

**Implementation Guide for CDA Release 2
Emergency Medical
Services Patient Care Report
(US REALM)**



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Revision History

Rev	Date	By Whom	Changes
R1 D1	May 2011	Jay Lyle	Initial draft, level two
R1 D2	September 2011	Jay Lyle	Revisions from May ballot; extended to level 3
R1 D3	December 2011	Jay Lyle	Revisions from September ballot
R1 D4	June 2012	Jay Lyle	Implemented in MDHT

Chapter 1

INTRODUCTION

Topics:

- [Overview](#)
- [Approach](#)
- [Null and Negative Values](#)
- [Null Value Mapping](#)
- [Units](#)
- [Scope](#)
- [Audience](#)
- [Organization of This Guide](#)
- [Use of Templates](#)
- [Conventions Used in This Guide](#)

This document is intended to guide software developers in generating CDA# compliant XML patient care reports, also known as run reports, from EMS agency crews to emergency departments and other interested parties. It consists of a set of constraints on the HL7 CDA R2 model mapped to the National EMS Information System (NEMSIS) data elements.

CDA, or Clinical Document Architecture, is a standard for information exchange. It is based on the HL7 Reference Information Model, but it constrains that model to a specific set of patterns. This document adds further constraints, so that it specifies not just a generic clinical document, but an Emergency Medical Services (EMS) Patient Care Report—a record of an Emergency Medical Services encounter with a patient. An EMS Patient Care Report is also known as a run report.

Further information about CDA is available at [HL7.org](http://hl7.org).

This guide constrains the NEMSIS data set to the HL7 CDA R2 document format. NEMSIS is maintained by the NEMSIS Technical Assistance Center, a US organization funded by the National Highway Transportation Safety Administration, the Centers for Disease Control, the Health Resources and Services Administration, the University of Utah, and the University of North Carolina.

We expect this standard to change during the DSTU period. Issues should be reported on the HL7 Draft Standard for Trial Use (DSTU) comment page at <http://www.hl7.org/dstucomments/>. For more information and status on the DSTU period, consult the HL7 wiki.

Overview

This implementation guide is generated from UML models developed in the Open Health Tools (OHT) Model-Driven Health Tools (MDHT) project. The data specifications have been formalized into computational models expressed in UML. These models are used by automated tooling to generate this publication, plus validation tools and Java libraries for implementers.

Approach

We first converted the NEMESIS specification into an analysis model in the Emergency Medical Services Domain Analysis Model (EMS DAM), initially balloted through HL7 in May of 2010 and finalized for the release in May 2011. The static part of the analysis model was then constrained to the HL7 Reference Information Model (RIM) in a Domain Information Model (DIM), balloted in January, 2011, and reballoted in September, 2011. Both DAM and DIM are scheduled for publication in 2013, but they can be found on the HL7 Wiki.

This guide is the first implementable specification developed based on the EMS DIM.

An initial iteration, balloted in May 2011, supports what is commonly termed “level one” CDA compliance, i.e., a document with structured header information containing an unstructured document of some form (whether pdf, image, or other recognized format). In addition, this iteration supported “level two” compliance, in which human-readable text information is provided for sections identified in XML. A sender of a document, however, must choose whether to send the “level one” encapsulated document or the “level two” set of XML sections: a document containing both is not acceptable.

The September, 2011 iteration modeled the sections to “level three,” in which the sections also include detailed, structured information representing the section text. This structured information follows standard patterns in such a way that receiving applications will be able to process specific semantically identified elements for storage in medical records, application of business rules, or other computable services. This iteration also includes changes to the level two template assignments, so the May 2011 iteration is no longer correct.

Harmonization with Emergency Department specifications and *Data Elements for Emergency Department Systems*(DEEDS) involved use of extant LOINC codes for shared elements.

Null and Negative Values

We use RIM attributes for observations that may require explicit negation or null values. If I have checked for signs of drug use, I can assert that a particular sign was found (with a proper value), that whether there were signs is unknown (with a null) or that there were no signs (with negation).

However, in collections of acts other than observations, epistemological attributes may have uncertain semantics. If a procedure is negated, it may not be clear whether the clinician is asserting that the procedure was not performed during the encounter or that it has never been performed on the patient. Similarly, you may document a history of specific disorders, but including a single, general but negated disorder implies assumptions about the scope of the negated disorder that are not explicitly modeled.

As a result, we manage negation and uncertainty for procedures with explicit observations. Using an observation allows the clinician to assert a history of zero disorders, or a lack of knowledge about disorders, without tying that assertion to a notional disorder that may imply unanticipated facts or questions. Questions supporting observations about procedures can differentiate between encounter and patient history, letting assertions about the truth or existence of the knowledge obtain in the appropriate scope.

As a result, the medical history sections include, in addition to problems, procedures, medications, and allergies, observations regarding the existence of problems, procedures, medications, and allergies.

In the interest of conformance with other guides, we also represent these null and negative acts with null and negated acts, in line with Consolidation Project recommendations. These notional classes are annotated to ensure it's clear that they restate the explicit observations, and are not distinct facts.

Null Value Mapping

NEMSIS contains null values not listed in HL7. “Not applicable” maps directly to “Not applicable,” but “Not recorded” and “Not reported” must be represented as the general concept “No information.” These values may also be copied into Observation.text.

NEMSIS also contains “negative action values,” most of which are addressed with negation and special cases in this document. Some of the negative action values, however, are actually null values, and are recorded as “NI,” no information. A mapping of negative action values is provided in Appendix B.

Units

Physical quantities use the HL7 PQ data type, in which units are expressed in the Unified Code for Units of Measure (UCUM; 2.16.840.1.113883.6.8), available at <http://www.regenstrief.org>. Interface values that are not actual physical units are handled differently: see appendix C for mappings.

Scope

The NEMSIS data set supports many uses, including the transfer of patient care reports from EMS crews to emergency departments, the prepopulation of hospital electronic health records, identification of trauma registry candidates, and preparation of data for submission to NEMSIS for research. Implementers may generate the same patient care reports that they generate today and attach them in “level one” documents, or they may populate the structured sections as specified herein.

Because the NEMSIS data set is so broad, it extends beyond the Emergency Transfer of Care specified by Integrating the Healthcare Enterprise (IHE). These templates may be harmonized in the future; at this point, they are distinct.

The PCR is only a part of the full NEMSIS dataset, which will consolidate information from different sources (including hospital outcomes data and agency trip report information) to form a complete picture of the full patient care process.

Audience

The audience for this document is software developers and development organizations who wish to produce or receive EMS patient care reports.

Software developers should use the CDA XML schema to guide their production of EMS patient care reports, subject to the constraints documented in this guide. Mappings of NEMSIS elements to the CDA schema are included in this document. Coded elements should use the vocabularies referred to in the constraints.

The CDA schema is published by Health Level 7, and is available at <http://www.hl7.org/implement/standards>.

This guide defines the information payload only. Implementers are encouraged to coordinate with one another by using the IHE framework (available at <http://www.ihe.net/>) to address expected capabilities of participating systems, including security and audit considerations.

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. When SNOMED codes are used, rules defined in Using SNOMED CT in HL7 Version 3 are adhered to. 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.XX.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

CCD templates are included within this implementation guide for ease of reference. CCD templates contained within this implementation guide are formatted **WITHOUT** typical **KEYWORD** and **XML** element styles. A WIKI site is available if you would like to make a comment to be considered for the next release of CCD: http://wiki.hl7.org/index.php?title=CCD_Suggested_Enhancements The user name and password are: wiki/wikiwiki. You will need to create an account to edit the page and add your suggestion.

1. The value for "Observation / @moodCode" in a problem observation **SHALL** be "EVN" 2.16.840.1.113883.5.1001 ActMood **STATIC**. (CONF: 814).
2. A problem observation **SHALL** include exactly one Observation / statusCode. (CONF: 815).
3. The value for "Observation / statusCode" in a problem observation **SHALL** be "completed" 2.16.840.1.113883.5.14 ActStatus **STATIC**. (CONF: 816).
4. A problem observation **SHOULD** contain exactly one Observation / effectiveTime, to indicate the biological timing of condition (e.g. the time the condition started, the onset of the illness or symptom, the duration of a condition). (CONF: 817).

Figure 3: CCD 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.

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

Figure 4: ClinicalDocument example

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

Chapter

2

DOCUMENT TEMPLATES

Topics:

- [Patient Care Report](#)

This section contains the document level constraints for CDA documents that are compliant with this implementation guide.

Patient Care Report

[ClinicalDocument: templateId 2.16.840.1.113883.17.3.10.1]

1. **SHALL** conform to [Consol General Header Constraints](#) template (templateId: 2.16.840.1.113883.10.20.22.1.1)
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** (CONF:5253)/**@code**= "67796-3" *EMS Patient Care Report* (CodeSystem: 2.16.840.1.113883.6.1 LOINC)
5. Contains zero or one [0..1] **author**
 - a. This author **SHALL** contain zero or one [0..1] **@typeCode**= "AUT"
 - b. This author Contains zero or one [0..1] **assignedAuthor**
 - a. This assignedAuthor **SHALL** contain zero or one [0..1] **@classCode**= "ASSIGNED"
 - b. This assignedAuthor Contains zero or one [0..1] **assignedAuthoringDevice**
 - a. This assignedAuthoringDevice **SHALL** conform to [Consol Authoring Device](#)
 - b. This assignedAuthoringDevice **SHALL** contain exactly one [1..1] **manufacturerModelName** (CONF:9936)

NEMESIS Trace: ERecord.02
 - c. This assignedAuthoringDevice **SHALL** contain exactly one [1..1] **softwareName** (CONF:9999)

NEMESIS Trace: ERecord.03 and ERecord.04 (version), concatenated with an intervening space
6. **SHALL** contain exactly one [1..1] **recordTarget**
 - a. This recordTarget **SHALL** conform to [Consol Record Target](#)
 - b. This recordTarget Contains zero or one [0..1] **patientRole**
 - a. This patientRole **SHALL** contain at least one [1..*] **addr**

NEMESIS Trace EPatient.05 . . . /PatientRole/addr/streetAddressLine EPatient.06 . . . /PatientRole/addr/city EPatient.07 . . . /PatientRole/addr/county EPatient.08 . . . /PatientRole/addr/state Paatient.09 . . . /PatientRole/addr/postalCode EPatient.10 . . . /PatientRole/addr/country
 - b. This patientRole Contains at least one [1..*] **id**

NEMESIS Trace EPatient.01: root= the OID for the generating EMS agency, or "NI" EPatient.12: root=" 2.16.840.1.113883.3.184" (Social Security Administration) EPatient.20 and EPatient.21: root= the OID for the state department of motor vehicles, found at HL7.org, and reproduced as found in March of 2011 in appendix A.
 - c. This patientRole Contains zero or more [0..*] **telecom**

NEMESIS Trace: EPatient.18
 - d. This patientRole Contains zero or one [0..1] **patient**
 - a. This patient Contains zero or one [0..1] **birthTime**

NEMESIS Trace EPatient.17
 - b. This patient **SHALL** contain zero or one [0..1] **ethnicGroupCode**, where the **@code** **SHALL** be selected from (CodeSystem: 2.16.840.1.113883.6.238 Race and Ethnicity - CDC)

NEMESIS Trace: EPatient.14
 - c. This patient Contains zero or more [0..*] **name**

NEMESIS Trace EPatient.02 . . . /PatientRole/Patient/name/family EPatient.03 . . . /PatientRole/Patient/name/given EPatient.04 . . . /PatientRole/Patient/name/given Name sub-elements SHOULD be in the

following order: family, given, middle (also "given"). For names from cultures not following the order assumed above, the "family" name **SHOULD** be populated with whatever name component should be used to sort by. E.g., for a person with a single name, "family" should be used.

- d. This patient **SHALL** contain zero or one [0..1] **raceCode**, where the @code **SHALL** be selected from (CodeSystem: 2.16.840.1.113883.6.238 Race and Ethnicity - CDC)

NEMESIS Trace: EPatient.14 NEMESIS collects race and ethnicity in the one-question format (see guidance at http://www.whitehouse.gov/omb/fedreg_1997standards), but the HL7 RIM and, therefore, the CDA schema contain separate elements. It is necessary to populate both CDA fields based on the values selected for the NEMESIS question. Further, the CDA model includes a single race code. In order to support multiple race codes as required by OMB, we adopt a second race code entry from the HL7 SDWG namespace. All documents with a race code must populate the CDA race code; if more than one race code is recorded, then the SDWG element may also be populated. No semantic priority is implied by the element selection.

