



HL7 Implementation Guide for CDA Release 2: NHSN Healthcare Associated Infection (HAI) Reports, Release 4.1

(U.S. Realm)

Draft Standard for Trial Use

January 2010

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The best standards are those driven by business requirements. Each stage of the development of this DSTU has been monitored, evaluated, and tested by a strong set of Healthcare Associated Infection (HAI) surveillance application vendors. Those vendors who participated in the 2007-2008 pilot activities of Bloodstream Infection Reports and Surgical Site Infection deserve special thanks and acknowledgment: MedMined™ services from Cardinal Health, EpiQuest, ICPA, Premier, TheraDoc, and Vecna Technologies.

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This specification is a set of constraints on existing work and the extent to which it can accommodate the expressive requirements of HAI reporting over time is a function of the richness of the model on which it is built, the Health Level Seven (HL7) Reference Information Model (RIM) and the RIM document standard, and the Clinical Document Architecture Release 2 (CDA R2). Many thanks to all those who have worked for over a decade to produce these fundamental specifications and special thanks to structured documents co-chairs Bob Dolin, Keith Boone, and Calvin Beebe for their support of this project.

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Revision History

Release	Date	Notes
1	28 February 2008	First release of the DSTU
2	6 August 2008 4 December 2008	4 Reports updated, 1 Report added 5 Reports updated, 8 Reports added
	27 February 2009	Integrated January 2009 ballot resolutions
3	30 March 2009	2 Reports added
	June 25 2009	Integrated May 2009 ballot resolutions Replaced fine-grained NHSN codeSystems with a single NHSN vocabulary Replaced temporary NHSN code values with final NHSN code values
4	August 7, 2009	1 Report added, population-summary updated to include a new form. Converted to Templates Database constraints format. A population-summary report that does not report in-facility ID and type now records them with nullFlavors.
	October 30, 2009	Integrated September 2009 ballot resolutions.
4.1	January 14, 2010	Updated UTI Urinary Catheter Observation. Added History of Object Presence Observation.

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1 INTRODUCTION

1.1 Purpose

The purpose of this implementation guide (IG) is to specify a standard for electronic submission of Healthcare Associated Infection (HAI) Reports to the National Healthcare Safety Network (NHSN) of the Centers for Disease Control and Prevention (CDC). This Draft Standard for Trial Use (DSTU) defines the overall approach and method of electronic submission and develops constraints defining specific HAI report types. As reports are modified and new report types are defined, additional constraints will be developed and published by CDC and Health Level Seven (HL7).

Throughout this process, CDC remains the authority on NHSN data collection protocols. Occurrences such as specific reportable procedures, even those without complications, and events such as a bloodstream infection, either confirmed by a positive blood culture or supported by a patient's clinical symptoms, are reportable to the CDC when health care enterprises choose to participate in NHSN. This specification opens the channel for data submission by all applications compliant with the data coding requirements defined here.

Note that participation in the NHSN requires enrollment and filing of reporting plans, which are not defined by this specification. For an overview of NHSN and full information on NHSN participation requirements, see:

<http://www.cdc.gov/nhsn/>

Note that provisions of the Public Health Service Act protect all data reported to NHSN from discovery through the Freedom Of Information Act.

1.2 Audience

The audience for this DSTU is all developers of software systems who want to enable their systems for reporting HAI data to the NHSN.

1.3 Approach

Overall, the approach taken here is consistent with balloted IGs for the Clinical Document Architecture (CDA). These publications view the ultimate implementation specification as a series of layered constraints. CDA itself is a set of constraints on the HL7 Reference Information Model (RIM) defined in the CDA Release 2 (CDA R2) Refined Message Information Model (RMIM). Implementation guides such as this and the Continuity of Care Document (CCD) add constraints to CDA through conformance statements that further define and restrict the sequence and cardinality of CDA objects and the vocabulary sets for coded elements.

1.3.1 CDA R2

CDA R2 is “... a document markup standard that specifies the structure and semantics of ‘clinical documents’ for the purpose of exchange” [CDA R2, Section 1.1; see [6 References](#)]. Clinical documents, according to CDA, have the following characteristics:

- Persistence
- Stewardship
- Potential for authentication
- Context
- Wholeness
- Human readability

CDA defines a header that is used for classification and management, and a document body that carries the clinical record. While the header metadata are prescriptive and designed for consistency across all instances, the body is highly generic, leaving the designation of semantic requirements to implementation.

1.3.2 Development of This Specification

The approach taken in the development of this specification was to compare the baseline requirements for HAI reporting against CDA R2 to make an initial determination whether CDA, designed for clinical reports that become part of a patient chart, is suitable for HAI reporting or whether significant modifications would be required. That analysis determined that the only anomaly between the two was the requirement for a single record target (patient), which is appropriate for single-patient-focused reports such as the Bloodstream Infection (BSI) Report and not appropriate for population-summary reports that summarize data for many patients over a period of time. This IG addresses this issue in population-summary reports through use of a null flavor for the record target and a participant defined as a “group”.

After the initial evaluation, four HAI report types were analyzed and mapped to the CDA header and body, noting similarities and differences between the report types. From this analysis, the first in a set of “straw man” instances illustrating the proposed approach was developed. These initial samples were reviewed informally by the Structured Documents Working Group (SDWG), which is the sponsor of this DSTU within HL7; the stakeholders in HAI exchange; the NHSN, which is the overall sponsor of the activity; and the software vendors whose systems will use the specification for NHSN reporting.

Design considerations included consistency with published CDA IGs and with the RMIMs of related domain committees, specifically those developed for laboratory reporting, while retaining fidelity with the data structures of the NHSN database.

A preliminary design for the BSI and ICU Summary (now part of Population Summary) forms was tested in an implementation pilot that ran in late July 2007. Findings from that pilot have been reviewed and incorporated.

In response to comments received on the first ballot for DSTU, a rigorous evaluation ensured use of standard codes in every instance where their use was fully expressive and supported by NHSN. The criteria for this evaluation are described in [Appendix F — Vocabulary Heuristics for Codes and Value Sets \(Non-normative\)](#). Changes were

incorporated through the reconciliation process from the second ballot for DSTU held in December 2007 and January 2008.

A second development cycle updated the constraints on several reports and added a new MDRO Infection report. These updates were reviewed informally by the Structured Documents Working Group and balloted in September 2008. Changes were incorporated through the reconciliation process, and Release 2 of the DSTU was published in March 2009.

Release 3 extended the population-summary report value-set to encompass two new data sets:

- Denominators for Neonatal Intensive Care Unit (NICU)
- Denominators for Specialty Care Area (SCA)

In addition, a single cdcNHSN vocabulary replaced the fine-grained NHSN code systems, and final NHSN code values replaced temporary NHSN code values.

Release 4 adds a new report type and extends the population-summary report to include another data set:

- Laboratory-identified Organism (LIO)
- Prevention Process and Outcome Measures Monthly Monitoring (POM)

In addition, in preparing this release, all of the HAI constraints were recorded in a Templates Database that also houses the templates for “HL7 Implementation Guide for CDA Release 2, CDA for Public Health Case Reports, Based on HL7 CDA Release 2.0” balloted in May 2009. The conformance statements in this release are generated directly from the database and use a new format, which consolidates explanatory text for each template. The conformance-statement format is consistent with that used for PHCR.

In addition, the conditional conformance statements in the header section were updated with specialization templates for single-person and population-summary reports.

1.3.3 Change Notification Process

CDC maintains an e-mail list of contacts at organizations interested in or responsible for implementations of CDA for HAI reporting to NHSN. To be added to the list, send a request with your contact information to nhsn@cdc.gov. CDC uses the list for e-mail notifications of changes, including new data requirements. Changes may apply to this IG and to other documents such as business rules that are needed to implement and support CDA for HAI reporting to NHSN. In addition, access to the current version of this IG will be provided through the CDA tab at the NHSN members website: <http://www.cdc.gov/nhsn/>.

Note: Ancillary files, including an up-to-date display transform and validating rule set, will be posted on the HL7 wiki site (see [1.8 Supporting Tools](#)).

1.4 Future Work

This implementation was the first use of the CDA R2 for public health reporting. Since the initial ballot in spring of 2007, additional use cases have been identified and a CDA Implementation Guide for Public Health Case Reports (PHCR) has been developed.

Future work may develop an overarching set of principles for use of CDA in this context under the project tentatively named “CDA for Reporting”.

Future work on HAI reporting will continue to expand the set of forms covered by the specification. In the future, the latest set of any value set referenced in this guide will be made available through CDC’s Public Health Information Network Vocabulary Access and Distribution System (PHIN VADS; <http://phinvads.cdc.gov>). A link to the PHIN VADS vocabularies will be available and the link and other pertinent information will be distributed using the e-mail list notification process described in In addition, the conditional conformance statements in the header section were updated with specialization templates for single-person and population-summary reports.

Change Notification Process above.

PHIN VADS is based upon Whitehouse E-Gov Consolidated Health Informatics (CHI) domain recommendations, and its main purpose is to distribute the vocabulary subsets that are needed for public health. PHIN VADS allows implementers to browse, search, and download the value sets associated with an implementation guide. PHIN VADS has the capability to host multiple versions of value sets and implementation guide vocabulary. PHIN VADS provides vocabulary metadata that are needed for HL7 messaging or CDA implementation.

1.5 Organization of This Implementation Guide

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

1.5.1 Generic HAI Report Requirements

Generic HAI report requirements apply to any HAI CDA document. They apply to constraints on the CDA header and sections, and also include the requirement that the body be represented by a `structuredBody` element.

Specialization templates record the requirements specific to single-person and population-summary reports.

1.5.2 Report-specific Requirements

This section of the DSTU contains constraints specific to a particular document type, such as the Bloodstream Infection (BSI) Report. They include, for each document type, the template identifier (`templateId`), any report-specific header constraints, and the required sections.

1.5.3 Section Library

This section of the DSTU specifies section-level constraints. For example, the Infection Details Section in a BSI Report contains a `templateId` element, a `code` element, an Infection-type Observation, and a Death Observation.

1.5.4 Clinical Statement Library

This section of the DSTU defines the core semantic units of the reports—the conformance requirements for CDA clinical statements including associated vocabularies and value sets.

1.5.5 Vocabularies and Value Sets

Vocabularies are sets of terms that may be in general use (standard codes) or that may have been created by NHSN specifically for HAI reporting (NHSN codes or local codes). A value set is a subset of the vocabulary chosen as appropriate for HAI reporting to NHSN. In either case, conformance may require use of any term from a specified vocabulary or from one of its value sets.

Large vocabularies, specifically those for pathogens, antimicrobials, procedures, and location types, are presented in abbreviated form where conformance requirements are defined and listed in full in [Appendix J —Large Vocabularies](#). Short tables, for ease of reference, are shown with the conformance statements to which they pertain.

[Appendix G —Summary of Vocabularies \(Non-normative\)](#) lists all vocabularies used in this IG. Value sets are summarized in [Appendix I —Summary of NHSN Value Sets \(Non-normative\)](#) and single-value bindings are in [Appendix H —Summary of NHSN Single-Value Bindings \(Non-normative\)](#).

1.5.6 TemplateIds

[Appendix C —Template IDs \(Non-normative\)](#) lists the template identifiers assigned for use in HAI reporting to NHSN. These template identifiers are assigned at the document, section, and entry level. Interpretation of these identifiers is described in [1.7 Use of Templates](#).

1.5.7 Example Instance Identifiers

Much of the initial development of this DSTU was driven by a pilot project in July 2007. The pilot project used object identifiers (OIDs) assigned to a fictional facility and vendor to illustrate the numbering schemes for which facilities and vendors are responsible.

These pilot OIDs are used for the data elements in the examples in this IG and in the accompanying sample files. In practice, the identifiers will be assigned by facilities and software applications submitting reports to NHSN.

These pilot instance identifiers begin with 2.16.840.1.113883.3.117.1.1.5. They are used throughout this guide and are documented in [Appendix E —Example Instance Identifiers \(Non-normative\)](#).

1.6 Conventions Used in This Implementation Guide

1.6.1 Keywords

The keywords **SHALL**, **SHOULD**, **MAY**, **NEED NOT**, **SHOULD NOT**, and **SHALL NOT** in this document are to be interpreted as described in the [HL7 Version 3 Publishing Facilitator's Guide \(http://www.hl7.org/v3ballot/html/help/pfg/pfg.htm\)](http://www.hl7.org/v3ballot/html/help/pfg/pfg.htm):

- **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

The keyword "**SHALL**" implies a lower cardinality of 1 but does not disallow NULL values. If NULL values are to be excluded, it will be via an additional explicit conformance statement.

1.6.2 Constraint Format

Where no constraints are stated in this IG, HAI instances are subject to and are to be created in accordance with the base CDA R2 specification. For example, where the CDA R2 specification declares an attribute to be optional and the HAI IG contains no additional constraints, that attribute remains optional for use in an HAI instance.

This implementation guide uses a new format for CDA conformance statements. The constraints are generated from a Templates Database.

Figure 1: Constraints format example

Immunocompromised Observation

[observation: templateId 2.16.840.1.113883.10.20.5.6.19]

[description of the template]

1. **SHALL** contain [1..1] @classCode="OBS" Observation (CodeSystem: 2.16.840.1.113883.5.6 HL7ActClass) **STATIC** (CONF:2348)
2. **SHALL** contain [1..1] @moodCode="EVN" Event (CodeSystem: 2.16.840.1.113883.5.1001 HL7ActMood) **STATIC** (CONF:2349)
3. **SHALL** contain [1..1] code/@code="ASSERTION" Assertion (CodeSystem: 2.16.840.1.113883.5.4 HL7ActCode) **STATIC** (CONF:2350)
4. **SHALL** contain [1..1] statusCode/@code="completed" (CodeSystem: 2.16.840.1.113883.5.14 HL7ActStatus) **STATIC** (CONF:2351)
5. **SHALL** contain [1..1] value/@code="370388006" Patient immunocompromized (CodeSystem: 2.16.840.1.113883.6.96 SNOMEDCT) **STATIC** (CONF:2352)

Each constraint is uniquely identified (e.g., "CONF: 605") by an identifier placed at or near the end of the constraint. These are persistent identifiers and are not sequential.

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 a document instance. The cardinality indicators may be interpreted as follows:

- 0..1 as zero to one present
- 1..1 as one and only one 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. If HL7 "null" value such as other (OTH) or unknown (UNK) is allowed, the constraints state this explicitly. Value-set constraints can be "**STATIC**," meaning that they are bound to a specified version of a value set, or "**DYNAMIC**," meaning that they are bound to the most current version of the value set. A simplified constraint is used when binding is to a single code.

Some constraints are not "computable" and are recorded as narrative constraints, using the text as it appeared in previous versions of this guide.

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.

When a constraint has subordinate clauses, the scope of the cardinality of the parent constraint must be clear. Here is how that is done:

Figure 2: Constraints format, only one allowed

1. **SHALL** contain [1..1] **participant** (CONF:2777).
 - a. This participant **SHALL** contain [1..1] @**typeCode**="LOC"
(CodeSystem: 2.16.840.1.113883.5.90 HL7ParticipationType)
STATIC (CONF:2230).

In Figure 2, the constraint says exactly one participant is to be present. The subordinate constraint specifies some additional characteristics of that participant.

Figure 3: Constraints format, only one like this allowed

1. **SHALL** contain [1..1] **participant** (CONF:2777) such that it
 - a. **SHALL** contain [1..1] @**typeCode**="LOC" (CodeSystem:
2.16.840.1.113883.5.90 HL7ParticipationType)
STATIC (CONF:2230).

In Figure 3, the constraint says only one participant "like this" is to be present. Other participants are not precluded by this constraint.

1.6.3 Explanatory Remarks

Text that explains a constraint is usually included in the paragraphs that introduce the template, but may appear immediately preceding the constraint it describes. Like the template introduction, this information is shown in Roman type, as follows:

This entry records whether the patient died and, if so, whether the event being reported contributed to that death.

When necessary to clarify adherence to or differences from constraints based on the base CDA R2 or other specifications, extracts or paraphrases of those specifications will be given in an indented paragraph followed by an abbreviated reference. For example:

The immunization is recorded as a `substanceAdministration` element where the value of `@moodCode` is EVN. If the immunization was not administered, the value of `@negationInd` is true. [HITSP]

1.6.4 Sample XML Code

Sample Extensible Markup Language (XML) code is shown in boxed figures. Portions of the XML content may be elided for brevity, as shown here.

Figure 4: Sample XML code

```
<ClinicalDocument xmlns='urn:hl7-org:v3'>
  ...
</ClinicalDocument>
```

1.6.5 Succession Management

CDA-conformant HAI instances use the elements defined in the CDA header (`documentID`, `setID`, version number, and `relatedDocument/typeCode`) to manage replacements and updates of the documents. As with all CDA documents, the `ClinicalDocument/id` uniquely identifies a document instance (an electronic file). Subsequent versions of the document are identified by incrementing the version number.

NHSN will assign each participating vendor a root OID. `ClinicalDocument/setId` is generated by the vendor system. The vendor is responsible for extending its OID as necessary to support the several unique numbering schemes it must generate. These include document IDs and facility-generated procedure IDs.

1.6.6 Vocabulary Tables and Value Sets

A number of controlled vocabularies, or code system tables, are provided in this document. These controlled vocabularies are defined in various supporting specifications and may be maintained by other bodies, as is the case for the LOINC® and SNOMED CT® vocabularies.

Note that value-set identifiers do not appear in CDA submissions; they tie the conformance requirements of an IG to the appropriate `codeSystem` for validation.

[Appendix G —Summary of Vocabularies \(Non-normative\)](#) summarizes value-set names and OIDs; Appendixes H, I, and J provide value-set details.

[Appendix F —Vocabulary Heuristics for Codes and Value Sets \(Non-normative\)](#) explains principles regarding choice of vocabularies and value sets.

1.6.7 XPath Notation

Instead of the traditional dotted notation used by HL7 to represent RIM classes, this IG uses XPath notation in conformance statements and elsewhere to identify the XML elements and attributes within the CDA document instance to which various constraints are applied.

