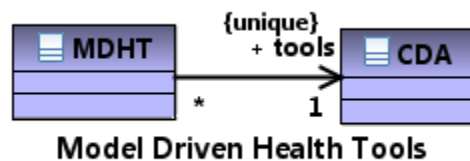


Implementation Guide for CDA Release 2

Streptococcus pneumoniae

Case Report CDA R2

Optional Subtitle



**PROTOTYPE: FOR DISCUSSION
AND DEMONSTRATION USE ONLY
(Consolidated Developer Documentation)**

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Acknowledgments

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Revision History

Rev	Date	By Whom	Changes
New	July 2010	Dave Carlson	
First draft for posting	December 2010	Dave Carlson	Updated model content and publication format

Chapter 1

INTRODUCTION

Topics:

- [Overview](#)
- [Approach](#)
- [Scope](#)
- [Audience](#)
- [Organization of This Guide](#)
- [Use of Templates](#)
- [Conventions Used in This Guide](#)

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

Working with specifications generated from formal UML models provides the opportunity to work with the data from the perspective of the underlying model and electronic format and to explore many design issues thoroughly. Taking this as an initial step ensures that the data set developers and standards community can reach consensus prior to the larger commitment of time that would be required to bring the full data set into standard format.

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

This implementation guide (IG) specifies a standard for electronic submission of NCRs in a Clinical Document Architecture (CDA), Release 2 format.

Scope

TODO: scope of this implementation guide.

Audience

The audience for this document includes software developers and implementers who wish to develop...

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:hl7-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:

- [Strep Pneumo Case Report](#)

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

Strep Pneumo Case Report

[ClinicalDocument: templateId 2.16.840.1.113883.10.20.15.1.12]

1. **SHALL** conform to *PHCR Public Health Case Report* template (templateId: 2.16.840.1.113883.10.20.15)
2. Contains exactly one [1..1] **typeId**, where its data type is InfrastructureRootTypeId
3. Contains exactly one [1..1] **id**, where its data type is II
4. **SHALL** contain exactly one [1..1] **code/@code**="55751-2" *Public Health Case Report* (CodeSystem: 2.16.840.1.113883.6.1 LOINC) (CONF:546)
5. **SHALL** contain exactly one [1..1] **title** = "Public Health Case Report - Streptococcus pneumoniae"
6. Contains exactly one [1..1] **effectiveTime**, where its data type is TS
7. Contains exactly one [1..1] **confidentialityCode**, where its data type is CE
8. Contains at least one [1..*] **recordTarget**, where its type is *Record Target*
9. Contains at least one [1..*] **author**, where its type is *Author*
10. Contains exactly one [1..1] **custodian**, where its type is *Custodian*
11. Contains exactly one [1..1] **component**, where its type is *Component2*
12. **SHOULD** contain zero or one [0..1] **component** (CONF:643, CONF:609), such that
 - a. Contains exactly one [1..1] *Phcr Encounters Section* (templateId: 2.16.840.1.113883.10.20.15.2.2)
13. **MAY** contain zero or one [0..1] **component**, such that
 - a. Contains exactly one [1..1] *CCD Immunizations Section* (templateId: 2.16.840.1.113883.10.20.1.6)
14. **SHALL** contain exactly one [1..1] **component**, such that
 - a. Contains exactly one [1..1] *Strep Pneumo PHCR Clinical Information Section* (templateId: 2.16.840.1.113883.10.20.15.2.55)
15. **SHOULD** contain zero or one [0..1] **component**, such that
 - a. Contains exactly one [1..1] *Strep Pneumo PHCR Treatment Information Section* (templateId: 2.16.840.1.113883.10.20.15.2.53)
16. **SHOULD** contain zero or one [0..1] **component**, such that
 - a. Contains exactly one [1..1] *Strep Pneumo Relevant Diagnostic Tests And Or Laboratory Data Section* (templateId: 2.16.840.1.113883.10.20.15.2.56)
17. **SHOULD** contain zero or more [0..*] **component**, such that
 - a. Contains exactly one [1..1] *Strep Pneumo Social History Section* (templateId: 2.16.840.1.113883.10.20.15.2.54)
18. **SHOULD** contain zero or one [0..1] **component**, such that
 - a. Contains exactly one [1..1] *Strep Pneumo Immunization Section* (templateId: 2.16.840.1.113883.10.20.15.2.52)
19. **SHALL** contain [1..1] **recordTarget** (CONF:547)
 - [OCL]: self.recordTarget->one(recordTarget : cda::RecordTarget | not recordTarget.ocIsUndefined())
20. **RecordTarget SHALL** contain [1..1] **patientRole** (CONF:548)
 - [OCL]: self.recordTarget.patientRole->one(patientRole : cda::PatientRole | not patientRole.ocIsUndefined())
21. **RecordTarget / PatientRole SHALL** contain [1..*] **id** (CONF:549)
 - [OCL]: self.recordTarget.patientRole.id->exists(id : datatypes::II | not id.root.ocIsUndefined() or not id.extension.ocIsUndefined() or not id.nullFlavor.ocIsUndefined())
22. **RecordTarget / PatientRole SHOULD** contain [0..*] **addr** (CONF:550)

23. RecordTarget / PatientRole **SHOULD** contain [0..*] telecom (CONF:551)
24. RecordTarget / PatientRole **SHOULD** contain [0..1] patient (CONF:552)
25. RecordTarget / PatientRole / Patient **SHOULD** contain [0..*] name (CONF:553)
26. RecordTarget / PatientRole / Patient **SHOULD** contain [0..1] administrativeGenderCode/@code, which **SHALL** be selected from ValueSet 2.16.840.1.113883.1.11.1 Administrative Gender (HL7 V3) DYNAMIC (CONF:554)
27. RecordTarget / PatientRole / Patient **SHOULD** contain [0..1] birthTime (CONF:555)
28. RecordTarget / PatientRole / Patient **SHOULD** contain [0..1] ethnicGroupCode, which **SHALL** be selected from ValueSet 2.16.840.1.114222.4.11.837 Ethnicity group DYNAMIC (CONF:556)
29. RecordTarget / PatientRole / Patient **SHOULD** contain [0..1] birthplace/place, which **SHALL** be selected from ValueSet 2.16.840.1.114222.4.11.3200 Birth Country DYNAMIC (CONF:557)
30. **SHALL** contain [1..*] author (CONF:1853)
 - [OCL]: self.author->exists(author : cda::Author | not author.ocIsUndefined())
31. Author **SHALL** contain [1..1] time (CONF:560)
 - [OCL]: self.author.time->one(time : datatypes::TS | not time.value.ocIsUndefined() or not time.nullFlavor.ocIsUndefined())
32. Author **SHALL** contain [1..1] assignedAuthor (CONF:561)
 - [OCL]: self.author.assignedAuthor->one(assignedAuthor : cda::AssignedAuthor | not assignedAuthor.ocIsUndefined())
33. Author / AssignedAuthor **SHALL** contain [1..*] id (CONF:562)
 - [OCL]: self.author.assignedAuthor.id->exists(id : datatypes::II | not id.root.ocIsUndefined() or not id.extension.ocIsUndefined() or not id.nullFlavor.ocIsUndefined())
34. Author / AssignedAuthor **SHALL** contain [1..1] addr (CONF:562)
 - [OCL]: self.author.assignedAuthor.addr->one(addr : datatypes::AD | not addr.ocIsUndefined())
35. Author / AssignedAuthor **SHALL** contain [1..1] telecom (CONF:564)
 - [OCL]: self.author.assignedAuthor.telecom->one(tel : datatypes::TEL | not tel.ocIsUndefined())
36. Author / AssignedAuthor **SHALL** contain [1..1] assignedPerson/name (CONF:565)
 - [OCL]: self.author.assignedAuthor.assignedPerson->one(assignedPerson : cda::Person | not assignedPerson.ocIsUndefined()) and self.author.assignedAuthor.assignedPerson.name->one(name : datatypes::PN | not name.ocIsUndefined())
37. The custodian of a public health case report **SHALL** be the reporting organization. (CONF:1616)
38. **SHALL** contain [1..1] legalAuthenticator (CONF:1854)
 - [OCL]: self.legalAuthenticator->one(legalAuthenticator : cda::LegalAuthenticator | not legalAuthenticator.ocIsUndefined())
39. LegalAuthenticator **SHALL** contain [1..1] time (CONF:1855)
 - [OCL]: self.legalAuthenticator.time->one(time : datatypes::TS | not time.value.ocIsUndefined() or not time.nullFlavor.ocIsUndefined())
40. LegalAuthenticator **SHALL** contain [1..1] assignedEntity (CONF:1856)
 - [OCL]: self.legalAuthenticator.assignedEntity->one(assignedEntity : cda::AssignedEntity | not assignedEntity.ocIsUndefined())
41. LegalAuthenticator / AssignedEntity **SHALL** contain [1..*] id (CONF:1857)
 - [OCL]: self.legalAuthenticator.assignedEntity.id->exists(id : datatypes::II | not id.root.ocIsUndefined() or not id.extension.ocIsUndefined() or not id.nullFlavor.ocIsUndefined())
42. LegalAuthenticator / AssignedEntity **SHALL** contain [1..1] addr (CONF:1857)
 - [OCL]: self.legalAuthenticator.assignedEntity.addr->one(addr : datatypes::AD | not addr.ocIsUndefined())

43. LegalAuthenticator / AssignedEntity **SHALL** contain [1..1] telecom (CONF:1859)

44. LegalAuthenticator / AssignedEntity **SHALL** contain [1..1] assignedPerson/name (CONF:1860)

- [OCL]: self.legalAuthenticator.assignedEntity.assignedPerson->one(assignedPerson : cda::Person | not assignedPerson.ocIsUndefined()) and self.legalAuthenticator.assignedEntity.assignedPerson.name->one(name : datatypes::PN | not name.ocIsUndefined())

45. Where a Public Health Case Report CDA R2 document contains any of the section or clinical statement templates defined in this implementation guide, such section or clinical statement **SHALL** include a templateId/@root valued with the corresponding template's identifier. (CONF:2017)