- e. This patient **SHALL** contain zero or more [0..*] **sDTCRaceCode**, where the @code **SHALL** be selected from (CodeSystem: 2.16.840.1.113883.6.238 Race and Ethnicity - CDC)

NEMESIS Trace: EPatient.14

- f. 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)

NEMESIS Trace: EPatient.13

7. **MAY** contain zero or one [0..1] **author**

- a. This author Contains zero or one [0..1] **assignedAuthor**

- a. This assignedAuthor **SHALL** contain exactly one [1..1] **id**

NEMESIS Trace: EOther.08

- b. This assignedAuthor **SHALL** contain zero or more [0..*] **addr**

NEMESIS Trace DProfessional.04. . . / AssignedAuthor/addr/streetAddressLine DProfessional.05. . . / AssignedAuthor/addr/city DProfessional.06. . . / AssignedAuthor/addr/state DProfessional.07. . . / AssignedAuthor/addr/postalCode DProfessional.08. . . / AssignedAuthor/addr/country

- c. This assignedAuthor **SHALL** contain exactly one [1..1] **telecom**

NEMESIS Trace: DProfessional.09

- d. This assignedAuthor Contains zero or one [0..1] **assignedPerson**

- a. This assignedPerson **SHALL** conform to [Consol Person](#)
 - b. This assignedPerson **SHALL** contain exactly one [1..1] **name** (CONF:9406)

NEMESIS Trace DProfessional.01. . . Person/name/family DProfessional.02. . . Person/name/given DProfessional.03. . . Person/name/given

8. **MAY** contain exactly one [1..1] **componentOf** (CONF:9955)

- a. This componentOf **SHALL** contain exactly one [1..1] **encompassingEncounter** (CONF:9956)

- a. This encompassingEncounter **SHALL** contain exactly one [1..1] **effectiveTime** (CONF:9958)
 - b. This encompassingEncounter **SHALL** contain at least one [1..*] **id** (CONF:9959)

9. Contains zero or one [0..1] **componentOf**

- a. This componentOf **SHALL** contain zero or one [0..1] **@typeCode= "COMP"**
- b. This componentOf Contains zero or one [0..1] **encompassingEncounter**

- a. This encompassingEncounter **SHALL** contain exactly one [1..1] **effectiveTime**

NEMESIS Trace: ETimes.03, the date the responding unit was notified by dispatch

- b. This encompassingEncounter Contains zero or one [0..1] **location**

- a. This location **SHALL** contain exactly one [1..1] **healthCareFacility**

- a. This healthCareFacility **SHALL** contain exactly one [1..1] **id**
NEMESIS Trace: EResponse.04
- b. This healthCareFacility **SHALL** contain exactly one [1..1] **location**
 - a. This location **SHALL** contain exactly one [1..1] **@classCode="PLC"** , where the @code **SHALL** be selected from (CodeSystem: 2.16.840.1.113883.6.3 ICD-10)
NEMESIS Trace: EScene.09; Code under ICD-10 Y92
 - b. This location **MAY** contain zero or one [0..1] **name**
NEMESIS Trace: EScene.13
 - c. This location **MAY** contain zero or one [0..1] **addr**
NEMESIS Trace: EScene.15-21
- c. This healthCareFacility **SHALL** contain exactly one [1..1] **code**, where the @code **SHALL** be selected from ValueSet *UnitResponseRole* 2.16.840.1.113883.17.3.5.82 **STATIC**
NEMESIS Trace: EResponse.07

10. SHALL contain exactly one [1..1] **component**

- a. Contains exactly one [1..1] *EMS Billing Section* (templateId: 2.16.840.1.113883.17.3.10.1.5)

11. MAY contain zero or one [0..1] **versionNumber** (CONF:5264)

- May be null, and in most cases will not be used. In circumstances where updates are likely, it may be advantageous to default to "1" in the first instance.

12. SHALL contain exactly one [1..1] **id** (CONF:5363)

- NEMESIS trace: ERecord.01

13. SHALL contain exactly one [1..1] **title** = "EMS Patient Care Report" (CONF:5254)

14. MAY contain zero or one [0..1] **component**

- a. Contains exactly one [1..1] *EMS Injury Incident Description Section* (templateId: 2.16.840.1.113883.17.3.10.1.17)

15. SHALL contain exactly one [1..1] **component**

- a. This component Contains zero or one [0..1] **@negationInd**

If EHistory.12 has the value "None Reported," the value is "True" This negation of a notional class is parallel to the explicit question "patient on medication"

- b. This component Contains zero or one [0..1] **@nullFlavor**

If EHistory.12 has the value "Refused" or "Unable to Complete," the value is "NI"; the original value may be recorded in SubstanceAdministration.text. This nulled notional class is parallel to the explicit question "patient on medication"

- c. This component Contains zero or one [0..1] **doseQuantity**

NEMESIS Trace: EHistory.13, EHistory.14

- d. This component **SHALL** contain zero or one [0..1] **routeCode**, where the @code **SHALL** be selected from ValueSet *CurrentMedicationAdministrationRoute* 2.16.840.1.113883.17.3.5.17 **STATIC**

NEMESIS Trace: EMedication.15

16. MAY contain zero or one [0..1] **component**

- a. Contains exactly one [1..1] *EMS Cardiac Arrest Event Section* (templateId: 2.16.840.1.113883.17.3.10.1.14)

17. SHOULD contain zero or one [0..1] **component**

- a. Contains exactly one [1..1] *EMS Advance Directives Section* (templateId: 2.16.840.1.113883.17.3.10.1.12)

18. SHALL contain exactly one [1..1] **component**

- a. Contains exactly one [1..1] *EMS Allergies And Adverse Reactions Section* (templateId: 2.16.840.1.113883.17.3.10.1.13)

19. SHALL contain exactly one [1..1] **component**

- a. Contains exactly one [1..1] *EMS Past Medical History* (templateId: 2.16.840.1.113883.17.3.10.1.19)

20. SHALL contain exactly one [1..1] **component**

- a. Contains exactly one [1..1] *EMS Social History* (templateId: 2.16.840.1.113883.17.3.10.1.22)

21. SHALL contain exactly one [1..1] **component**

- a. Contains exactly one [1..1] *EMS Physical Assessment Section* (templateId: 2.16.840.1.113883.17.3.10.1.20)

22. MAY contain zero or one [0..1] **component**

- a. Contains exactly one [1..1] *EMS Medications Administered Section* (templateId: 2.16.840.1.113883.17.3.10.1.18)

23. SHALL contain exactly one [1..1] **component**

- a. Contains exactly one [1..1] *EMS Procedures Performed Section* (templateId: 2.16.840.1.113883.17.3.10.1.21)

24. SHALL contain exactly one [1..1] **component**

- a. Contains exactly one [1..1] *EMS Patient Care Narrative* (templateId: 2.16.840.1.113883.17.3.10.1.1)

25. SHALL contain exactly one [1..1] **component**

- a. Contains exactly one [1..1] *EMS Scene Section* (templateId: 2.16.840.1.113883.17.3.10.1.8)

Patient Care Report example

Chapter

3

SECTION TEMPLATES

Topics:

- *Derived CDA Section*
- *EMS Advance Directives Section*
- *EMS Allergies And Adverse Reactions Section*
- *EMS Billing Section*
- *EMS Cardiac Arrest Event Section*
- *EMS Current Medication Section*
- *EMS Dispatch*
- *EMS Disposition Section*
- *EMS Injury Incident Description Section*
- *EMS Medications Administered Section*
- *EMS Past Medical History*
- *EMS Patient Care Narrative*
- *EMS Personnel Adverse Event*
- *EMS Physical Assessment Section*
- *EMS Procedures Performed Section*
- *EMS Protocol Section*
- *EMS Response*
- *EMS Scene Section*
- *EMS Situation Section*
- *EMS Social History*
- *EMS Times Section*
- *EMS Vital Signs Section*

Derived CDA Section

[Section: templateId null]

1.

Derived CDA Section example

EMS Advance Directives Section

[Section: templateId 2.16.840.1.113883.17.3.10.1.12]

1. **SHALL** conform to [Derived CDA Section](#)
2. **SHALL** contain zero or one [0..1] **code/@code**="67840-9" *EMS Advance Directives* (CodeSystem: 2.16.840.1.113883.6.1 LOINC)
3. **SHOULD** contain zero or one [0..1] **title**="EMS Advance Directives"

EMS Advance Directives Section example

EMS Allergies And Adverse Reactions Section

[Section: templateId 2.16.840.1.113883.17.3.10.1.13]

1. **SHALL** conform to [Derived CDA Section](#)
2. **SHALL** contain exactly one [1..1] **code/@code**="67841?7" *EMS Allergies and Adverse Reactions* (CodeSystem: 2.16.840.1.113883.6.1 LOINC)
3. **SHOULD** contain zero or one [0..1] **title**="EMS Allergies and Adverse Reactions"
4. **SHALL** contain exactly one [1..1] **entry**
 - a. This entry **SHALL** contain exactly one [1..1] **component**
 - a. This component **SHALL** contain exactly one [1..1] **code/@code**="67794?8" *Existence of drug allergy* (CodeSystem: 2.16.840.1.113883.6.1 LOINC)
 - b. This component Contains zero or more [0..*] **value** with data type BL

If NEMESIS EHistory.06 is "No Known Drug Allergies," the value should be FALSE. If it is a proper value, the value should be TRUE. If it is a flavor of null, the appropriate flavor should be used here. See the null table to translate NEMESIS flavors into HL7; original values may be stored in Observation.text.
 - b. This entry **MAY** contain zero or more [0..*] **component**
 - a. Such components Contains exactly one [1..1] **code**
 - b. Such components **SHALL** contain exactly one [1..1] **value** with data type CD/@code="106190000" *allergy* (CodeSystem: 2.16.840.1.113883.6.96 SNOMEDCT)
 - c. Such components Contains exactly one [1..1] **eMSDrugAllergyParticipation**
 - a. This eMSDrugAllergyParticipation Contains exactly one [1..1] **eMSDrugAllergyParticipantRole**
 - a. This eMSDrugAllergyParticipantRole Contains exactly one [1..1] **playingEntity**
 - a. This playingEntity **SHALL** contain exactly one [1..1] **code**, where the @code **SHALL** be selected from (CodeSystem: 2.16.840.1.113883.6.88 RxNorm)

NEMESIS Trace: EHistory.06
 5. Contains exactly one [1..1] **entry**
 - a. This entry **SHALL** contain exactly one [1..1] **component**

- a. This component **SHALL** contain exactly one [1..1] **code/@code**="69747?4" *EMS Existence of environmental allergy* (CodeSystem: 2.16.840.1.113883.6.1 LOINC)
- b. This component Contains zero or one [0..1] **value** with data type BL
If NEMESIS EHistory.07 has no values, this is FALSE; otherwise it is TRUE.
- b. This entry **MAY** contain zero or more [0..*] **component**
 - a. Such components **SHALL** contain exactly one [1..1] **code/@code**="69748?2" *Known allergies to food or environmental agents* (CodeSystem: 2.16.840.1.113883.6.1 LOINC)
 - b. Such components **SHALL** contain exactly one [1..1] **value** with data type CD, where the @code **SHALL** be selected from ValueSet *EnvironmentalAllergyType* 2.16.840.1.113883.17.3.5.83 **STATIC**

EMS Allergies And Adverse Reactions Section example

EMS Billing Section

[Section: templateId 2.16.840.1.113883.17.3.10.1.5]

- 1. **SHALL** conform to *Derived CDA Section*
- 2. **SHALL** contain zero or one [0..1] **code/@code**="67659-3" (CodeSystem: 2.16.840.1.113883.6.1 LOINC)
- 3. **SHALL** contain exactly one [1..1] **entry**
 - a. This entry **SHALL** contain exactly one [1..1] **code/@code**="69464-6" *EMS level of service* (CodeSystem: 2.16.840.1.113883.6.1 LOINC)
 - b. This entry **SHALL** contain zero or more [0..*] **value** with data type CD, where the @code **SHALL** be selected from ValueSet *EMSLevelOfService* 2.16.840.1.113883.17.3.5.70 **STATIC**
- 4. Contains zero or one [0..1] **entry**
 - a. This entry **SHALL** contain exactly one [1..1] **code/@code**="67556-1" (CodeSystem: 2.16.840.1.113883.6.1 LOINC)
 - b. This entry **SHALL** contain zero or more [0..*] **value** with data type CD, where the @code **SHALL** be selected from ValueSet *EMSBillingCondition* 2.16.840.1.113883.17.3.5.71 **STATIC**

EMS Billing Section example

EMS Cardiac Arrest Event Section

[Section: templateId 2.16.840.1.113883.17.3.10.1.14]

- 1. **SHALL** conform to *Derived CDA Section*
- 2. **SHALL** contain zero or one [0..1] **code/@code**="67799-7" *EMS CARDIAC ARREST EVENT* (CodeSystem: 2.16.840.1.113883.6.1 LOINC)
- 3. **SHOULD** contain exactly one [1..1] **title**="EMS Cardiac Arrest Event"
- 4. **SHALL** contain zero or one [0..1] **entry**
 - a. This entry Contains zero or one [0..1] **@negationInd**
Populate as true if NEMESIS EArrest.01 = "No"
 - b. This entry **SHALL** contain exactly one [1..1] **code/@code**="ASSERTION" *ASSERTION* (CodeSystem: 2.16.840.1.113883.5.4 HL7ActCode)
 - c. This entry Contains zero or one [0..1] **effectiveTime**
NEMESIS Trace: EArrest.14
 - d. This entry **SHALL** contain exactly one [1..1] **value** with data type CD/@code="410429000" *cardiac arrest* (CodeSystem: 2.16.840.1.113883.6.96 SNOMEDCT)

NEMESIS Trace: EArrest.01

- e. This entry Contains zero or one [0..1] **entryRelationship**
 - a. This entryRelationship Contains exactly one [1..1] **@inversionInd**= "TRUE "
 - b. This entryRelationship Contains exactly one [1..1] **@typeCode**= "SUBJ "
 - c. This entryRelationship Contains exactly one [1..1] **observation**
 - a. This observation **SHALL** contain exactly one [1..1] **code/@code**= "67503-3" *Cardiac arrest cause* (CodeSystem: 2.16.840.1.113883.6.1 LOINC)
 - b. This observation **SHALL** contain exactly one [1..1] **value** with data type CD, where the **@code** **SHALL** be selected from ValueSet *CardiacArrestCause* 2.16.840.1.113883.17.3.5.10 **STATIC**

NEMESIS Trace: EArrest.02

- f. This entry Contains zero or one [0..1] **entryRelationship**
 - a. This entryRelationship **SHALL** contain exactly one [1..1] **@inversionInd**= "TRUE "
 - b. This entryRelationship Contains exactly one [1..1] **@typeCode**= "SUBJ "
 - c. This entryRelationship Contains exactly one [1..1] **observation**
 - a. This observation **SHALL** contain exactly one [1..1] **code/@code**= "67502-5" (CodeSystem: 2.16.840.1.113883.6.1 LOINC)
 - b. This observation **SHALL** contain exactly one [1..1] **value** with data type CD, where the **@code** **SHALL** be selected from ValueSet *CardiacArrestTiming* 2.16.840.1.113883.17.3.5.91 **STATIC**