Throughout the text, element names and their content, and attribute names and their values, are shown in a monospace font, as follows:

The `legalAuthenticator` element shall contain a `time` element that represents the time of authentication of the document, a `signatureCode` element where the value of `@code` is S, and an `assignedEntity` element that represents the authenticator of the document.

Constraints generated by the Template Database put some monospace elements in bold.

1.7 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.

1.7.1 Originator Responsibilities: General Case

An originator can apply a `templateId` if there is a desire 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.

1.7.2 Recipient Responsibilities: General Case

A recipient may reject an instance that does not contain a particular `templateId` (e.g., a recipient looking to only receive 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 `substanceAdministration` acts within a Medications section, even if the entries do not have `templateIds`).

1.7.3 Templates for NHSN Validation

Template identifiers are critical to the validation methods chosen at this time for submissions to the NHSN. Submission of instances that do not conform to the template identifier constraints defined here may be rejected as nonconformant.

1.7.4 TemplateId Values in Release 4

With the release of HAI 4, NHSN will no longer accept CDA documents conformant to previous editions of the DSTU. The updates from Release 2 to Release 3 finalized temporary codes, value sets, and the NHSN code system. This release includes a new

report and converts the format of the constraints. To minimize the effort that pilot implementers must make to adopt Release 4, previous `templateId` values are not changed in Release 4.

1.8 Supporting Tools

1.8.1 Validation

CDA R2 constraints are expressed in a technology-neutral formalism in this guide. A non-normative set of Schematron schemas based on the technology-neutral formalism, which can test template conformance, is also provided. Schematron is “a language for making assertions about patterns found in XML documents.” For more information, see <http://www.schematron.com>.

The schemas provided for CDA and for this DSTU support two-stage validation. First, the CDA schema `CDA.xsd` validates the basic structural and semantic requirements of any CDA instance. Second, the HAI-specific Schematron schema validates the specific requirements of this DSTU.

A Schematron schema for this document will be maintained on the HL7 wiki: [http://wiki.hl7.org/index.php?title=Healthcare Associated Infection Reports](http://wiki.hl7.org/index.php?title=Healthcare_Associated_Infection_Reports)

The CDA Validator is an online application that validates a CDA document’s conformance to several standards and IGs. The Schematron files described above are included. The Validator can be found at: <http://www.alschulerassociates.com/validator>

1.8.2 Generation of Narrative Block

Clinical documents generated by clinicians for a patient chart can assume an almost infinite set of semantic structures. For this reason, CDA relies on a narrative block (`section/text`) to convey the comprehensive clinical report, i.e., all the information that a human reader would consider the definitive, legal content of the record. (Human readability and rendering requirements are described in CDA R2, Section 1.2.3. See [6 References](#).)

In contrast, the structure and semantics of HAI reports to the NHSN must be tightly defined and constrained for unambiguous insertion into the NHSN database. Relatively few elements of such reports consist of unstructured, uncoded narrative. Unlike most CDA instances, the definitive, human-readable, legal contents of a report can be derived entirely from the CDA titles and coded entries.

Therefore, for the convenience of implementers who wish to avoid redundant entry and eliminate possible conflicts between the entries and the narrative block, this project created a set of transforms that derives the displayed narrative block from the CDA entries. The latest version of the transforms is available from the project wiki site. (See instructions for accessing the wiki in [Validation](#).)

Use of these transforms is not required; implementers can use local methods to create the CDA narrative block.

1.8.3 Display Transforms

The content required for correct interpretation by a human reader of a compliant instance must be displayable using any CDA stylesheet. Thus, instances conforming to this IG can be viewed using CDA.xsl or any other stylesheet.

In addition, this project has a customized stylesheet that conforms more closely to the display format typical of such records. This stylesheet, hai-display.xsl, will be maintained on the project wiki. (See instructions for accessing the wiki in [Validation](#).)

1.9 Content of the DSTU

The DSTU is comprised of the following files:

Table 1: Content of the DSTU

Filename	Description
CDAR2_HAIRPT_R4.doc	Implementation Guide
bsi-num.xml	BSI numerator sample file
ssi-num.xml	SSI numerator sample file
mdro-num.xml	MDRO/CDAD infection numerator sample file
pneu-num.xml	Pneumonia Infection numerator sample file
uti-num.xml	Urinary tract Infection numerator sample file
generic-num.xml	Generic Infection report numerator sample file
immunize-num.xml	Immunization numerator sample file
proc-denom.xml	Procedure denominator sample file
clip-num.xml	Central line insertion practice numerator sample file
lio-num.xml	Laboratory-identified organism sample file
pop_sum-denom.xml	Population summary denominator sample file
pop_sum-denom-NICU.xml	Population summary denominator sample file for NICU
pop_sum-denom-pom.xml	Prevention process and outcome measures population summary denominator sample file
generate-narrative.xsl	Generate narrative block transform
voc.xml	Vocabulary file used by generate-narrative.xsl
hai-display.xsl	Stylesheet for display of HAI instances
nhsnlogo_small.gif	Graphic logo for hai-display.xsl

1.10 Summary of Changes

1.10.1 Release 3

Release 3 updated the value set in the population-summary report to include the Specialty Care Area (SCA) and Neonatal Intensive Care Unit (NICU) Monthly forms.

To accommodate the recording of sub-groups in the NICU Monthly form, the Summary Encounter now allows a participant element specifying the characteristic of the subgroup (e.g., birth weight under 750g).

A single NHSN code system replaced the finer-grained NHSN code systems.

Final values replaced temporary values in the NHSN code system.

Final values were assigned to two temporary value-set OIDs.

An influenza immunization report no longer records the in-facility location and type.

1.10.2 Release 4

Release 4 introduced the Laboratory-identified Organisms report and updated the population-summary report to include the Process Outcome Measures form.

To accommodate the grouping of information in the Process Outcome Measures monthly form, the Summary Data Observation may now contain subordinate observations.

In population-summary reports, in-facility location and code are now recorded as a participant in the Summary Encounter. Previously, this information was recorded in the header.

A population-summary report that does not report in-facility ID and type now records them with nullFlavors.

In several observations, the values for @classCode, @moodCode, and statusCode/@code were made explicit, making the representation of these templates consistent with the approach elsewhere in this guide.

The guide now uses the Templates Database constraints format.

Ballot resolutions from the September 2009 ballot have been incorporated.

In future releases, an appendix referenced by this Summary section will document detailed changes to constraints.

2 NHSN HAI GENERIC CONSTRAINTS

This section of the DSTU describes CDA constraints common across all HAI Report types. It includes specializations for single-person and population-summary reports.

To review report-specific constraints, consult these other sections of the DSTU:

- [Report-Specific Constraints](#) describes report-specific header and body constraints such as the `templateId` and required sections for each report type. For example, an SSI Report must contain two sections: Infection Details and Findings.
- [Section Library](#) describes section-level constraints such as the `templateId`, LOINC code, and required clinical statements for each section. For example, an Infection Details Section must contain an Infection-type Observation.
- [Clinical Statement Library](#) describes the constraints for each clinical statement. For example, in a Transplant Observation the value of `code/@code` is 77465005.

The [Sequence of Sections / Templates within Report Types](#) table provides an overview of the `templateId` requirements across report types.

In most cases a CDA Report type corresponds directly to an NHSN form. The report types covered in this document are shown in the following table.

Table 2: HAI Report Types

Report Type	Abbreviation	Single-person	Population-summary
Bloodstream Infection Numerator Report	BSI Report	y	
Surgical Site Infection Numerator Report	SSI Report	y	
Multi-drug-resistant Organism or Clostridium-difficile-associated Disease Report	MDRO/CDAD Infection Report	y	
Pneumonia Infection Numerator Report	PNEU Infection Report	y	
Urinary Tract Infection Numerator Report	UTI Report	y	
Generic (Custom) Infection Numerator Report	Generic Infection Report	y	
Immunization Numerator Report, which covers the following NHSN forms: <ul style="list-style-type: none">▪ Healthcare Worker Influenza Vaccination▪ High Risk Inpatient Influenza Vaccination Method B Form, Parts 1 and 2▪ High Risk Inpatient Influenza Vaccination, Standing Orders Form	Immunization Report	y	
Procedure Denominator Report	Procedure Report	y	
Central-line Insertion Practices Numerator Report	CLIP Report	y	
Laboratory-identified Organism Report	LIO Report	y	

Report Type	Abbreviation	Single-person	Population-summary
Population Summary Denominator Report, covering the following NHSN forms: <ul style="list-style-type: none"> Intensive Care Unit (ICU)/Other Locations (not NICU or SCA) Denominator Report Influenza Vaccination Method A Denominator Report Influenza Vaccination Method B Denominator Report Neonatal Intensive Care Unit (NICU) Denominator Report Specialty Care Area (SCA) Denominator Report Prevention Process and Outcome Measures Monthly Monitoring (POM) 	Population Summary Report		y

2.1 Healthcare Associated Infection Report

[ClinicalDocument: templateId 2.16.840.1.113883.10.20.5.4.19]

This template records constraints on all NHSN Healthcare Associated Infection Reports (generic constraints). Further constraints are found in the specialization templates for single-patient and population-summary reports, and in the templates for specific report types.

Annotations before some constraints provide additional information for the implementer.

Elements required by CDA that are not further constrained in this guide are noted in paragraph text but are not presented as HAI-specific constraints.

2.1.1 Top-level Element

In a CDA document, the top-level element, also called the document element, is ClinicalDocument, in the urn:hl7-org:v3 namespace.

The examples in this specification assume that this is the default namespace, and accordingly show all elements without a namespace prefix. This IG does not require use of any specific namespace prefix.

Header constraints are expressed in relation to the document element.

2.1.2 Document Information

The first header information in a CDA document is about the document itself—what kind of document it is; its language, confidentiality status, and title; and its succession management detail.

For all templates specified in this document, the templateId is a required element.

1. In a document instance, a templated structure **SHALL** contain a `templateId` to assert conformance to this Implementation Guide. (CONF:3201).

The `ClinicalDocument` must have a `templateId` representing conformance to these general constraints, and an additional `templateId` representing conformance to a specific report type. At the `ClinicalDocument` level, the use of `templateId/@extension` is prohibited.

2. A `templateId` element **SHALL** be present representing conformance to the constraints for a specific report type. (CONF:2827).
3. **SHALL NOT** contain [1..1] `templateId/@extension` (CONF:2826)

This specification is for the U.S. realm.

4. **SHALL** contain [1..1] `realmCode/@code="US" STATIC` (CONF:2825)

CDA requires that a `ClinicalDocument/typeId` be present to identify the constraints imposed by CDA Release 2.0, essentially acting as a CDA version identifier. The effect of the CDA Release 2.0 requirements is:

The value of `typeId/@root` shall be 2.16.840.1.113883.1.3 and the value of `typeId/@extension` shall be POCD_HD000040. [CDA R2]

Figure 5: CDA header – template identifiers example

```
<ClinicalDocument
  xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
  xmlns:mif="urn:hl7-org:v3/mif" xmlns="urn:hl7-org:v3">

  <realmCode code="US"/>

  <typeId root="2.16.840.1.113883.1.3" extension="POCD_HD000040"/>

  <!-- Conformant to HAI Generic Constraints -->
  <templateId root="2.16.840.1.113883.10.20.5.4.19" />

  <!-- Conformant to the HAI Constraints for BSI Numerator Report -->
  <templateId root="2.16.840.1.113883.10.20.5.7" />

  ...
</ClinicalDocument>
```

CDA requires a code element that specifies the type of the clinical document.

5. **SHALL** contain [1..1] `code/@code="51897-7" Healthcare Associated Infection Report (CodeSystem: 2.16.840.1.113883.6.1 LOINC) STATIC` (CONF:2828)

The preferred title content for each report type is given in the DSTU section [Report-specific Constraints](#).

6. **SHALL** contain [1..1] `title` (CONF:2829)

CDA requires an `effectiveTime` element representing the time of document creation.

7. **SHALL** contain [1..1] `effectiveTime` (CONF:2830)

CDA requires a confidentiality code that indicates the sensitivity of the document. All HAI submissions carry the same value of "normal". Note that this designation does not affect local policy on safeguarding confidentiality of patient-identifiable personal health information.

8. **SHALL** contain [1..1] **confidentialityCode/@code="N"** Normal (CodeSystem: 2.16.840.1.113883.5.25 HL7 Confidentiality Code) **STATIC** (CONF:2831).
9. **SHALL** contain [1..1] **languageCode/@code="en-US"** **STATIC** (CONF:2832).

CDA requires a `ClinicalDocument/id` element representing a unique identifier for the document. The `id` may be represented by either `@root` or `@root` plus `@extension`, so long as the resulting `id` is globally unique.

CDA provides `id`, `setId`, `versionNumber`, and `relatedDocument` elements to support succession management (document versioning). The `id` element identifies the CDA document instance (the electronic file). It is independent of the `setId` and `versionNumber` elements.

Since NHSN HAI documents are sometimes updated, this IG requires the use of `setId` and `versionNumber` to ensure that succession management can be easily performed.

The `setId` element identifies the set of documents in a version tree and is consistent across all versions; The `versionNumber` element stores the version number as an integer (the first version is 1, the second is 2, etc.). The vendor software is responsible for generating the necessary values and for ensuring uniqueness.

10. **SHALL** contain [1..1] **setId** (CONF:2833)
11. **SHALL** contain [1..1] **versionNumber** (CONF:2834)

In a replacement document, the `relatedDocument` element stores the `id` of the parent document and the `typeCode` attribute stores the type of document relationship. CDA supports several document relationship typecodes. If present in an HAI report, the value of a document relationship typecode must be RPLC (replace).

12. If `versionNumber/@value` is greater than 1, a `relatedDocument` element **SHALL** be present where the value of `@typeCode` **SHALL** be RPLC (replace) and the value of `parentDocument/id` **SHALL** be populated with the `ClinicalDocument/id` of the document being replaced. In all cases (regardless of the version number), values of APND and XFRM **SHALL NOT** be used for `relatedDocument/@typeCode`. (CONF:2835).

Figure 6: CDA header – document information example

```
<ClinicalDocument
  xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
  xmlns:mif="urn:hl7-org:v3/mif" xmlns="urn:hl7-org:v3">
  ...
  <id root="2.16.840.1.113883.3.117.1.1.5.2.1.1.2"
    extension="20202201"/>

  <code codeSystem="2.16.840.1.113883.6.1"
    codeSystemName="LOINC"
    code="51897-7"
    displayName="Healthcare Associated Infection Report"/>

  <title>Bloodstream Infection Report (BSI)</title>

  <effectiveTime value="20061219"/>

  <confidentialityCode codeSystem="2.16.840.1.113883.5.25"
    code="N" />

  <languageCode code="en-US"/>

  <setId root="2.16.840.1.113883.3.117.1.1.5.2.1.1.1"
    extension="31"/>
  <versionNumber value="1"/>

  ...
</ClinicalDocument>
```

2.1.3 The Patient

CDA requires a `recordTarget` element that must contain a `patientRole` element. This is represented differently in single-patient and population-summary reports. See the subsections for [single-person](#) and [population-summary](#) reports for details of how to represent the patient or group subject.

2.1.4 The Author, Custodian and Legal Authenticator

In a single-patient report, the author may be software or may be a person in the role of infection control professional (ICP). In a population-summary report, the author will be the software forming the message. The effect of the CDA Release 2.0 requirements is:

An `author` element shall be present. The `author` element shall contain a `time` element that represents the time of authoring of the information, and an `assignedAuthor` element that represents the author of the information. The `assignedAuthor` element shall contain an `id` element.
[CDA R2]

CDA requires that the document custodian be recorded. The NHSN is the custodian of NHSN HAI Reports.

13. **SHALL** contain [1..1] **custodian/assignedCustodian/representedCustodianOrganization/id/@root="2.16.840.1.114222.4.3.2.11"** (CONF:2837).

CDA requires that a **legalAuthenticator** element be present if the document has been legally authenticated. Local policy may delegate the function of legal authentication to a device or system that generates the CDA document. In these cases, the legal authenticator must still be a person accepting responsibility for the document content, not the device or system. The effect of the CDA Release 2.0 requirements is:

The **legalAuthenticator** element shall contain a **time** element that represents the time of authentication of the document, a **signatureCode** element where the value of **@code** is **S**, and an **assignedEntity** element that represents the authenticator of the document. The **assignedEntity** element shall contain an **id** element. [CDA R2]

Figure 7: CDA header – author, custodian, and legalAuthenticator example

```
<ClinicalDocument
  xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
  xmlns:mif="urn:hl7-org:v3/mif" xmlns="urn:hl7-org:v3">
  ...
  <author>
    <time value="20061219"/>
    <assignedAuthor>
      <id root="2.16.840.1.113883.3.117.1.1.5.1.1.2"
        extension="anAuthorID"/>
    </assignedAuthor>
  </author>

  <custodian>
    <assignedCustodian>
      <representedCustodianOrganization>
        <id root="2.16.840.1.114222.4.3.2.11"/>
      </representedCustodianOrganization>
    </assignedCustodian>
  </custodian>

  <legalAuthenticator>
    <time value="20061224"/>
    <signatureCode code="S"/>
    <assignedEntity>
      <id root="2.16.840.1.113883.3.117.1.1.5.1.1.2"
        extension="aLegalAuthenticatorID"/>
    </assignedEntity>
  </legalAuthenticator>
  ...
</ClinicalDocument>
```

2.1.5 Document Body

An HAI Report uses the CDA `structuredBody`. Specified sections are required in each report type; see the section on [Report-specific Constraints](#). Additional sections may be present but their content will not be processed by NHSN.

14. **SHALL** contain [1..1] `component/structuredBody` (CONF:2841)
15. The `structuredBody` element **SHALL** contain a `component` element for each section required by the particular report type. Additional sections may be present but their content will not be processed by NHSN. (CONF:2842).

Figure 8: Structured body example

```
<ClinicalDocument
  xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
  xmlns:mif="urn:hl7-org:v3/mif" xmlns="urn:hl7-org:v3">
  ...
  <component>
    <structuredBody>
      <component>
        <section>
          ...
        </section>
        ...
      </component>
    </structuredBody>
  </component>
</ClinicalDocument>
```

2.1.6 Data Constraints

NHSN imposes data constraints on the admission date, on the facility and location identifier, and on the combination of location type and gender.