Strep Pneumo Case Report example

Chapter

3

SECTION TEMPLATES

Topics:

- *Strep Pneumo Immunization Section*
- *Strep Pneumo PHCR Clinical Information Section*
- *Strep Pneumo PHCR Treatment Information Section*
- *Strep Pneumo Relevant Diagnostic Tests And Or Laboratory Data Section*
- *Strep Pneumo Social History Section*

Strep Pneumo Immunization Section

[Section: templateId 2.16.840.1.113883.10.20.15.2.52]

1. **SHALL** conform to [CCD Immunizations Section](#) template (templateId: 2.16.840.1.113883.10.20.1.6)
2. **SHALL** contain at least one [1..*] **entry**, such that
 - a. Contains **@typeCode="DRIV"** *DRIV (is derived from)*
 - b. Contains exactly one [1..1] [Strep Pneumo Immunization Activity](#) (templateId: 2.16.840.1.113883.10.20.15.3.124)
3. **SHOULD** satisfy: ImmunizationsSectionHasMedicationOrSupplyActivity
 - [OCL]: `self.getSubstanceAdministrations()->exists(activity : cda::SubstanceAdministration | activity.ocIsKindOf(ccd::MedicationActivity)) or self.getSupplies()->exists(activity : cda::Supply | activity.ocIsKindOf(ccd::SupplyActivity))`
4. **SHALL** satisfy: ImmunizationsSectionTemplateId
 - [OCL]: `self.templateId->exists(id : datatypes::II | id.root = '2.16.840.1.113883.10.20.1.6')`
5. **SHALL** satisfy: ImmunizationsSectionCode
 - [OCL]: `(self.code.ocIsUndefined() or self.code.isNullFlavorUndefined()) implies (not self.code.ocIsUndefined() and self.code.ocIsKindOf(datatypes::CE) and let value : datatypes::CE = self.code.ocAsType(datatypes::CE) in value.code = '11369-6' and value.codeSystem = '2.16.840.1.113883.6.1')`
6. **SHALL** satisfy: ImmunizationsSectionTitle
 - [OCL]: `(self.title.ocIsUndefined() or self.title.isNullFlavorUndefined()) implies (not self.title.ocIsUndefined())`
7. **SHALL** satisfy: ImmunizationsSectionText
 - [OCL]: `not self.text.ocIsUndefined()`
8. **SHALL** satisfy: ImmunizationsSectionMedicationActivity
 - [OCL]: `self.entry->exists(entry : cda::Entry | not entry.substanceAdministration.ocIsUndefined() and entry.substanceAdministration.ocIsKindOf(ccd::MedicationActivity))`
9. **SHALL** satisfy: ImmunizationsSectionSupplyActivity
 - [OCL]: `self.entry->exists(entry : cda::Entry | not entry.supply.ocIsUndefined() and entry.supply.ocIsKindOf(ccd::SupplyActivity))`

Strep Pneumo Immunization Section example

Strep Pneumo PHCR Clinical Information Section

[Section: templateId 2.16.840.1.113883.10.20.15.2.55]

1. **SHALL** conform to [PHCR Phcr Clinical Information Section](#) template (templateId: 2.16.840.1.113883.10.20.15.2.1)
2. **SHALL** contain exactly one [1..1] **code/@code="55752-0"** *Clinical Information* (CodeSystem: 2.16.840.1.113883.6.1 LOINC) (CONF:540)
3. **SHALL** contain exactly one [1..1] **title="Clinical Information"** (CONF:541)

4. **SHALL** contain exactly one [1..1] **text** (CONF:542)
5. **SHOULD** contain zero or more [0..*] **entry**, such that
 - a. Contains **@typeCode="DRIV"** *DRIV (is derived from)*
 - b. Contains exactly one [1..1] *Phcr Relevant Medical Condition History Observation* (templateId: 2.16.840.1.113883.10.20.15.3.62)
6. **MAY** contain zero or one [0..1] **entry** (CONF:1912, CONF:1913, CONF:1914), such that
 - a. Contains **@typeCode="DRIV"** *DRIV (is derived from)*
 - b. Contains exactly one [1..1] *Patient Condition Alive Observation* (templateId: 2.16.840.1.113883.10.20.15.3.42)
7. **MAY** contain zero or one [0..1] **entry** (CONF:1915, CONF:1916, CONF:1917), such that
 - a. Contains **@typeCode="DRIV"** *DRIV (is derived from)*
 - b. Contains exactly one [1..1] *Patient Condition Deceased Observation* (templateId: 2.16.840.1.113883.10.20.15.3.17)
8. **SHALL** contain exactly one [1..1] **entry**, such that
 - a. Contains **@typeCode="DRIV"** *DRIV (is derived from)*
 - b. Contains exactly one [1..1] *Strep Pneumo Case Observation* (templateId: 2.16.840.1.113883.10.20.15.3.125)
9. TemplateId 2.16.840.1.113883.10.20.15.3.42 (Patient condition alive) and templateId 2.16.840.1.113883.10.20.15.3.17 (Patient condition deceased) **SHALL NOT** be present together in a CDA PHCR instance. (CONF:1918)
 - ```
[OCL]: self.getObservations()->exists(obs3 : cda::Observation | obs3.ocIsKindOf(phcr::PatientConditionAliveObservation) and not self.getObservations()->exists(obs4 : cda::Observation | obs4.ocIsKindOf(phcr::PatientConditionDeceasedObservation))) or self.getObservations()->exists(obs1 : cda::Observation | obs1.ocIsKindOf(phcr::PatientConditionDeceasedObservation) and not self.getObservations()->exists(obs2 : cda::Observation | obs2.ocIsKindOf(phcr::PatientConditionAliveObservation))) or self.getObservations()->forAll(obs : cda::Observation | not obs.ocIsKindOf(phcr::PatientConditionAliveObservation) and not obs.ocIsKindOf(phcr::PatientConditionDeceasedObservation))
```

#### Strep Pneumo PHCR Clinical Information Section example

## Strep Pneumo PHCR Treatment Information Section

---

[Section: templateId 2.16.840.1.113883.10.20.15.2.53]

1. **SHALL** conform to *PHCR Phcr Treatment Information Section* template (templateId: 2.16.840.1.113883.10.20.15.2.4)
2. **SHALL** contain exactly one [1..1] **code/@code="55753-8"** *Treatment Information* (CodeSystem: 2.16.840.1.113883.6.1 LOINC) (CONF:663)
3. **SHALL** contain exactly one [1..1] **title** = "Treatment Information" (CONF:664)
4. **SHALL** contain exactly one [1..1] **text** (CONF:665)
5. **SHALL** contain exactly one [1..1] **entry**, such that
  - a. Contains **@typeCode="DRIV"** *DRIV (is derived from)*
  - b. Contains exactly one [1..1] *Strep Pneumo Therapeutic Regimen Act* (templateId: 2.16.840.1.113883.10.20.15.3.122)

#### Strep Pneumo PHCR Treatment Information Section example

## Strep Pneumo Relevant Diagnostic Tests And Or Laboratory Data Section

---

[Section: templateId 2.16.840.1.113883.10.20.15.2.56]

1. **SHALL** conform to [CCD Results Section](#) template (templateId: 2.16.840.1.113883.10.20.1.14)
2. **SHALL** conform to [PHCR Phcr Relevant Dx Tests Section](#) template (templateId: 2.16.840.1.113883.10.20.15.2.3)
3. **SHALL** contain exactly one [1..1] **code/@code**="30954-2" *Relevant diagnostic tests and/or laboratory data* (CodeSystem: 2.16.840.1.113883.6.1 LOINC) (CONF:389)
4. **SHALL** contain exactly one [1..1] **title**="Relevant diagnostic tests and/or laboratory data" (CONF:391)
5. **SHALL** contain exactly one [1..1] **text** (CONF:388, CONF:737)
6. **MAY** contain zero or more [0..\*] **entry** (CONF:2014, CONF:2015, CONF:2016), such that
  - a. Contains **@typeCode**="DRIV" *DRIV (is derived from)*
  - b. Contains exactly one [1..1] [Imaging Observation](#) (templateId: 2.16.840.1.113883.10.20.15.3.5)
7. **SHOULD** contain zero or more [0..\*] **entry**, such that
  - a. Contains **@typeCode**="DRIV" *DRIV (is derived from)*
  - b. Contains exactly one [1..1] [Strep Pneumo Result Observation](#) (templateId: 2.16.840.1.113883.10.20.15.3.128)
8. **MAY** contain zero or more [0..\*] **entry**, such that
  - a. Contains **@typeCode**="DRIV" *DRIV (is derived from)*
  - b. Contains exactly one [1..1] [Strep Pneumo Result Organizer](#) (templateId: 2.16.840.1.113883.10.20.15.3.130)
9. **SHOULD** satisfy: Contains a case-insensitive language-insensitive string containing 'results'. (CONF:392)
  - UNIMPLEMENTABLE

### Strep Pneumo Relevant Diagnostic Tests And Or Laboratory Data Section example

## Strep Pneumo Social History Section

---

[Section: templateId 2.16.840.1.113883.10.20.15.2.54]

1. **SHALL** conform to [CCD Social History Section](#) template (templateId: 2.16.840.1.113883.10.20.1.15)
2. **SHALL** conform to [PHCR Phcr Social History Section](#) template (templateId: 2.16.840.1.113883.10.20.15.2.22)
3. **SHALL** contain exactly one [1..1] **code/@code**="29762-2" *Social History* (CodeSystem: 2.16.840.1.113883.6.1 LOINC) (CONF:1894)
4. **SHALL** contain exactly one [1..1] **title**="Social History" (CONF:1895)
5. **SHALL** contain exactly one [1..1] **text** (CONF:1896)
6. **SHOULD** contain zero or more [0..\*] **entry**, such that
  - a. Contains exactly one [1..1] [Social History Observation](#) (templateId: 2.16.840.1.113883.10.20.1.33)
7. **SHOULD** contain zero or more [0..\*] **entry** (CONF:1897, CONF:1898, CONF:1899), such that
  - a. Contains **@typeCode**="DRIV" *DRIV (is derived from)*
  - b. Contains exactly one [1..1] [Geotemporal History Observation](#) (templateId: 2.16.840.1.113883.10.20.15.3.3)
8. **SHOULD** contain zero or one [0..1] **entry** (CONF:1900, CONF:1901, CONF:1902), such that
  - a. Contains **@typeCode**="DRIV" *DRIV (is derived from)*