NEMESIS Trace: EArrest.01

- g. This entry Contains zero or one [0..1] **informant**
 - a. This informant Contains exactly one [1..1] **@typeCode**= "INF "
- h. This entry Contains zero or one [0..1] **entryRelationship**
 - a. This entryRelationship Contains exactly one [1..1] **@inversionInd**= "TRUE "
 - b. This entryRelationship Contains exactly one [1..1] **@typeCode**= "SUBJ "
 - c. This entryRelationship Contains exactly one [1..1] **observation**
 - a. This observation **SHALL** contain exactly one [1..1] **code/@code**= "67506-6" *CPR prior to EMS arrival* (CodeSystem: 2.16.840.1.113883.6.1 LOINC)
 - b. This observation Contains zero or more [0..*] **value** with data type BL

NEMESIS Trace: EArrest.05

- c. This observation Contains zero or one [0..1] **participant**
 - a. This participant Contains exactly one [1..1] **@typeCode**= "RESP "
 - b. This participant Contains zero or one [0..1] **participantRole**
 - a. This participantRole **SHALL** contain zero or one [0..1] **code**, where the **@code** **SHALL** be selected from ValueSet *PriorCareProviderRole* 2.16.840.1.113883.17.3.5.12 **STATIC**
- i. This entry Contains zero or one [0..1] **entryRelationship**
 - a. This entryRelationship Contains zero or one [0..1] **@inversionInd**= "TRUE "
 - b. This entryRelationship Contains exactly one [1..1] **@typeCode**= "SUBJ "
 - c. This entryRelationship Contains exactly one [1..1] **observation**
 - a. This observation **SHALL** contain exactly one [1..1] **code/@code**= "67508-2" *AED use prior to EMS arrival* (CodeSystem: 2.16.840.1.113883.6.1 LOINC)

- b. This observation **SHALL** contain zero or more [0..*] **value** with data type CD, where the @code **SHALL** be selected from ValueSet [AEDUsePriorToEMSArrival](#) 2.16.840.1.113883.17.3.5.13 **STATIC**

NEMESIS Trace: EArrest.07

- c. This observation Contains zero or one [0..1] **participant**
 - a. This participant Contains exactly one [1..1] **@typeCode= "RESP"**
 - b. This participant Contains exactly one [1..1] **participantRole**
 - a. This participantRole **SHALL** contain zero or one [0..1] **code**, where the @code **SHALL** be selected from ValueSet [PriorCareProviderRole](#) 2.16.840.1.113883.17.3.5.12 **STATIC**

NEMESIS Trace: EArrest.08

- j. This entry Contains zero or one [0..1] **entryRelationship**
 - a. This entryRelationship Contains zero or one [0..1] **@inversionInd= "TRUE"**
 - b. This entryRelationship Contains exactly one [1..1] **@typeCode= "SUBJ"**
 - c. This entryRelationship Contains exactly one [1..1] **observation**
 - a. This observation **SHALL** contain exactly one [1..1] **code/@code= "67513-2"** *Return of spontaneous circulation* (CodeSystem: 2.16.840.1.113883.6.1 LOINC)
 - b. This observation **SHALL** contain zero or more [0..*] **value** with data type CD, where the @code **SHALL** be selected from ValueSet [ReturnOfSpontaneousCirculation](#) 2.16.840.1.113883.17.3.5.15 **STATIC**

NEMESIS Trace: EArrest.12

- k. This entry Contains zero or more [0..*] **entryRelationship**
 - a. Such entryRelationships Contains exactly one [1..1] **@inversionInd= "TRUE"**
 - b. Such entryRelationships Contains exactly one [1..1] **@typeCode= "SUBJ"**
 - c. Such entryRelationships Contains exactly one [1..1] **observation**
 - a. This observation **SHALL** contain exactly one [1..1] **code/@code= "67519-9"** *Cardiac rhythm* (CodeSystem: 2.16.840.1.113883.6.1 LOINC)
 - b. This observation **SHALL** contain exactly one [1..1] **value** with data type CD, where the @code **SHALL** be selected from ValueSet [CardiacRhythmReading](#) 2.16.840.1.113883.17.3.5.16 **STATIC**

NEMESIS Trace: EArrest.17

EMS Cardiac Arrest Event Section example

EMS Current Medication Section

[Section: templateId 2.16.840.1.113883.17.3.10.1.15]

NEMESIS Trace: EHHistory.12

1. **SHALL** conform to [Derived CDA Section](#)
2. **SHALL** contain zero or one [0..1] **code/@code= "67844-1"** *EMS Current Medications* (CodeSystem: 2.16.840.1.113883.6.1 LOINC)
3. Contains zero or one [0..1] **title**

EMS Current Medication Section example

EMS Dispatch

[Section: templateId 2.16.840.1.113883.17.3.10.1.2]

1. **SHALL** conform to *Derived CDA Section*
2. **SHALL** contain exactly one [1..1] **code/@code**="67660?1" *Dispatch* (CodeSystem: 2.16.840.1.113883.6.1 LOINC)
3. **SHALL** contain exactly one [1..1] **text**
4. **SHALL** contain exactly one [1..1] **title** = "EMS Dispatch"
5. **MAY** contain zero or one [0..1] **eMSEmergencyMedicalDispatchRelationship**
 - a. This eMSEmergencyMedicalDispatchRelationship **SHALL** contain exactly one [1..1] **observation**
 - a. This observation **SHALL** contain exactly one [1..1] **code/@code**="67488?7" *EMDPerformed* (CodeSystem: 2.16.840.1.113883.6.1 LOINC)
 - b. This observation **SHALL** contain exactly one [1..1] **value** with data type CD, where the @code **SHALL** be selected from ValueSet *EMDPerformed* 2.16.840.1.113883.17.3.5.48 **STATIC**
6. **MAY** contain zero or one [0..1] **eMSComplaintReportedByDispatchRelationship**
 - a. This eMSComplaintReportedByDispatchRelationship **SHALL** contain exactly one [1..1] **observation**
 - a. This observation **SHALL** contain exactly one [1..1] **code**
 - b. This observation **SHALL** contain exactly one [1..1] **value** with data type CD, where the @code **SHALL** be selected from ValueSet *Complaint* 2.16.840.1.113883.17.3.5.49 **STATIC**

EMS Dispatch example

EMS Disposition Section

[Section: templateId 2.16.840.1.113883.17.3.10.1.4]

1. **SHALL** conform to *Derived CDA Section*
2. **SHALL** contain exactly one [1..1] **code/@code**="67796?3" *EMS Disposition* (CodeSystem: 2.16.840.1.113883.6.1 LOINC)
3. **SHALL** contain exactly one [1..1] **text**
4. **SHALL** contain exactly one [1..1] **title** = "EMS Disposition"
5. **SHALL** contain exactly one [1..1] **eMSNumberOfPatientsRelationship**
 - a. This eMSNumberOfPatientsRelationship **SHALL** contain exactly one [1..1] **observation**
 - a. This observation **SHALL** contain exactly one [1..1] **code/@code**="67547?0" *EMS Number of patients* (CodeSystem: 2.16.840.1.113883.6.1 LOINC)
 - b. This observation **SHALL** contain exactly one [1..1] **value** with data type INT
6. **SHALL** contain exactly one [1..1] **eMSIncidentDispositionRelationship**
 - a. This eMSIncidentDispositionRelationship **SHALL** contain exactly one [1..1] **observation**
 - a. This observation **SHALL** contain exactly one [1..1] **code/@code**="67548?8" *EMS incident disposition* (CodeSystem: 2.16.840.1.113883.6.1 LOINC)
 - b. This observation **SHALL** contain exactly one [1..1] **value** with data type CD, where the @code **SHALL** be selected from ValueSet *IncidentOutcome* 2.16.840.1.113883.17.3.5.64 **STATIC**
7. **SHALL** contain exactly one [1..1] **eMSTransportMethodRelationship**
 - a.
8. **SHALL** contain exactly one [1..1] **eMSTransportModeRelationship**
 - a. This eMSTransportModeRelationship **SHALL** contain exactly one [1..1] **observation**

- a. This observation **SHALL** contain exactly one [1..1] **code/@code**="67550?4" *EMS transport mode* (CodeSystem: 2.16.840.1.113883.6.1 LOINC)
- b. This observation **SHALL** contain exactly one [1..1] **value** with data type CD, where the @code **SHALL** be selected from ValueSet *TransportMode* 2.16.840.1.113883.17.3.5.66 **STATIC**
- 9. **SHALL** contain exactly one [1..1] **eMSPatientConditionChangeAtDestinatinoRelationship**
 - a. This eMSPatientConditionChangeAtDestinatinoRelationship **SHALL** contain exactly one [1..1] **observation**
 - a. This observation **SHALL** contain exactly one [1..1] **code/@code**="67551?2" *EMS patient condition change at destination* (CodeSystem: 2.16.840.1.113883.6.1 LOINC)
 - b. This observation **SHALL** contain exactly one [1..1] **value** with data type CD, where the @code **SHALL** be selected from ValueSet *PatientConditionChange* 2.16.840.1.113883.17.3.5.59 **STATIC**
- 10. **SHALL** contain exactly one [1..1] **eMSReasonForChoosingDestinationRelationship**
 - a. This eMSReasonForChoosingDestinationRelationship **SHALL** contain exactly one [1..1] **observation**
 - a. This observation **SHALL** contain exactly one [1..1] **code/@code**="67552?0" *EMS reason for choosing destination* (CodeSystem: 2.16.840.1.113883.6.1 LOINC)
 - b. This observation **SHALL** contain exactly one [1..1] **value** with data type CD, where the @code **SHALL** be selected from ValueSet *DestinationChoiceReason* 2.16.840.1.113883.17.3.5.68 **STATIC**
- 11. **SHALL** contain exactly one [1..1] **eMSPrearrivalActivationRelationship**
 - a. This eMSPrearrivalActivationRelationship **SHALL** contain exactly one [1..1] **observation**
 - a. This observation **SHALL** contain exactly one [1..1] **code/@code**="69462?0" *EMS prearrival activation performed* (CodeSystem: 2.16.840.1.113883.6.1 LOINC)
 - b. This observation **SHALL** contain exactly one [1..1] **value** with data type BL
 - c. This observation **SHALL** contain zero or one [0..1] **effectiveTime**

NEMESIS Trace: EDisposition.25 Required if value is TRUE

EMS Disposition Section example

EMS Injury Incident Description Section

[Section: templateId 2.16.840.1.113883.17.3.10.1.17]

- 1. **SHALL** conform to *Derived CDA Section*
- 2. **SHALL** contain exactly one [1..1] **code/@code**="11374-6" *Injury incident description* (CodeSystem: 2.16.840.1.113883.6.1 LOINC)
- 3. Contains exactly one [1..1] **entry**
 - a. This entry **SHALL** contain exactly one [1..1] **code/@code**="69543-7" *Injury Cause* (CodeSystem: 2.16.840.1.113883.6.1 LOINC)
 - b. This entry **SHALL** contain exactly one [1..1] **value** with data type CD, where the @code **SHALL** be selected from

Add binding to ICD-10 chapter XX
- 4. Contains zero or one [0..1] **entry**
 - a. This entry **SHALL** contain exactly one [1..1] **code/@code**="67494-5" *Injury Mechanism* (CodeSystem: 2.16.840.1.113883.6.1 LOINC)
 - b. This entry **SHALL** contain exactly one [1..1] **value** with data type CD, where the @code **SHALL** be selected from ValueSet *MechanismOfInjury* 2.16.840.1.113883.17.3.5.1 **STATIC**
- 5. Contains zero or one [0..1] **entry**

- a. This entry **SHALL** contain exactly one [1..1] **code/@code**="67495-2" *Trauma Center Criteria* (CodeSystem: 2.16.840.1.113883.6.1 LOINC)
- b. This entry **SHALL** contain at least one [1..*] **value** with data type CD, where the @code **SHALL** be selected from ValueSet *TraumaCenterCriteria* 2.16.840.1.113883.17.3.5.3 **STATIC**
6. Contains zero or one [0..1] **entry**
 - a. This entry **SHALL** contain exactly one [1..1] **code/@code**="67496-0" *Other injury risk factors* (CodeSystem: 2.16.840.1.113883.6.1 LOINC)
 - b. This entry **SHALL** contain at least one [1..*] **value** with data type CD, where the @code **SHALL** be selected from ValueSet *InjuryRiskFactor* 2.16.840.1.113883.17.3.5.4 **STATIC**
7. Contains zero or one [0..1] **entry**
 - a. This entry **SHALL** contain exactly one [1..1] **code/@code**="67497-8" *Location of impact on the vehicle* (CodeSystem: 2.16.840.1.113883.6.1 LOINC)
 - b. This entry **SHALL** contain exactly one [1..1] **value** with data type CD, where the @code **SHALL** be selected from ValueSet *VehicleImpactArea* 2.16.840.1.113883.17.3.5.5 **STATIC**
8. Contains zero or one [0..1] **entry**
 - a. This entry **SHALL** contain exactly one [1..1] **code/@code**="67498-6" *Location of patient in vehicle* (CodeSystem: 2.16.840.1.113883.6.1 LOINC)
 - b. This entry **SHALL** contain exactly one [1..1] **value** with data type CD, where the @code **SHALL** be selected from ValueSet *VehiclePassengerLocation* 2.16.840.1.113883.17.3.5.6 **STATIC**
9. Contains zero or one [0..1] **entry**
 - a. This entry **SHALL** contain exactly one [1..1] **code/@code**="67499-4" *Safety equipment* (CodeSystem: 2.16.840.1.113883.6.1 LOINC)
 - b. This entry **SHALL** contain at least one [1..*] **value** with data type CD, where the @code **SHALL** be selected from ValueSet *SafetyEquipmentType* 2.16.840.1.113883.17.3.5.7 **STATIC**
10. Contains zero or one [0..1] **entry**
 - a. This entry **SHALL** contain exactly one [1..1] **code/@code**="67500-9" *Airbag deployment* (CodeSystem: 2.16.840.1.113883.6.1 LOINC)
 - b. This entry **SHALL** contain zero or more [0..*] **value** with data type CD, where the @code **SHALL** be selected from ValueSet *AirbagStatus* 2.16.840.1.113883.17.3.5.8 **STATIC**
11. Contains zero or one [0..1] **entry**
 - a. This entry **SHALL** contain exactly one [1..1] **code/@code**="67501-7" *Height of fall* (CodeSystem: 2.16.840.1.113883.6.1 LOINC)
 - b. This entry **SHALL** contain exactly one [1..1] **value** with data type PQ, where the @code **SHALL** be selected from ValueSet **STATIC**
12. Contains zero or one [0..1] **text**
13. Contains zero or one [0..1] **title**