In a single-patient report, admission date is recorded in `componentOf/encompassingEncounter/effectiveTime/low`. Admission date is not recorded in a population-summary report. “Event date”, in the context of the following conformance statement, refers to the event most pertinent to the report. For each report type, the location of this date in the CDA document is noted in the [Report-specific Constraints](#).

16. If the admission date is recorded, its value **SHALL NOT** be earlier than January 1, 1986; **SHALL NOT** be earlier than the date of birth; and **SHALL NOT** be later than the event date. (CONF:2838).

NHSN provides a data constraint on the identifier of an in-facility location such as a ward ID, which appears in `componentOf/encompassingEncounter/location` in a single-person report, and in `encounter/participant/associatedEntity` in a population-summary report.

17. The value of at least one `healthCareFacility/id/@extension`, if required, **SHALL** be a value previously registered with NHSN. (CONF:2839).

NHSN provides a data constraint on the content of the name element.

18. In a name element in any context, the sub-elements **SHOULD** be in the following order: family, given, and optionally a second given representing the middle name(s). A name element **SHALL NOT** contain mixed content. (CONF:3026).

NHSN also provides a data constraint on the combination of location type and gender.

19. If the value of the NHSN location type (in single-patient reports, healthCareFacility/code/@code) is one of the following, the patient's administrativeGenderCode **SHALL NOT** be a code representing male (for example, "M" from code system 2.16.840.1.113883.5.1 AdministrativeGender complete): (CONF:2840).

HL7 HealthcareServiceLocation 2.16.840.1.113883.6.259	
1034-8	Prenatal Critical Care
1057-9	Inpatient Gynecology ward
1058-7	Labor and Delivery Ward
1059-5	Labor, Delivery, Recovery, Postpartum Suite (LDRP)
1068-6	Inpatient Postpartum Ward
1095-9	Cesarean Section Room/Suite
1121-3	Gynecology Clinic
1156-9	Prenatal Clinic

2.2 Single-person and Population-Summary Header Constraints

2.2.1 Summary of Differences

The CDA header constraints differ for single-patient reports and population-summary reports. (Note that this distinction does not correspond exactly to the distinction between numerator and denominator reports; for example, the Procedure Denominator Report is a single-patient report.)

Single-patient reports are reports about an individual patient and may be either numerator or denominator reports. Population-summary reports cover defined groups of patients. The final calculation for numerator and denominator calculations can be drawn from both single-patient and population-summary reports. The specific inclusion and exclusion criteria used to refine the numerators and denominators for the reports are available from the NHSN.

The differences between single-patient and population-summary reports in an HAI CDA document are summarized in the table below.

Table 3: Generic Header in Single-patient and Population-summary Reports

CDA Element	in a ...	Single-patient Report	Population-summary Report
recordTarget/patientRole id patient administrativeGenderCode		Has a value Is required Is required	Has nullFlavor Is not used
Author		May be software or ICP	Will be software
componentOf/encompassingEncounter id effectiveTime location/healthCareFacility id @root @extension code/@code		Is required Is required (admission date) Is required (facility ID) Is required in most reports (ward) Is required in most reports (location type)	Is not used
Participant @typeCode = LOC @classCode = OP associatedEntity @classCode = SDLOC id @root @extension code/@code		Is not used	Is required (facility ID) Is required in most reports Is required in most reports
participant @typeCode = SBJ @contextControlCode = OP associatedEntity @classCode = PRS code @code 389109008 @codeSystem 2.16.840.1.113883.6.96		Is not used	Is required (records that subject is a group)
documentationOf/serviceEvent		Is not used	Is required (the period documented)

2.2.2 Header Constraints, HAI Single-person Reports

[ClinicalDocument: templateId 2.16.840.1.113883.10.20.5.4.1]

This template records the constraints specific to HAI single-person reports. Constraints common to all HAI reports are recorded in template 2.16.840.1.113883.10.20.5.4.1. Additional constraints are recorded in the templates for specific report types, such as the BSI Report.

The first statement requires that a single-person report conform to the Generic Requirements above.

In the `recordTarget` element, which is required by CDA, an `id` element representing the patient ID assigned by the facility is required. Additional `id` elements representing secondary patient IDs and a United States Social Security Number (`id/@root 2.16.840.1.113883.4.1`) may also be present.

In a single-patient report, the author may be software or may be a person in the role of infection control professional (ICP). (In a population-summary report, the author will be the software forming the message.) The effect of the CDA Release 2.0 requirements is:

An `author` element shall be present. The `author` element shall contain a `time` element that represents the time of authoring of the information, and an `assignedAuthor` element that represents the author of the information. The `assignedAuthor` element shall contain an `id` element.
[CDA R2]

In the `componentOf/encompassingEncounter` element,

- The `effectiveTime/low` element represents the date admitted to the facility.
 - Some report types also record whether the patient was an outpatient.
 - Physical location is recorded in `location/healthCareFacility/id`, where the value of `@root` represents the facility OID assigned by NHSN. (Most single-patient report types also require `@extension`, representing the facility's unit identifier, such as "9W", and `healthCareFacility/code` representing the type of location. See the sections on [report-specific constraints](#). The Immunization, Procedure, and Laboratory-identified Organism Reports do not require this information.)
1. Conforms to Healthcare Associated Infection Report Template (`templateId: 2.16.840.1.113883.10.20.5.4.19`).
 2. **SHALL** contain [1..1] `recordTarget/patientRole` (CONF:3084).
 - a. This `recordTarget/patientRole` **SHALL** contain [1..*] `id` (CONF:3085).
 - i. Such `ids` **SHALL** contain `@root` (CONF:3087).
 - ii. Such `ids` **SHALL** contain `@extension` (CONF:3088).
 - b. This `recordTarget/patientRole` **SHALL** contain [1..1] `patient` (CONF:3220).
 - i. This `patient` **MAY** contain [0..1] `name` (CONF:3221).
 - ii. This `patient` **SHALL** contain [1..1] `administrativeGenderCode/@code` (CodeSystem: 2.16.840.1.113883.5.1 HL7 Gender Codes) **STATIC** (CONF:3222).
 - iii. This `patient` **SHALL** contain [1..1] `birthTime` (CONF:3223).

3. The author **MAY** be software or **MAY** be a person in the role of infection control professional (ICP). (CONF:3089).
4. **SHALL** contain [1..1] **componentOf/encompassingEncounter** (CONF:3090).
 - a. This componentOf/encompassingEncounter **SHALL** contain [1..1] **effectiveTime/low** (CONF:3091).
 - b. This componentOf/encompassingEncounter **SHALL** contain [1..1] **location/healthCareFacility/id** (CONF:3092).

Figure 9: CDA header – recordTarget example

```
<ClinicalDocument
  xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
  xmlns:mif="urn:hl7-org:v3/mif" xmlns="urn:hl7-org:v3">
  ...
  <recordTarget>
    <patientRole>
      <!-- Patient ID - scoped by facility -->
      <id root="2.16.840.1.113883.3.117.1.1.5.1.1.1"
        extension="123456"/>
      <patient>
        <name>
          <family>Nuclear</family>
          <given>Ned</given>
        </name>
        <administrativeGenderCode
          codeSystem="2.16.840.1.113883.5.1"
          codeSystemName="HL7 Gender codes"
          code="M"/>
        <birthTime value="19320924"/>
      </patient>
    </patientRole>
  </recordTarget>
  ...
</ClinicalDocument>
```

Figure 10: CDA header – facility location and admission date, single-patient report example

```
<ClinicalDocument
  xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
  xmlns:mif="urn:hl7-org:v3/mif" xmlns="urn:hl7-org:v3">
  ...
  <componentOf>
    <encompassingEncounter>

      <id root="2.16.840.1.113883.3.117.1.1.5.2.1.1.3"
        extension="31"/>

      <code codeSystem="2.16.840.1.113883.5.4"
        codeSystemName="HL7 ActCode"
        code="AMB"
        displayName="Ambulatory"/>

      <effectiveTime>
        <!-- Date Admitted to Facility -->
        <low value="20061218"/>
      </effectiveTime>

      <location>
        <healthCareFacility>
          <!-- Facility ID -->
          <id root="2.16.840.1.113883.3.117.1.1.5.1.1" extension="9W"/>
          <code codeSystem="2.16.840.1.113883.6.259"
            codeSystemName="HL7 HealthcareServiceLocation"
            code="1029-8"
            displayName="Medical/Surgical critical care"/>
        </healthCareFacility>
      </location>
    </encompassingEncounter>
  </componentOf>
  ...
</ClinicalDocument>
```

2.2.3 Header Constraints, HAI Population-summary Reports

[ClinicalDocument: templateId 2.16.840.1.113883.10.20.5.4.2]

This template records the constraints specific to HAI population-summary reports.

The first statement requires that a population-summary report conform to the Generic Requirements above.

In the recordTarget element, which is required by CDA, since there is no individual patient, the patientRole/id element is given a nullFlavor.

In documentationOf/serviceEvent, the effectiveTime element records the first and last days of the period being reported.

The subject of a population-summary report is a group rather than an individual patient. This is expressed using a participant with the SBJ (subject) type code and the

SNOMED CT code for "group". (When based on CDA R3 this design will leverage changes in the approach of the underlying RIM to the representation of groups.)

Another participant element represents the facility sending the report. (This is not recorded within `encompassingEncounter` because, for population-summary reports, there is no single encounter: the report is about a group of patients in a particular time period.) (The in-facility unit and type are recorded in the Summary Encounter.)

1. Conforms to Healthcare Associated Infection Report Template (`templateId`: 2.16.840.1.113883.10.20.5.4.19).
2. **SHALL** contain [1..1] `recordTarget/patientRole/id` (CONF:3093).
 - a. This `recordTarget/patientRole/id` **SHALL** contain `@nullFlavor` (CONF:3211).
3. The `author` **SHALL** represent the software forming the message. (CONF:3094).
4. **SHALL** contain [1..1] `documentationOf/serviceEvent` (CONF:3101).
 - a. This `documentationOf/serviceEvent` **SHALL** contain [1..1] `@classCode="CASE"` (CONF:3102).
 - b. This `documentationOf/serviceEvent` **SHALL** contain [1..1] `effectiveTime` (CONF:3103).
 - i. This `effectiveTime` **SHALL** contain [1..1] `low` (CONF:3104).
 - ii. This `effectiveTime` **SHALL** contain [1..1] `high` (CONF:3105).
5. **SHALL** contain [1..1] `participant` (CONF:3095) such that it
 - a. **SHALL** contain [1..1] `@typeCode="SBJ"` Subject (CodeSystem: 2.16.840.1.113883.5.90 HL7ParticipationType) **STATIC** (CONF:3096).
 - b. **SHALL** contain [1..1] `@contextControlCode="OP"` (CodeSystem: 2.16.840.1.113883.5.1057 HL7 Context Control Code) **STATIC** (CONF:3097).
 - c. **SHALL** contain [1..1] `associatedEntity` (CONF:3098).
 - i. This `associatedEntity` **SHALL** contain [1..1] `@classCode="PRS"` (CodeSystem: 2.16.840.1.113883.5.41 HL7EntityClass) **STATIC** (CONF:3099).
 - ii. This `associatedEntity` **SHALL** contain [1..1] `code/@code="389109008"` Group (CodeSystem: 2.16.840.1.113883.6.96 SNOMEDCT) **STATIC** (CONF:3100).
6. **SHALL** contain [1..1] `participant` (CONF:3214) such that it
 - a. **SHALL** contain [1..1] `@typeCode="LOC"` Location (CodeSystem: 2.16.840.1.113883.5.90 HL7ParticipationType) **STATIC** (CONF:3215).
 - b. **SHALL** contain [1..1] `@classCode="OP"` (CodeSystem: 2.16.840.1.113883.5.1057 HL7 Context Control Code) **STATIC** (CONF:3216).
 - c. **SHALL** contain [1..1] `associatedEntity` (CONF:3217).
 - i. This `associatedEntity` **SHALL** contain [1..1] `@classCode="SDLOC"` Service delivery location (CodeSystem: 2.16.840.1.113883.5.110 HL7RoleClass) **STATIC** (CONF:3218).
 1. This `@classCode` **shall** contain [1..1] `id/@root` (CONF:3219).

Figure 11: CDA header – period reported, reporting facility, and group participant, population-summary report example

```
<ClinicalDocument>
...
<participant typeCode="LOC" contextControlCode="OP">
  <associatedEntity classCode="SDLOC">
    <!--ID of facility -->
    <id root="2.16.840.1.113883.19.5"/>
  </associatedEntity>
</participant>

<participant typeCode="SBJ" contextControlCode="OP">
  <associatedEntity classCode="PRS">
    <code codeSystem="2.16.840.1.113883.6.96"
      codeSystemName="SNOMED"
      code="389109008"
      displayName="group"/>
  </associatedEntity>
</participant>
...

<documentationOf>
  <serviceEvent classCode="CASE">
    <effectiveTime>
      <!-- e.g., The first day of the period -->
      <low value="20080601"/>
      <!-- e.g., The last day of the period -->
      <high value="20080630"/>
    </effectiveTime>
  </serviceEvent>
</documentationOf>
...
</ClinicalDocument>
```

2.3 Generic Section Constraints

2.3.1 HAI Section Generic Constraints

[section: templateId 2.16.840.1.113883.10.20.5.4.3]

This template records the constraints that apply to all sections specified in the NHSN HAI Implementation Guide. Each section element conforming to constraints in this guide will have a `templateId`, a `code`, a `title`, a `narrative block` (text element), and the specific entries required by the report type. Top-level sections conforming to other guides are allowed and need not conform to these constraints.

1. **SHALL** contain [1..1] **code/@code** (CodeSystem: 2.16.840.1.113883.6.1 LOINC) **STATIC** (CONF:3171).
2. **SHALL** contain [1..1] **title** (CONF:3172).
3. **SHALL** contain [1..1] **text** (CONF:3173).
4. **SHALL** contain [1..*] **entry** (CONF:3174).

Figure 12: Section example

```
<section>
  <templateId root="2.16.840.1.113883.10.20.5.5.15"/>
  <code codeSystem="2.16.840.1.113883.6.1"
        codeSystemName="LOINC"
        code="18769-0"
        displayName="Findings Section"/>
  <title>Bug-Drug Tests</title>
  <text>
    ...
  </text>
  <entry>
    ...
  </entry>
</section>
```

2.3.2 Narrative Block and @typeCode="DRIV"

If the narrative block is derived solely from `entry` elements, the `entry` elements should have a `@typeCode` attribute with the value `DRIV`. This attribute is in the sample files. It is the sender's responsibility to ensure that the narrative block is the equivalent of the entries, regardless of how the narrative block was created.

3 REPORT-SPECIFIC CONSTRAINTS

This section of the DSTU details the report-specific requirements for each report type. In general, these requirements specify the document-level `templateId` value that identifies the report type, the preferred report title, and the sections required in that report type.

- For an overview of the NHSN HAI Generic Header, see the table: [Generic Header in Single-patient and Population-summary Reports](#).
- For details of each section type, see [Section Library](#).
- For details of each clinical statement, see [Clinical Statement Library](#).

3.1 Summary of templateId Use Across Report Types

The following chart summarizes the sequence of sections/templates within the report types described here.

The `templateIds` in this IG begin with `2.16.840.1.113883.10.20.5`. This is abbreviated in the table below as “...20.5”. For example:

- Infection Risk Factors Observation
 - `2.16.840.1.113883.10.20.5.2.1.1.1` shown here as ...20.5.1.1.1
- BSI Numerator Report
 - `2.16.840.1.113883.10.20.5.7` shown here as ...20.5.7

Table 4: Sequence of Sections / Templates within Report Types

Conditional requirements are indicated by italics. All other items are required, except in the instance of an “or” that indicates a choice between sets of required items.

HAI Implementation Guide (2.16.840.1.113883.10.20.5.4.19)	
Document	Section and Clinical Statements Libraries
Infection-type Reports	
Bloodstream Infection Report (...20.5.7)	<p>Infection Risk Factors (BSI) Section (...20.5.5.1)</p> <ul style="list-style-type: none"> • Infection Risk Factors Observation(s) (...20.5.2.1.1.1) and/or Infection Risk Factors Measurement Observation(s) (...20.5.2.1.1.2) (dependent on location type) <p>Infection Details (BSI) Section (...20.5.5.6)</p> <ul style="list-style-type: none"> • Infection-type Observation (...20.5.6.23) <ul style="list-style-type: none"> ○ Criteria of Diagnosis Organizer (...20.5.6.11) <ul style="list-style-type: none"> ▪ Criterion of Diagnosis Observation(s) (...20.5.6.10) ○ Bloodstream Infection Evidence Type Observation (...20.5.6.4) <p><i>(If patient died)</i></p> <ul style="list-style-type: none"> ▪ <i>Death Observation</i> (...20.5.6.12) <ul style="list-style-type: none"> ○ <i>Infection Contributed to Death Observation</i> (...20.5.6.22) <p>Findings Section (...20.5.5.15)</p> <ul style="list-style-type: none"> ▪ <i>Pathogen Identified Observation (no pathogens identified)</i> (...20.5.2.5.1) <p>or</p> <ul style="list-style-type: none"> ▪ <i>Findings Organizer(s)</i> (...20.5.6.14) <ul style="list-style-type: none"> ○ Pathogen Identified Observation (...20.5.2.5.1) ○ Pathogen Ranking Observation (...20.5.2.5.1.1) ○ Drug-susceptibility Test Observation(s) (...20.5.2.5.1.2) ○ MDRO Observation (...20.5.6.24)
Surgical Site Infection Report (...20.5.8)	<p>Infection Details (SSI) Section (...20.5.5.7)</p> <ul style="list-style-type: none"> ▪ Infection-type Observation (...20.5.6.23) <ul style="list-style-type: none"> ○ Criteria of Diagnosis Organizer (...20.5.6.11) <ul style="list-style-type: none"> ▪ Criterion of Diagnosis Observation (...20.5.6.10) ○ Occasion of HAI Detection Observation (...20.5.6.27) ○ Infection Condition Observation (...20.5.6.21) ○ Secondary Bloodstream Infection Observation (...20.5.2.2.7.15) ▪ Procedure Details (...20.5.6.34)¹ <p><i>(If patient died)</i></p> <ul style="list-style-type: none"> ▪ <i>Death Observation</i> (...20.5.6.12) <ul style="list-style-type: none"> ○ <i>Infection Contributed to Death Observation</i> (...20.5.6.22)

¹ SSI Location Type is recorded in an Infection Condition Observation.