- b. Contains exactly one [1..1] [Most Recent Time Arrived In USA Observation](#) (templateId: 2.16.840.1.113883.10.20.15.3.6)
- 9. **SHOULD** contain zero or more [0..\*] **entry** (CONF:1903, CONF:1904, CONF:1905), such that
  - a. Contains **@typeCode="DRIV"** *DRIV (is derived from)*
  - b. Contains exactly one [1..1] [Race Observation](#) (templateId: 2.16.840.1.113883.10.20.15.3.9)
- 10. **SHOULD** contain zero or more [0..\*] **entry** (CONF:1906, CONF:1907, CONF:1908), such that
  - a. Contains **@typeCode="DRIV"** *DRIV (is derived from)*
  - b. Contains exactly one [1..1] [Occupation Observation](#) (templateId: 2.16.840.1.113883.10.20.15.3.7)
- 11. **MAY** contain zero or more [0..\*] **entry** (CONF:1909, CONF:1910, CONF:1911), such that
  - a. Contains **@typeCode="DRIV"** *DRIV (is derived from)*
  - b. Contains exactly one [1..1] [Pregnancy Observation](#) (templateId: 2.16.840.1.113883.10.20.15.3.8)
- 12. **SHOULD** contain zero or more [0..\*] **entry**, such that
  - a. Contains **@typeCode="DRIV"** *DRIV (is derived from)*
  - b. Contains exactly one [1..1] [Strep Pneumo Possible Exposure Location Act](#) (templateId: 2.16.840.1.113883.10.20.15.3.129)
- 13. **SHOULD** satisfy: Contains a case-insensitive language-insensitive string containing 'social history'. (CONF-236)
  - UNIMPLEMENTABLE
- 14. Marital status **SHOULD** be represented as ClinicalDocument / recordTarget / patientRole / patient / maritalStatusCode. Additional information **MAY** be represented as social history observations (CONF-250)
  - ```
[OCL]: self.getClinicalDocument().recordTarget->select(r | not r.patientRole.patient.maritalStatusCode.hasContent())->isEmpty()
```
- 15. Religious affiliation **SHOULD** be represented as ClinicalDocument / recordTarget / patientRole / patient / religiousAffiliationCode. Additional information **MAY** be represented as social history observations (CONF-251)
 - ```
[OCL]: self.getClinicalDocument().recordTarget->select(r | not r.patientRole.patient.religiousAffiliationCode.hasContent())->isEmpty()
```
- 16. A patients race **SHOULD** be represented as ClinicalDocument / recordTarget / patientRole / patient / raceCode. Additional information **MAY** be represented as social history observations (CONF-252)
  - ```
[OCL]: self.getClinicalDocument().recordTarget->select(r | not r.patientRole.patient.raceCode.hasContent())->isEmpty()
```
- 17. The value for ClinicalDocument / recordTarget / patientRole / patient / raceCode **MAY** be selected from codeSystem 2.16.840.1.113883.5.104 (Race) (CONF-253)
 - ```
[OCL]: self.getClinicalDocument().recordTarget->forAll(r | r.patientRole.patient.raceCode.codeSystem = '2.16.840.1.113883.5.104')
```
- 18. A patients ethnicity **SHOULD** be represented as ClinicalDocument / recordTarget / patientRole / patient / ethnicGroupCode. Additional information **MAY** be represented as social history observations. (CONF-254)
  - ```
[OCL]: self.getClinicalDocument().recordTarget->select(r | not r.patientRole.patient.ethnicGroupCode.hasContent())->isEmpty()
```
- 19. The value for ClinicalDocument / recordTarget / patientRole / patient / ethnicGroupCode **MAY** be selected from codeSystem 2.16.840.1.113883.5.50 (Ethnicity). (CONF-255)
 - ```
[OCL]: self.getClinicalDocument().recordTarget->forAll(r | r.patientRole.patient.ethnicGroupCode.codeSystem = '2.16.840.1.113883.5.50')
```

### Strep Pneumo Social History Section example



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# Chapter

# 4

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## CLINICAL STATEMENT TEMPLATES

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### Topics:

- [\*Strep Pneumo Case Observation\*](#)
- [\*Strep Pneumo Immunization Activity\*](#)
- [\*Strep Pneumo Possible Exposure Location Act\*](#)
- [\*Strep Pneumo Result Observation\*](#)
- [\*Strep Pneumo Result Organizer\*](#)
- [\*Strep Pneumo Signs And Symptoms Observation\*](#)
- [\*Strep Pneumo Therapeutic Regimen Act\*](#)
- [\*Strep Pneumo Treatment Given Substance Administration\*](#)
- [\*Strep Pneumo Treatment Not Given Substance Administration\*](#)

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.

## Strep Pneumo Case Observation

[Observation: templateId 2.16.840.1.113883.10.20.15.3.125]

1. **SHALL** conform to [CCD Problem Observation](#) template (templateId: 2.16.840.1.113883.10.20.1.28)
2. **SHALL** conform to [PHCR Case Observation](#) template (templateId: 2.16.840.1.113883.10.20.15.3.54)
3. **SHALL** contain exactly one [1..1] **@classCode**="OBS" *Observation* (CodeSystem: 2.16.840.1.113883.5.6 HL7ActClass) (CONF:1868)
4. **SHALL** contain exactly one [1..1] **@moodCode**="EVN" *Event* (CodeSystem: 2.16.840.1.113883.5.1001 HL7ActMood) (CONF:1869)
5. **MAY** contain zero or more [0..\*] **id** (CONF:1870)
6. **SHALL** contain exactly one [1..1] **code/@code**="ASSERTION" (CodeSystem: 2.16.840.1.113883.5.4 HL7ActCode) (CONF:1871)
7. **SHALL** contain exactly one [1..1] **statusCode/@code**="completed" (CodeSystem: 2.16.840.1.113883.5.14 ActStatus) (CONF:1872)
8. **SHOULD** contain zero or one [0..1] **effectiveTime** (CONF:1873)
9. **SHALL** contain exactly one [1..1] **value**, which **SHALL** be selected from ValueSet 2.16.840.1.114222.4.11.6030 [PHVS\\_DiseaseType\\_StrepPneumo](#) DYNAMIC, where its data type is CD
10. **MAY** contain zero or one [0..1] **entryRelationship** (CONF-162), such that
  - a. Contains **@typeCode**="REFR" *REFR (refers to)*
  - b. Contains exactly one [1..1] [Problem Status Observation](#) (templateId: 2.16.840.1.113883.10.20.1.50)
11. **MAY** contain zero or one [0..1] **entryRelationship** (CONF-165), such that
  - a. Contains **@typeCode**="REFR" *REFR (refers to)*
  - b. Contains exactly one [1..1] [Problem Health Status Observation](#) (templateId: 2.16.840.1.113883.10.20.1.51)
12. **MAY** contain zero or one [0..1] **entryRelationship** (CONF-160), such that
  - a. Contains **@typeCode**="SUBJ" *SUBJ (has subject)*
  - b. Contains exactly one [1..1] [Age Observation](#) (templateId: 2.16.840.1.113883.10.20.1.38)
13. **SHOULD** contain zero or one [0..1] **entryRelationship** (CONF:1884, CONF:1885, CONF:1886), such that
  - a. Contains **@typeCode**="REFR" *REFR (refers to)*
  - b. Contains exactly one [1..1] [CCD Problem Status Observation](#) (templateId: 2.16.840.1.113883.10.20.1.50)
14. **SHOULD** contain zero or more [0..\*] **entryRelationship**, such that
  - a. Contains **@typeCode**="MFST" *MFST (is manifestation of)*
  - b. Contains exactly one [1..1] [Strep Pneumo Signs And Symptoms Observation](#) (templateId: 2.16.840.1.113883.10.20.15.3.121)
15. **SHALL** contain one or more sources of information. (CONF-161)
  - [OCL]: not self.informant->isEmpty()  
 or not self.getSection().informant->isEmpty()  
 or not self.getClinicalDocument().informant->isEmpty()  
 or self.reference->exists(ref : cda::Reference | ref.typeCode = vocab::x\_ActRelationshipExternalReference::XCRPT)  
 or (self.entryRelationship->exists(rel : cda::EntryRelationship | rel.typeCode = vocab::x\_ActRelationshipEntryRelationship::REFR and rel.observation.code.code = '48766-0'))
16. **MAY** contain exactly one Patient Awareness (CONF-180)
  - [OCL]: self.participant->one(partic : cda::Participant2 | partic.oclisKindOf(ccd::PatientAwareness))



17. **SHOULD** contain [0..1] `effectiveTime/low` (CONF:1873)

- `[OCL]: self.effectiveTime->exists(time : datatypes::IVL_TS | not time.low.ocIsUndefined())`

18. **SHOULD** contain [0..1] `author` (CONF:1875)

- `[OCL]: self.author->exists(author : cda::Author | not author.ocIsUndefined())`

19. `Author` **SHALL** contain [1..1] `time` (CONF:1876)

20. `Author` **SHALL** contain [1..1] `assignedAuthor` (CONF:1877)

- `[OCL]: self.author.assignedAuthor->exists(assignedAuthor : cda::AssignedAuthor | not assignedAuthor.ocIsUndefined())`

21. `Author / AssignedAuthor` **SHALL** contain [1..\*] `id` (CONF:1878)

22. `Author / AssignedAuthor` **MAY** contain [0..\*] `addr` (CONF:1879)

23. `Author / AssignedAuthor` **MAY** contain [0..\*] `telecom` (CONF:1880)

24. `Author / AssignedAuthor` **MAY** contain [0..1] `assignedPerson` (CONF:1881)

25. `Author / AssignedAuthor / Person` **MAY** contain [0..1] `name` (CONF:1882)

26. `Author / AssignedAuthor` **MAY** contain [0..1] `representedOrganization` (CONF:1883)

### Strep Pneumo Case Observation example

## Strep Pneumo Immunization Activity

---

[SubstanceAdministration: templateId 2.16.840.1.113883.10.20.15.3.124]

1. **SHALL** conform to *CCD Medication Activity* template (templateId: 2.16.840.1.113883.10.20.1.24)

2. Contains exactly one [1..1] `@classCode="SBADM"` (CodeSystem: 2.16.840.1.113883.5.6 HL7ActClass), where its data type is `ActClass`

3. Contains exactly one [1..1] `@moodCode`, where its data type is `x_DocumentSubstanceMood`

4. **SHALL** contain at least one [1..\*] `id` (CONF-306)

5. **SHOULD** contain exactly one [1..1] `statusCode` (CONF-307)

6. **SHOULD** contain at least one [1..\*] `effectiveTime` (CONF-308)

- Used to indicate the actual or intended start and stop date of a medication, and the frequency of administration.