EMS Injury Incident Description Section example

EMS Medications Administered Section

[Section: templateId 2.16.840.1.113883.17.3.10.1.18]

1. **SHALL** conform to *Derived CDA Section*
2. **SHALL** contain zero or one [0..1] **code/@code**="67849-0" *Medications administered* (CodeSystem: 2.16.840.1.113883.6.1 LOINC)
3. **SHALL** contain zero or one [0..1] **text**
4. **SHALL** contain zero or one [0..1] **title**
5. **MAY** contain zero or one [0..1] **entry**

- a. This entry **SHALL** contain exactly one [1..1] **@classCode= "SBADM"** (CodeSystem: 2.16.840.1.113883.5.6 HL7ActClass)
- b. This entry **MAY** contain zero or one [0..1] **@negationInd**
NEMESIS Trace: EMedications.03 negative action values If a substance is recorded as not given, it shall be recorded with a negationInd =True, and with an entryRelationship such that it SHALL contain exactly one [1..1] @typeCode="RSON" Has reason (CodeSystem: HL7ActRelationshipType 2.16.840.1.113883.5.1002) SHALL contain exactly one [1..1] @inversionInd="true" True SHALL contain exactly one /Observation with code drawn from 2.16.840.1.113883.17.3.5.42 Medication omission reason and value = "Assertion."
- c. This entry **SHALL** contain exactly one [1..1] **doseQuantity**
NEMESIS Trace: EMedications.05, 06
- d. This entry **SHALL** contain exactly one [1..1] **effectiveTime**
NEMESIS Trace: EMedications.01
- e. This entry **SHALL** contain zero or one [0..1] **routeCode**, where the @code **SHALL** be selected from ValueSet *MedicationAdministeredRoute* 2.16.840.1.113883.17.3.5.43 **STATIC**
NEMESIS Trace: EMedications.04
- f. This entry **MAY** contain zero or one [0..1] **entryRelationship**
 - a. This entryRelationship **SHALL** contain exactly one [1..1] **@inversionInd= "TRUE"**
 - b. This entryRelationship **SHALL** contain exactly one [1..1] **@typeCode/@code= "RSON"** *Reason* (CodeSystem: 2.16.840.1.113883.5.1002 HL7ActRelationshipType)
 - c. This entryRelationship **SHALL** contain exactly one [1..1] **observation**
 - a. This observation **SHALL** contain exactly one [1..1] **code/@code= "ASSERTION"** *Assertion* (CodeSystem: 2.16.840.1.113883.5.4 HL7ActCode)
 - b. This observation **SHALL** contain exactly one [1..1] **value** with data type CD, where the @code **SHALL** be selected from ValueSet *MedicationNotGivenReason* 2.16.840.1.113883.17.3.5.92 **STATIC**
- g. This entry **SHALL** contain exactly one [1..1] **consumable**
 - a. This consumable **SHALL** contain exactly one [1..1] **manufacturedProduct**
 - a. This manufacturedProduct **SHALL** contain exactly one [1..1] **manufacturedLabeledDrug**
 - a. This manufacturedLabeledDrug **SHALL** contain zero or one [0..1] **code**, where the @code **SHALL** be selected from (CodeSystem: 2.16.840.1.113883.6.88 RxNorm)
NEMESIS Trace: EMedications.03
- h. This entry **SHALL** contain exactly one [1..1] **entryRelationship**
 - a. This entryRelationship **SHALL** contain exactly one [1..1] **observation**
 - a. This observation **SHALL** contain exactly one [1..1] **code/@code= "67540?5"** *Response to medication* (CodeSystem: 2.16.840.1.113883.6.1 LOINC)
 - b. This observation **SHALL** contain zero or more [0..*] **value** with data type CD, where the @code **SHALL** be selected from ValueSet *PatientConditionChange* 2.16.840.1.113883.17.3.5.59 **STATIC**
- i. This entry **SHALL** contain at least one [1..*] **entryRelationship**
 - a. Such entryRelationships **SHALL** contain exactly one [1..1] **observation**
 - a. This observation **SHALL** contain exactly one [1..1] **code/@code= "67541?3"** *Medication complication* (CodeSystem: 2.16.840.1.113883.6.1 LOINC)
 - b. This observation **SHALL** contain zero or more [0..*] **value** with data type CD, where the @code **SHALL** be selected from ValueSet *MedicationComplication* 2.16.840.1.113883.17.3.5.45 **STATIC**
- j. This entry **SHALL** contain exactly one [1..1] **entryRelationship**

- a. This entryRelationship **SHALL** contain exactly one [1..1] **observation**

NEMESIS Trace: EMedications.02

- a. This observation **SHALL** contain exactly one [1..1] **code/@code="67539?7"** *Prior administration* (CodeSystem: 2.16.840.1.113883.6.1 LOINC)
- b. This observation **SHALL** contain exactly one [1..1] **value** with data type BL

NEMESIS Trace: EMedications.02

- k. This entry **MAY** contain zero or one [0..1] **eMSMedicationPerformerParticipation**

This participation is required if the medication is administered by the crew; i.e., if EMSMedicationPriorAdministrationObservation is FALSE.

- a. This eMSMedicationPerformerParticipation **SHALL** contain exactly one [1..1] **assignedEntity**

- a. This assignedEntity **SHALL** contain exactly one [1..1] **code**, where the @code **SHALL** be selected from ValueSet *ProviderRole* 2.16.840.1.113883.17.3.5.46 **STATIC**

NEMESIS Trace: EMedications.10

- b. This assignedEntity **SHALL** contain exactly one [1..1] **id**

NEMESIS Trace: EMedications.09

This participation is required if the medication is administered by the crew; i.e., if EMSMedicationPriorAdministrationObservation is FALSE.

- l. This entry **MAY** contain zero or one [0..1] **entryRelationship**

This relationship is required if the medication is administered by the crew; i.e., if EMSMedicationPriorAdministrationObservation is FALSE.

- a. This entryRelationship **SHALL** contain exactly one [1..1] **act**

- a. This act **SHALL** contain exactly one [1..1] **@classCode/@code="INFRM"** (CodeSystem: 2.16.840.1.113883.5.6 HL7ActClass)
- b. This act **SHALL** contain exactly one [1..1] **code**, where the @code **SHALL** be selected from ValueSet *MedicationAuthorizationType* 2.16.840.1.113883.17.3.5.47 **STATIC**

This relationship is required if the medication is administered by the crew; i.e., if EMSMedicationPriorAdministrationObservation is FALSE.

EMS Medications Administered Section example

EMS Past Medical History

[Section: templateId 2.16.840.1.113883.17.3.10.1.19]

1. **SHALL** conform to *Derived CDA Section*
2. **SHALL** contain exactly one [1..1] **code/@code="67842?5"** *EMS past medical history* (CodeSystem: 2.16.840.1.113883.6.1 LOINC)
3. **SHOULD** contain zero or one [0..1] **title** = "EMS Past Medical History"
4. **MAY** contain zero or one [0..1] **entry**
 - a. This entry **SHALL** contain exactly one [1..1] **component**
 - a. This component **SHALL** contain exactly one [1..1] **code/@code="67793?0"** *Has the patient had any significant medical conditions* (CodeSystem: 2.16.840.1.113883.6.1 LOINC)
 - b. This component Contains zero or more [0..*] **value** with data type BL

If NEMESIS EHistory. 08 is "Refused " or "Unable to Complete," the value should be "NI"; the original value may be recorded in Observation.text. If NEMESIS EHistory. 08 is "None Reported," the value should be FALSE. If NEMESIS EHistory. 08 has proper values, the value should be TRUE.

- b. This entry **MAY** contain zero or more [0..*] **component**
 - a. Such components **SHALL** contain exactly one [1..1] **code/@code**= "68487?8" *EMS History of Condition* (CodeSystem: 2.16.840.1.113883.6.1 LOINC)
 - b. Such components **SHALL** contain exactly one [1..1] **value** with data type CD, where the @code **SHALL** be selected from

If NEMESIS EHistory.08 is "No bleeding disorder," the value should be the appropriate ICD?10 code (D66, D67, D68) and negationIndicator should be TRUE.

EMS Past Medical History example

EMS Patient Care Narrative

[Section: templateId 2.16.840.1.113883.17.3.10.1.1]

- 1. **SHALL** contain exactly one [1..1] **code/@code**= "67781?5" *EMS Patient Care Report Narrative* (CodeSystem: 2.16.840.1.113883.6.1 LOINC)
- 2. **SHALL** contain exactly one [1..1] **text**
 - NEMESIS Trace: ENarrative.01
- 3. **SHALL** contain exactly one [1..1] **title** = "EMS Patient Care Report Narrative"

EMS Patient Care Narrative example

EMS Personnel Adverse Event

[Section: templateId 2.16.840.1.113883.17.3.10.1.6]

- 1. **SHALL** conform to *Derived CDA Section*
- 2. **SHALL** contain exactly one [1..1] **code/@code**= "67658?5" *Exposures or injuries of EMS personnel* (CodeSystem: 2.16.840.1.113883.6.1 LOINC)
- 3. **SHALL** contain exactly one [1..1] **text**
- 4. **SHALL** contain exactly one [1..1] **title** = "Exposures or Injuries of EMS Personnel"
- 5. **SHALL** contain exactly one [1..1] **eMSExposureOrInjuryIndicatorRelationship**
 - a. This eMSExposureOrInjuryIndicatorRelationship **SHALL** contain exactly one [1..1] **observation**
 - a. This observation **SHALL** contain exactly one [1..1] **code/@code**= "67554?6" *EMS personnel exposed or injured* (CodeSystem: 2.16.840.1.113883.6.1 LOINC)
 - b. This observation **SHALL** contain exactly one [1..1] **value** with data type BL
- 6. **SHALL** contain zero or one [0..1] **EMSAdverseEventTypeRelationship**

Required if the adverse event indicator value = TRUE

 - a.

EMS Personnel Adverse Event example

EMS Physical Assessment Section

[Section: templateId 2.16.840.1.113883.17.3.10.1.20]

1. **SHALL** conform to [Derived CDA Section](#)
2. **SHALL** contain exactly one [1..1] **code/@code**="67668?4" (CodeSystem: 2.16.840.1.113883.6.1 LOINC)
3. **SHALL** contain exactly one [1..1] **text**
4. **SHOULD** contain exactly one [1..1] **title**
5. **SHALL** contain at least one [1..*] **entry**
 - a. Such entries **SHALL** contain exactly one [1..1] **effectiveTime**
NEMESIS Trace: EExam.03
 - b. Such entries **MAY** contain zero or one [0..1] **component**
 - a. This component **SHALL** contain exactly one [1..1] **code/@code**="8335?2" (CodeSystem: 2.16.840.1.113883.6.1 LOINC)
 - b. This component **SHALL** contain exactly one [1..1] **value** with data type PQ
UCUM units should be 'kg'
 - c. Such entries **MAY** contain zero or one [0..1] **component**
 - a. This component **SHALL** contain exactly one [1..1] **code/@code**="67670?0" (CodeSystem: 2.16.840.1.113883.6.1 LOINC)
 - b. This component **SHALL** contain exactly one [1..1] **value** with data type CD, where the @code **SHALL** be selected from ValueSet [LengthBasedTapeMeasure](#) 2.16.840.1.113883.17.3.5.24 **STATIC**
 - d. Such entries **MAY** contain zero or one [0..1] **component**
 - a. This component **SHALL** contain exactly one [1..1] **code/@code**="67524?9" (CodeSystem: 2.16.840.1.113883.6.1 LOINC)
 - b. This component **SHALL** contain at least one [1..*] **value** with data type CD, where the @code **SHALL** be selected from ValueSet [SkinAssessment](#) 2.16.840.1.113883.17.3.5.25 **STATIC**
 - e. Such entries **MAY** contain zero or one [0..1] **component**
 - a. This component **SHALL** contain exactly one [1..1] **code/@code**="67525?6" (CodeSystem: 2.16.840.1.113883.6.1 LOINC)
 - b. This component **SHALL** contain at least one [1..*] **value** with data type CD, where the @code **SHALL** be selected from ValueSet [HeadAssessmentFinding](#) 2.16.840.1.113883.17.3.5.26 **STATIC**
 - f. Such entries **MAY** contain zero or one [0..1] **component**
 - a. This component **SHALL** contain exactly one [1..1] **code/@code**="67526?4" (CodeSystem: 2.16.840.1.113883.6.1 LOINC)
 - b. This component **SHALL** contain at least one [1..*] **value** with data type CD, where the @code **SHALL** be selected from ValueSet [FaceAssessmentFinding](#) 2.16.840.1.113883.17.3.5.27 **STATIC**
 - g. Such entries **MAY** contain zero or one [0..1] **component**
 - a. This component **SHALL** contain exactly one [1..1] **code/@code**="67527?2" *Neck assessment finding* (CodeSystem: 2.16.840.1.113883.6.1 LOINC)
 - b. This component **SHALL** contain zero or more [0..*] **value** with data type CD, where the @code **SHALL** be selected from ValueSet [NeckAssessmentFinding](#) 2.16.840.1.113883.17.3.5.28 **STATIC**
 - h. Such entries **MAY** contain zero or one [0..1] **component**
 - a. This component **SHALL** contain exactly one [1..1] **code/@code**="67528?0" *Chest and lungs assessment* (CodeSystem: 2.16.840.1.113883.6.1 LOINC)
 - b. This component **SHALL** contain at least one [1..*] **value** with data type CD, where the @code **SHALL** be selected from ValueSet [ChestLungAssessmentFinding](#) 2.16.840.1.113883.17.3.5.29 **STATIC**
 - i. Such entries **MAY** contain zero or one [0..1] **component**

