
- 5. SHALL contain exactly one [1..1] value with data type CD, where the @code SHALL be selected from (CodeSystem: 2.16.840.1.114222.4.11.6004 Tobacco Use)

vsdr::Tobacco Use							
cda::observation[cda:templateId/@root = 2.16.840.1.113883.10.20.26.1.14]/							
Name	XPath	Cardinality	Severity	Nullable	Data Type	Conformance	Value(s)
classCode	@classCode	11	SHALL	NO	ActClassObservat	on	ALRT

vsdr::Tobacco Use								
cda::observation[cda:templateId/@root = 2.16.840.1.113883.10.20.26.1.14]/								
Name	XPath	Cardinality	Severity	Nullable	Data Type	Conformance	Value(s)	
moodCode	@moodCode	11	SHALL	NO	x_ActMoodDocui	nentObservation	DEF	
code	code	11	SHALL	NO	CD		LOINC 2.16.840.1.113883 69443-0	.6.1
value	value	11	SHALL	YES	CD		Tobacco Use 2.16.840.1.114222	.4.11.6
tobacco Use	tobacco Use	01	SHALL	YES	Tobacco Use			

Tobacco Use example

Chapter

5

OTHER CLASSES

This section of the Implementation Guide describes other classes that are not CDA Clinical Documents, Sections, or Clinical Statements.

Chapter



VALUE SETS

Topics:

- Certifier Type Codes
- Certifier Types
- Death Location Type Codes
- Death Location Types
- Manner Of Death
- Manner Of Death Codes
- Pregnancy Status Codes
- Pregnancy Statuses
- Tobacco Use
- Tobacco Use Codes
- Transportation Relationships
- Transportation Relationships To Death

The following tables summarize the value sets used in this Implementation Guide.

Certifier Type Codes

Value Set	CertifierTypeCodes - 2.16.840.1.114222.4.11.6001
Code System	Certifier Types - 2.16.840.1.114222.4.11.6001
Description	The value set collects all the codes defined within the Certifier Types coding system.

Code	Code System	Print Name
С	Certifier Types	Coroner
CA	Certifier Types	County Attorney
ME	Certifier Types	Medical Examiner
NP	Certifier Types	Nurse Practitioner
PHY	Certifier Types	Physician
PA	Certifier Types	Physician Assistant

Certifier Types

Value Set	Certifier Types
Description	The code system collects the possible professional roles played by the person who certifies the death.

Death Location Type Codes

Value Set	DeathLocationTypeCodes - (OID not specified)
Code System	Death Location Types - OID TBD

Code	Code System	Print Name
H-IN	Death Location Types	Hospital Inpatient
H-ER/OP	Death Location Types	Hospital Emergency Department or Outpatient
H-DOA	Death Location Types	Hospital Dead on Arrival
NH	Death Location Types	Nursing Home
RES	Death Location Types	Residence
ОТН	Death Location Types	Other

Death Location Types

Value Set	Death Location Types	
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Manner Of Death

Value Set	Manner Of Death
Description	The coding system defines a list of the possible manners by which a person might die.

Manner Of Death Codes

Value Set	MannerOfDeathCodes - 2.16.840.1.114222.4.11.6002
Code System	Manner Of Death - 2.16.840.1.114222.4.11.6002
Description	The value set includes all members of the Manners of Death coding system.

Code	Code System	Print Name
A	Manner Of Death	Accident
С	Manner Of Death	Could not be determined
Н	Manner Of Death	Homicide
N	Manner Of Death	Natural
NOS	Manner Of Death	Not on Standard
NS	Manner Of Death	Not Specified
P	Manner Of Death	Pending Investigation
SI	Manner Of Death	Self Inflicted
S	Manner Of Death	Suicide

Pregnancy Status Codes

Value Set	PregnancyStatusCodes - 2.16.840.1.114222.4.11.6003
Code System	Pregnancy Statuses - 2.16.840.1.114222.4.11.6003
Description	The value set includes all the values from the Prenancy Statuses coding system.

Code	Code System	Print Name
1	Pregnancy Statuses	Not pregnant within the past year
2	Pregnancy Statuses	Pregnant at the time of death
3	Pregnancy Statuses	Not pregnant, but pregnant within 42 days of death
4	Pregnancy Statuses	Not pregnant, but pregnant 43 days to 1 year before death
9	Pregnancy Statuses	Unknown if pregnant within the past year
8	Pregnancy Statuses	Not Applicable: Computer Generated
7	Pregnancy Statuses	Not on Certificate

Pregnancy Statuses

Value Set	Pregnancy Statuses
Description	The coding system contains a collection of values to provide an indication of whether or not a person was pregnant at the time of death.

Tobacco Use

Value Set	Tobacco Use
Description	The coding system contains a list of values to describe the extent to which tobacco use contributed to the person's death.

Tobacco Use Codes

Value Set	TobaccoUseCodes - 2.16.840.1.114222.4.11.6004
Code System	Tobacco Use - 2.16.840.1.114222.4.11.6004
Description	The value set includes the entire content of the Tobacco Use coding system.

Code	Code System	Print Name
N	Tobacco Use	No
P	Tobacco Use	Probable
Y	Tobacco Use	Yes
U	Tobacco Use	Unknown
С	Tobacco Use	Not on Certificate

Transportation Relationships

Value Set	Transportation Relationships
Description	The coding system contains the list of possible roles that the decedent could play with relationship to a transport vehicle in the context of an accident.

Transportation Relationships To Death

Value Set	TransportationRelationshipsToDeath - 2.16.840.1.114222.4.11.6005
Code System	Transportation Relationships - OID TBD
Description	The value set contains the entire set of codes from the Transportation Relationships coding system.

Code	Code System	Print Name
D	Transportation Relationships	Driver or Operator

Code	Code System	Print Name
PA	Transportation Relationships	Passenger
PE	Transportation Relationships	Pedestrian

REFERENCES

- Dolin RH, Alschuler L, Boyer S, Beebe C, Behlen FM, Biron PV, Shabo A, (Editors). HL7 Clinical Document Architecture, Release 2.0. ANSI-approved HL7 Standard; May 2005. Ann Arbor, Mich.: Health Level Seven, Inc. Available through *HL7* or if an HL7 member with the following link: *CDA Release 2 Normative Web Edition*.
- LOINC®: Logical Observation Identifiers Names and Codes, Regenstrief Institute.
- Extensible Markup Language, www.w3.org/XML
- Dolin RH, Alschuler L, Boyer S, Beebe C, Behlen FM, Biron PV, Shabo A., HL7 Clinical Document Architecture, Release 2. J Am Med Inform Assoc. 2006;13:30-39. Available at: http://www.jamia.org/cgi/reprint/13/1/30.