	<p>Findings Section (...20.5.5.15)</p> <ul style="list-style-type: none"> ▪ <i>Pathogen Identified Observation (no pathogens identified)</i> (...20.5.2.5.1) <p>or</p> <ul style="list-style-type: none"> • <i>Findings Organizer(s)</i> (...20.5.6.14) <ul style="list-style-type: none"> ○ Pathogen Identified Observation (...20.5.2.5.1) ○ Pathogen Ranking Observation (...20.5.2.5.1.1) ○ Drug-susceptibility Test Observation(s) (...20.5.2.5.1.2) • MDRO Observation (...20.5.6.24)
MDRO/CDAD Infection report (...20.5.9)	<p>Infection Details (MDRO/CDAD) Section (...20.5.5.8)</p> <ul style="list-style-type: none"> • Infection-type Observation (...20.5.6.23) <ul style="list-style-type: none"> ○ Criteria of Diagnosis Organizer (...20.5.6.11) <ul style="list-style-type: none"> ▪ Criterion of Diagnosis Observation (...20.5.6.10) ○ Infection Condition Observation (...20.5.6.21) ○ Secondary Bloodstream Infection Observation (...20.5.2.2.7.15) <p><i>(If infection = CDAD)</i></p> <ul style="list-style-type: none"> ○ Admission to ICU clinical statement (...20.5.6.1) ○ CDAD-related Surgery clinical statement (...20.5.6.6) <p><i>(If patient died)</i></p> <ul style="list-style-type: none"> • Death Observation (...20.5.6.12) <ul style="list-style-type: none"> ○ Infection Contributed to Death Observation (...20.5.6.22) <p>Findings Section (...20.5.5.15)</p> <ul style="list-style-type: none"> • <i>Pathogen Identified Observation (no pathogens identified)</i> (...20.5.2.5.1) <p>or</p> <ul style="list-style-type: none"> • <i>Significant Pathogens Observation</i> (...20.5.6.41) • MDRO Observation (...20.5.6.24) • CDAD Observation (...20.5.6.5) • <i>Findings Organizer(s)</i> (...20.5.6.14) <ul style="list-style-type: none"> ○ Pathogen Identified Observation (...20.5.2.5.1) ○ Pathogen Ranking Observation (...20.5.2.5.1.1) ○ Drug-susceptibility Test Observation(s) (...20.5.2.5.1.2)
Pneumonia Infection Report (PNEU) (...20.5.10)	<p>Infection Risk Factors (PNEU) Section (...20.5.5.3)</p> <ul style="list-style-type: none"> • Ventilator Observation (...20.5.6.50) • Immunocompromised Observation (...20.5.6.19) <p><i>(if in NICU)</i></p> <ul style="list-style-type: none"> • Infection Risk Factors Measurement Observation(s) (...20.5.2.1.1.2) <p>Infection Details Section (PNEU) (...20.5.5.9)</p> <ul style="list-style-type: none"> • Infection-type Observation (...20.5.6.23) <ul style="list-style-type: none"> ○ Criteria of Diagnosis Organizer (...20.5.6.11) <ul style="list-style-type: none"> ▪ Criterion of Diagnosis Observation(s) (...20.5.6.10) ○ Post-Procedure Observation (...20.5.6.31) ○ Secondary Bloodstream Infection Observation (...20.5.2.2.7.15) ○ Infection Condition Observation (...20.5.6.21) <p><i>(If patient died)</i></p> <ul style="list-style-type: none"> • Death Observation(...20.5.6.12)

	<ul style="list-style-type: none"> ○ <i>Infection Contributed to Death Observation</i> (...20.5.6.22) <p>Findings Section (..20.5.5.15)</p> <ul style="list-style-type: none"> • <i>Pathogen Identified Observation (no pathogens identified)</i> (...20.5.2.5.1) <p>or</p> <ul style="list-style-type: none"> • <i>Findings Organizer(s)</i> (...20.5.6.14) <ul style="list-style-type: none"> ○ Pathogen Identified Observation (...20.5.2.5.1) ○ Pathogen Ranking Observation (...20.5.2.5.1.1) ○ Drug-susceptibility Test Observation(s) (...20.5.2.5.1.2) • MDRO Observation (...20.5.6.24)
Urinary Tract Infection Report (...20.5.11)	<p>Infection Risk Factors (UTI) Section (...20.5.5.4)</p> <ul style="list-style-type: none"> • Urinary Catheter Observation (...20.5.6.48) <ul style="list-style-type: none"> ○ <i>History of Object Presence Observation</i> (...20.5.6.56) <p>Infection Details (UTI) Section (...20.5.5.10)</p> <ul style="list-style-type: none"> • Infection-type Observation (...20.5.6.23) <ul style="list-style-type: none"> ○ Criteria of Diagnosis Organizer (...20.5.6.11) <ul style="list-style-type: none"> ▪ Criterion of Diagnosis Observation(s) (...20.5.6.10) ○ Secondary Bloodstream Infection Observation (...20.5.2.2.7.15) ○ Infection Condition Observation (...20.5.6.21) <p><i>(If patient died)</i></p> <ul style="list-style-type: none"> • <i>Death Observation</i> (...20.5.6.12) <ul style="list-style-type: none"> ○ <i>Infection Contributed to Death Observation</i> (...20.5.6.22) <p>Findings Section (..20.5.5.15)</p> <ul style="list-style-type: none"> • <i>Pathogen Identified Observation (no pathogens identified)</i> (...20.5.2.5.1) <p>or</p> <ul style="list-style-type: none"> • <i>Findings Organizer(s)</i> (...20.5.6.14) <ul style="list-style-type: none"> ○ Pathogen Identified Observation (...20.5.2.5.1) ○ Pathogen Ranking Observation (...20.5.2.5.1.1) ○ Drug-susceptibility Test Observation(s) (...20.5.2.5.1.2) • MDRO Observation (...20.5.6.24)
Generic (Custom) Infection Report (...20.5.14)	<p>Infection Details (CUS) Section (...20.5.5.11)</p> <ul style="list-style-type: none"> • Infection-type Observation (...20.5.6.23) <ul style="list-style-type: none"> ○ Criteria of Diagnosis Organizer (...20.5.6.11) <ul style="list-style-type: none"> ▪ Criterion of Diagnosis Observation (...20.5.6.10) ○ <i>Infection Condition Observation</i> (...20.5.6.21) ○ <i>Secondary Bloodstream Infection Observation</i> (...20.5.2.2.7.15) <p><i>(If patient died)</i></p> <ul style="list-style-type: none"> • <i>Death Observation</i> (...20.5.6.12) <ul style="list-style-type: none"> ○ <i>Infection Contributed to Death Observation</i> (...20.5.6.22) <p>Findings Section (..20.5.5.15)</p> <ul style="list-style-type: none"> • <i>Pathogen Identified Observation (no pathogens identified)</i> (...20.5.2.5.1) <p>or</p> <ul style="list-style-type: none"> • <i>Significant Pathogen Observations</i> (...20.5.6.41) • <i>Findings Organizer(s)</i> (...20.5.6.14)

	<ul style="list-style-type: none"> ○ Pathogen Identified Observation (...20.5.2.5.1) ○ Pathogen Ranking Observation (...20.5.2.5.1.1) ○ Drug-susceptibility Test Observation(s) (...20.5.2.5.1.2)
Other Single-person Report Types	
Procedure Denominator Report (...20.5.16)	<p>Infection Risk Factors (Procedure) Section (...20.5.5.2)</p> <ul style="list-style-type: none"> • Procedure Risk Factors Clinical Statement (Procedure Report) (...20.5.6.35)² <ul style="list-style-type: none"> ○ Wound Class Observation (...20.5.2.1.2) ○ Endoscope Used Procedure (...20.5.2.1.3) ○ Multiple Procedures Observation (...20.5.2.2.7.6) • ASA (American Society of Anesthesiologists) Class Observation (...20.5.2.2.7.4) • Trauma Observation (...20.5.2.2.7.5) <p><i>(If procedure = spinal fusion or refusion)</i></p> <ul style="list-style-type: none"> • Diabetes Mellitus Observation (...20.5.2.2.7.7) <p><i>(If procedure = Cesarean)</i></p> <ul style="list-style-type: none"> • Height Observation (...20.5.2.2.7.9) • Weight Observation (...20.5.2.2.7.10) • Duration of Labor Observation (...20.5.2.2.7.11) • Estimated Blood Loss Observation (...20.5.2.2.7.12) <p>Details (Procedure) Section (...20.5.5.14)</p> <ul style="list-style-type: none"> • Procedure Details clinical statement in a Procedure Report (...20.5.6.33)³ <ul style="list-style-type: none"> ○ Anesthesia Administration (...20.5.2.2.7.3) ○ Implant Observation (...20.5.6.20) ○ Non-autologous Transplant Observation (...20.5.6.25) <p><i>(If procedure = fusion/refusion)</i></p> <ul style="list-style-type: none"> • Spinal Fusion Level Observation (...20.5.2.2.7.8)
Central-line Insertion Practices Report (...20.5.12)	<p>Infection Risk Factors (CLIP) Section (...20.5.5.5)</p> <ul style="list-style-type: none"> • Central-line Insertion Practice Clinical Statement (...20.5.6.7) <ul style="list-style-type: none"> ○ Central-line Insertion Preparation Organizer (seq 1) (...20.5.6.8) <ul style="list-style-type: none"> ▪ Hand Hygiene Clinical Statement (...20.5.6.16) ▪ Skin Preparation Solutions Applied Organizer (...20.5.6.43) <ul style="list-style-type: none"> • Skin Preparation Clinical Statement (...20.5.6.42) ▪ Sterile Barriers Applied Clinical Statement (...20.5.6.45) ○ Solutions Dried Observation (seq 2) (...20.5.6.44) ○ Procedure Risk Factors Clinical Statement in a CLIP Report (id) (seq 3) (...20.5.6.36) <ul style="list-style-type: none"> ▪ Number of Lumens Observation (...20.5.6.26)

² Whether the procedure was an emergency is recorded in a `methodCode` element. Whether the patient was an outpatient is recorded in the CDA Header in a Procedure Report.

³ Hip or Knee Replacement Type is recorded in a `methodCode` element. Spinal Fusion Approach is recorded in an `approachSiteCode` element.

	<ul style="list-style-type: none"> ▪ Guidewire Clinical Statement (...20.5.6.15) <ul style="list-style-type: none"> ○ Antiseptic Ointment Clinical Statement (seq 4) (...20.5.6.3) <p>Details (CLIP) Section (...20.5.5.13)</p> <ul style="list-style-type: none"> • Procedure Details clinical statement (CLIP Report) (...20.5.6.32) <ul style="list-style-type: none"> ○ Recorder Observation (...20.5.6.39) ○ Reason for Procedure Observation (...20.5.6.38)
Immunization Report (...20.5.13)	<p>Immunization Details Section (...20.5.5.12)</p> <ul style="list-style-type: none"> • Immunization Offer clinical statement (...20.5.6.18) <ul style="list-style-type: none"> ○ Eligibility Criterion Observation(s) (...20.5.6.13) <i>[If healthcare worker]</i> <ul style="list-style-type: none"> ▪ Patient Care Observation (...20.5.6.30) ▪ Occupation Observation (...20.5.6.28) <i>(If physician, intern, or resident)</i> <ul style="list-style-type: none"> • Clinical Specialty Observation (...20.5.6.9) ○ Offer Declined Observation (negatable) (...20.5.6.29) <ul style="list-style-type: none"> ▪ Reason Declined Observation(s) (...20.5.6.37) <p>or</p> <ul style="list-style-type: none"> ▪ Immunization clinical statement (HITSP template) (...20.5.6.17) <i>(If administered onsite)</i> <ul style="list-style-type: none"> • Vaccine Information Statement Type Observation (...20.5.6.49) <i>(If healthcare worker)</i> <ul style="list-style-type: none"> • Seasons Immunized Observation (...20.5.6.40) • Adverse Reaction Observation (...20.5.6.2)
Laboratory-identified Organism Report (...20.5.17)	<p>Findings Section (LIO) (...20.5.5.17)</p> <p><i>If organism reported is C.diff. and a prior discharge in past 3 months</i></p> <p>Encounters Section (LIO) (...20.5.5.16)</p>
Population-summary Report	
Population Summary Report (...20.5.15)	<p>Summary Data Section (...20.5.2.6)</p> <ul style="list-style-type: none"> • Summary Encounter (...20.5.6.47) <ul style="list-style-type: none"> ○ Summary Data Observations (...20.5.6.46)

3.2 HAI Bloodstream Infection Report (BSI)

[ClinicalDocument: templateId 2.16.840.1.113883.10.20.5.7]

The BSI Report records a bloodstream infection. The preferred title for this Report is “Bloodstream Infection Report (BSI)”.

The date of the infection is recorded as `effectiveTime` in the Infection-type Observation (templateId 2.16.840.1.113883.10.20.5.6.23).

1. Conforms to Header Constraints, HAI Single-person Reports Template (templateId: 2.16.840.1.113883.10.20.5.4.1).

2. **SHALL** contain [1..1] **componentOf/encompassingEncounter/location/healthCareFacility/id/@extension** (CONF:3114).
3. **SHALL** contain [1..1] **componentOf/encompassingEncounter/location/healthCareFacility/code/@code**, which **SHALL** be selected from ValueSet 2.16.840.1.113883.13.19 NHSNHealthcareServiceLocationCode **STATIC** 20091101 (CONF:3115).
4. **SHALL** contain [1..1] **component/structuredBody** (CONF:2848).
 - a. This component/structuredBody **SHALL** contain [1..1] **component** (CONF:2849) such that it
 - i. **SHALL** contain [1..1] **Infection Risk Factors Section in a BSI Report** (templateId:2.16.840.1.113883.10.20.5.5.1) (CONF:2850).
 - b. This component/structuredBody **SHALL** contain [1..1] **component** (CONF:2851) such that it
 - i. **SHALL** contain [1..1] **Infection Details Section in a BSI Report** (templateId:2.16.840.1.113883.10.20.5.5.6) (CONF:2852).
 - c. This component/structuredBody **SHALL** contain [1..1] **component** (CONF:2853) such that it
 - i. **SHALL** contain [1..1] **Findings Section** (templateId:2.16.840.1.113883.10.20.5.5.15) (CONF:2854).

Figure 13: Report-specific constraints example

```
<ClinicalDocument
  xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
  xmlns:mif="urn:hl7-org:v3/mif" xmlns="urn:hl7-org:v3">
  ...
  <templateId root="2.16.840.1.113883.10.20.5.7">
  ...
  <title>Bloodstream Infection Report (BSI)</title>
  ...
  <component>
    <structuredBody>
      <component>
        <section>
          <templateId root="2.16.840.1.113883.10.20.5.5.1"/>
          ...
        </section>
      </component>

      <component>
        <section>
          <templateId root="2.16.840.1.113883.10.20.5.5.6"/>
          ...
        </section>
      </component>

      <component>
        <section>
          <templateId root="2.16.840.1.113883.10.20.5.5.15"/>
          ...
        </section>
      </component>

    </structuredBody>
  </component>
</ClinicalDocument>
```

3.3 HAI Surgical Site Infection Report (SSI)

[ClinicalDocument: templateId 2.16.840.1.113883.10.20.5.8]

The SSI Report records a surgical site infection. The preferred title for this Report is “Surgical Site Infection Report (SSI)”.

The SSI Report and Procedure Report headers record, in encompassingEncounter/code, whether the patient was an outpatient.

The date of the infection is recorded as effectiveTime in the Infection-type Observation (templateId 2.16.840.1.113883.10.20.5.6.23).

NHSN uses the procedure ID, which is recorded in the Infection Details section, to establish a link between Procedure and SSI Reports.

1. Conforms to Header Constraints, HAI Single-person Reports Template (templateId: 2.16.840.1.113883.10.20.5.4.1).

2. **SHALL** contain [1..1] **componentOf/encompassingEncounter/code/@code**, which **SHALL** be selected from ValueSet 2.16.840.1.113883.13.1 NHSNEncounterTypeCode **STATIC** 20090130 (CONF:2862).
3. **SHALL** contain [1..1] **component/structuredBody** (CONF:2855).
 - a. This component/structuredBody **SHALL** contain [1..1] **component** (CONF:2856) such that it
 - i. **SHALL** contain [1..1] **Infection Details Section in an SSI Report** (templateId:2.16.840.1.113883.10.20.5.5.7) (CONF:2857).
 - b. This component/structuredBody **SHALL** contain [1..1] **component** (CONF:2858) such that it
 - i. **SHALL** contain [1..1] **Findings Section** (templateId:2.16.840.1.113883.10.20.5.5.15) (CONF:2859).

Table 5: Encounter Type Value Set

Value Set: NHSNEncounterTypeCode 2.16.840.1.113883.13.1 Code System: HL7 ActCode 2.16.840.1.113883.5.4		
Code	Code System	Print Name
AMB	HL7 ActCode	Ambulatory
IMP	HL7 ActCode	Inpatient

3.4 HAI MDRO/CDAD Infection Numerator Report

[ClinicalDocument: templateId 2.16.840.1.113883.10.20.5.9]

This Report records an MDRO or CDAD infection. The preferred title is “Multi-drug Resistant Organism Infection Report (MDRO)” or “Clostridium-difficile Associated Disease Infection Report (CDAD)” as appropriate to the organism reported.

The date of the infection is recorded as effectiveTime in the Infection-type Observation (templateId 2.16.840.1.113883.10.20.5.6.23).