7. **SHOULD** contain exactly one [1..1] `routeCode` (CodeSystem: 2.16.840.1.113883.5.112 HL7 RouteOfAdministration) (CONF-309, CONF-310)

8. **SHOULD** contain zero or one [0..1] `doseQuantity`

9. **SHOULD** contain zero or one [0..1] `rateQuantity`

10. **MAY** contain exactly one [1..1] `maxDoseQuantity` (CONF-312)

- represents a maximum dose limit

11. Contains exactly one [1..1] `consumable`, where its type is *Consumable*

12. **MAY** contain exactly one [1..1] `entryRelationship` (CONF-338, CONF-339), such that

- Contains `@typeCode="SUBJ"` *SUBJ (has subject)*
- Contains exactly one [1..1] *Medication Series Number Observation* (templateId: 2.16.840.1.113883.10.20.1.46)

13. **MAY** contain exactly one [1..1] `entryRelationship` (CONF-350), such that

- Contains exactly one [1..1] *Medication Status Observation* (templateId: 2.16.840.1.113883.10.20.1.47)

14. **MAY** contain at least one [1..\*] `entryRelationship` (CONF-330, CONF-333), such that

- Contains `@typeCode="SUBJ"` *SUBJ (has subject)*
- Contains exactly one [1..1] *Patient Instruction* (templateId: 2.16.840.1.113883.10.20.1.49)

15. **MAY** contain at least one [1..\*] `performer` (CONF-313), such that

- Indicates the person administering a substance.
- 16. MAY** contain at least one [1..\*] **entryRelationship** (CONF-348, CONF-349), such that
- Contains **@typeCode="CAUS"** *CAUS (is etiology for)*
  - Contains exactly one [1..1] *Reaction Observation* (templateId: 2.16.840.1.113883.10.20.1.54)
- 17. MAY** contain at least one [1..\*] **participant** (CONF-368), such that
- Contains exactly one [1..1] *Product Instance* (templateId: 2.16.840.1.113883.10.20.1.52)
- 18. SHALL** satisfy: Value for moodCode is "EVN" or "INT" 2.16.840.1.113883.5.1001 ActMood STATIC (CONF-305)
- [OCL]: `self.moodCode=vocab::x_DocumentSubstanceMood::EVN or self.moodCode=vocab::x_DocumentSubstanceMood::INT`
- 19. SHOULD** satisfy: Contains exactly one doseQuantity or rateQuantity. (CONF-311)
- [OCL]: `not self.doseQuantity.ocIsUndefined() or not self.rateQuantity.ocIsUndefined()`
- 20. MAY** satisfy: Has one or more associated consents, represented in the CCD Header as ClinicalDocument / authorization / consent. (CONF-314)
- [OCL]: `self.getClinicalDocument().authorization->size() > 0 and self.getClinicalDocument().authorization.consent->size() > 0`
- 21. SHALL** satisfy: Contains one or more sources of information. (CONF-315)
- [OCL]: `not self.informant->isEmpty() or not self.getSection().informant->isEmpty() or not self.getClinicalDocument().informant->isEmpty() or self.reference->exists(ref : cda::Reference | ref.typeCode = vocab::x_ActRelationshipExternalReference::XCRPT) or (self.entryRelationship->exists(rel : cda::EntryRelationship | rel.typeCode = vocab::x_ActRelationshipEntryRelationship::REFR and rel.observation.code.code = '48766-0'))`
- 22. MAY** satisfy: Contains one or more precondition / Criterion, to indicate that the medication is administered only when the associated (coded or free text) criteria are met. (CONF-327)
- Indicates that the medication is administered only when the associated (coded or free text) criteria are met.
  - [OCL]: `self.precondition->exists(precondition : cda::Precondition | not precondition.criterion.ocIsUndefined())`
- 23. MAY** satisfy: Contains one or more entryRelationship, where the value for @typeCode is "RSON" "Has reason" 2.16.840.1.113883.5.1002 ActRelationshipType STATIC. (CONF-328)
- The target of the relationship represents the indication for the activity.
  - [OCL]: `self.entryRelationship->exists(entryRel : cda::EntryRelationship | entryRel.typeCode = vocab::x_ActRelationshipEntryRelationship::RSON)`
- 24. SHALL** satisfy: entryRelationship / @typeCode="RSON" in a medication activity has a target of problem act (templateId 2.16.840.1.113883.10.20.1.27), problem observation (templateId 2.16.840.1.113883.10.20.1.28), or some other clinical statement. (CONF-329)
- [OCL]: `self.getEntryRelationshipTargets(vocab::x_ActRelationshipEntryRelationship::RSON, cda::ClinicalStatement)->forall(target : cda::ClinicalStatement | not target.ocIsUndefined() and (target.ocIsKindOf(ccd::ProblemAct) or target.ocIsKindOf(ccd::ProblemObservation)))`
- 25. SHALL** satisfy: Contains exactly one consumable, the target of which is a Product template. (CONF-354)
- [OCL]: `self.consumable.manufacturedProduct.ocIsKindOf(ccd::Product)`
- 26. SHALL** contain [1..1] consumable, which a. **SHALL** contain [1..1] Streptococcus pneumoniae immunization product (templateId: 2.16.840.1.113883.10.20.15.3.123)

## Strep Pneumo Immunization Activity example

## Strep Pneumo Possible Exposure Location Act

---

[Act: templateId 2.16.840.1.113883.10.20.15.3.129]

1. **SHALL** contain exactly one [1..1] **@classCode**="ACT" *Act* (CodeSystem: 2.16.840.1.113883.5.6 HL7ActClass)
2. **SHALL** contain exactly one [1..1] **@moodCode**="EVN" *Event* (CodeSystem: 2.16.840.1.113883.5.1001 HL7ActMood)
3. **SHALL** contain exactly one [1..1] **code/@code**="413350009" (CodeSystem: 2.16.840.1.113883.6.96 SNOMEDCT)
4. **SHALL** contain exactly one [1..1] **statusCode/@code**="completed" (CodeSystem: 2.16.840.1.113883.5.14 ActStatus)
5. 1. **SHALL** contain [1..\*] participant (specialized branch), which a. **SHALL** contain [1..1] **@typeCode**="LOC" Location (CodeSystem: 2.16.840.1.113883.5.90 HL7ParticipationType) STATIC b. **SHOULD** contain [0..1] time c. **SHALL** contain [1..1] participantRole, which i. **SHALL** contain [1..1] **@classCode**="LOCE" Located entity (CodeSystem: 2.16.840.1.113883.5.110 HL7RoleClass) STATIC ii. **SHOULD** contain [0..\*] addr iii. **SHOULD** contain [0..\*] telecom iv. **SHOULD** contain [0..1] playingEntity, which if present 1. **SHALL** contain [1..1] **@classCode**="PLC" Place (CodeSystem: 2.16.840.1.113883.5.41 HL7EntityClass) STATIC 2. **SHALL** contain [1..1] code/@code, which **SHALL** be selected from ValueSet 2.16.840.1.114222.4.11.3209 Exposure Location DYNAMIC

## Strep Pneumo Possible Exposure Location Act example

## Strep Pneumo Result Observation

---

[Observation: templateId 2.16.840.1.113883.10.20.15.3.128]

1. **SHALL** conform to *CCD Result Observation* template (templateId: 2.16.840.1.113883.10.20.1.31)
2. **SHALL** conform to *PHCR Result Observation* template (templateId: 2.16.840.1.113883.10.20.15.3.58)
3. **SHALL** contain exactly one [1..1] **@classCode**="OBS" *Observation* (CodeSystem: 2.16.840.1.113883.5.6 HL7ActClass) (CONF:1967)
4. **SHALL** contain exactly one [1..1] **@moodCode**="EVN" *Event* (CodeSystem: 2.16.840.1.113883.5.1001 HL7ActMood) (CONF-408)
5. **SHALL** contain at least one [1..\*] **id** (CONF-409)
6. **SHALL** contain exactly one [1..1] **code**, which **SHALL** be selected from ValueSet 2.16.840.1.114222.4.11.4208 *PHVS\_LabTestName\_StrepPneumo* DYNAMIC (CONF-412)
7. **SHALL** contain exactly one [1..1] **statusCode/@code**="completed" (CodeSystem: 2.16.840.1.113883.5.14 ActStatus) (CONF:1971)
8. **SHOULD** contain exactly one [1..1] **effectiveTime** (CONF-411)
  - Represents the biologically relevant time (e.g. time the specimen was obtained from the patient).
9. **SHALL** contain exactly one [1..1] **value** (CONF-416)
10. **SHOULD** contain zero or more [0..\*] **interpretationCode** (CONF-418)
  - Can be used to provide a rough qualitative interpretation of the observation, such as 'N' (normal), 'L' (low), 'S' (susceptible), etc. Interpretation is generally provided for numeric results where an interpretation range has been defined, or for antimicrobial susceptibility test interpretation.
11. **MAY** contain zero or one [0..1] **methodCode** (CONF-414)
  - Included if the method isn't inherent in code or if there is a need to further specialize the method in code.
12. **MAY** contain zero or more [0..\*] **entryRelationship** (CONF:1990), such that