- a. This component **SHALL** contain exactly one [1..1] **code/@code="67529?8"** *Heart assessment finding* (CodeSystem: 2.16.840.1.113883.6.1 LOINC)
- b. This component **SHALL** contain at least one [1..*] **value** with data type CD, where the @code **SHALL** be selected from ValueSet *HeartAssessmentFinding* 2.16.840.1.113883.17.3.5.30 **STATIC**
- j. Such entries **MAY** contain zero or more [0..*] **component**
 - a. Such components **SHALL** contain exactly one [1..1] **code/@code="67530?6"** *Abdomen assessment* (CodeSystem: 2.16.840.1.113883.6.1 LOINC)
 - b. Such components **SHALL** contain exactly one [1..1] **value** with data type CD, where the @code **SHALL** be selected from ValueSet *AbdomenAssessmentFinding* 2.16.840.1.113883.17.3.5.31 **STATIC**
 - c. Such components **SHALL** contain exactly one [1..1] **targetSiteCode**, where the @code **SHALL** be selected from ValueSet *AbdominalFindingLocation* 2.16.840.1.113883.17.3.5.32 **STATIC**
- k. Such entries **MAY** contain zero or one [0..1] **component**
 - a. This component **SHALL** contain exactly one [1..1] **code/@code="67531?4"** *Pelvic and genitourinary assessment* (CodeSystem: 2.16.840.1.113883.6.1 LOINC)
 - b. This component **SHALL** contain at least one [1..*] **value** with data type CD, where the @code **SHALL** be selected from ValueSet *PelvisGenitourinaryAssessment* 2.16.840.1.113883.17.3.5.33 **STATIC**
- l. Such entries **MAY** contain zero or more [0..*] **component**
 - a. Such components **SHALL** contain exactly one [1..1] **code/@code="67532?2"** *Back and spine assessment* (CodeSystem: 2.16.840.1.113883.6.1 LOINC)
 - b. Such components **SHALL** contain exactly one [1..1] **targetSiteCode**, where the @code **SHALL** be selected from ValueSet *BackSpineFindingLocation* 2.16.840.1.113883.17.3.5.35 **STATIC**
 - c. Such components **SHALL** contain exactly one [1..1] **value** with data type CD, where the @code **SHALL** be selected from ValueSet *BackSpineAssessmentFinding* 2.16.840.1.113883.17.3.5.34 **STATIC**
- m. Such entries **MAY** contain zero or more [0..*] **component**
 - a. Such components **SHALL** contain exactly one [1..1] **code/@code="67533?0"** *Extremities assessment* (CodeSystem: 2.16.840.1.113883.6.1 LOINC)
 - b. Such components **MAY** contain exactly one [1..1] **targetSiteCode**, where the @code **SHALL** be selected from ValueSet *ExtremityFindingLocation* 2.16.840.1.113883.17.3.5.37 **STATIC**
 - c. Such components **SHALL** contain exactly one [1..1] **value** with data type CD, where the @code **SHALL** be selected from ValueSet *ExtremitiesAssessmentFinding* 2.16.840.1.113883.17.3.5.36 **STATIC**
- n. Such entries **MAY** contain zero or more [0..*] **component**
 - a. Such components **SHALL** contain exactly one [1..1] **code/@code="67534?8"** *Eye assessment* (CodeSystem: 2.16.840.1.113883.6.1 LOINC)
 - b. Such components **SHALL** contain exactly one [1..1] **targetSiteCode**, where the @code **SHALL** be selected from ValueSet *EyeFindingLocation* 2.16.840.1.113883.17.3.5.39 **STATIC**
 - c. Such components **SHALL** contain exactly one [1..1] **value** with data type CD, where the @code **SHALL** be selected from ValueSet *EyeAssessmentFinding* 2.16.840.1.113883.17.3.5.38 **STATIC**
- o. Such entries **MAY** contain zero or one [0..1] **component**
 - a. This component **MAY** contain exactly one [1..1] **code/@code="67535?5"** *Mental status assessment* (CodeSystem: 2.16.840.1.113883.6.1 LOINC)

- b. This component **SHALL** contain at least one [1..*] **value** with data type CD, where the @code **SHALL** be selected from ValueSet [MentalStatusFinding](#) 2.16.840.1.113883.17.3.5.84 **STATIC**
- p. Such entries **MAY** contain zero or one [0..1] **component**
 - a. This component **SHALL** contain exactly one [1..1] **code/@code**="67536?3" *Neurological status assessment* (CodeSystem: 2.16.840.1.113883.6.1 LOINC)
 - b. This component **SHALL** contain zero or more [0..*] **value** with data type CD, where the @code **SHALL** be selected from ValueSet [NeurologicalAssessmentFinding](#) 2.16.840.1.113883.17.3.5.40 **STATIC**
- 6. **MAY** contain zero or one [0..1] **entry**
 - a. This entry **SHALL** contain exactly one [1..1] **code/@code**="67471?3" *Patient Pregnancy* (CodeSystem: 2.16.840.1.113883.6.1 LOINC)
 - b. This entry **SHALL** contain exactly one [1..1] **value** with data type CD, where the @code **SHALL** be selected from ValueSet [Pregnancy](#) 2.16.840.1.113883.17.3.5.42 **STATIC**
- 7. **MAY** contain zero or one [0..1] **entry**
 - a. This entry **SHALL** contain exactly one [1..1] **code/@code**="67517?3" *Last oral intake* (CodeSystem: 2.16.840.1.113883.6.1 LOINC)
 - b. This entry **SHALL** contain exactly one [1..1] **value** with data type TS
- 8. **SHALL** contain exactly one [1..1] **entry**
 - a. This entry **SHALL** contain exactly one [1..1] **code/@code**="30525?0" *Patient age* (CodeSystem: 2.16.840.1.113883.6.1 LOINC)
 - b. This entry **SHALL** contain exactly one [1..1] **value** with data type PQ
UCUM units SHOULD be 'a'
- 9. **MAY** contain zero or one [0..1] **entry**
 - a. This entry **SHALL** contain exactly one [1..1] **code/@code**="67523?1" *Contraindications to thrombolytic use* (CodeSystem: 2.16.840.1.113883.6.1 LOINC)
 - b. This entry **SHALL** contain at least one [1..*] **value** with data type CD, where the @code **SHALL** be selected from ValueSet [ExistenceOfContraindicationsToThrombolyticUse](#) 2.16.840.1.113883.17.3.5.41 **STATIC**
- 10. **SHALL** contain exactly one [1..1] **entry**
 - a. This entry **SHALL** contain exactly one [1..1] **code/@code**="67523?1" *Barriers to patient care* (CodeSystem: 2.16.840.1.113883.6.1 LOINC)
 - b. This entry **SHALL** contain zero or more [0..*] **value** with data type CD, where the @code **SHALL** be selected from ValueSet [BarrierToCare](#) 2.16.840.1.113883.17.3.5.85 **STATIC**

EMS Physical Assessment Section example

EMS Procedures Performed Section

[Section: templateId 2.16.840.1.113883.17.3.10.1.21]

- 1. **SHALL** conform to [Derived CDA Section](#)
- 2. **SHALL** contain exactly one [1..1] **code/@code**="67802?9" *EMS Procedures Performed* (CodeSystem: 2.16.840.1.113883.6.1 LOINC)
- 3. **SHALL** contain exactly one [1..1] **text**
- 4. **SHALL** contain exactly one [1..1] **title** = "EMS Procedures Performed"
- 5. **SHALL** contain zero or more [0..*] **entry**
 - a. Such entries **SHALL** contain exactly one [1..1] **code**, where the @code **SHOULD** be selected from
NEMIS Trace: EProcedures.03 If EArrest.10 = true, include here as ICD?10 PCS "6A4" For EArrest.03, it is permissible to use NEMIS value set Cardiopulmonary Resuscitation Type (2.16.840.1.113883.17.3.5.57)

3003001 Attempted Defibrillation = Defibrillation 5A2204Z 3003005 Initiated Chest Compressions: use more detailed Cardiopulmonary Resuscitation Type (2.16.840.1.113883.17.3.5.57); reader may infer from these values if necessary 3003003 Attempted Ventilation: use more detailed Cardiopulmonary Resuscitation Type (2.16.840.1.113883.17.3.5.57); reader may infer from these values if necessary 3003007 Not Attempted-Considered Futile = Assistance 5A0; SuccessfulObservation = False; ReasonNotAttempted required 3003009 Not Attempted-DNR Orders = Assistance 5A0; SuccessfulObservation = False; ReasonNotAttempted required 3003011 Not Attempted-Signs of Circulation = Assistance 5A0; SuccessfulObservation = False; ReasonNotAttempted required

- b. Such entries **SHALL** contain exactly one [1..1] **effectiveTime**

NEMESIS Trace: EProcedures.01 goes in effectiveTime.low If an abandoned time is recorded, EArrest.15 goes in effectiveTime.high

- c. Such entries **MAY** contain zero or one [0..1] **entryRelationship**

- a. This entryRelationship **SHALL** contain exactly one [1..1] **observation**

- a. This observation **SHALL** contain exactly one [1..1] **code/@code="ASSERTION"** *Assertion* (CodeSystem: 2.16.840.1.113883.5.4 HL7ActCode)

- b. This observation **SHALL** contain exactly one [1..1] **value** with data type CD, where the @code **SHALL** be selected from ValueSet [ResuscitationDiscontinueReason](#) 2.16.840.1.113883.17.3.5.62 **STATIC**

- d. Such entries **MAY** contain zero or one [0..1] **statusCode/@code="Aborted"** *Aborted* (CodeSystem: 2.16.840.1.113883.5.14 ActStatus)

NEMESIS Trace: EArrest.15

- e. Such entries **MAY** contain zero or one [0..1] **approachSiteCode**, where the @code **SHALL** be selected from ValueSet [IVSite](#) 2.16.840.1.113883.17.3.5.56 **STATIC**

NEMESIS Trace: EProcedures.13 Required conditionally if procedure code is intravenous catheterization (E303)

- f. Such entries **SHALL** contain exactly one [1..1] **entryRelationship**

- a. This entryRelationship **SHALL** contain zero or one [0..1] **observation**

- a. This observation **SHALL** contain exactly one [1..1] **code/@code="67542?1"** *Procedure performed prior to EMS arrival* (CodeSystem: 2.16.840.1.113883.6.1 LOINC)

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

- g. Such entries **SHALL** contain exactly one [1..1] **entryRelationship**

- a. This entryRelationship **SHALL** contain exactly one [1..1] **observation**

NEMESIS Trace: EProcedures.05

- a. This observation **SHALL** contain exactly one [1..1] **code/@code="67543?9"** *Number of procedure attempts* (CodeSystem: 2.16.840.1.113883.6.1 LOINC)

- b. This observation **SHALL** contain exactly one [1..1] **value** with data type INT

NEMESIS Trace: EProcedures.05

- h. Such entries **SHALL** contain exactly one [1..1] **entryRelationship**

- a. This entryRelationship **SHALL** contain exactly one [1..1] **observation**

- a. This observation **SHALL** contain exactly one [1..1] **code/@code="67544?7"** *Procedure successful indicator* (CodeSystem: 2.16.840.1.113883.6.1 LOINC)

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

- i. Such entries **SHALL** contain exactly one [1..1] **entryRelationship**

- a. This entryRelationship **SHALL** contain exactly one [1..1] **observation**

- a. This observation **SHALL** contain exactly one [1..1] **code/@code="67545?4"** *Procedure complication* (CodeSystem: 2.16.840.1.113883.6.1 LOINC)

- b. This observation **SHALL** contain at least one [1..*] **value** with data type CD, where the @code **SHALL** be selected from ValueSet [ProcedureComplicationType](#) 2.16.840.1.113883.17.3.5.58 **STATIC**
- j. Such entries **SHALL** contain exactly one [1..1] **entryRelationship**
 - a. This entryRelationship **SHALL** contain exactly one [1..1] **observation**
 - a. This observation **SHALL** contain exactly one [1..1] **code/@code**="67546?2" *Procedure patient response* (CodeSystem: 2.16.840.1.113883.6.1 LOINC)
 - b. This observation **SHALL** contain zero or more [0..*] **value** with data type CD, where the @code **SHALL** be selected from ValueSet [PatientConditionChange](#) 2.16.840.1.113883.17.3.5.59 **STATIC**
- k. Such entries **SHALL** contain exactly one [1..1] **eMSProcedurePerformer**
 - a. This eMSProcedurePerformer **SHALL** contain exactly one [1..1] **assignedEntity**
 - a. This assignedEntity **SHALL** contain exactly one [1..1] **code**, where the @code **SHALL** be selected from ValueSet [ProviderRole](#) 2.16.840.1.113883.17.3.5.46 **STATIC**
NEMESIS Trace: EProcedures.10
 - b. This assignedEntity **SHALL** contain exactly one [1..1] **id**
NEMESIS Trace: EProcedures.09, ID equal to the EMS professional's agency ID number
- l. Such entries **MAY** contain zero or one [0..1] **entryRelationship**
NEMESIS Trace: EAirway.04; required if procedure code is airway placement, i.e., 0CHY7BZ
 - a. This entryRelationship Contains exactly one [1..1] **observation**
 - a. This observation **SHALL** contain exactly one [1..1] **code/@code**="TBD" (CodeSystem: 2.16.840.1.113883.6.1 LOINC)
 - b. This observation **SHALL** contain exactly one [1..1] **methodCode**, where the @code **SHALL** be selected from ValueSet [AirwayDeviceConfirmationMethod](#) 2.16.840.1.113883.17.3.5.60 **STATIC**
 - c. This observation **SHALL** contain exactly one [1..1] **value** with data type BL
 - d. This observation **SHALL** contain exactly one [1..1] **effectiveTime**
NEMESIS Trace: EAirway.02. If the confirmation is negated, this SHALL be "NA."
 - e. This observation **SHALL** contain exactly one [1..1] **eMSAirwayDeviceParticipant**
 - a. This eMSAirwayDeviceParticipant **SHALL** contain exactly one [1..1] **eMSAirwayDeviceParticipantRole**
 - a. This eMSAirwayDeviceParticipantRole **SHALL** contain exactly one [1..1] **playingDevice**
 - a. This playingDevice **SHALL** contain zero or one [0..1] **code**, where the @code **SHALL** be selected from ValueSet [AirwayDeviceType](#) 2.16.840.1.113883.17.3.5.61 **STATIC**
NEMESIS Trace: EAirway.04; required if procedure code is airway placement, i.e., 0CHY7BZ
- m. Such entries **MAY** contain zero or one [0..1] **eMSAirwayDeviceParticipant**
 - a. This eMSAirwayDeviceParticipant **SHALL** contain exactly one [1..1] **eMSAirwayDeviceParticipantRole**
 - a. This eMSAirwayDeviceParticipantRole **SHALL** contain exactly one [1..1] **playingDevice**
 - a. This playingDevice **SHALL** contain zero or one [0..1] **code**, where the @code **SHALL** be selected from ValueSet [AirwayDeviceType](#) 2.16.840.1.113883.17.3.5.61 **STATIC**