1. Conforms to Header Constraints, HAI Single-person Reports Template (templateId: 2.16.840.1.113883.10.20.5.4.1).
2. **SHALL** contain [1..1] **componentOf/encompassingEncounter/location/healthCareFacility/id/@extension** (CONF:3120).
3. **SHALL** contain [1..1] **componentOf/encompassingEncounter/location/healthCareFacility/code/@code**, which **SHALL** be selected from ValueSet 2.16.840.1.113883.13.19 NHSNHealthcareServiceLocationCode **STATIC** 20091101 (CONF:3121).
4. **SHALL** contain [1..1] **component/structuredBody** (CONF:2863).
 - a. This component/structuredBody **SHALL** contain [1..1] **component** (CONF:2864) such that it
 - i. **SHALL** contain [1..1] **Infection Details Section in an MDRO/CDAD Infection Report** (templateId:2.16.840.1.113883.10.20.5.5.8) (CONF:2865).

- b. This component/structuredBody **SHALL** contain [1..1] component (CONF:2866) such that it
 - i. **SHALL** contain [1..1] **Findings Section**
(templateId:2.16.840.1.113883.10.20.5.5.15) (CONF:2867).

3.5 **HAI Pneumonia Infection Numerator Report (PNEU)**

[ClinicalDocument: templateId 2.16.840.1.113883.10.20.5.10]

This Report records a pneumonia infection. The preferred title for this Report is "Pneumonia Infection Report (PNEU)."

The date of the infection is recorded as effectiveTime in the Infection-type Observation (templateId 2.16.840.1.113883.10.20.5.6.23).

1. Conforms to Header Constraints, HAI Single-person Reports Template (templateId: 2.16.840.1.113883.10.20.5.4.1).
2. **SHALL** contain [1..1] componentOf/encompassingEncounter/location/healthCareFacility/id/@extension (CONF:3122).
3. **SHALL** contain [1..1] componentOf/encompassingEncounter/location/healthCareFacility/code/@code, which **SHALL** be selected from ValueSet 2.16.840.1.113883.13.19 NHSNHealthcareServiceLocationCode **STATIC** 20091101 (CONF:3123).
4. **SHALL** contain [1..1] component/structuredBody (CONF:2868).
 - a. This component/structuredBody **SHALL** contain [1..1] component (CONF:2869) such that it
 - i. **SHALL** contain [1..1] **Infection Risk Factors Section in a Pneumonia Infection Report**
(templateId:2.16.840.1.113883.10.20.5.5.3) (CONF:2870).
 - b. This component/structuredBody **SHALL** contain [1..1] component (CONF:2871) such that it
 - i. **SHALL** contain [1..1] **Infection Details Section in a Pneumonia Infection Report**
(templateId:2.16.840.1.113883.10.20.5.5.9) (CONF:2872).
 - c. This component/structuredBody **SHALL** contain [1..1] component (CONF:2873) such that it
 - i. **SHALL** contain [1..1] **Findings Section**
(templateId:2.16.840.1.113883.10.20.5.5.15) (CONF:2874).

3.6 **HAI Urinary Tract Infection Numerator Report (UTI)**

[ClinicalDocument: templateId 2.16.840.1.113883.10.20.5.11]

This Report records an infection of the urinary tract. The preferred title is "Urinary Infection Report (UTI)".

The date of the infection is recorded as effectiveTime in the Infection-type Observation (templateId 2.16.840.1.113883.10.20.5.6.23).

1. Conforms to Header Constraints, HAI Single-person Reports Template (templateId: 2.16.840.1.113883.10.20.5.4.1).
2. **SHALL** contain [1..1] **componentOf/encompassingEncounter/location/healthCareFacility/id/@extension** (CONF:3126).
3. **SHALL** contain [1..1] **componentOf/encompassingEncounter/location/healthCareFacility/code/@code**, which **SHALL** be selected from ValueSet 2.16.840.1.113883.13.19 NHSNHealthcareServiceLocationCode **STATIC** 20091101 (CONF:3127).
4. **SHALL** contain [1..1] **component/structuredBody** (CONF:2875).
 - a. This component/structuredBody **SHALL** contain [1..1] **component** (CONF:2876) such that it
 - i. **SHALL** contain [1..1] **Infection Risk Factors Section in a UTI Report** (templateId:2.16.840.1.113883.10.20.5.5.4) (CONF:2877).
 - b. This component/structuredBody **SHALL** contain [1..1] **component** (CONF:2878) such that it
 - i. **SHALL** contain [1..1] **Infection Details Section in a UTI Report** (templateId:2.16.840.1.113883.10.20.5.5.10) (CONF:2879).
 - c. This component/structuredBody **SHALL** contain [1..1] **component** (CONF:2880) such that it
 - i. **SHALL** contain [1..1] **Findings Section** (templateId:2.16.840.1.113883.10.20.5.5.15) (CONF:2881).

3.7 HAI Generic Infection Numerator Report

[ClinicalDocument: templateId 2.16.840.1.113883.10.20.5.14]

This Report is used to record an infection a more specific infection report type (e.g., BSI, SSI) isn't appropriate. The preferred title is "Generic Infection Report".

The date of the infection is recorded as effectiveTime in the Infection-type Observation (templateId 2.16.840.1.113883.10.20.5.6.23).

1. Conforms to Header Constraints, HAI Single-person Reports Template (templateId: 2.16.840.1.113883.10.20.5.4.1).
2. **SHALL** contain [1..1] **componentOf/encompassingEncounter/location/healthCareFacility/id/@extension** (CONF:3118).
3. **SHALL** contain [1..1] **componentOf/encompassingEncounter/location/healthCareFacility/code/@code**, which **SHALL** be selected from ValueSet 2.16.840.1.113883.13.19 NHSNHealthcareServiceLocationCode **STATIC** 20091101 (CONF:3119).
4. **SHALL** contain [1..1] **component/structuredBody** (CONF:2882).
 - a. This component/structuredBody **SHALL** contain [1..1] **component** (CONF:2883) such that it

- i. **SHALL** contain [1..1] **Infection Details Section in a Generic Infection Report**
(templateId:2.16.840.1.113883.10.20.5.5.11) (CONF:2884).
- b. This component/structuredBody **SHALL** contain [1..1] **component** (CONF:2885) such that it
 - i. **SHALL** contain [1..1] **Findings Section**
(templateId:2.16.840.1.113883.10.20.5.5.15) (CONF:2886).

3.8 **HAI Procedure Denominator Report**

[ClinicalDocument: templateId 2.16.840.1.113883.10.20.5.16]

This Report records a procedure performed. It is a single-person report. The preferred title is “Denominator for Procedure Report”.

The date of the procedure is recorded as the `effectiveTime` in the Procedure Details (Procedure) clinical statement (templateId 2.16.840.1.113883.10.20.5.6.33).

The SSI Report and Procedure Report headers record, in `encompassingEncounter/code`, whether the patient was an outpatient.

NHSN uses the procedure ID, which is recorded in the Procedure Details section, to establish a link between Procedure and SSI Reports.

1. Conforms to Header Constraints, HAI Single-person Reports Template
(templateId: 2.16.840.1.113883.10.20.5.4.1).
2. **SHALL** contain [1..1] `componentOf/encompassingEncounter/code/@code`, which **SHALL** be selected from ValueSet 2.16.840.1.113883.13.1
`NHSNEncounterTypeCode` **STATIC** 20090130 (CONF:2889).
3. **SHALL NOT** contain [1..1] `componentOf/encompassingEncounter/location/healthCareFacility/id/@extension` (CONF:2887).
4. **SHALL NOT** contain [1..1] `componentOf/encompassingEncounter/location/healthCareFacility/code` (CONF:2888).
5. **SHALL** contain [1..1] **component/structuredBody** (CONF:2894).
 - a. This component/structuredBody **SHALL** contain [1..1] **component** (CONF:2890) such that it
 - i. **SHALL** contain [1..1] **Procedure Details Section in a Procedure Report** (templateId:2.16.840.1.113883.10.20.5.5.14) (CONF:2891).
 - b. This component/structuredBody **SHALL** contain [1..1] **component** (CONF:2892) such that it
 - i. **SHALL** contain [1..1] **Infection Risk Factors Section in a Procedure Report**
(templateId:2.16.840.1.113883.10.20.5.5.2) (CONF:2893).

3.9 **HAI Central-line Insertion Practice Numerator Report**

[ClinicalDocument: templateId 2.16.840.1.113883.10.20.5.12]

The preferred title for this Report is “Central-line Insertion Practices (CLIP)”.

The date of the infection is recorded as `effectiveTime` in the Infection-type Observation (templateId 2.16.840.1.113883.10.20.5.6.23).

1. Conforms to Header Constraints, HAI Single-person Reports Template (templateId: 2.16.840.1.113883.10.20.5.4.1).
2. **SHALL** contain [1..1] `componentOf/encompassingEncounter/location/healthCareFacility/id/@extension` (CONF:3116).
3. **SHALL** contain [1..1] `componentOf/encompassingEncounter/location/healthCareFacility/code/@code`, which **SHALL** be selected from ValueSet 2.16.840.1.113883.13.19 NHSNHealthcareServiceLocationCode **STATIC** 20091101 (CONF:3117).
4. **SHALL** contain [1..1] `component/structuredBody` (CONF:2895).
 - a. This component/structuredBody **SHALL** contain [1..1] `component` (CONF:2896) such that it
 - i. **SHALL** contain [1..1] **Infection Risk Factors Section in a CLIP Report** (templateId:2.16.840.1.113883.10.20.5.5.5) (CONF:2897).
 - b. This component/structuredBody **SHALL** contain [1..1] `component` (CONF:2898) such that it
 - i. **SHALL** contain [1..1] **Procedure Details Section in a CLIP Report** (templateId:2.16.840.1.113883.10.20.5.5.13) (CONF:2899).

3.10 HAI Immunization Numerator Report

[ClinicalDocument: templateId 2.16.840.1.113883.10.20.5.13]

The preferred title for this Report is “Immunization Offer”.

This report type records an offer to immunize for influenza, with reasons (the person is an inpatient meeting criteria for being at high risk of contracting influenza; or, the person is a healthcare worker); and, if the offer was accepted, details of the immunization; or, if the offer was declined, the reasons for declining.

An inpatient is identified in the header. An observation records whether immunization was offered because the person is a healthcare worker.

Some additional details are required about the healthcare worker’s work. If the healthcare worker’s immunization was administered offsite, some details of the immunization are not required. The differences are summarized in the table below.

The date of the infection is recorded as `effectiveTime` in the Infection-type Observation (templateId 2.16.840.1.113883.10.20.5.6.23).

In an Immunization Report (as in a Procedure Report), the facility identifier is recorded (`healthCareFacility/id/@root`), but the in-facility location (such as the ward; `healthCareFacility/id/@extension`) and type (`healthCareFacility/code`) are not recorded.

1. Conforms to Header Constraints, HAI Single-person Reports Template (templateId: 2.16.840.1.113883.10.20.5.4.1).

2. **SHALL NOT** contain [1..1] **componentOf/encompassingEncounter/location/healthCareFacility/code** (CONF:2901).
3. If the immunization was offered because the person is an inpatient who meets criteria for being at high risk of contracting influenza, the **encompassingEncounter** element **SHALL** contain a code element where the value of @code is IMP Inpatient 2.16.840.1.113883.5.4 HL7 ActCode **STATIC** (CONF:3224).
4. If the immunization was offered because the person is a healthcare worker, the report **SHALL NOT** record a date of admission. (CONF:3225).
5. **SHALL NOT** contain [1..1] **componentOf/encompassingEncounter/location/healthCareFacility/id/@extension** (CONF:2900).
6. **SHALL** contain [1..1] **component/structuredBody** (CONF:2903).
 - a. This component/structuredBody **SHALL** contain [1..1] **component** (CONF:2904).
 - i. This component **SHALL** contain [1..1] **Procedure Details Section in an Immunization Report** (templateId:2.16.840.1.113883.10.20.5.5.12) (CONF:2905).

Table 6: Inpatient and Healthcare Worker Immunization Details

In inpatient reports	In healthcare worker reports
Header: Is inpatient	
Immunization Offer	Required
Eligibility Criterion (several)	One. <i>Also contains:</i> Work location (as participant) Patient Care Observation Occupation Observation
Offer Declined Reason Declined (Personal or Medical)	Single list of codes
Immunization code (general influenza vaccine) <i>if administered –</i> effectiveTime routeCode code lotNumberText performer Vaccination Information Statement Type	Required <i>if administered onsite</i> <i>if administered onsite</i> <i>if administered onsite</i> <i>if administered onsite</i> <i>if administered onsite</i> <i>if administered onsite</i> <i>Also contains:</i> given on/offsite (as participant) Seasons Immunized Adverse Reaction

3.11 Laboratory-identified Organism (LIO) Report

[ClinicalDocument: templateId 2.16.840.1.113883.10.20.5.17]

The preferred title for this Report is "Laboratory-identified Organism Report".

This report records whether the patient was an outpatient.

The LIO Report records the laboratory identification of a microorganism in a specimen. This is not an infection-type report: the presence of the organism is not equivalent to the presence of an infection. These reports are submitted if the facility is monitoring the organism identified. Each report records a single organism.

The report records three dates: date of admission to the facility, date of admission to the in-facility location where the specimen was collected, and date of specimen collection. The encompassingEncounter/code element records whether the patient is an inpatient or an outpatient. If the patient is an outpatient, the date of specimen collection is recorded as the date of admission to the facility.

1. Conforms to Header Constraints, HAI Single-person Reports Template (templateId: 2.16.840.1.113883.10.20.5.4.1).
2. **SHALL** contain [1..1] **componentOf/encompassingEncounter/code** (CONF:3079).
3. **SHALL NOT** contain [1..1] **componentOf/encompassingEncounter/location/healthCareFacility/id/@extension** (CONF:3128).
4. **SHALL NOT** contain [1..1] **componentOf/encompassingEncounter/location/healthCareFacility/code** (CONF:3129).
5. **SHALL** contain [1..1] **component/structuredBody** (CONF:3207).
 - a. This component/structuredBody **SHALL** contain [1..1] **component** (CONF:3081) such that it
 - i. **SHALL** contain [1..1] **Findings Section (LIO)** (templateId:2.16.840.1.113883.10.20.5.5.17) (CONF:3082).
6. If the organism being monitored is C.difficile and if the patient was discharged from this facility within the prior three months, a component element containing an Encounters Section (LIO) (templateId 2.16.840.1.113883.10.20.5.5.16) **SHALL** be present. (CONF:3080).

3.12 HAI Population Summary Report

[ClinicalDocument: templateId 2.16.840.1.113883.10.20.5.15]

Population-summary reports report summary statistics for a specified location in a specified period, such as the number of patient-days in a ward and the number of umbilical-catheter days in that ward in June 2004.

Two characteristics of population-summary reports are that they deal with a group, rather than an individual (see the section on [Header Constraints, HAI Population-summary Report](#)), and that they report concepts whose definition is specified by the NHSN protocol and that are not expected to see widespread external use: they are reported with NHSN local codes using a simple QA pattern.

This template covers the following population-summary reports:

Released in DSTU R2

- ICU. The preferred title for the CDA document is “Denominator for Intensive Care Unit (ICU)/Other Locations (not NICU or SCA) Report”.
- Monthly Influenza Method A. The preferred title for the CDA document is “Influenza Vaccination Method A Denominator Report”.
- Monthly Influenza Method B. The preferred title for the CDA document is “Influenza Vaccination Method B Denominator Report”.

Released in DSTU R3:

- NICU. The preferred title for the CDA document is “Denominator for Neonatal Intensive Care Unit (NICU)”.
- SCA. The preferred title for the CDA document is “Denominator for Specialty Care Area (SCA)”.

Released in DSTU R4:

- POM. The preferred title for the CDA document is “Prevention Process and Outcome Measures Monthly Monitoring (POM)”.
1. Conforms to Header Constraints, HAI Population-summary Reports Template (templateId: 2.16.840.1.113883.10.20.5.4.2).
 2. **SHALL NOT** contain [1..1] **componentOf/encompassingEncounter/location/healthCareFacility/id/@extension** (CONF:3165).
 3. **SHALL NOT** contain [1..1] **componentOf/encompassingEncounter/location/healthCareFacility/code** (CONF:3166).
 4. **SHALL** contain [1..1] **component/structuredBody** (CONF:3167).
 - a. This component/structuredBody **SHALL** contain [1..1] **component** (CONF:3169).
 - i. This component **SHALL** contain [1..1] **Summary Data Section** (templateId:2.16.840.1.113883.10.20.5.2.6) (CONF:3170).

4 SECTION LIBRARY

The Section Library provides the requirements for sections and their entries in NHSN HAI Reports. Several types of sections and entries are used in more than one type of HAI Report. For example, the Findings Section for pathogen susceptibility results is used in the BSI, SSI, and several other infection reports. To avoid repeating identical details for each report, the section-level requirements are provided in a single location, which is this Section Library. The requirements for the specified clinical statements are provided in the [Clinical Statement Library](#).

Where section-level requirements vary minimally by report type, the same LOINC code and `templateId` are used, and the variance is expressed in a conformance statement as “If the Report is a BSI Report...”. For example, the Findings Section is used in six report types (BSI, SSI, MDRO/CDAD, PNEU, UTI, and Generic Infection Reports): the constraints are identical for the six reports, with the single exception that in an MDRO/CDAD infection report one additional observation is required.

Where section-level requirements vary substantially by report type, the section has the same LOINC code in each report but the `templateId` is different for each report type. For example, the Infection Risk Factors Section in a BSI Report carries different information than the Infection Risk Factors Section in a Procedure Report.

A NHSN CDA document may also contain top-level sections conformant to other guides.

4.1 Infection Risk Factors Section

The Infection Risk Factors Section is required in several Reports. The information requirements are substantially different in each. Therefore, although the section has the same LOINC code in all reports, the `templateId` that represents the constraints is specific to the report type.

4.1.1 Infection Risk Factors Section in a BSI Report

[section: `templateId 2.16.840.1.113883.10.20.5.5.1`]

In a BSI Report, the Infection Risk Factors Section contains Infection Risk Factors Observations and/or Infection Risk Factors Measurement Observations (`templateIds 2.16.840.1.113883.10.20.5.2.1.1.1` and `2.16.840.1.113883.10.20.5.2.1.1.2`). The particular observations required depend on the location type, specified by `ClinicalDocument/componentOf/encompassingEncounter/location/healthcareFacility/code`.