- a. Contains **@typeCode="REFR"** *REFR (refers to)*
- b. Contains exactly one [1..1] *Specimen Collection Procedure* (templateId: 2.16.840.1.113883.10.20.15.3.2)
- 13. **MAY** contain zero or more [0..\*] **entryRelationship** (CONF:1993), such that
  - a. Contains **@typeCode="COMP"** *COMP (has component)*
  - b. Contains exactly one [1..1] *Susceptibility Result* (templateId: 2.16.840.1.113883.10.20.15.3.10)
- 14. The value for 'code' **SHOULD** be selected from LOINC (codeSystem 2.16.840.1.113883.6.1) or SNOMED CT (codeSystem 2.16.840.1.113883.6.96), and **MAY** be selected from CPT-4 (codeSystem 2.16.840.1.113883.6.12). (CONF-413)
  - ```
[OCL]: self.code.codeSystem = '2.16.840.1.113883.6.1' xor
      self.code.codeSystem = '2.16.840.1.113883.6.96' xor self.code.codeSystem
      = '2.16.840.1.113883.6.12'
```
- 15. The methodCode **SHALL NOT** conflict with the method inherent in code (CONF-415)
 - UNIMPLEMENTABLE
- 16. Where value is a physical quantity, the unit of measure **SHALL** be expressed using a valid Unified Code for Units of Measure (UCUM) expression. (CONF-417)
 - UNIMPLEMENTABLE
- 17. **SHOULD** satisfy: Contain one or more referenceRange to show the normal range of values for the observation result (CONF-419)
 - ```
[OCL]: not self.referenceRange->isEmpty()
```
- 18. **SHALL NOT** contain referenceRange / observationRange / code, as this attribute is not used by the HL7 Clinical Statement or Lab Committee models. (CONF-420)
  - ```
[OCL]: self.referenceRange->forall(range : cda::ReferenceRange |
      range.observationRange.code.code.ocIsUndefined())
```
- 19. **SHALL** satisfy: Contains one or more sources of information. (CONF-421)
 - ```
[OCL]: not self.informant->isEmpty()
 or not self.getSection().informant->isEmpty()
 or not self.getClinicalDocument().informant->isEmpty()
 or self.reference->exists(ref : cda::Reference | ref.typeCode =
 vocab::x_ActRelationshipExternalReference::XCRPT)
 or (self.entryRelationship->exists(rel : cda::EntryRelationship |
 rel.typeCode = vocab::x_ActRelationshipEntryRelationship::REFR
 and rel.observation.code.code = '48766-0'))
```
- 20. 9. **SHOULD** contain [0..1] specimen , which if present a. **SHALL** contain [1..1] specimenRole , which i. **SHOULD** contain [0..1] id ii. **MAY** contain [0..1] specimenPlayingEntity , which if present 1. **SHALL** contain [1..1] code/@code, which **SHALL** be selected from ValueSet 2.16.840.1.114222.4.11.3321 PHVS\_SterileSpecimen\_IPD DYNAMIC

#### Strep Pneumo Result Observation example

## Strep Pneumo Result Organizer

[Organizer: templateId 2.16.840.1.113883.10.20.15.3.130]

1. **SHALL** conform to *CCD Result Organizer* template (templateId: 2.16.840.1.113883.10.20.1.32)
2. **SHALL** conform to *PHCR Result Organizer* template (templateId: 2.16.840.1.113883.10.20.15.3.59)
3. **SHALL** contain exactly one [1..1] **@classCode="BATTERY"** (CodeSystem: 2.16.840.1.113883.5.6 HL7ActClass) (CONF:1996)
4. **SHALL** contain exactly one [1..1] **@moodCode="EVN"** *Event* (CodeSystem: 2.16.840.1.113883.5.1001 HL7ActMood) (CONF-394, CONF:1997)

5. **SHALL** contain at least one [1..\*] **id** (CONF-395, CONF:1998)
6. **SHALL** contain exactly one [1..1] **code**, which **SHALL** be selected from ValueSet 2.16.840.1.114222.4.11.4208 *PHVS\_LabTestName\_StrepPneumo* DYNAMIC (CONF-397, CONF:1999)
7. **SHALL** contain exactly one [1..1] **statusCode/@code**="completed" (CodeSystem: 2.16.840.1.113883.5.14 ActStatus) (CONF:2000)
8. **SHALL** contain exactly one [1..1] **effectiveTime** (CONF:2001)
9. **SHOULD** contain at least one [1..\*] **specimen** (CONF-399), such that
  - Should be included if the specimen isn't inherent in code value.
10. **MAY** contain zero or one [0..1] **component** (CONF:2009, CONF:2010), such that
  - a. Contains exactly one [1..1] *Specimen Collection Procedure* (templateId: 2.16.840.1.113883.10.20.15.3.2)
11. **SHALL** contain at least one [1..\*] **component**, such that
  - a. Contains exactly one [1..1] *Strep Pneumo Result Observation* (templateId: 2.16.840.1.113883.10.20.15.3.128)
12. The value for 'code' in a result organizer **SHOULD** be selected from LOINC (codeSystem 2.16.840.1.113883.6.1) or SNOMED CT (codeSystem 2.16.840.1.113883.6.96), and **MAY** be selected from CPT-4 (codeSystem 2.16.840.1.113883.6.12) or ValueSet 2.16.840.1.113883.1.11.20.16 ResultTypeCode STATIC. (CONF-398)
  - ```
[OCL]: self.code.codeSystem = '2.16.840.1.113883.6.1' xor
      self.code.codeSystem = '2.16.840.1.113883.6.96' xor self.code.codeSystem =
      '2.16.840.1.113883.6.12' xor self.code.codeSystem =
      '2.16.840.1.113883.1.11.20.16'
```
13. The specimen element **SHALL NOT** conflict with the specimen inherent in code (CONF-400)
 - UNIMPLEMENTABLE
14. specimen / specimenRole / id **SHOULD** be set to equal a Procedure / specimen / specimenRole / id to indicate that the Results and the Procedure are referring to the same specimen. (CONF-401)
 - UNIMPLEMENTABLE
15. **SHALL** satisfy: Contains one or more component (CONF-402)
 - ```
[OCL]: not self.component->isEmpty()
```
16. The target of one or more result organizer component relationships **MAY** be a procedure, to indicate the means or technique by which a result is obtained, particularly if the means or technique isn't inherent in code or if there is a need to further specialize the code value. (CONF-403)
  - UNIMPLEMENTABLE
17. A result organizer component / procedure **MAY** be a reference to a procedure described in the Procedure section. (CONF-404)
  - UNIMPLEMENTABLE
18. **SHALL** satisfy: Contains one or more sources of information. (CONF-406)
  - ```
[OCL]: not self.informant->isEmpty()
      or not self.getSection().informant->isEmpty()
      or not self.getClinicalDocument().informant->isEmpty()
      or self.reference->exists(ref : cda::Reference | ref.typeCode =
      vocab::x_ActRelationshipExternalReference::XCRPT)
```

Strep Pneumo Result Organizer example

Strep Pneumo Signs And Symptoms Observation

[Observation: templateId 2.16.840.1.113883.10.20.15.3.121]

1. **SHALL** conform to *PHCR Signs And Symptoms Observation* template (templateId: 2.16.840.1.113883.10.20.15.3.53)
2. **SHALL** contain exactly one [1..1] **@classCode**="OBS" *Observation* (CodeSystem: 2.16.840.1.113883.5.6 HL7ActClass) (CONF:1861)
3. **SHALL** contain exactly one [1..1] **@moodCode**="EVN" *Event* (CodeSystem: 2.16.840.1.113883.5.1001 HL7ActMood) (CONF:1862)
4. **SHALL** contain exactly one [1..1] **@negationInd** (CONF:1863)
5. **SHALL** contain exactly one [1..1] **code/@code**="ASSERTION" (CodeSystem: 2.16.840.1.113883.5.4 HL7ActCode) (CONF:1864)
6. **SHALL** contain exactly one [1..1] **statusCode/@code**="completed" (CodeSystem: 2.16.840.1.113883.5.14 ActStatus) (CONF:1865)
7. **SHOULD** contain zero or one [0..1] **effectiveTime** (CONF:1866)
8. **SHALL** contain exactly one [1..1] **value**, which **SHALL** be selected from ValueSet 2.16.840.1.114222.4.11.6031 *PHVS_SignsSymptoms_StrepPneumo DYNAMIC*, where its data type is CD (CONF:1867)
9. PHCR Case Observation **SHOULD** contain zero or more [0..*] entryRelationship (CONF:1887, CONF:1888, CONF:1890), such that Contains @typeCode="MFST" MFST (is manifestation of), such that Contains @inversionInd="true", and Contains exactly one [1..1] Signs And Symptoms Observation (templateId: 2.16.840.1.113883.10.20.15.3.53) (CONF:1889)

Strep Pneumo Signs And Symptoms Observation example

Strep Pneumo Therapeutic Regimen Act

[Act: templateId 2.16.840.1.113883.10.20.15.3.122]