EMS Procedures Performed Section example

EMS Protocol Section

[Section: templateId 2.16.840.1.113883.17.3.10.1.7]

1. **SHALL** conform to *Derived CDA Section*
2. **SHALL** contain zero or one [0..1] **code/@code**="67537?1" *EMS Protocol* (CodeSystem: 2.16.840.1.113883.6.1 LOINC)
3. Contains zero or one [0..1] **text**
4. Contains zero or one [0..1] **title**
5. **SHALL** contain exactly one [1..1] **eMSProtocolRelationship**
 - a. This eMSProtocolRelationship **SHALL** contain exactly one [1..1] **observation**
 - a. This observation **SHALL** contain exactly one [1..1] **code/@code**="67537?1" *EMS protocol* (CodeSystem: 2.16.840.1.113883.6.1 LOINC)
 - b. This observation **SHALL** contain exactly one [1..1] **value** with data type CD, where the @code **SHALL** be selected from ValueSet *Protocol* 2.16.840.1.113883.17.3.5.73 **STATIC**
6. **SHALL** contain exactly one [1..1] **eMSProtocolAgeCategoryRelationship**
 - a. This eMSProtocolAgeCategoryRelationship **SHALL** contain exactly one [1..1] **observation**
 - a. This observation **SHALL** contain exactly one [1..1] **code/@code**="67538?9" *EMS Protocol age category* (CodeSystem: 2.16.840.1.113883.6.1 LOINC)
 - b. This observation **SHALL** contain exactly one [1..1] **value** with data type CD, where the @code **SHALL** be selected from ValueSet *ProtocolAgeCategory* 2.16.840.1.113883.17.3.5.86 **STATIC**
7. **SHALL** contain exactly one [1..1] **eMSCandidatePatientRegistryRelationship**
 - a. This eMSCandidatePatientRegistryRelationship **SHALL** contain exactly one [1..1] **observation**
 - a. This observation **SHALL** contain exactly one [1..1] **code/@code**="67553?8" *EMS candidate patient registry* (CodeSystem: 2.16.840.1.113883.6.1 LOINC)
 - b. This observation **SHALL** contain exactly one [1..1] **value** with data type CD, where the @code **SHALL** be selected from ValueSet *RegistryType* 2.16.840.1.113883.17.3.5.74 **STATIC**

EMS Protocol Section example

EMS Response

[Section: templateId 2.16.840.1.113883.17.3.10.1.3]

1. **SHALL** conform to *Derived CDA Section*
2. **SHALL** contain exactly one [1..1] **code/@code**="67664?3" *EMS Response* (CodeSystem: 2.16.840.1.113883.6.1 LOINC)
3. **SHALL** contain exactly one [1..1] **text**
4. **SHALL** contain exactly one [1..1] **title**="EMS Response"
5. **SHALL** contain exactly one [1..1] **eMSDelayRelationship**
 - a. This eMSDelayRelationship **SHALL** contain exactly one [1..1] **organizer**
 - a. This organizer **SHALL** contain exactly one [1..1] **eMSDispatchDelayRelationship**
 - a. This eMSDispatchDelayRelationship **SHALL** contain exactly one [1..1] **observation**
 - a. This observation **SHALL** contain exactly one [1..1] **code/@code**="67480?4" *Dispatch delay* (CodeSystem: 2.16.840.1.113883.6.1 LOINC)

- b. This observation **SHALL** contain exactly one [1..1] **value** with data type CD, where the @code **SHALL** be selected from ValueSet [DispatchDelayType](#) 2.16.840.1.113883.17.3.5.50 **STATIC**
 - b. This organizer **SHALL** contain exactly one [1..1] **eMSResponseDelayRelationship**
 - a. This eMSResponseDelayRelationship **SHALL** contain exactly one [1..1] **observation**
 - a. This observation **SHALL** contain exactly one [1..1] **code/@code**="67557?9" *Response delay* (CodeSystem: 2.16.840.1.113883.6.1 LOINC)
 - b. This observation **SHALL** contain exactly one [1..1] **value** with data type CD, where the @code **SHALL** be selected from ValueSet [ResponseDelayType](#) 2.16.840.1.113883.17.3.5.51 **STATIC**
 - c. This organizer **SHALL** contain exactly one [1..1] **eMSSceneDelayRelationship**
 - a. This eMSSceneDelayRelationship **SHALL** contain exactly one [1..1] **observation**
 - a. This observation **SHALL** contain exactly one [1..1] **code/@code**="67558?7" *Scene delay* (CodeSystem: 2.16.840.1.113883.6.1 LOINC)
 - b. This observation **SHALL** contain exactly one [1..1] **value** with data type CD, where the @code **SHALL** be selected from ValueSet [SceneDelayType](#) 2.16.840.1.113883.17.3.5.52 **STATIC**
 - d. This organizer **SHALL** contain exactly one [1..1] **eMSTransportDelayRelationship**
 - a. This eMSTransportDelayRelationship **SHALL** contain exactly one [1..1] **observation**
 - a. This observation **SHALL** contain exactly one [1..1] **code/@code**="67559?5" *Transport delay* (CodeSystem: 2.16.840.1.113883.6.1 LOINC)
 - b. This observation **SHALL** contain exactly one [1..1] **value** with data type CD, where the @code **SHALL** be selected from ValueSet [TransportDelayType](#) 2.16.840.1.113883.17.3.5.53 **STATIC**
 - e. This organizer **SHALL** contain exactly one [1..1] **eMSTurnaoundDelayRelationship**
 - a. This eMSTurnaoundDelayRelationship **SHALL** contain exactly one [1..1] **observation**
 - a. This observation **SHALL** contain exactly one [1..1] **code/@code**="67560?3" *Turnaround delay* (CodeSystem: 2.16.840.1.113883.6.1 LOINC)
 - b. This observation **SHALL** contain exactly one [1..1] **value** with data type CD, where the @code **SHALL** be selected from ValueSet [TurnAroundDelayType](#) 2.16.840.1.113883.17.3.5.54 **STATIC**
- 6. **MAY** contain zero or one [0..1] **eMSDispatchLocationRelationship**
 - a.
- 7. **MAY** contain zero or one [0..1] **eMSResponseOdometerReadingsRelationship**
 - a. This eMSResponseOdometerReadingsRelationship **SHALL** contain zero or one [0..1] **organizer**
 - a. This organizer **MAY** contain zero or one [0..1] **eMSResponseBeginningOdometerReadingRelationship**
 - a. This eMSResponseBeginningOdometerReadingRelationship **SHALL** contain exactly one [1..1] **observation**
 - a. This observation **SHALL** contain exactly one [1..1] **code/@code**="67484?6" *EMS Response odometer beginning reading* (CodeSystem: 2.16.840.1.113883.6.1 LOINC)
 - b. This observation **SHALL** contain exactly one [1..1] **value** with data type PQ
UCUM units SHOULD be "[mi_i]"
 - b. This organizer **MAY** contain zero or one [0..1] **eMSResponseOnSceneOdometerReadingRelationship**

- a. This eMSResponseOnSceneOdometerReadingRelationship **SHALL** contain exactly one [1..1] **observation**
 - a. This observation **SHALL** contain exactly one [1..1] **code/@code**="67485?3" *EMS Response odometer on-scene reading* (CodeSystem: 2.16.840.1.113883.6.1 LOINC)
 - b. This observation **SHALL** contain exactly one [1..1] **value** with data type PQ
UCUM units SHOULD be "[mi_i]"
- c. This organizer **MAY** contain zero or one [0..1] **eMSResponseDestinationOdometerReadingRelationship**
 - a. This eMSResponseDestinationOdometerReadingRelationship **SHALL** contain exactly one [1..1] **observation**
 - a. This observation **SHALL** contain exactly one [1..1] **code/@code**="67486?1" *EMS Response odometer destination reading* (CodeSystem: 2.16.840.1.113883.6.1 LOINC)
 - b. This observation **SHALL** contain exactly one [1..1] **value** with data type PQ
UCUM units SHOULD be "[mi_i]"
- 8. **SHALL** contain exactly one [1..1] **eMSResponseModeToSceneRelationship**
 - a. This eMSResponseModeToSceneRelationship **SHALL** contain exactly one [1..1] **observation**
 - a. This observation **SHALL** contain exactly one [1..1] **code/@code**="67482?0" *Response mode to scene* (CodeSystem: 2.16.840.1.113883.6.1 LOINC)
 - b. This observation **SHALL** contain exactly one [1..1] **value** with data type CD, where the @code **SHALL** be selected from ValueSet *TransportationMode* 2.16.840.1.113883.17.3.5.66 **STATIC**

EMS Response example

EMS Scene Section

[Section: templateId 2.16.840.1.113883.17.3.10.1.8]

- 1. **SHALL** conform to *Derived CDA Section*
- 2. **SHALL** contain exactly one [1..1] **code/@code**="67665?0" *EMS Scene* (CodeSystem: 2.16.840.1.113883.6.1 LOINC)
- 3. **SHALL** contain exactly one [1..1] **text**
- 4. **SHALL** contain exactly one [1..1] **title** = "EMS Scene"
- 5. **SHALL** contain exactly one [1..1] **eMSFirstUnitIndicatorRelationship**
 - a. This eMSFirstUnitIndicatorRelationship **SHALL** contain exactly one [1..1] **observation**
 - a. This observation **SHALL** contain exactly one [1..1] **code/@code**="67665?0" *EMS reporter is first unit on scene* (CodeSystem: 2.16.840.1.113883.6.1 LOINC)
 - b. This observation **SHALL** contain exactly one [1..1] **value** with data type BL
- 6. **MAY** contain zero or one [0..1] **eMSFirstUnitOnSceneRelationship**
 - a. This eMSFirstUnitOnSceneRelationship **SHALL** contain exactly one [1..1] **observation**
 - a. This observation **SHALL** contain exactly one [1..1] **code/@code**="67481?2" *Name of first unit on scene* (CodeSystem: 2.16.840.1.113883.6.1 LOINC)
 - b. This observation **SHALL** contain exactly one [1..1] **value** with data type ST
- 7. **MAY** contain zero or one [0..1] **eMSScenePatientCountRelationship**
 - a. This eMSScenePatientCountRelationship **SHALL** contain exactly one [1..1] **observation**
 - a. This observation **SHALL** contain exactly one [1..1] **code/@code**="67489?5" *EMS Count of patients at scene* (CodeSystem: 2.16.840.1.113883.6.1 LOINC)
 - b. This observation **SHALL** contain exactly one [1..1] **value** with data type INT

8. **MAY** contain zero or one [0..1] **eMSMassCasualtyIndicatorRelationship**
 - a. This eMSMassCasualtyIndicatorRelationship **SHALL** contain exactly one [1..1] **observation**
 - a. This observation **SHALL** contain exactly one [1..1] **code**
 - b. This observation **SHALL** contain exactly one [1..1] **value** with data type BL

EMS Scene Section example

EMS Situation Section

[Section: templateId 2.16.840.1.113883.17.3.10.1.9]

1. **SHALL** conform to *Derived CDA Section*
2. **SHALL** contain exactly one [1..1] **code/@code="67666?8"** *EMS Situation* (CodeSystem: 2.16.840.1.113883.6.1 LOINC)
3. **SHALL** contain exactly one [1..1] **text**
4. **SHALL** contain exactly one [1..1] **title**
5. **MAY** contain zero or more [0..*] **entry**
 - a. Such entries **SHALL** contain exactly one [1..1] **code/@code="10154?3"** *EMS complaint* (CodeSystem: 2.16.840.1.113883.6.1 LOINC)
 - b. Such entries **MAY** contain zero or one [0..1] **value** with data type ST
 - c. Such entries **MAY** contain zero or one [0..1] **entryRelationship**
 - a. This entryRelationship Contains exactly one [1..1] **observation**
 - a. This observation **SHALL** contain exactly one [1..1] **code/@code="67491?1"** *Complaint duration* (CodeSystem: 2.16.840.1.113883.6.1 LOINC)
 - b. This observation **SHALL** contain exactly one [1..1] **value** with data type PQ
Units SHALL be selected from UCUM time units (i.e., s, min, h, d, wk, mo, a)
 - d. Such entries **MAY** contain zero or one [0..1] **entryRelationship**
 - a. This entryRelationship Contains at least one [1..*] **observation**
 - a. Such observations **SHALL** contain exactly one [1..1] **code**, where the @code **SHALL** be selected from (CodeSystem: 2.16.840.1.113883.6.1 LOINC)
 - b. Such observations **SHALL** contain exactly one [1..1] **value** with data type CD
 - e. Such entries **SHOULD** contain exactly one [1..1] **targetSiteCode**, where the @code **SHALL** be selected from ValueSet *AnatomicLocation* 2.16.840.1.113883.17.3.5.76 **STATIC**
NEMESIS Trace: ESituation.07 Complaint site is required if complaint is type "Chief complaint"
 - f. Such entries **SHOULD** contain zero or one [0..1] **entryRelationship**
The organ system is required if the complaint is of type "Chief complaint"
 - a. This entryRelationship **SHALL** contain exactly one [1..1] **observation**
 - a. This observation **SHALL** contain exactly one [1..1] **code/@code="69468?7"** *Organ system* (CodeSystem: 2.16.840.1.113883.6.1 LOINC)
 - b. This observation **SHALL** contain exactly one [1..1] **value** with data type CD, where the @code **SHALL** be selected from ValueSet *OrganSystem* 2.16.840.1.113883.17.3.5.77 **STATIC**
The organ system is required if the complaint is of type "Chief complaint"
6. **SHALL** contain exactly one [1..1] **entry**
 - a. This entry **SHALL** contain exactly one [1..1] **code/@code="TBD"** (CodeSystem: 2.16.840.1.113883.6.1 LOINC)