Some information requirements in this template depend on the location reporting the infection: ICU/Other (ICU or any other location except for Specialty Care Areas), SCA (Specialty Care Areas), or NICU (Neonatal Intensive Care Unit).

1. Conforms to HAI Section Generic Constraints Template (`templateId: 2.16.840.1.113883.10.20.5.4.3`).
2. **SHALL** contain [1..1] `code/@code="51898-5" Risk Factors Section (CodeSystem: 2.16.840.1.113883.6.1 LOINC) STATIC (CONF:2131)`.

3. If the location type represents an ICU/Other or NICU location, an entry element **SHALL** be present containing a Risk Factors Observation (templateId 2.16.840.1.113883.10.20.5.2.1.1.1) representing whether a central line was present. (CONF:2132).
4. If the location type represents an SCA location, an entry element **SHALL** be present containing a Risk Factors Observation (templateId 2.16.840.1.113883.10.20.5.2.1.1.1) representing whether a permanent central line was present, and an entry element containing a Risk Factors Observation (templateId 2.16.840.1.113883.10.20.5.2.1.1.1) representing whether a Temporary Central Line was present. (CONF:2133).
5. If the location type represents an NICU location, an entry element **SHALL** be present containing an Infection Risk Factors Observation (templateId 2.16.840.1.113883.10.20.5.2.1.1.1) representing whether a (non-umbilical) central line was present, an entry element **SHALL** be present containing a Risk Factors Observation (templateId 2.16.840.1.113883.10.20.5.2.1.1.1) representing whether an umbilical catheter was present, and an entry element **SHALL** be present containing an Infection Risk Factors Measurement Observation (templateId 2.16.840.1.113883.10.20.5.2.1.1.2) representing the birth weight. (CONF:2134).

Figure 14: Risk factors section in a BSI report example

```
<section>
  <templateId root="2.16.840.1.113883.10.20.5.5.1"/>
  <code codeSystem="2.16.840.1.113883.6.1"
        codeSystemName="LOINC"
        code="51898-5"
        displayName=" Risk Factors Section"/>
  <title>Risk Factors</title>
  ...
</section>
```

4.1.2 Infection Risk Factors Section in a Pneumonia Infection Report

[section: templateId 2.16.840.1.113883.10.20.5.5.3]

In a Pneumonia Infection Report, the Infection Risk Factors Section contains an Infection Risk Factors Measurement Observations dependent on the location type, specified by ClinicalDocument/componentOf/encompassingEncounter/location/healthcareFacility/code.

The location types as specified here will be mapped to the service locations in [Healthcare Service Location Value Set](#). When this mapping is available, it will be posted to <http://www.cdc.gov/nhsn/> and the Schematron rule set will be updated to validate this mapping.

1. Conforms to HAI Section Generic Constraints Template (templateId: 2.16.840.1.113883.10.20.5.4.3).
2. **SHALL** contain [1..1] `/@code="51898-5" Risk Factors Section (CodeSystem: 2.16.840.1.113883.6.1 LOINC) STATIC (CONF:2776).`

3. **SHALL** contain [1..1] **entry** (CONF:2777) such that it
 - a. **SHALL** contain [1..1] **Ventilator Observation** (templateId:2.16.840.1.113883.10.20.5.6.50) (CONF:2778).
4. **SHALL** contain [1..1] **entry** (CONF:2779) such that it
 - a. **SHALL** contain [1..1] **Immunocompromised Observation** (templateId:2.16.840.1.113883.10.20.5.6.19) (CONF:2780).
5. If the location type represents a Neonatal Intensive Care Unit (NICU), an entry element **SHALL** be present containing an Infection Risk Factors Measurement Observation (templateId 2.16.840.1.113883.10.20.5.2.1.1.2). (CONF:2781).

4.1.3 Infection Risk Factors Section in a UTI Report

[section: templateId 2.16.840.1.113883.10.20.5.5.4]

In a Urinary Tract Infection Report, the Infection Risk Factors Section contains a single Urinary Catheter Observation.

1. Conforms to HAI Section Generic Constraints Template (templateId: 2.16.840.1.113883.10.20.5.4.3).
2. **SHALL** contain [1..1] **code/@code="51898-5" Risk Factors Section** (CodeSystem: 2.16.840.1.113883.6.1 LOINC) **STATIC** (CONF:2782).
3. **SHALL** contain [1..1] **entry** (CONF:2783).
 - a. This entry **SHALL** contain [1..1] **Urinary Catheter Observation** (templateId:2.16.840.1.113883.10.20.5.6.48) (CONF:2784).

4.1.4 Infection Risk Factors Section in a CLIP Report

[section: templateId 2.16.840.1.113883.10.20.5.5.5]

In a Central Line Insertion Practice Report, the Infection Risk Factors Section contains a single Central-line Insertion Practice clinical statement, which contains a set of sequenced events.

1. Conforms to HAI Section Generic Constraints Template (templateId: 2.16.840.1.113883.10.20.5.4.3).
2. **SHALL** contain [1..1] **code/@code="51898-5" Risk Factors Section** (CodeSystem: 2.16.840.1.113883.6.1 LOINC) **STATIC** (CONF:2785).
3. **SHALL** contain [1..1] **entry** (CONF:2786).
 - a. This entry **SHALL** contain [1..1] **Central-line Insertion Practice Clinical Statement** (templateId:2.16.840.1.113883.10.20.5.6.7) (CONF:2787).

Figure 15: Risk factors section in a CLIP report example

```
<section>
  <templateId root="2.16.840.1.113883.10.20.5.5.5"/>
  <code codeSystem="2.16.840.1.113883.6.1"
        codeSystemName="LOINC"
        code="51898-5"
        displayName=" Risk Factors Section"/>
  <title>Risk Factors</title>
  ...
  <entry>
    <act>
      <templateId root="2.16.840.1.113883.10.20.5.6.7"/>
      ...
      <entryRelationship>
        <sequenceNumber value="1"/>
        <organizer>
          <templateId root="2.16.840.1.113883.10.20.5.6.8"/>
          ...
          <component>
            <procedure>
              <templateId root="2.16.840.1.113883.10.20.5.6.16"/>
              ...
            </procedure>
          </component>
          <component>
            <organizer>
              <templateId root="2.16.840.1.113883.10.20.5.6.43"/>
              ...
              <component>
                <substanceAdministration>
                  <templateId root="2.16.840.1.113883.10.20.5.6.42"/>
                  ...
                </substanceAdministration>
              </component>
              ...
            </organizer>
          </component>
          <component>
            <procedure>
              <templateId root="2.16.840.1.113883.10.20.5.6.45"/>
              ...
            </procedure>
          </component>
        </organizer>
      </entryRelationship>

      <entryRelationship>
        <sequenceNumber value="2"/>
        <observation>
          <templateId root="2.16.840.1.113883.10.20.5.6.44"/>
          ...
        </observation>
      </entryRelationship>
    </act>
  </entry>

```

```

    <entryRelationship>
      <sequenceNumber value="3"/>
      <procedure>
        <templateId root="2.16.840.1.113883.10.20.5.6.36"/>
        <entryRelationship>
          <observation>
            <templateId root="2.16.840.1.113883.10.20.5.6.26"/>
            ...
          </observation>
        </entryRelationship>
      </procedure>
    </entryRelationship>

    <entryRelationship>
      <procedure>
        <templateId root="2.16.840.1.113883.10.20.5.6.15"/>
        ...
      </procedure>
    </entryRelationship>
  </procedure>
</entryRelationship>

  <entryRelationship>
    <sequenceNumber value="4"/>
    <substanceAdministration>
      <templateId root="2.16.840.1.113883.10.20.5.6.3"/>
      ...
    </substanceAdministration>
  </entryRelationship>
</act>
</entry>
</section>

```

4.1.5 Infection Risk Factors Section in a Procedure Report

[section: templateId 2.16.840.1.113883.10.20.5.5.2]

The following table summarizes how the infection risk factors in a Procedure Report are represented.

Table 7: Requirements for Risk Factors Section in a Procedure Report

Within an entry/procedure	As entry/observations
Emergency (as methodCode)	ASA Class
Wound Class	Trauma
Endoscope	If spinal fusion or refusion:
Multiple Procedures	Diabetes mellitus
	If Cesarean:
	Height
	Weight
	Labor duration
	Estimated blood loss

1. Conforms to HAI Section Generic Constraints Template (templateId: 2.16.840.1.113883.10.20.5.4.3).
2. **SHALL** contain [1..1] **code/@code="51898-5" Risk Factors Section** (CodeSystem: 2.16.840.1.113883.6.1 LOINC) **STATIC** (CONF:2788).
3. **SHALL** contain [1..1] **entry** (CONF:2789) such that it
 - a. **SHALL** contain [1..1] **Procedure Risk Factors Clinical Statement in a Procedure Report** (templateId:2.16.840.1.113883.10.20.5.6.35) (CONF:2790).
4. **SHALL** contain [1..1] **entry** (CONF:2791) such that it
 - a. **SHALL** contain [1..1] **ASA Class Observation** (templateId:2.16.840.1.113883.10.20.5.2.2.7.4) (CONF:2792).
5. **SHALL** contain [1..1] **entry** (CONF:2793) such that it
 - a. **SHALL** contain [1..1] **Trauma Observation** (templateId:2.16.840.1.113883.10.20.5.2.2.7.5) (CONF:2794).
6. If the procedure, recorded in the Details Section of the report, was a Cesarean (code/@code is 2115-4), an entry element **SHALL** be present for each of the following: Height Observation (templateId 2.16.840.1.113883.10.20.5.2.2.7.9), Weight Observation (templateId 2.16.840.1.113883.10.20.5.2.2.7.10), Duration of Labor Observation (templateId 2.16.840.1.113883.10.20.5.2.2.7.11), and Blood Loss Observation (templateId 2.16.840.1.113883.10.20.5.2.2.7.12). (CONF:2796).
7. If the procedure, recorded in the Details Section of the report, was a spinal fusion or refusion (code/@code is either 2137-8 or 2135-2), an entry element **SHALL** be present containing a Diabetes Mellitus Observation (templateId 2.16.840.1.113883.10.20.5.2.2.7.7). (CONF:2795).

Figure 16: Risk factors section in a procedure report example

```

<entry>
  <procedure classCode="PROC" moodCode="EVN">
    <templateId root="2.16.840.1.113883.10.20.5.6.35"/>
    <id root="2.16.840.1.113883.3.117.1.1.5.2.1.1.4" extension="92"/>
    <methodCode codeSystem="2.16.840.1.113883.6.96"
      codeSystemName="SNOMED"
      code="373110003"
      displayName="Emergency"/>
    <entryRelationship>
      <observation>
        <templateId root="2.16.840.1.113883.10.20.5.2.1.2"/>
        ...
      </observation>
    </entryRelationship>
    <entryRelationship>
      <procedure>
        <templateId root="2.16.840.1.113883.10.20.5.2.1.3"/>
        ...
      </procedure>
    </entryRelationship>
    <entryRelationship>
      <observation>
        <templateId root="2.16.840.1.113883.10.20.5.2.2.7.6"/>
        ...
      </observation>
    </entryRelationship>
  </procedure>
</entry>
<entry>
  <observation>
    <templateId root="2.16.840.1.113883.10.20.5.2.2.7.4"/>
    ...
  </observation>
</entry>
<entry>
  <observation>
    <templateId root="2.16.840.1.113883.10.20.5.2.2.7.5"/>
    ...
  </observation>
</entry>

```

4.2 Details Section

The Details Section is used in several report types. The information requirements are slightly different in each. Therefore, although the section has the same LOINC code in all reports, the `templateId` that represents the constraints is specific to the report type.

Table 8: Details Section in Each Report Type Where Used

BSI Report	SSI Report	MDRO/CDAD Report
Infection-type Observation	Infection-type Observation	Infection-type Observation

If patient died: Death (+ Contributed to Death)	Procedure Details If patient died: Death (+ Contributed to Death)	If patient died: Death (+ Contributed to Death)
PNEU Report	UTI Report	Generic Infection Report
Infection-type Observation If patient died: Death (+ Contributed to Death)	Infection-type Observation If patient died: Death (+ Contributed to Death)	Infection-type Entry If patient died: Death (+ Contributed to Death)
Procedure Report	CLIP Report	Immunization Report
Procedure Details Entry	Procedure Details Entry	Immunization Offer Entry

Figure 17: Details section example

```
<section>
  <templateId root="2.16.840.1.113883.10.20.5.5.6"/>
  <code codeSystem="2.16.840.1.113883.6.1"
        codeSystemName="LOINC"
        code="51899-3"
        displayName="Details Section"/>
  <title>Details</title>
  ...
</section>
```

4.2.1 Infection Details Section in a BSI Report

[section: templateId 2.16.840.1.113883.10.20.5.5.6]

1. Confirms to HAI Section Generic Constraints Template (templateId: 2.16.840.1.113883.10.20.5.4.3).
2. **SHALL** contain [1..1] **code/@code="51899-3" Details Section** (CodeSystem: 2.16.840.1.113883.6.1 LOINC) **STATIC** (CONF:2129).
3. **SHALL** contain [1..1] **entry** (CONF:2197) such that it
 - a. **SHALL** contain [1..1] **Infection-type Observation** (templateId:2.16.840.1.113883.10.20.5.6.23) (CONF:2130).
4. If the patient died, an **entry** element **SHALL** be present containing a Death Observation (templateId 2.16.840.1.113883.10.20.5.6.12); if the patient did not die, an entry element **MAY** be present containing a Death Observation (templateId 2.16.840.1.113883.10.20.5.6.12) . (CONF:2163).

4.2.2 Infection Details Section in an SSI Report

[section: templateId 2.16.840.1.113883.10.20.5.5.7]

1. Confirms to HAI Section Generic Constraints Template (templateId: 2.16.840.1.113883.10.20.5.4.3).

2. **SHALL** contain [1..1] **code/@code="51899-3" Details Section (CodeSystem: 2.16.840.1.113883.6.1 LOINC) STATIC (CONF:2165).**
3. **SHALL** contain [1..1] **entry (CONF:2198)** such that it
 - a. **SHALL** contain [1..1] **Infection-type Observation (templateId:2.16.840.1.113883.10.20.5.6.23) (CONF:2166).**
4. **SHALL** contain [1..1] **entry (CONF:2199)** such that it
 - a. **SHALL** contain [1..1] **Procedure Details Clinical Statement in an SSI Report (templateId:2.16.840.1.113883.10.20.5.6.34) (CONF:2167).**
5. If the patient died, an entry element **SHALL** be present containing a Death Observation (templateId 2.16.840.1.113883.10.20.5.6.12); if the patient did not die, an entry element **MAY** be present containing a Death Observation (templateId 2.16.840.1.113883.10.20.5.6.12). (CONF:2168).

4.2.3 Infection Details Section in an MDRO/CDAD Infection Report

[section: templateId 2.16.840.1.113883.10.20.5.5.8]

The MDRO/CDAD Infection Report is similar to other infection-type reports. NHSN requires this report be used when the infection is MDRO/CDAD and there is not a specialized infection-specific report type to use.

1. Conforms to HAI Section Generic Constraints Template (templateId: 2.16.840.1.113883.10.20.5.4.3).
2. **SHALL** contain [1..1] **code/@code="51899-3" Details Section (CodeSystem: 2.16.840.1.113883.6.1 LOINC) STATIC (CONF:2797).**
3. **SHALL** contain [1..1] **entry (CONF:2798)** such that it
 - a. **SHALL** contain [1..1] **Infection-type Observation (templateId:2.16.840.1.113883.10.20.5.6.23) (CONF:2799).**
 - i. This Infection-type Observation **SHALL NOT** represent a bloodstream infection, a surgical-site infection, a urinary tract infection, or pneumonia. (CONF:2800).
4. If the patient died, an entry element **SHALL** be present containing a Death Observation (templateId 2.16.840.1.113883.10.20.5.6.12); if the patient did not die, an entry element **MAY** be present containing a Death Observation (templateId 2.16.840.1.113883.10.20.5.6.12). (CONF:2801).

4.2.4 Infection Details Section in a Pneumonia Infection Report

[section: templateId 2.16.840.1.113883.10.20.5.5.9]

1. Conforms to HAI Section Generic Constraints Template (templateId: 2.16.840.1.113883.10.20.5.4.3).
2. **SHALL** contain [1..1] **code/@code="51899-3" Details Section (CodeSystem: 2.16.840.1.113883.6.1 LOINC) STATIC (CONF:2802).**
3. **SHALL** contain [1..1] **entry (CONF:2803)** such that it
 - a. **SHALL** contain [1..1] **Infection-type Observation (templateId:2.16.840.1.113883.10.20.5.6.23) (CONF:2804).**
4. If the patient died, an entry element **SHALL** be present containing a Death Observation (templateId 2.16.840.1.113883.10.20.5.6.12); if the patient did

not die, an entry element **MAY** be present containing a Death Observation (templateId 2.16.840.1.113883.10.20.5.6.12). (CONF:2806).

4.2.5 Infection Details Section in a UTI Report

[section: templateId 2.16.840.1.113883.10.20.5.5.10]

1. Conforms to HAI Section Generic Constraints Template (templateId: 2.16.840.1.113883.10.20.5.4.3).
2. **SHALL** contain [1..1] **code/@code="51899-3"** Details Section (CodeSystem: 2.16.840.1.113883.6.1 LOINC) **STATIC** (CONF:2807).
3. **SHALL** contain [1..1] **entry** (CONF:2808) such that it
 - a. **SHALL** contain [1..1] **Infection-type Observation** (templateId:2.16.840.1.113883.10.20.5.6.23) (CONF:2809).
4. If the patient died, an entry element **SHALL** be present containing a Death Observation (templateId 2.16.840.1.113883.10.20.5.6.12); if the patient did not die, an entry element **MAY** be present containing a Death Observation (templateId 2.16.840.1.113883.10.20.5.6.12). (CONF:2810).