1. **SHALL** conform to *PHCR Therapeutic Regimen Act* template (templateId: 2.16.840.1.113883.10.20.15.3.57)
2. **SHALL** contain exactly one [1..1] **@classCode**="ACT" *Act* (CodeSystem: 2.16.840.1.113883.5.6 HL7ActClass) (CONF:1940)
3. **SHALL** contain exactly one [1..1] **@moodCode**="EVN" *Event* (CodeSystem: 2.16.840.1.113883.5.1001 HL7ActMood) (CONF:1941)
4. **SHALL** contain exactly one [1..1] **@negationInd** (CONF:1942)
5. **SHALL** contain exactly one [1..1] **code/@code**="133877004" *Therapeutic regimen* (CodeSystem: 2.16.840.1.113883.6.96 SNOMEDCT) (CONF:1943)
6. **SHALL** contain exactly one [1..1] **statusCode/@code**="completed" (CodeSystem: 2.16.840.1.113883.5.14 ActStatus) (CONF:1944)
7. **SHOULD** contain zero or more [0..*] **entryRelationship**, such that
 - a. Contains **@typeCode**="COMP" *COMP (has component)*
 - b. Contains exactly one [1..1] *Strep Pneumo Treatment Given Substance Administration* (templateId: 2.16.840.1.113883.10.20.15.3.126)
8. **MAY** contain zero or more [0..*] **entryRelationship**, such that
 - a. Contains **@typeCode**="COMP" *COMP (has component)*
 - b. Contains exactly one [1..1] *Strep Pneumo Treatment Not Given Substance Administration* (templateId: 2.16.840.1.113883.10.20.15.3.127)
9. **SHALL**
10. 7. **SHALL** contain [1..1] entryRelationship (specialized branch), which a. **SHALL** contain [1..1] **@typeCode**="REFR" Refers to (CodeSystem: 2.16.840.1.113883.5.1002 HL7ActRelationshipType) STATIC b. **SHALL** contain [1..1] observation, which i. **SHALL** contain [1..1] **@classCode**="OBS" *Observation* (CodeSystem: 2.16.840.1.113883.5.6 HL7ActClass) STATIC ii. **SHALL** contain [1..1] **@moodCode**="EVN" *Event* (CodeSystem: 2.16.840.1.113883.5.1001 HL7ActMood) STATIC iii. observation/id **SHALL** be present,

and **SHALL** equal Streptococcus pneumoniae case observation's observation/id . iv. **SHALL** contain [1..1] code/@code="ASSERTION" (CodeSystem: 2.16.840.1.113883.5.4 HL7ActCode) STATIC v. **SHALL** contain [1..1] value/@code="406617004" Invasive Streptococcus pneumoniae disease (CodeSystem: 2.16.840.1.113883.6.96 SNOMEDCT) STATIC

Strep Pneumo Therapeutic Regimen Act example

Strep Pneumo Treatment Given Substance Administration

[SubstanceAdministration: templateId 2.16.840.1.113883.10.20.15.3.126]

1. **SHALL** conform to *PHCR Treatment Given Substance Administration* template (templateId: 2.16.840.1.113883.10.20.15.3.55)
2. **SHALL** contain exactly one [1..1] @classCode="SBADM" (CodeSystem: 2.16.840.1.113883.5.6 HL7ActClass) (CONF:1919)
3. **SHALL** contain exactly one [1..1] @moodCode="EVN" Event (CodeSystem: 2.16.840.1.113883.5.1001 HL7ActMood) (CONF:1920)
4. **SHALL** contain exactly one [1..1] @negationInd (CONF:1921)
5. **SHALL** contain exactly one [1..1] statusCode (CodeSystem: 2.16.840.1.113883.5.14 ActStatus) (CONF:1922)
6. **SHOULD** contain zero or one [0..1] effectiveTime (CONF:1923)
7. **SHALL** contain zero or one [0..1] routeCode, which **SHALL** be selected from ValueSet 2.16.840.1.113883.3.88.12.3221.8.7 *Medication Route FDA* DYNAMIC (CONF:1925)
8. Contains exactly one [1..1] consumable, where its type is *Consumable*
9. **SHOULD** satisfy: Should contain [0..1] low (CONF:1924)
10. **SHALL** satisfy: Shall contain consumable (CONF:1926)
11. **SHALL** contain exactly one [1..1] @negationInd="false" (CONF:1921)
 - [OCL]: self.negationInd=false
12. 8. **SHALL** contain [1..1] consumable , which a. **SHALL** contain [1..1] manufacturedProduct , which i. **SHALL** contain [1..1] manufacturedMaterial , which 1. **SHALL** contain [1..1] code/@code, which **SHALL** be selected from ValueSet 2.16.840.1.114222.4.11.6033 PHVS_MedicationTreatment_StrepPneumo DYNAMIC), which a. **SHOULD** contain [0..1] originalText

Strep Pneumo Treatment Given Substance Administration example

Strep Pneumo Treatment Not Given Substance Administration

[SubstanceAdministration: templateId 2.16.840.1.113883.10.20.15.3.127]

1. **SHALL** conform to *PHCR Treatment Not Given Substance Administration* template (templateId: 2.16.840.1.113883.10.20.15.3.56)
2. **SHALL** contain exactly one [1..1] @classCode="SBADM" (CodeSystem: 2.16.840.1.113883.5.6 HL7ActClass) (CONF:1931)
3. **SHALL** contain exactly one [1..1] @moodCode="EVN" Event (CodeSystem: 2.16.840.1.113883.5.1001 HL7ActMood) (CONF:1932)
4. **SHALL** contain exactly one [1..1] @negationInd (CONF:1933)
5. **SHALL** contain exactly one [1..1] statusCode/@code="completed" (CodeSystem: 2.16.840.1.113883.5.14 ActStatus) (CONF:1934)
6. Contains exactly one [1..1] consumable, where its type is *Consumable*

7. **SHALL** satisfy: Shall contain consumable (CONF:1935)
8. **SHALL** contain exactly one [1..1] @negationInd="true" (CONF:1933)
 - [OCL]: `self.negationInd=true`
9. 6. **SHALL** contain [1..1] consumable , which a. **SHALL** contain [1..1] manufacturedProduct , which i. **SHALL** contain [1..1] manufacturedMaterial), which 1. **SHALL** contain [1..1] code/@code, which **SHALL** be selected from ValueSet 2.16.840.1.114222.4.11.6033 PHVS_MedicationTreatment_StrepPneumo DYNAMIC), which a. **SHOULD** contain [0..1] originalText

Strep Pneumo Treatment Not Given Substance Administration example

Chapter

5

OTHER CLASSES

Topics:

- [*Strep Pneumo Immunization Product*](#)

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

Strep Pneumo Immunization Product

[Product: templateId 2.16.840.1.113883.10.20.15.3.123]

1. Contains exactly one [1..1] **manufacturedProduct**, where its type is *Manufactured Product*
2. 2. **SHALL** contain [1..1] manufacturedMaterial, which a. **SHALL** contain [1..1] code/@code, which **SHALL** be selected from ValueSet 2.16.840.1.114222.4.11.6032 PHVS_VaccinesAdministered_StrepPneumo DYNAMIC

Strep Pneumo Immunization Product example

Chapter

6

VALUE SETS

Topics:

- [PHV S_ Disease Type_ Strep Pneumo](#)
- [PHV S_ Lab Test Name_ Strep Pneumo](#)
- [PHV S_ Medication Treatment_ Strep Pneumo](#)
- [PHV S_ Signs Symptoms_ Strep Pneumo](#)
- [PHV S_ Sterile Specimen_ IPD](#)
- [PHV S_ Vaccines Administered_ Strep Pneumo](#)

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

PHV S_ Disease Type_ Strep Pneumo

Value Set	PHVS_DiseaseType_StrepPneumo - 2.16.840.1.114222.4.11.6030
Source	PHIN-VADS
Source URL	http://phinvads.cdc.gov/vads/ViewValueSet.action?oid=2.16.840.1.114222.4.11.6030
Definition	Streptococcus pneumoniae disease type value set has problems or disease related to Streptococcus pneumoniae, invasive disease. This value set is based upon SNOMED CT.

Concept Code	Concept Name	Code System	Description
167572006			
186379002			
186380004			
186381000			
19547001			
195886008			
206285007			
233607000			
266350000			
29577008			
29577008			
302809008			
310649002			
310668004			
34020007			
405633009			
405634003			
406595002			
406612005			
406616008			
406617004			
406618009			
409804001			
420787001			
423271002			
426933007			
428260000			

Concept Code	Concept Name	Code System	Description
440990006			
441942006			
444765007			
447331003			
447400006			
448418006			
448419003			
448420009			
448421008			
448422001			
449504009			
449900006			
4510004			
46970008			
47256006			
48397003			
51169003			
60837001			
64479007			
64912000			
74689003			
81638006			
90849005			

PHV S_ Lab Test Name_ Strep Pneumo

Value Set	PHVS_LabTestName_StrepPneumo - 2.16.840.1.114222.4.11.4208
Source	PHIN-VADS
Source URL	https://phinvads.cdc.gov/vads/ViewValueSet.action?oid=2.16.840.1.114222.4.11.4208
Definition	lab tests associated with Streptococcus pneumoniae

Concept Code	Concept Name	Code System	Description
10717-7			
10908-2			
11086-6			
13131-8			

Concept Code	Concept Name	Code System	Description
13132-6			
13133-4			
13134-2			
13135-9			
13136-7			
13137-5			
13138-3			
13139-1			
13140-9			
13141-7			
13142-5			
13143-3			
13144-1			
13145-8			
13146-6			
13147-4			
13148-2			
13149-0			
13150-8			
13151-6			
13152-4			
13153-2			
13154-0			
13155-7			
13156-5			
13157-3			
13158-1			
13159-9			
13160-7			
13161-5			
13162-3			
13163-1			
13165-6			
13166-4			
13167-2			

Concept Code	Concept Name	Code System	Description
13168-0			
14322-2			
17612-3			
17613-1			
17614-9			
17615-6			
17616-4			
17617-2			
17618-0			
17619-8			
17620-6			
17621-4			
17622-2			
17623-0			
17624-8			
17625-5			
17626-3			
17627-1			
17628-9			
17629-7			
17630-5			
17632-1			
17633-9			
17634-7			
17635-4			
17636-2			
17637-0			
17638-8			
17639-6			
17640-4			
17641-2			
17642-0			
17643-8			
17644-6			
17645-3			

Concept Code	Concept Name	Code System	Description
17646-1			
17647-9			
17648-7			
17649-5			
17650-3			
17651-1			
17652-9			
17653-7			
17654-5			
17655-2			
18346-7			
18347-5			
20489-1			
22541-7			
22542-5			
22543-3			
22544-1			
22545-8			
22546-6			
22547-4			
22548-2			
22549-0			
22550-8			
22551-6			
22552-4			
22553-2			
22554-0			
22555-7			
22556-5			
22557-3			
22558-1			
22559-9			
22560-7			
22561-5			
22562-3			