- b. This entry **SHALL** contain exactly one [1..1] **value** with data type TS
- 7. **SHALL** contain exactly one [1..1] **entry**
 - a. This entry **SHALL** contain exactly one [1..1] **code/@code**= "69467?9" *Possible injury* (CodeSystem: 2.16.840.1.113883.6.1 LOINC)
 - b. This entry **SHALL** contain exactly one [1..1] **value** with data type BL
- 8. **SHALL** contain exactly one [1..1] **entry**
 - a. This entry **SHALL** contain exactly one [1..1] **code/@code**= "67774?0" *EMS Primary Symptom* (CodeSystem: 2.16.840.1.113883.6.1 LOINC)
 - b. This entry **SHALL** contain exactly one [1..1] **value** with data type CD/@code= "ADD ICD 10"
- 9. **SHALL** contain exactly one [1..1] **entry**
 - a. This entry **SHALL** contain exactly one [1..1] **code/@code**= "67493?7" *Initial Patient Acuity* (CodeSystem: 2.16.840.1.113883.6.1 LOINC)
 - b. This entry **SHALL** contain exactly one [1..1] **value** with data type CD, where the @code **SHALL** be selected from ValueSet [PatientStatus](#) 2.16.840.1.113883.17.3.5.78 **STATIC**
- 10. Contains exactly one [1..1] **entry**
 - a. This entry **SHALL** contain exactly one [1..1] **code/@code**= "TBD" (CodeSystem: 2.16.840.1.113883.6.1 LOINC)
 - b. This entry **SHALL** contain exactly one [1..1] **value** with data type TS
- 11. **SHALL** contain exactly one [1..1] **entry**
 - a. This entry **SHALL** contain exactly one [1..1] **code/@code**= "67492?9" *Provider Primary Impression* (CodeSystem: 2.16.840.1.113883.6.1 LOINC)
 - b. This entry **SHALL** contain exactly one [1..1] **value** with data type CD/@code= "ADD ICD10 CM"
- 12. **MAY** contain zero or one [0..1] **entry**
 - a. This entry **SHALL** contain exactly one [1..1] **code/@code**= "67776?5" *Other symptoms* (CodeSystem: 2.16.840.1.113883.6.1 LOINC)
 - b. This entry **SHALL** contain zero or more [0..*] **value** with data type CD/@code= "ADD ICD-10 CM"
- 13. **SHALL** contain exactly one [1..1] **entry**
 - a. This entry **SHALL** contain exactly one [1..1] **code/@code**= "69542-9" *Provider Secondary Impressions* (CodeSystem: 2.16.840.1.113883.6.1 LOINC)
 - b. This entry **SHALL** contain at least one [1..*] **value** with data type CD/@code= "ADD ICD 10 CM"

EMS Situation Section example

EMS Social History

[Section: templateId 2.16.840.1.113883.17.3.10.1.22]

- 1. **SHALL** conform to [Derived CDA Section](#)
- 2. **SHALL** contain exactly one [1..1] **code/@code**= "67843?3" *EMS Social History* (CodeSystem: 2.16.840.1.113883.6.1 LOINC)
- 3. **SHOULD** contain zero or one [0..1] **title** = "EMS Social History"
- 4. **SHALL** contain exactly one [1..1] **entry**
 - a. This entry **SHALL** contain exactly one [1..1] **code/@code**= "69757?3" *Indications of drug or alcohol use by the patient* (CodeSystem: 2.16.840.1.113883.6.1 LOINC)
 - b. This entry Contains zero or more [0..*] **value** with data type CD
- 5. **MAY** contain zero or more [0..*] **entry**
 - a. Such entrys **SHALL** contain exactly one [1..1] **code/@code**= "67669?2" *Alcohol - drug use* (CodeSystem: 2.16.840.1.113883.6.1 LOINC)

- b. Such entries **SHALL** contain zero or more [0..*] **value** with data type CD, where the @code **SHALL** be selected from ValueSet [AlcoholDrugUseIndicator](#) 2.16.840.1.113883.17.3.5.18 **STATIC**

EMS Social History example

EMS Times Section

[Section: templateId 2.16.840.1.113883.17.3.10.1.10]

1. **SHALL** conform to [Derived CDA Section](#)
2. **SHALL** contain zero or one [0..1] **code/@code**="67667-6" *EMS Times* (CodeSystem: 2.16.840.1.113883.6.1 LOINC)
3. **SHALL** contain zero or one [0..1] **text**
4. **SHOULD** contain zero or one [0..1] **title**="EMS Times"

EMS Times Section example

EMS Vital Signs Section

[Section: templateId 2.16.840.1.113883.17.3.10.1.23]

1. **SHALL** conform to [Derived CDA Section](#)
2. **SHALL** contain exactly one [1..1] **code/@code**="67801?1" *EMS Vital Signs* (CodeSystem: 2.16.840.1.113883.6.1 LOINC)
3. **SHOULD** contain exactly one [1..1] **title**="EMS Vital Signs"
4. **SHALL** contain at least one [1..*] **entry**
 - a. Such entries **SHALL** contain exactly one [1..1] **effectiveTime**
NEMESIS Trace: EVitals.01
 - b. Such entries **SHALL** contain exactly one [1..1] **component**
 - a. This component **SHALL** contain exactly one [1..1] **code/@code**="67518?1" *Obtained prior to units EMS care* (CodeSystem: 2.16.840.1.113883.6.1 LOINC)
 - b. This component Contains zero or more [0..*] **value** with data type BL
 - c. Such entries **SHALL** contain exactly one [1..1] **component**
 - a. This component **SHALL** contain exactly one [1..1] **code/@code**="67519?9" *Cardiac rhythm* (CodeSystem: 2.16.840.1.113883.6.1 LOINC)
 - b. This component **SHALL** contain exactly one [1..1] **methodCode**, where the @code **SHALL** be selected from ValueSet [MethodOfECGInterpretation](#) 2.16.840.1.113883.17.3.5.20 **STATIC**
NEMESIS Trace: EVitals.05
 - c. This component **SHALL** contain exactly one [1..1] **value** with data type CD, where the @code **SHALL** be selected from ValueSet [ECGType](#) 2.16.840.1.113883.17.3.5.19 **STATIC**
NEMESIS Trace: EVitals.03
 - d. Such entries **SHALL** contain exactly one [1..1] **component**
 - a. This component **SHALL** contain exactly one [1..1] **code/@code**="8480?6" *Intravascular systolic* (CodeSystem: 2.16.840.1.113883.6.1 LOINC)
 - b. This component **SHALL** contain exactly one [1..1] **value** with data type PQ
UCUM units SHOULD be "mm[Hg]".
 - e. Such entries **MAY** contain zero or one [0..1] **component**
 - a. This component **SHALL** contain exactly one [1..1] **code/@code**="8462-4" *Intravascular diastolic* (CodeSystem: 2.16.840.1.113883.6.1 LOINC)

- b. This component **SHALL** contain exactly one [1..1] **value** with data type PQ
UCUM units SHOULD be "mm[Hg]".
- f. Such entries **SHOULD** contain exactly one [1..1] **component**
 - a. This component **SHALL** contain exactly one [1..1] **code/@code="8867?4"** *Heart rate* (CodeSystem: 2.16.840.1.113883.6.1 LOINC)
 - b. This component **SHALL** contain zero or more [0..*] **value** with data type PQ
UCUM units SHOULD be "/min".
- g. Such entries **SHALL** contain exactly one [1..1] **component**
 - a. This component **SHALL** contain exactly one [1..1] **code/@code="9279?1"** *Breaths* (CodeSystem: 2.16.840.1.113883.6.1 LOINC)
 - b. This component **SHALL** contain exactly one [1..1] **value** with data type PQ
UCUM units SHOULD be "/min".
- h. Such entries **MAY** contain zero or one [0..1] **component**
 - a. This component **SHALL** contain exactly one [1..1] **code/@code="8310?5"** *Body temperature* (CodeSystem: 2.16.840.1.113883.6.1 LOINC)
 - b. This component **SHALL** contain exactly one [1..1] **value** with data type PQ
UCUM units SHOULD be "Cel".
- i. Such entries **SHALL** contain exactly one [1..1] **component**
 - a. This component **SHALL** contain exactly one [1..1] **code/@code="2710?2"** *Oxygen saturation* (CodeSystem: 2.16.840.1.113883.6.1 LOINC)
 - b. This component **SHALL** contain exactly one [1..1] **value**
UCUM units will typically be "%".
- j. Such entries **SHALL** contain exactly one [1..1] **component**
 - a. This component **SHALL** contain exactly one [1..1] **code/@code="19889?5"** *Carbon dioxide/ Gas.total.at end expiration* (CodeSystem: 2.16.840.1.113883.6.1 LOINC)
 - b. This component **SHALL** contain exactly one [1..1] **value**
UCUM units will typically be "%".
- k. Such entries **MAY** contain zero or one [0..1] **component**
 - a. This component **SHALL** contain exactly one [1..1] **code/@code="19911?7"** *Diffusion capacity.carbon monoxide* (CodeSystem: 2.16.840.1.113883.6.1 LOINC)
 - b. This component **SHALL** contain zero or more [0..*] **value** with data type PQ
UCUM units will typically be "[ppm]".
- l. Such entries **SHALL** contain exactly one [1..1] **component**
 - a. This component **SHALL** contain exactly one [1..1] **code/@code="2339?0"** *Glucose* (CodeSystem: 2.16.840.1.113883.6.1 LOINC)
 - b. This component **SHALL** contain zero or more [0..*] **value** with data type PQ
UCUM units will typically be "mg/dl".
- m. Such entries **SHALL** contain exactly one [1..1] **component**
 - a. This component **SHALL** contain exactly one [1..1] **code/@code="67775?7"** *Level of responsiveness* (CodeSystem: 2.16.840.1.113883.6.1 LOINC)
 - b. This component **SHALL** contain exactly one [1..1] **value** with data type CD, where the @code **SHALL** be selected from ValueSet [LevelOfResponsiveness](#) 2.16.840.1.113883.17.3.5.21
STATIC
- n. Such entries **SHALL** contain exactly one [1..1] **component**

- a. This component **SHALL** contain exactly one [1..1] **code/@code="56840?2"** *Pain severity verbal numeric scale* (CodeSystem: 2.16.840.1.113883.6.1 LOINC)
- b. This component Contains zero or more [0..*] **value** with data type INT

An ordinal value between 0 and 10, inclusive. There are three scales, but the values are equivalent.

- o. Such entrys **SHALL** contain exactly one [1..1] **component**

- a. This component **SHALL** contain exactly one [1..1] **code/@code="67520?7"** *Stroke scale overall interpretation* (CodeSystem: 2.16.840.1.113883.6.1 LOINC)
- b. This component **SHALL** contain exactly one [1..1] **value** with data type CD, where the @code **SHALL** be selected from ValueSet **STATIC**

NEMESIS Trace: EVitals.29

- c. This component **SHALL** contain exactly one [1..1] **methodCode**, where the @code **SHALL** be selected from ValueSet *StrokeScale* 2.16.840.1.113883.17.3.5.88 **STATIC**

NEMESIS Trace: EVitals.30

- p. Such entrys **SHALL** contain exactly one [1..1] **component**

- a. This component **SHALL** contain exactly one [1..1] **component**

- a. This component **SHALL** contain exactly one [1..1] **code/@code="9267?6"** *Glasgow coma score. eye opening* (CodeSystem: 2.16.840.1.113883.6.1 LOINC)
- b. This component **SHALL** contain exactly one [1..1] **value** with data type INT

- b. This component **SHALL** contain exactly one [1..1] **component**

- a. This component **SHALL** contain exactly one [1..1] **code/@code="9268?4"** *Glasgow coma score. motor* (CodeSystem: 2.16.840.1.113883.6.1 LOINC)
- b. This component **SHALL** contain zero or more [0..*] **value**

- c. This component **MAY** contain zero or one [0..1] **component**

- a. This component **SHALL** contain exactly one [1..1] **code/@code="55285?1"** *Glasgow coma score special circumstances* (CodeSystem: 2.16.840.1.113883.6.1 LOINC)
- b. This component **MAY** contain zero or more [0..*] **value** with data type CD

- d. This component **SHOULD** contain zero or one [0..1] **component**

- a. This component **SHALL** contain exactly one [1..1] **code/@code="9269?2"** *Glasgow coma score. total* (CodeSystem: 2.16.840.1.113883.6.1 LOINC)
- b. This component **SHALL** contain exactly one [1..1] **value** with data type INT

Integer value equal to the sum of verbal, motor, and eye

- e. This component **SHALL** contain exactly one [1..1] **component**

- a. This component **SHALL** contain exactly one [1..1] **code/@code="9270?0"** *Glasgow coma score. verbal* (CodeSystem: 2.16.840.1.113883.6.1 LOINC)
- b. This component **SHALL** contain exactly one [1..1] **value**

EMS Vital Signs Section example

Chapter

4

CLINICAL STATEMENT TEMPLATES

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.