4.2.6 Infection Details Section in a Generic Infection Report

[section: templateId 2.16.840.1.113883.10.20.5.5.11]

1. Conforms to HAI Section Generic Constraints Template (templateId: 2.16.840.1.113883.10.20.5.4.3).
2. **SHALL** contain [1..1] **code/@code="51899-3"** Details Section (CodeSystem: 2.16.840.1.113883.6.1 LOINC) **STATIC** (CONF:2817).
3. **SHALL** contain [1..1] **entry** (CONF:2818) such that it
 - a. **SHALL** contain [1..1] **Infection-type Observation** (templateId:2.16.840.1.113883.10.20.5.6.23) (CONF:2819).
4. An entry element **MAY** be present containing a Death Observation (templateId 2.16.840.1.113883.10.20.5.6.12). (CONF:2821).

4.2.7 Procedure Details Section in a Procedure Report

[section: templateId 2.16.840.1.113883.10.20.5.5.14]

Risk factors that are not aspects of the procedure itself are recorded in the Risk Factors Section.

1. Conforms to HAI Section Generic Constraints Template (templateId: 2.16.840.1.113883.10.20.5.4.3).
2. **SHALL** contain [1..1] **code/@code="51899-3"** Details Section (CodeSystem: 2.16.840.1.113883.6.1 LOINC) **STATIC** (CONF:2822).
3. **SHALL** contain [1..1] **entry** (CONF:2823).
 - a. This entry **SHALL** contain [1..1] **Procedure Details Clinical Statement in a Procedure Report** (templateId:2.16.840.1.113883.10.20.5.6.33) (CONF:2824).

4.2.8 Procedure Details Section in a CLIP Report

[section: templateId 2.16.840.1.113883.10.20.5.5.13]

The clinical statements in this section record details of the procedure, including the reason for it.

1. Conforms to HAI Section Generic Constraints Template (templateId: 2.16.840.1.113883.10.20.5.4.3).
2. **SHALL** contain [1..1] **code/@code="51899-3"** Details Section (CodeSystem: 2.16.840.1.113883.6.1 LOINC) **STATIC** (CONF:2811).
3. **SHALL** contain [1..1] **entry** (CONF:2812).
 - a. This entry **SHALL** contain [1..1] **Procedure Details Clinical Statement in a CLIP Report** (templateId:2.16.840.1.113883.10.20.5.6.32) (CONF:2813).

4.2.9 Procedure Details Section in an Immunization Report

[section: templateId 2.16.840.1.113883.10.20.5.5.12]

NHSN records details of the offer to immunize, including the reasons for offering.

1. Conforms to HAI Section Generic Constraints Template (templateId: 2.16.840.1.113883.10.20.5.4.3).
2. **SHALL** contain [1..1] **code/@code="51899-3"** Details Section (CodeSystem: 2.16.840.1.113883.6.1 LOINC) **STATIC** (CONF:2814).
3. **SHALL** contain [1..1] **entry** (CONF:2815).
 - a. This entry **SHALL** contain [1..1] **Immunization Offer Clinical Statement** (templateId:2.16.840.1.113883.10.20.5.6.18) (CONF:2816).

4.3 Encounters Section in a LIO Report

[section: templateId 2.16.840.1.113883.10.20.5.5.16]

In a LIO Report the Encounters Section is present if the patient was previously discharged from the facility within the past three months, and records the date of that discharge. This section conforms to the [CCD Encounters Section](#) template (templateId 2.16.840.1.113883.10.20.1.3).

1. Conforms to HAI Section Generic Constraints Template (templateId: 2.16.840.1.113883.10.20.5.4.3).
2. **SHALL** contain [1..1] **code/@code="46240-8"** History of Encounters (CodeSystem: 2.16.840.1.113883.6.1 LOINC) **STATIC** (CONF:3071).
3. **SHALL** contain [1..1] **entry** (CONF:3072).
 - a. This entry **SHALL** contain [1..1] **Prior Discharge Encounter** (templateId:2.16.840.1.113883.10.20.5.6.51) (CONF:3073).

4.4 Findings Section in an Infection Report

[section: templateId 2.16.840.1.113883.10.20.5.5.15]

The Findings Section records whether infection organisms were identified and, if so, records details about them. Several NHSN Report types, such as the BSI and SSI Reports, include this section. The LOINC code and templateId are the same in all report types, and the information recorded is the same in each report type, with the following exceptions: in an MDRO/CDAD Infection Report, two additional clinical statements are required; the Generic Infection Report does not require an MDRO Observation.

1. Conforms to HAI Section Generic Constraints Template (templateId: 2.16.840.1.113883.10.20.5.4.3).
2. **SHALL** contain [1..1] `code/@code="18769-0"` Findings Section (CodeSystem: 2.16.840.1.113883.6.1 LOINC) **STATIC** (CONF:2120).
3. If no pathogens were identified, the Findings Section **SHALL** contain a single entry element containing a Pathogen Identified Observation (templateId 2.16.840.1.113883.10.20.5.2.5.1) reporting that no pathogens were identified. (CONF:2605).
4. If pathogens were identified, the Findings Section **SHALL** contain at least one and no more than three entry elements containing a Findings Organizer (templateId 2.16.840.1.113883.10.20.5.6.14) reporting pathogens identified. (CONF:2207).
5. If pathogens were identified, and the report is not a Generic Infection Report, an entry element where the value of @typeCode is COMP **SHALL** be present containing an MDRO Observation (templateId 2.16.840.1.113883.10.20.5.6.24). (CONF:2123).
6. If pathogens were identified and the report is an MDRO/CDAD Infection Report, an entry element **SHALL** be present where the value of @typeCode is COMP, containing a Significant Pathogens Observation (templateId 2.16.840.1.113883.10.20.5.6.41). (CONF:2208).
7. If pathogens were identified and the report is an MDRO/CDAD Infection Report, an entry element **SHALL** be present where the value of @typeCode is COMP, containing a CDAD Observation (templateId 2.16.840.1.113883.10.20.5.6.5). (CONF:2127).

Figure 18: Findings section example

```
<section>
  <templateId root="2.16.840.1.113883.10.20.5.5.15"/>
  <code codeSystem="2.16.840.1.113883.6.1"
        codeSystemName="LOINC"
        code="18769-0"
        displayName="Findings Section"/>
  <title>Findings</title>
  ...
</section>
```

4.5 Findings Section in a LIO Report

[section: templateId 2.16.840.1.113883.10.20.5.5.17]

The Findings Section in a LIO Report records a laboratory-identified microorganism. It differs from the Findings Section in Infection Reports in that it records only one microorganism (if more were identified, each is recorded in a separate report), details about the specimen collection are recorded, and no drug-susceptibility test results are recorded. If no organism is found, no report is submitted; thus, the explicit statement "no organism found", which is used in the Findings Section in Infection Reports, is not used here.

1. Conforms to HAI Section Generic Constraints Template (templateId: 2.16.840.1.113883.10.20.5.4.3).
2. **SHALL** contain [1..1] **code/@code="18769-0"** Findings Section (CodeSystem: 2.16.840.1.113883.6.1 LOINC) **STATIC** (CONF:3067).
3. **SHALL** contain [1..1] **entry** (CONF:3068).
 - a. This entry **SHALL** contain [1..1] **Pathogen Identified Observation (LIO)** (templateId:2.16.840.1.113883.10.20.5.6.52) (CONF:3069).

4.6 Summary Data Section

[section: templateId 2.16.840.1.113883.10.20.5.2.6]

The Summary Data Section is used in a population-summary report. The specific counts to be reported in the Summary Data Section vary by report topic, but the section itself conveys the same kind of information wherever used; therefore, the section is represented by the same LOINC section code and templateId whatever the data reported.

The data in a population-summary report may have been categorized. For example, the NICU population-summary report contains data about patients in an NICU ward, distinguished by patient birth weight. Each population group is represented by a separate Summary Encounter element. If there is no such distinction, the report concerns a group that has only one category and therefore will contain only one Summary Encounter element.

1. Conforms to HAI Section Generic Constraints Template (templateId: 2.16.840.1.113883.10.20.5.4.3).
2. **SHALL** contain [1..1] **code/@code="51900-9"** Details Section (CodeSystem: 2.16.840.1.113883.6.1 LOINC) **STATIC** (CONF:3161).
3. **SHALL** contain [1..*] **entry** (CONF:3162).
 - a. Such entries **SHALL** contain [1..1] **Summary Encounter** (templateId:2.16.840.1.113883.10.20.5.6.47) (CONF:3163).

Figure 19: Summary data section example

```
<section>
  <templateId root="2.16.840.1.113883.10.20.5.2.6"/>
  <code codeSystem="2.16.840.1.113883.6.1"
        codeSystemName="LOINC"
        code="51900-9"
        displayName="Summary Data Section"/>
  <title>Population Summary - ICU - June 2006</title>
  <entry>
    ...
  </entry>
</section>
```

5 CLINICAL STATEMENT LIBRARY

5.1 Organizers

5.1.1 Central-line Insertion Preparation Organizer

[organizer: templateId 2.16.840.1.113883.10.20.5.6.8]

This organizer represents the first step in the Central-line Insertion Practice sequence. It records three types of preparations (which may have occurred in any order): hand hygiene, skin-preparation solutions, and sterile barriers.

1. **SHALL** contain [1..1] **@classCode="CLUSTER"** Cluster (CodeSystem: 2.16.840.1.113883.5.6 HL7ActClass) **STATIC** (CONF:2762).
2. **SHALL** contain [1..1] **@moodCode="EVN"** Event (CodeSystem: 2.16.840.1.113883.5.1001 HL7ActMood) **STATIC** (CONF:2763).
3. **SHALL** contain [1..1] **statusCode/@code="completed"** Completed (CodeSystem: 2.16.840.1.113883.5.14 HL7ActStatus) **STATIC** (CONF:2764).
4. **SHALL** contain [1..1] **component** (CONF:2765) such that it
 - a. **SHALL** contain [1..1] **Hand Hygiene Performed Clinical Statement** (templateId:2.16.840.1.113883.10.20.5.6.16) (CONF:2766).
5. **SHALL** contain [1..1] **component** (CONF:2767) such that it
 - a. **SHALL** contain [1..1] **Skin-preparation Solutions Applied Organizer** (templateId:2.16.840.1.113883.10.20.5.6.43) (CONF:2768).
6. **SHALL** contain [1..1] **component** (CONF:2769) such that it
 - a. **SHALL** contain [1..1] **Sterile Barriers Applied Clinical Statement** (templateId:2.16.840.1.113883.10.20.5.6.45) (CONF:2770).

Figure 20: Central-line insertion practice organizer example

```
<sequenceNumber value="1"/>
<organizer moodCode="EVN" classCode="CLUSTER">
  <templateId root="2.16.840.1.113883.10.20.5.6.8"/>
  <statusCode code="completed"/>
  <component>
    <procedure>
      <templateId root="2.16.840.1.113883.10.20.5.6.16"/>
      ...
    </procedure>
  </component>

  <component>
    <organizer>
      <templateId root="2.16.840.1.113883.10.20.5.6.43"/>
      ...
    </organizer>
  </component>

  <component>
    <procedure>
      <templateId root="2.16.840.1.113883.10.20.5.6.45"/>
      ...
    </procedure>
  </component>
</organizer>
```

5.1.2 Criteria of Diagnosis Organizer

[organizer: templateId 2.16.840.1.113883.10.20.5.6.11]

This organizer groups together the criteria used in the diagnosis of an infection. Each criterion is recorded as a Criterion of Diagnosis Observation. The organizer appears within an Infection-type Observation.

The Criteria of Diagnosis Organizer is used in several report types. The NHSN Protocol specifies which criteria are to be recorded for each report type. Those rules do not form part of this template. The NHSN submission requirement is that, in a given report type, a Criterion of Diagnosis Observation must be present for every datum required by the NHSN Protocol for that report type, with an appropriate value for @negationInd.

1. **SHALL** contain [1..1] @**classCode**="CLUSTER" Cluster (CodeSystem: 2.16.840.1.113883.5.6 HL7ActClass) **STATIC** (CONF:2091).
2. **SHALL** contain [1..1] @**moodCode**="EVN" Event (CodeSystem: 2.16.840.1.113883.5.1001 HL7ActMood) **STATIC** (CONF:2092).
3. **SHALL** contain [1..1] **statusCode/@code**="completed" Completed (CodeSystem: 2.16.840.1.113883.5.14 HL7ActStatus) **STATIC** (CONF:2093).
4. **SHALL** contain [1..*] **component** (CONF:2195).
 - a. Such components **SHALL** contain [1..1] **Criterion of Diagnosis Observation** (templateId:2.16.840.1.113883.10.20.5.6.10) (CONF:2094).

Figure 21: Criteria of diagnosis organizer example

```
<organizer classCode="CLUSTER" moodCode="EVN">
  <templateId root="2.16.840.1.113883.10.20.5.6.11"/>
  <statusCode code="completed"/>
  <component>
    <observation>
      ...
    </observation>
  </component>
  ...
</organizer>
```

5.1.3 Findings Organizer

[organizer: templateId 2.16.840.1.113883.10.20.5.6.14]

Each Findings Organizer represents a set of information concerning a single pathogen identified. The organizer contains two `component` elements that record the pathogen and its rank in regard to the other pathogens identified, and can contain additional `component` elements recording drug-susceptibility test findings.

For bacterial pathogens, at least one drug-susceptibility test result is required. For nonbacterial pathogens, drug-susceptibility test results are not required.

1. **SHALL** contain [1..1] **@classCode="CLUSTER"** Cluster (CodeSystem: 2.16.840.1.113883.5.6 HL7ActClass) **STATIC** (CONF:2075).
2. **SHALL** contain [1..1] **@moodCode="EVN"** Event (CodeSystem: 2.16.840.1.113883.5.1001 HL7ActMood) **STATIC** (CONF:2076).
3. **SHALL** contain [1..1] **statusCode/@code="completed"** Completed (CodeSystem: 2.16.840.1.113883.5.14 HL7ActStatus) **STATIC** (CONF:2077).
4. **SHALL** contain [1..1] **component** (CONF:2200) such that it
 - a. **SHALL** contain [1..1] **Pathogen Identified Observation** (templateId:2.16.840.1.113883.10.20.5.2.5.1) (CONF:2078).
5. **SHALL** contain [1..1] **component** (CONF:2201) such that it
 - a. **SHALL** contain [1..1] **Pathogen Ranking Observation** (templateId:2.16.840.1.113883.10.20.5.2.5.1.1) (CONF:2079).
6. If the pathogen is a bacterial pathogen, at least one `component` element **SHALL** be present containing a Drug-susceptibility Test Observation (templateId 2.16.840.1.113883.10.20.5.2.5.1.2). (CONF:2204).

Figure 22: Findings organizer example

```
<organizer classCode="CLUSTER" moodCode="EVN">
  <templateId root="2.16.840.1.113883.10.20.5.6.14"/>

  <component>
    <observation classCode="OBS" moodCode="EVN">
      <templateId root="2.16.840.1.113883.10.20.5.2.5.1"/>
      ...
    </observation>
  </component>

  <component>
    <observation classCode="OBS" moodCode="EVN">
      <templateId root="2.16.840.1.113883.10.20.5.2.5.1.1"/>
      ...
    </observation>
  </component>

  <component>
    <observation classCode="OBS" moodCode="EVN">
      <templateId root="2.16.840.1.113883.10.20.5.2.5.1.2"/>
      ...
    </observation>
  </component>
</organizer>
```

5.1.4 Skin-preparation Solutions Applied Organizer

[organizer: templateId 2.16.840.1.113883.10.20.5.6.43]

This clinical statement reports what skin-preparation solutions were applied. It is one of the actions recorded in the first, preparatory step in the Central-line Insertion Practice sequence.

1. **SHALL** contain [1..1] @**classCode**="CLUSTER" Cluster (CodeSystem: 2.16.840.1.113883.5.6 HL7ActClass) **STATIC** (CONF:2771).
2. **SHALL** contain [1..1] @**moodCode**="EVN" Event (CodeSystem: 2.16.840.1.113883.5.1001 HL7ActMood) **STATIC** (CONF:2772).
3. **SHALL** contain [1..1] **statusCode/@code**="completed" Completed (CodeSystem: 2.16.840.1.113883.5.14 HL7ActStatus) **STATIC** (CONF:2773).
4. **SHALL** contain [1..*] **component** (CONF:2774) such that it
 - a. **SHALL** contain [1..1] **Skin Preparation Clinical Statement** (templateId:2.16.840.1.113883.10.20.5.6.42) (CONF:2775).

Figure 23: Skin-preparation solutions applied organizer example

```
<organizer moodCode="EVN" classCode="CLUSTER">
  <templateId root="2.16.840.1.113883.10.20.5.6.43"/>
  <statusCode code="completed"/>

  <component>
    <substanceAdministration>
      <templateId root="2.16.840.1.113883.10.20.5.6.42"/>
      ...
    </substanceAdministration>
  </component>
  ...
</organizer>
```

5.2 Clinical Statements

5.2.1 Admission to ICU Clinical Statement

[act: templateId 2.16.840.1.113883.10.20.5.6.1]

If the infection reported is a CDAD infection, an Admission to ICU clinical statement is required, recording whether the patient was admitted to the ICU as a result of the infection. The admission is recorded as an act within the Infection Details Section; the inverted "Reason" relationship indicates that the infection was the cause of the act of admission.

If the patient was admitted to the ICU, set the value of @negationInd to false. If the patient was not admitted to the ICU, set the value of @negationInd to true.