Concept Code	Concept Name	Code System	Description
22563-1			
22564-9			
22565-6			
22762-9			
24021-8			
24022-6			
24023-4			
24025-9			
24027-5			
25276-7			
25277-5			
25278-3			
25279-1			
25280-9			
25281-7			
25282-5			
25283-3			
25284-1			
25285-8			
25286-6			
25287-4			
25288-2			
25289-0			
25290-8			
25291-6			
25292-4			
25293-2			
25294-0			
25295-7			
25296-5			
25531-5			
26681-7			
26692-4			
26693-2			
26701-3			

Concept Code	Concept Name	Code System	Description
26754-2			
26755-9			
26875-5			
26876-3			
26917-5			
26939-9			
26941-5			
27092-6			
27094-2			
27096-7			
27113-0			
27118-9			
27119-7			
27120-5			
27121-3			
27126-2			
27128-8			
27138-7			
27139-5			
27141-1			
27142-9			
27143-7			
27144-5			
27145-2			
27146-0			
27147-8			
27148-6			
27150-2			
27151-0			
27152-8			
27153-6			
27154-4			
27155-1			
27156-9			
27157-7			

Concept Code	Concept Name	Code System	Description
27158-5			
27227-8			
27228-6			
27229-4			
27230-2			
27231-0			
27374-8			
27387-0			
27388-8			
27389-6			
27390-4			
27392-0			
27393-8			
27395-3			
27397-9			
27398-7			
27405-0			
27406-8			
27407-6			
27422-5			
27425-8			
27427-4			
27428-2			
27429-0			
27430-8			
27431-6			
27433-2			
27434-0			
27435-7			
27437-3			
27964-6			
28553-6			
29318-3			
29319-1			
29320-9			

Concept Code	Concept Name	Code System	Description
29360-5			
29361-3			
29362-1			
30153-1			
30488-1			
30489-9			
30490-7			
30491-5			
30492-3			
30493-1			
30494-9			
30495-6			
30496-4			
30497-2			
30498-0			
30499-8			
30501-1			
30502-9			
30503-7			
30504-5			
30505-2			
30506-0			
30561-5			
31183-7			
31635-6			
31636-4			
31637-2			
31638-0			
31639-8			
31640-6			
31641-4			
31642-2			
31643-0			
31644-8			
31645-5			

Concept Code	Concept Name	Code System	Description
31646-3			
31647-1			
31648-9			
31649-7			
31650-5			
31652-1			
31653-9			
31654-7			
31655-4			
31656-2			
31657-0			
31968-1			
31969-9			
32847-6			
32849-2			
32850-0			
34172-7			
40902-9			
40903-7			
40904-5			
40905-2			
40906-0			
40907-8			
40908-6			
40909-4			
40910-2			
40911-0			
40912-8			
40913-6			
40914-4			
40915-1			
40916-9			
40917-7			
40918-5			
40919-3			

Concept Code	Concept Name	Code System	Description
40920-1			
40921-9			
40922-7			
40923-5			
40924-3			
40925-0			
40926-8			
40963-1			
40964-9			
40965-6			
40966-4			
40967-2			
40968-0			
40969-8			
40973-0			
40974-8			
42359-0			
42360-8			
42361-6			
42362-4			
42363-2			
42364-0			
42365-7			
42366-5			
42367-3			
42771-6			
43236-9			
46205-1			
47036-9			
47037-7			
47323-1			
47324-9			
47325-6			
47326-4			
47327-2			

Concept Code	Concept Name	Code System	Description
47328-0			
47329-8			
47330-6			
47331-4			
47332-2			
47333-0			
47334-8			
47335-5			
47336-3			
47337-1			
47338-9			
47339-7			
47340-5			
47341-3			
47342-1			
47343-9			
47344-7			
47345-4			
47346-2			
47347-0			
47348-8			
47349-6			
47350-4			
47351-2			
47352-0			
47353-8			
47354-6			
47355-3			
47356-1			
47357-9			
47481-7			
47482-5			
47483-3			
47484-1			
47485-8			

Concept Code	Concept Name	Code System	Description
47486-6			
47487-4			
47488-2			
47489-0			
47490-8			
47491-6			
47492-4			
47493-2			
47494-0			
47495-7			
47496-5			
47497-3			
47498-1			
47499-9			
47500-4			
47501-2			
47502-0			
47503-8			
47504-6			
47505-3			
47506-1			
47507-9			
47508-7			
47509-5			
47510-3			
49611-7			
49672-9			
49803-0			
49804-8			
49805-5			
49806-3			
49807-1			
49808-9			
5035-1			
51407-5			

Concept Code	Concept Name	Code System	Description
51408-3			
51473-7			
51668-2			
5368-6			
53917-1			
62493-2			
6552-4			
6553-2			
6554-0			
6555-7			
8027-5			
8028-3			
8029-1			
8030-9			
8031-7			
8032-5			
8033-3			
9455-7			
9456-5			
9457-3			
9458-1			
9460-7			
9461-5			
9611-5			
V51472-9			

PHV S_ Medication Treatment_ Strep Pneumo

Value Set	PHVS_MedicationTreatment_StrepPneumo - 2.16.840.1.114222.4.11.6033
Code System	RxNorm - 2.16.840.1.113883.6.88
Source	PHIN-VADS
Source URL	http://phinvads.cdc.gov/vads/ViewValueSet.action?oid=2.16.840.1.114222.4.11.6033
Definition	Streptococcus pneumoniae medication treatment value set has list of Medications related to Streptococcus pneumoniae, invasive disease. This value set is based upon RxNorm

Concept Code	Concept Name	Code System	Description
4053	Erythromycin	RxNorm	
21212	Clarithromycin	RxNorm	
18631	Azithromycin	RxNorm	
82122	Levofloxacin	RxNorm	
138099	Gemifloxacin	RxNorm	
139462	Moxifloxacin	RxNorm	
70618	Penicillin	RxNorm	

PHV S_ Signs Symptoms_ Strep Pneumo

Value Set	PHVS_SignsSymptoms_StrepPneumo - 2.16.840.1.114222.4.11.6031
Code System	SNOMEDCT - 2.16.840.1.113883.6.96
Source	PHIN-VADS
Source URL	http://phinvads.cdc.gov/vads/ViewValueSet.action?oid=2.16.840.1.114222.4.11.6031
Definition	Streptococcus pneumoniae signs and symptoms value set has signs and symptoms related to Streptococcus pneumoniae, invasive disease. This value set is based upon SNOMED CT

Concept Code	Concept Name	Code System	Description
102496004		SNOMEDCT	
102570003		SNOMEDCT	
102599008		SNOMEDCT	
102613000		SNOMEDCT	
102614006		SNOMEDCT	
103011009		SNOMEDCT	
110288007		SNOMEDCT	
11092001		SNOMEDCT	
110989007		SNOMEDCT	
111950007		SNOMEDCT	
111985007		SNOMEDCT	
116290004		SNOMEDCT	
12336008		SNOMEDCT	
123705009		SNOMEDCT	
125115006		SNOMEDCT	
125116007		SNOMEDCT	
130987000		SNOMEDCT	
130988005		SNOMEDCT	

Concept Code	Concept Name	Code System	Description
135883003		SNOMEDCT	
13791008		SNOMEDCT	
14948001		SNOMEDCT	
15576007		SNOMEDCT	
16001004		SNOMEDCT	
161873000		SNOMEDCT	
161874006		SNOMEDCT	
162038003		SNOMEDCT	
162042000		SNOMEDCT	
162046002		SNOMEDCT	
162047006		SNOMEDCT	
162048001		SNOMEDCT	
162049009		SNOMEDCT	
162050009		SNOMEDCT	
162053006		SNOMEDCT	
162065005		SNOMEDCT	
162299003		SNOMEDCT	
162301005		SNOMEDCT	
162304002		SNOMEDCT	
162307009		SNOMEDCT	
162308004		SNOMEDCT	
162309007		SNOMEDCT	
162310002		SNOMEDCT	
162356005		SNOMEDCT	
162359003		SNOMEDCT	
162916002		SNOMEDCT	
162992001		SNOMEDCT	
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163215003		SNOMEDCT	
163216002		SNOMEDCT	
163217006		SNOMEDCT	
163218001		SNOMEDCT	
163219009		SNOMEDCT	
163220003		SNOMEDCT	
163221004		SNOMEDCT	

Concept Code	Concept Name	Code System	Description
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163238000		SNOMEDCT	
163239008		SNOMEDCT	
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163241009		SNOMEDCT	
163242002		SNOMEDCT	
163243007		SNOMEDCT	
163244001		SNOMEDCT	
163245000		SNOMEDCT	
163246004		SNOMEDCT	
163267004		SNOMEDCT	
163358002		SNOMEDCT	
164160002		SNOMEDCT	
164215009		SNOMEDCT	
164219003		SNOMEDCT	
164221008		SNOMEDCT	
164222001		SNOMEDCT	
164247004		SNOMEDCT	
164288004		SNOMEDCT	
164299002		SNOMEDCT	
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164307008		SNOMEDCT	
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164309006		SNOMEDCT	
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164316007		SNOMEDCT	
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164524001		SNOMEDCT	
164527008		SNOMEDCT	
164528003		SNOMEDCT	

Concept Code	Concept Name	Code System	Description
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16932000		SNOMEDCT	
17866004		SNOMEDCT	
186694006		SNOMEDCT	
18726006		SNOMEDCT	
191502008		SNOMEDCT	
191507002		SNOMEDCT	
191509004		SNOMEDCT	
191678001		SNOMEDCT	
192835007		SNOMEDCT	
19399000		SNOMEDCT	
194240006		SNOMEDCT	
194281003		SNOMEDCT	
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194290005		SNOMEDCT	
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200766001		SNOMEDCT	
200832000		SNOMEDCT	
200920000		SNOMEDCT	
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200922008		SNOMEDCT	
200922008		SNOMEDCT	
200923003		SNOMEDCT	
200923003		SNOMEDCT	
200924009		SNOMEDCT	
200924009		SNOMEDCT	
200951007		SNOMEDCT	
202472008		SNOMEDCT	