Chapter 5

OTHER CLASSES

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

Chapter

6

VALUE SETS

Topics:

- *AED Use Prior To EMS Arrival*
- *Abdomen Assessment Finding*
- *Abdominal Finding Location*
- *Advance Directive Type*
- *Airbag Status*
- *Airway Device Confirmation Method*
- *Airway Device Type*
- *Alcohol Drug Use Indicator*
- *Anatomic Location*
- *Back Spine Assessment Finding*
- *Back Spine Finding Location*
- *Barrier To Care*
- *Cardiac Arrest Cause*
- *Cardiac Arrest Timing*
- *Cardiac Arrest Witness Role*
- *Cardiac Rhythm Reading*
- *Cardinality*
- *Cardiopulmonary Resuscitation Type*
- *Chest Lung Assessment Finding*
- *Complaint*
- *Current Medication Administration Route*
- *Destination Choice Reason*
- *Destination Prearrival Activation*
- *Destination Type*
- *Disaster Type*
- *Dispatch Delay Type*
- *ECG Type*
- *EMD Performed*
- *EMS Billing Condition*
- *EMS Condition Code*
- *EMS Level Of Service*
- *Environmental Allergy Type*

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

- *Existence Of Contraindications To Thrombolytic Use*
- *Extremities Assessment Finding*
- *Extremity Finding Location*
- *Eye Assessment Finding*
- *Eye Finding Location*
- *Face Assessment Finding*
- *First Monitored Rhythm*
- *Glasgow Coma Score Qualifier*
- *Head Assessment Finding*
- *Heart Assessment Finding*
- *IV Site*
- *Incident Outcome*
- *Injury Risk Factor*
- *Length Based Tape Measure*
- *Level Of Responsiveness*
- *Mechanism Of Injury*
- *Medication Administered Route*
- *Medication Authorization Type*
- *Medication Complication*
- *Medication Not Given Reason*
- *Mental Status Finding*
- *Method Of ECG Interpretation*
- *Neck Assessment Finding*
- *Neurological Assessment Finding*
- *Organ System*
- *Patient Condition Change*
- *Patient Status*
- *Pelvis Genitourinary Assessment*
- *Pregnancy*
- *Prior Care Provider Role*
- *Procedure Complication Type*
- *Protocol*
- *Protocol Age Category*
- *Provider Adverse Event Type*
- *Provider Response Role*
- *Provider Role*
- *Provider Role Level*
- *Registry Type*
- *Response Delay Type*
- *Resuscitation Not Attempted Reason*
- *Resuscitation Discontinue Reason*
- *Return Of Spontaneous Circulation*

- *Safety Equipment Type*
- *Scene Delay Type*
- *Service Level*
- *Service Type*
- *Skin Assessment*
- *Stroke Scale*
- *Transport Delay Type*
- *Transport Method*
- *Transport Mode*
- *Transportation Mode*
- *Trauma Center Criteria*
- *Turn Around Delay Type*
- *Unit Response Role*
- *Vehicle Impact Area*
- *Vehicle Passenger Location*

AED Use Prior To EMS Arrival

Value Set	AEDUsePriorToEMSArrival - 2.16.840.1.113883.17.3.5.13
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Abdomen Assessment Finding

Value Set	AbdomenAssessmentFinding - 2.16.840.1.113883.17.3.5.31
-----------	--

Abdominal Finding Location

Value Set	AbdominalFindingLocation - 2.16.840.1.113883.17.3.5.32
-----------	--

Advance Directive Type

Value Set	AdvanceDirectiveType - 2.16.840.1.113883.17.3.5.63
-----------	--

Airbag Status

Value Set	AirbagStatus - 2.16.840.1.113883.17.3.5.8
-----------	---

Airway Device Confirmation Method

Value Set	AirwayDeviceConfirmationMethod - 2.16.840.1.113883.17.3.5.60
-----------	--

Airway Device Type

Value Set	AirwayDeviceType - 2.16.840.1.113883.17.3.5.61
-----------	--

Alcohol Drug Use Indicator

Value Set	AlcoholDrugUseIndicator - 2.16.840.1.113883.17.3.5.18
-----------	---

Anatomic Location

Value Set	AnatomicLocation - 2.16.840.1.113883.17.3.5.76
-----------	--

Back Spine Assessment Finding

Value Set	BackSpineAssessmentFinding - 2.16.840.1.113883.17.3.5.34
-----------	--

Back Spine Finding Location

Value Set	BackSpineFindingLocation - 2.16.840.1.113883.17.3.5.35
-----------	--

Barrier To Care

Value Set	BarrierToCare - 2.16.840.1.113883.17.3.5.85
-----------	---

Cardiac Arrest Cause

Value Set	CardiacArrestCause - 2.16.840.1.113883.17.3.5.10
-----------	--

Cardiac Arrest Timing

Value Set	CardiacArrestTiming - 2.16.840.1.113883.17.3.5.91
-----------	---

Cardiac Arrest Witness Role

Value Set	CardiacArrestWitnessRole - 2.16.840.1.113883.17.3.5.11
-----------	--

Cardiac Rhythm Reading

Value Set	CardiacRhythmReading - 2.16.840.1.113883.17.3.5.16
-----------	--

Cardinality

Value Set	Cardinality - 2.16.840.1.113883.17.3.5.75
-----------	---

Cardiopulmonary Resuscitation Type

Value Set	CardiopulmonaryResuscitationType - 2.16.840.1.113883.17.3.5.57
-----------	--

Chest Lung Assessment Finding

Value Set	ChestLungAssessmentFinding - 2.16.840.1.113883.17.3.5.29
-----------	--

Complaint

Value Set	Complaint - 2.16.840.1.113883.17.3.5.49
-----------	---

Current Medication Administration Route

Value Set	CurrentMedicationAdministrationRoute - 2.16.840.1.113883.17.3.5.17
-----------	--

Destination Choice Reason

Value Set	DestinationChoiceReason - 2.16.840.1.113883.17.3.5.68
-----------	---

Destination Prearrival Activation

Value Set	DestinationPrearrivalActivation - 2.16.840.1.113883.17.3.5.87
-----------	---

Destination Type

Value Set	DestinationType - 2.16.840.1.113883.17.3.5.69
-----------	---

Disaster Type

Value Set	DisasterType - 2.16.840.1.113883.17.3.5.9
-----------	---

Dispatch Delay Type

Value Set	DispatchDelayType - 2.16.840.1.113883.17.3.5.50
-----------	---

ECG Type

Value Set	ECGType - 2.16.840.1.113883.17.3.5.19
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EMD Performed

Value Set	EMDPerformed - 2.16.840.1.113883.17.3.5.48
-----------	--

EMS Billing Condition

Value Set	EMSBillingCondition - 2.16.840.1.113883.17.3.5.71
Code System	LOINC - 2.16.840.1.113883.6.1

EMS Condition Code

Value Set	EMSConditionCode - 2.16.840.1.113883.17.3.5.71
-----------	--

EMS Level Of Service

Value Set	EMSLevelOfService - 2.16.840.1.113883.17.3.5.70
Code System	LOINC - 2.16.840.1.113883.6.1

Environmental Allergy Type

Value Set	EnvironmentalAllergyType - 2.16.840.1.113883.17.3.5.83
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Existence Of Contraindications To Thrombolytic Use

Value Set	ExistenceOfContraindicationsToThrombolyticUse - 2.16.840.1.113883.17.3.5.41
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Extremities Assessment Finding

Value Set	ExtremitiesAssessmentFinding - 2.16.840.1.113883.17.3.5.36
-----------	--

Extremity Finding Location

Value Set	ExtremityFindingLocation - 2.16.840.1.113883.17.3.5.37
-----------	--

Eye Assessment Finding

Value Set	EyeAssessmentFinding - 2.16.840.1.113883.17.3.5.38
-----------	--

Eye Finding Location

Value Set	EyeFindingLocation - 2.16.840.1.113883.17.3.5.39
-----------	--

Face Assessment Finding

Value Set	FaceAssessmentFinding - 2.16.840.1.113883.17.3.5.27
-----------	---

First Monitored Rhythm

Value Set	FirstMonitoredRhythm - 2.16.840.1.113883.17.3.5.14
-----------	--

Glasgow Coma Score Qualifier

Value Set	GlasgowComaScoreQualifier - 2.16.840.1.113883.17.3.5.89
-----------	---

Head Assessment Finding

Value Set	HeadAssessmentFinding - 2.16.840.1.113883.17.3.5.26
-----------	---

Heart Assessment Finding

Value Set	HeartAssessmentFinding - 2.16.840.1.113883.17.3.5.30
-----------	--

IV Site

Value Set	IVSite - 2.16.840.1.113883.17.3.5.56
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Incident Outcome

Value Set	IncidentOutcome - 2.16.840.1.113883.17.3.5.64
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Injury Risk Factor

Value Set	InjuryRiskFactor - 2.16.840.1.113883.17.3.5.4
-----------	---

Length Based Tape Measure

Value Set	LengthBasedTapeMeasure - 2.16.840.1.113883.17.3.5.24
-----------	--

Level Of Responsiveness

Value Set	LevelOfResponsiveness - 2.16.840.1.113883.17.3.5.21
-----------	---

Mechanism Of Injury

Value Set	MechanismOfInjury - 2.16.840.1.113883.17.3.5.1
-----------	--

Medication Administered Route

Value Set	MedicationAdministeredRoute - 2.16.840.1.113883.17.3.5.43
-----------	---

Medication Authorization Type

Value Set	MedicationAuthorizationType - 2.16.840.1.113883.17.3.5.47
-----------	---

Medication Complication

Value Set	MedicationComplication - 2.16.840.1.113883.17.3.5.45
-----------	--

Medication Not Given Reason

Value Set	MedicationNotGivenReason - 2.16.840.1.113883.17.3.5.92
-----------	--

Mental Status Finding

Value Set	MentalStatusFinding - 2.16.840.1.113883.17.3.5.84
-----------	---

Method Of ECG Interpretation

Value Set	MethodOfECGInterpretation - 2.16.840.1.113883.17.3.5.20
-----------	---

Neck Assessment Finding

Value Set	NeckAssessmentFinding - 2.16.840.1.113883.17.3.5.28
-----------	---

Neurological Assessment Finding

Value Set	NeurologicalAssessmentFinding - 2.16.840.1.113883.17.3.5.40
-----------	---

Organ System

Value Set	OrganSystem - 2.16.840.1.113883.17.3.5.77
-----------	---

Patient Condition Change

Value Set	PatientConditionChange - 2.16.840.1.113883.17.3.5.59
-----------	--

Patient Status

Value Set	PatientStatus - 2.16.840.1.113883.17.3.5.78
-----------	---

Pelvis Genitourinary Assessment

Value Set	PelvisGenitourinaryAssessment - 2.16.840.1.113883.17.3.5.33
-----------	---

Pregnancy

Value Set	Pregnancy - 2.16.840.1.113883.17.3.5.42
-----------	---

Prior Care Provider Role

Value Set	PriorCareProviderRole - 2.16.840.1.113883.17.3.5.12
-----------	---

Procedure Complication Type

Value Set	ProcedureComplicationType - 2.16.840.1.113883.17.3.5.58
-----------	---

Protocol

Value Set	Protocol - 2.16.840.1.113883.17.3.5.73
-----------	--

Protocol Age Category

Value Set	ProtocolAgeCategory - 2.16.840.1.113883.17.3.5.86
-----------	---

Provider Adverse Event Type

Value Set	ProviderAdverseEventType - 2.16.840.1.113883.17.3.5.72
-----------	--

Provider Response Role

Value Set	ProviderResponseRole - 2.16.840.1.113883.17.3.5.80
-----------	--

Provider Role

Value Set	ProviderRole - 2.16.840.1.113883.17.3.5.46
-----------	--

Provider Role Level

Value Set	ProviderRoleLevel - 2.16.840.1.113883.17.3.5.81
-----------	---

Registry Type

Value Set	RegistryType - 2.16.840.1.113883.17.3.5.74
-----------	--

Response Delay Type

Value Set	ResponseDelayType - 2.16.840.1.113883.17.3.5.51
-----------	---

Resuscitation Not Attempted Reason

Value Set	ResuscitationNotAttemptedReason - 2.16.840.1.113883.17.3.5.90
-----------	---

Resuscitation Discontinue Reason

Value Set	ResuscitationDiscontinueReason - 2.16.840.1.113883.17.3.5.62
-----------	--

Return Of Spontaneous Circulation

Value Set	ReturnOfSpontaneousCirculation - 2.16.840.1.113883.17.3.5.15
-----------	--

Safety Equipment Type

Value Set	SafetyEquipmentType - 2.16.840.1.113883.17.3.5.7
-----------	--

Scene Delay Type

Value Set	SceneDelayType - 2.16.840.1.113883.17.3.5.52
-----------	--

Service Level

Value Set	ServiceLevel - 2.16.840.1.113883.17.3.5.70
-----------	--

Service Type

Value Set	ServiceType - 2.16.840.1.113883.17.3.5.79
-----------	---

Skin Assessment

Value Set	SkinAssessment - 2.16.840.1.113883.17.3.5.25
-----------	--

Stroke Scale

Value Set	StrokeScale - 2.16.840.1.113883.17.3.5.88
-----------	---

Transport Delay Type

Value Set	TransportDelayType - 2.16.840.1.113883.17.3.5.53
-----------	--

Transport Method

Value Set	TransportMethod - 2.16.840.1.113883.17.3.5.65
-----------	---

Transport Mode

Value Set	TransportMode - 2.16.840.1.113883.17.3.5.66
-----------	---

Transportation Mode

Value Set	TransportationMode - 2.16.840.1.113883.17.3.5.66
-----------	--

Trauma Center Criteria

Value Set	TraumaCenterCriteria - 2.16.840.1.113883.17.3.5.3
-----------	---

Turn Around Delay Type

Value Set	TurnAroundDelayType - 2.16.840.1.113883.17.3.5.54
-----------	---

Unit Response Role

Value Set	UnitResponseRole - 2.16.840.1.113883.17.3.5.82
-----------	--

Vehicle Impact Area

Value Set	VehicleImpactArea - 2.16.840.1.113883.17.3.5.5
-----------	--

Vehicle Passenger Location

Value Set	VehiclePassengerLocation - 2.16.840.1.113883.17.3.5.6
-----------	---

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