Concept Code	Concept Name	Code System	Description
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202485006		SNOMEDCT	
202487003		SNOMEDCT	
202489000		SNOMEDCT	
202490009		SNOMEDCT	
202491008		SNOMEDCT	
202493006		SNOMEDCT	
202495004		SNOMEDCT	
202496003		SNOMEDCT	
202497007		SNOMEDCT	
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213026003		SNOMEDCT	
213338000		SNOMEDCT	
214264003		SNOMEDCT	
21522001		SNOMEDCT	
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225440008		SNOMEDCT	
22818000		SNOMEDCT	
22972008		SNOMEDCT	
22972008		SNOMEDCT	
230489007		SNOMEDCT	
230490003		SNOMEDCT	
230664009		SNOMEDCT	
23067006		SNOMEDCT	
231440006		SNOMEDCT	
232251007		SNOMEDCT	
232252000		SNOMEDCT	

Concept Code	Concept Name	Code System	Description
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238410003		SNOMEDCT	
238411004		SNOMEDCT	
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238812004		SNOMEDCT	
238818000		SNOMEDCT	
238818000		SNOMEDCT	
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23971007		SNOMEDCT	
239733006		SNOMEDCT	
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240712006		SNOMEDCT	
240713001		SNOMEDCT	
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248434006		SNOMEDCT	
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248438009		SNOMEDCT	

Concept Code	Concept Name	Code System	Description
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248444008		SNOMEDCT	
248445009		SNOMEDCT	
248446005		SNOMEDCT	
248447001		SNOMEDCT	
248450003		SNOMEDCT	
248451004		SNOMEDCT	
248456009		SNOMEDCT	
248581005		SNOMEDCT	
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Concept Code	Concept Name	Code System	Description
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271897009		SNOMEDCT	
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274289007		SNOMEDCT	
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278862001		SNOMEDCT	

Concept Code	Concept Name	Code System	Description
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298585000		SNOMEDCT	
298674008		SNOMEDCT	
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298857005		SNOMEDCT	

Concept Code	Concept Name	Code System	Description
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299134007		SNOMEDCT	
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299327001		SNOMEDCT	
299377003		SNOMEDCT	
299385007		SNOMEDCT	
299414004		SNOMEDCT	
299415003		SNOMEDCT	
299416002		SNOMEDCT	
299417006		SNOMEDCT	

Concept Code	Concept Name	Code System	Description
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299480001		SNOMEDCT	
299481002		SNOMEDCT	
299482009		SNOMEDCT	
299483004		SNOMEDCT	
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300103004		SNOMEDCT	
300104005		SNOMEDCT	
300105006		SNOMEDCT	
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301357006		SNOMEDCT	
301367001		SNOMEDCT	
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301388005		SNOMEDCT	
301403003		SNOMEDCT	
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301406006		SNOMEDCT	
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301408007		SNOMEDCT	
301409004		SNOMEDCT	
301411008		SNOMEDCT	
301412001		SNOMEDCT	
301413006		SNOMEDCT	

Concept Code	Concept Name	Code System	Description
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301415004		SNOMEDCT	
301416003		SNOMEDCT	
301417007		SNOMEDCT	
301418002		SNOMEDCT	
301419005		SNOMEDCT	
301420004		SNOMEDCT	
301715003		SNOMEDCT	
301716002		SNOMEDCT	
301717006		SNOMEDCT	
301754002		SNOMEDCT	
304213008		SNOMEDCT	
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308893005		SNOMEDCT	
308903002		SNOMEDCT	
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310482008		SNOMEDCT	
3110003		SNOMEDCT	
313387002		SNOMEDCT	
314109004		SNOMEDCT	
314212008		SNOMEDCT	
31922003		SNOMEDCT	
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332982000		SNOMEDCT	
3424008		SNOMEDCT	
34730008		SNOMEDCT	
35183001		SNOMEDCT	
35611005		SNOMEDCT	
35678005		SNOMEDCT	
359609001		SNOMEDCT	
360595002		SNOMEDCT	
364760007		SNOMEDCT	
365977007		SNOMEDCT	
365977007		SNOMEDCT	

Concept Code	Concept Name	Code System	Description
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36715001		SNOMEDCT	
371073003		SNOMEDCT	
371094000		SNOMEDCT	
37151006		SNOMEDCT	
37151006		SNOMEDCT	
371632003		SNOMEDCT	
373906002		SNOMEDCT	
373906002		SNOMEDCT	
373931001		SNOMEDCT	
38654001		SNOMEDCT	
386661006		SNOMEDCT	
387638003		SNOMEDCT	
38823002		SNOMEDCT	
396350005		SNOMEDCT	
399914006		SNOMEDCT	
402418004		SNOMEDCT	
402419007		SNOMEDCT	
402603005		SNOMEDCT	
402969008		SNOMEDCT	
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402970009		SNOMEDCT	
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403209006		SNOMEDCT	
403210001		SNOMEDCT	
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403390002		SNOMEDCT	
403391003		SNOMEDCT	

Concept Code	Concept Name	Code System	Description
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403609001		SNOMEDCT	
403638003		SNOMEDCT	
405501007		SNOMEDCT	
405947006		SNOMEDCT	
405948001		SNOMEDCT	
405949009		SNOMEDCT	
408668005		SNOMEDCT	
409668002		SNOMEDCT	
409702008		SNOMEDCT	
41030002		SNOMEDCT	
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413223001		SNOMEDCT	
413223001		SNOMEDCT	
41413006		SNOMEDCT	
419735006		SNOMEDCT	
421348006		SNOMEDCT	
42136008		SNOMEDCT	
422400008		SNOMEDCT	
422587007		SNOMEDCT	
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43724002		SNOMEDCT	
439469002		SNOMEDCT	
439774009		SNOMEDCT	
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440220007		SNOMEDCT	
440220007		SNOMEDCT	
442515000		SNOMEDCT	

Concept Code	Concept Name	Code System	Description
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444042007		SNOMEDCT	
444746004		SNOMEDCT	
444827008		SNOMEDCT	
445386003		SNOMEDCT	
445422000		SNOMEDCT	
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448265002		SNOMEDCT	
448660000		SNOMEDCT	
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449129007		SNOMEDCT	
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56940005		SNOMEDCT	
57676002		SNOMEDCT	
58759008		SNOMEDCT	
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6048002		SNOMEDCT	
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63722008		SNOMEDCT	
63993003		SNOMEDCT	
65036008		SNOMEDCT	
65036008		SNOMEDCT	

Concept Code	Concept Name	Code System	Description
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69588003		SNOMEDCT	
70247006		SNOMEDCT	
71419002		SNOMEDCT	
71850005		SNOMEDCT	
72585000		SNOMEDCT	
73442001		SNOMEDCT	
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73658009		SNOMEDCT	
73658009		SNOMEDCT	
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75181005		SNOMEDCT	
7520000		SNOMEDCT	
7550008		SNOMEDCT	
76097009		SNOMEDCT	
76097009		SNOMEDCT	
77300003		SNOMEDCT	
77478005		SNOMEDCT	
77545000		SNOMEDCT	
77957000		SNOMEDCT	
78631004		SNOMEDCT	
79922009		SNOMEDCT	
81487000		SNOMEDCT	
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8304007		SNOMEDCT	
83132003		SNOMEDCT	
8326008		SNOMEDCT	
84229001		SNOMEDCT	
84438001		SNOMEDCT	
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86563000		SNOMEDCT	

Concept Code	Concept Name	Code System	Description
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86735004		SNOMEDCT	
86925001		SNOMEDCT	
88522004		SNOMEDCT	
95331002		SNOMEDCT	
95331002		SNOMEDCT	
95627000		SNOMEDCT	
95627000		SNOMEDCT	
95658004		SNOMEDCT	
95803004		SNOMEDCT	
95804005		SNOMEDCT	
95805006		SNOMEDCT	
9619006		SNOMEDCT	

PHV S_ Sterile Specimen_ IPD

Value Set	PHVS_SterileSpecimen_IPD - 2.16.840.1.114222.4.11.3321
Code System	SNOMEDCT - 2.16.840.1.113883.6.96
Source	PHIN-VADS
Source URL	https://phinvads.cdc.gov/vads/ViewValueSet.action?oid=2.16.840.1.114222.4.11.3321
Definition	Sterile Specimen for invasive pneumococcal disease

Concept Code	Concept Name	Code System	Description
119297000	Blood specimen (specimen)	SNOMEDCT	
258450006	Cerebrospinal fluid sample (specimen)	SNOMEDCT	
309125000	Joint sample (specimen)	SNOMEDCT	
122571007	Pericardial fluid specimen (specimen)	SNOMEDCT	
168139001	Peritoneal fluid sample (specimen)	SNOMEDCT	
418564007	Pleural fluid specimen (specimen)	SNOMEDCT	
119331003	Skeletal muscle specimen (specimen)	SNOMEDCT	
430268003	Specimen from bone (specimen)	SNOMEDCT	

PHV S_ Vaccines Administered_ Strep Pneumo

Value Set	PHVS_VaccinesAdministered_StrepPneumo - 2.16.840.1.114222.4.11.6032
Code System	Vaccines administered (CVX) - 2.16.840.1.113883.6.59
Source	PHIN-VADS
Source URL	http://phinvads.cdc.gov/vads/ViewValueSet.action?oid=2.16.840.1.114222.4.11.6032
Definition	Streptococcus pneumoniae vaccines received before illness onset

Concept Code	Concept Name	Code System	Description
133	Pneumococcal conjugate PCV 13	Vaccines administered (CVX)	
100	Pneumococcal conjugate PCV 7	Vaccines administered (CVX)	
33	Pneumococcal polysaccharide PPV23	Vaccines administered (CVX)	
109	Pneumococcal, unspecified formulation	Vaccines administered (CVX)	

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- Dolin RH, Alschuler L, Boyer S, Beebe C, Behlen FM, Biron PV, Shabo A, (Editors). HL7 Clinical Document Architecture, Release 2.0. ANSI-approved HL7 Standard; May 2005. Ann Arbor, Mich.: Health Level Seven, Inc. Available through [HL7](#) or if an HL7 member with the following link: [CDA Release 2 Normative Web Edition](#).
- [LOINC®](#) : Logical Observation Identifiers Names and Codes, Regenstrief Institute.
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