1. **SHALL** contain [1..1] @classCode="ACT" (CodeSystem: 2.16.840.1.113883.5.6 HL7ActClass) **STATIC** (CONF:2225).
2. **SHALL** contain [1..1] @moodCode="EVN" Event (CodeSystem: 2.16.840.1.113883.5.1001 HL7ActMood) **STATIC** (CONF:2226).
3. **SHALL** contain @negationInd (CONF:2227).
4. **SHALL** contain [1..1] code/@code="32485007" Hospital admission (CodeSystem: 2.16.840.1.113883.6.96 SNOMEDCT) **STATIC** (CONF:2228).
5. **SHALL** contain [1..1] participant (CONF:2229).
 - a. This participant **SHALL** contain [1..1] @typeCode="LOC" (CodeSystem: 2.16.840.1.113883.5.90 HL7ParticipationType) **STATIC** (CONF:2230).
 - b. This participant **SHALL** contain [1..1] participantRole (CONF:2231).
 - i. This participantRole **SHALL** contain [1..1] @classCode="SDLOC" (CodeSystem: 2.16.840.1.113883.5.110 HL7RoleClass) **STATIC** (CONF:2232).
 - ii. This participantRole **SHALL** contain [1..1] code/@code="1024-9" Admission to intensive care (CodeSystem: 2.16.840.1.113883.6.259 HL7 HealthcareServiceLocation) **STATIC** (CONF:2233).

Figure 24: Example of admission to ICU as a result of the infection

```
<!-- ICU Admission is negated, i.e., patient was NOT admitted to ICU -->
<act classCode="ACT" moodCode="EVN" negationInd="true">

  <templateId root="2.16.840.1.113883.10.20.5.6.1"/>
  <code codeSystem="2.16.840.1.113883.6.96"
        codeSystemName="SNOMED"
        code="32485007"
        displayName="Hospital Admission"/>

  <participant typeCode="LOC">
    <participantRole classCode="SDLOC">
      <code codeSystem="2.16.840.1.113883.6.259"
            codeSystemName="HL7 Healthcare Service Location"
            code="1024-9"
            displayName="Intensive care unit"/>
    </participantRole>
  </participant>

</act>
```

5.2.2 Adverse Reaction Observation

[observation: templateId 2.16.840.1.113883.10.20.5.6.2]

An adverse reaction is recorded using the [CCD Reaction template](#) (templateId 2.16.840.1.113883.10.20.1.54).

1. An Adverse Reaction Observation **SHALL** be recorded using the CCD Reaction template (templateId 2.16.840.1.113883.10.20.1.54). (CONF:2624).
2. **SHALL** contain [1..1] @classCode="OBS" Observation (CodeSystem: 2.16.840.1.113883.5.6 HL7ActClass) **STATIC** (CONF:2616).
3. **SHALL** contain [1..1] @moodCode="EVN" Event (CodeSystem: 2.16.840.1.113883.5.1001 HL7ActMood) **STATIC** (CONF:2617).
4. If the reaction occurred, the value of observation/@negationInd **SHALL** be false. If the reaction did not occur, the value of observation/@negationInd **SHALL** be true. If it is not known whether the reaction occurred, the value of observation/@nullFlavor **SHALL** be NI. (CONF:2622).
5. A templateId **SHALL** be present where the value of @root is 2.16.840.1.113883.10.20.1.54 representing conformance to the CCD Reaction template. (CONF:2621).
6. **SHALL** contain [1..1] code/@code="ASSERTION" Assertion (CodeSystem: 2.16.840.1.113883.5.4 HL7ActCode) **STATIC** (CONF:2618).
7. **SHALL** contain [1..1] statusCode/@code="completed" Completed (CodeSystem: 2.16.840.1.113883.5.14 HL7ActStatus) **STATIC** (CONF:2619).
8. **SHALL** contain [1..1] value (CONF:2620).
9. The value of value/@xsi:type **SHALL** be CD. When recording a reaction as a code, the value of value/@code **SHALL** be selected from 2.16.840.1.114222.4.11.3193

NHSNAdverseReactionCode **STATIC** 20090130. When recording a reaction as text, the value of value/@nullFlavor **SHALL** be OTH. (CONF:2623).

Table 9: Adverse Reaction Value Set

Value Set: NHSNAdverseReactionCode 2.16.840.1.114222.4.11.3193 Code System: SNOMED CT 2.16.840.1.113883.6.96		
Code	Code System	Print Name
57676002	SNOMED-CT	Arthralgia
43724002	SNOMED-CT	Chills
49727002	SNOMED-CT	Cough
386661006	SNOMED-CT	Fever
25064002	SNOMED-CT	Headache
247472004	SNOMED-CT	Hives
271795006	SNOMED-CT	Malaise/fatigue
68962001	SNOMED-CT	Myalgia
68235000	SNOMED-CT	Nasal congestion
95388000	SNOMED-CT	Pain/soreness at injection site
271807003	SNOMED-CT	Rash
64531003	SNOMED-CT	Rhinorrhea
267036007	SNOMED-CT	Shortness of breath/difficulty breathing
162397003	SNOMED-CT	Sore throat
65124004	SNOMED-CT	Swelling

Figure 25: Adverse reaction example

```
<!-- Adverse Reaction Observation -->
<observation classCode="OBS" moodCode="EVN" negationInd="false">
  <templateId root="2.16.840.1.113883.10.20.1.54"/>
  <templateId root="2.16.840.1.113883.10.20.5.6.2"/>
  <code code="ASSERTION" codeSystem="2.16.840.1.113883.5.4"/>
  <statusCode code="completed"/>
  <value xsi:type="CD"
    code="386661006"
    codeSystem="2.16.840.1.113883.6.96"
    codeSystemName="SNOMED CT"
    displayName="Fever"/>
</observation>
```

5.2.3 Anesthesia Administration Clinical Statement

[substanceAdministration: templateId 2.16.840.1.113883.10.20.5.2.2.7.3]

This clinical statement reports whether anesthesia was administered.

If anesthesia was not administered, set the value of @negationInd to true. If anesthesia was administered, set the value of @negationInd to false.

1. **SHALL** contain [1..1] **@classCode**="SBADM" Substance administration (CodeSystem: 2.16.840.1.113883.5.6 HL7ActClass) **STATIC** (CONF:2234).
2. **SHALL** contain [1..1] **@moodCode**="EVN" Event (CodeSystem: 2.16.840.1.113883.5.1001 HL7ActMood) **STATIC** (CONF:2235).
3. **SHALL** contain **@negationInd** (CONF:2238).
4. **SHALL** contain [1..1] **consumable/manufacturedProduct/manufacturedLabeledDrug** (CONF:2236).
 - a. This consumable/manufacturedProduct/manufacturedLabeledDrug **SHALL** contain [1..1] **code/@code**="84451006" General Anesthesia (CodeSystem: 2.16.840.1.113883.6.96 SNOMEDCT) **STATIC** (CONF:2237).

Figure 26: Anesthesia administration example

```
<procedure classCode="PROC" moodCode="EVN">
  ...
  <entryRelationship typeCode="COMP">
    <substanceAdministration classCode="SBADM" moodCode="EVN"
      negationInd="false">
      <templateId root="2.16.840.1.113883.10.20.5.2.2.7.3"/>
      <consumable>
        <manufacturedProduct>
          <manufacturedLabeledDrug>
            <code code="84451006"
              codeSystem="2.16.840.1.113883.6.96"
              codeSystemName="SNOMED"
              displayName="general anesthesia"/>
          </manufacturedLabeledDrug>
        </manufacturedProduct>
      </consumable>
    </substanceAdministration>
  </entryRelationship>
</procedure>
```

5.2.4 Antiseptic Ointment Clinical Statement

[substanceAdministration: templateId 2.16.840.1.113883.10.20.5.6.3]

This clinical statement reports whether antiseptic ointment was applied. It is used in the 4th and final step in the Central-line Insertion Practice sequence, recording whether antiseptic ointment was applied after the procedure.

If this step was completed at this place in the sequence, set the value of **@negationInd** to false. If this step was not completed at this place in the sequence, set the value of **@negationInd** to true.

1. **SHALL** contain [1..1] **@classCode**="SBADM" Substance administration (CodeSystem: 2.16.840.1.113883.5.6 HL7ActClass) **STATIC** (CONF:2239).
2. **SHALL** contain [1..1] **@moodCode**="EVN" Event (CodeSystem: 2.16.840.1.113883.5.1001 HL7ActMood) **STATIC** (CONF:2240).
3. **SHALL** contain **@negationInd** (CONF:2241).
4. **SHALL** contain [1..1] **consumable/manufacturedProduct** (CONF:2242).

- a. This consumable/manufacturedProduct **SHALL** contain [1..1] @classCode="MANU" Manufactured product (CodeSystem: 2.16.840.1.113883.5.110 HL7RoleClass) **STATIC** (CONF:2243).
- b. This consumable/manufacturedProduct **SHALL** contain [1..1] manufacturedMaterial (CONF:2244).
 - i. This manufacturedMaterial **SHALL** contain [1..1] @classCode="MMAT" Manufactured material (CodeSystem: 2.16.840.1.113883.5.41 HL7EntityClass) **STATIC** (CONF:2245).
 - ii. This manufacturedMaterial **SHALL** contain [1..1] code/@code="C11180" Antiseptic ointment (CodeSystem: 2.16.840.1.113883.3.26.1.5 NDFRT) **STATIC** (CONF:2246).

Figure 27: Antiseptic ointment clinical statement example

```
<sequenceNumber value="4"/>
<substanceAdministration moodCode="EVN" classCode="SBADM" negationInd="false">
  <templateId root="2.16.840.1.113883.10.20.5.6.3"/>

  <consumable>
    <manufacturedProduct classCode="MANU">
      <manufacturedMaterial classCode="MMAT">
        <code code="C11180"
              codeSystem="2.16.840.1.113883.3.26.1.5"
              codeSystemName="NDFRT"
              displayName="Antiseptic Ointment"/>
      </manufacturedMaterial>
    </manufacturedProduct>
  </consumable>

</substanceAdministration>
```

5.2.5 ASA Class Observation

[observation: templateId 2.16.840.1.113883.10.20.5.2.2.7.4]

This observation records the patient's physical status using the American Society of Anesthesiologists (ASA) Class Codes. The SNOMED CT representation of ASA Class Codes includes a sixth value (413500003 ASA physical status class 6 for brain-dead patients taken to the operating room to remove organs for transplant). This sixth value is not part of the value set allowed in a CDA document submitted to NHSN.

1. **SHALL** contain [1..1] @classCode="OBS" Observation (CodeSystem: 2.16.840.1.113883.5.6 HL7ActClass) **STATIC** (CONF:2292).
2. **SHALL** contain [1..1] @moodCode="EVN" Event (CodeSystem: 2.16.840.1.113883.5.1001 HL7ActMood) **STATIC** (CONF:2293).
3. **SHALL** contain [1..1] code/@code="ASSERTION" Assertion (CodeSystem: 2.16.840.1.113883.5.4 HL7ActCode) **STATIC** (CONF:2289).
4. **SHALL** contain [1..1] statusCode/@code="completed" Completed (CodeSystem: 2.16.840.1.113883.5.14 HL7ActStatus) **STATIC** (CONF:2290).

5. **SHALL** contain [1..1] **value/@code**, which **SHALL** be selected from ValueSet 2.16.840.1.113883.13.10 NHSNASAClassCode **STATIC** 20090130 (CONF:2291).

Table 10: ASA Class Value Set

Value Set: NHSNASAClassCode 2.16.840.1.113883.13.10 Code System: SNOMED CT 2.16.840.1.113883.6.96		
Code	Code System	Meaning
413495001	SNOMED CT	ASA physical status class 1 (Normally healthy patient)
413496000	SNOMED CT	ASA physical status class 2 (Patient with mild systemic disease)
413497009	SNOMED CT	ASA physical status class 3 (Patient with severe systemic disease, not incapacitating)
413498004	SNOMED CT	ASA physical status class 4 (Patient with incapacitating systemic disease, constant threat to life)
413499007	SNOMED CT	ASA physical status class 5 (Moribund patient, < 24-hour life expectancy)

Figure 28: ASA class observation example

```
<observation classCode="OBS" moodCode="EVN">
  <templateId root="2.16.840.1.113883.10.20.5.2.2.7.4"/>
  <code codeSystem="2.16.840.1.113883.5.4" code="ASSERTION"/>
  <statusCode code="completed"/>
  <value xsi:type="CD" codeSystem="2.16.840.1.113883.6.96"
    codeSystemName="SNOMED"
    value="413496000"
    displayName="Patient with mild systemic disease"/>
</observation>
```

5.2.6 Bloodstream Infection Evidence Type Observation

[observation: templateId 2.16.840.1.113883.10.20.5.6.4]

This observation records whether the bloodstream infection being reported was confirmed by a positive blood culture or inferred from clinical symptoms.

1. **SHALL** contain [1..1] **@classCode="OBS"** Observation (CodeSystem: 2.16.840.1.113883.5.6 HL7ActClass) **STATIC** (CONF:2051).
2. **SHALL** contain [1..1] **@moodCode="EVN"** Event (CodeSystem: 2.16.840.1.113883.5.1001 HL7ActMood) **STATIC** (CONF:2052).
3. **SHALL** contain [1..1] **code/@code="ASSERTION"** Assertion (CodeSystem: 2.16.840.1.113883.5.4 HL7ActCode) **STATIC** (CONF:2053).
4. **SHALL** contain [1..1] **statusCode/@code="completed"** Completed (CodeSystem: 2.16.840.1.113883.5.14 HL7ActStatus) **STATIC** (CONF:2056).

5. **SHALL** contain [1..1] **value/@code**, which **SHALL** be selected from ValueSet 2.16.840.1.113883.13.7 NHSNBloodStreamInfectionEvidenceTypeCode **STATIC** 20090130 (CONF:2057).

Table 11: Bloodstream Infection Evidence Type Value Set

Value Set: NHSNBloodStreamInfectionEvidenceTypeCode 2.16.840.1.113883.13.7 Code System: cdcNHSN 2.16.840.1.113883.6.277		
Code	Code System	Meaning
1603-0	cdcNHSN	Clinical sepsis
1613-9	cdcNHSN	Laboratory-confirmed bloodstream infection

Figure 29: Bloodstream infection evidence type example

```
<observation classCode="OBS" moodCode="EVN">
  <templateId root="2.16.840.1.113883.10.20.5.6.4"/>
  <code codeSystem="2.16.840.1.113883.5.4"
    code="ASSERTION"/>
  <statusCode code="completed"/>
  <value xsi:type="CD"
    codeSystem="2.16.840.1.113883.6.277"
    codeSystemName="cdcNHSN"
    value="1603-0"
    displayName="clinical sepsis"/>
</observation>
```

5.2.7 CDAD Observation

[observation: templateId 2.16.840.1.113883.10.20.5.6.5]

This observation records whether the primary infection being reported involved a C.difficile-associated disease (CDAD). It is a general or summary observation not associated with any individual pathogen in the Findings Section.

If a C.difficile-associated disease was involved, set the value of @negationInd to false. If a C.difficile-associated disease was not involved, set the value of @negationInd to true.

1. **SHALL** contain [1..1] **@classCode="OBS"** Observation (CodeSystem: 2.16.840.1.113883.5.6 HL7ActClass) **STATIC** (CONF:2284).
2. **SHALL** contain [1..1] **@moodCode="EVN"** Event (CodeSystem: 2.16.840.1.113883.5.1001 HL7ActMood) **STATIC** (CONF:2285).
3. **SHALL** contain **@negationInd** (CONF:2614).
4. **SHALL** contain [1..1] **code/@code="ASSERTION"** (CodeSystem: 2.16.840.1.113883.5.4 HL7ActCode) **STATIC** (CONF:2286).
5. **SHALL** contain [1..1] **statusCode/@code="completed"** (CodeSystem: 2.16.840.1.113883.5.14 HL7ActStatus) **STATIC** (CONF:2287).
6. **SHALL** contain [1..1] **value/@code="1795-4"** C.-difficile-associated disease (CodeSystem: 2.16.840.1.113883.6.277 cdcNHSN) **STATIC** (CONF:2288).

Figure 30: CDAD observation example

```
<!-- The observation is negated, i.e. CDAD=no -->
<observation classCode="OBS" moodCode="EVN" negationInd="true">
  <templateId root="2.16.840.1.113883.10.20.5.6.5"/>
  <code codeSystem="2.16.840.1.113883.5.4" code="ASSERTION"/>
  <statusCode code="completed"/>
  <value xsi:type="CD"
    codeSystem="2.16.840.1.113883.6.277"
    codeSystemName="cdcNHSN"
    code="1795-4"
    displayName="C.difficile-associated disease"/>
</observation>
```

5.2.8 CDAD-related Surgery

[procedure: templateId 2.16.840.1.113883.10.20.5.6.6]

If the infection is a CDAD infection, a CDAD-related Surgery clinical statement is required, recording whether the patient underwent surgery for CDAD complications.

If the patient underwent surgery for CDAD complications, set the value of @negationInd to false. If the patient did not undergo surgery for CDAD complications, set the value of @negationInd to true.

1. **SHALL** contain [1..1] @classCode="PROC" Procedure (CodeSystem: 2.16.840.1.113883.5.6 HL7ActClass) **STATIC** (CONF:2269).
2. **SHALL** contain [1..1] @moodCode="EVN" Event (CodeSystem: 2.16.840.1.113883.5.1001 HL7ActMood) **STATIC** (CONF:2270).
3. **SHALL** contain @negationInd (CONF:2271).
4. **SHALL** contain [1..1] code/@code="387713003" Surgical procedure (CodeSystem: 2.16.840.1.113883.6.96 SNOMEDCT) **STATIC** (CONF:2272).

Figure 31: CDAD-related surgery example

```
<!-- The patient did not undergo surgery as a result of the (CDAD)
infection -->

<procedure classCode="RROC" moodCode="EVN" negationInd="true">
  <templateId root="2.16.840.1.113883.10.20.5.6.6"/>
  <code xsi:type="CD"
    codeSystem="2.16.840.1.113883.6.96"
    codeSystemName="SNOMED"
    code="387713003"
    displayName="Surgical procedure"/>
</procedure>
```

5.2.9 Central-line Insertion Practice Clinical Statement

[act: templateId 2.16.840.1.113883.10.20.5.6.7]

This clinical statement records whether specified infection-prevention actions were performed in a specified sequence.

Recording sequence is expressed with the CDA `entryRelationship/sequenceNumber` feature. This follows the RIM modeling for definitions (e.g., of a protocol).

A `@negationInd` on each step expresses whether the step did [or did not] occur in sequence.

Below are the items, in sequence, to record within the Central-line Insertion Practice Report:

- preparation
 - hand hygiene
 - sterile barriers
 - skin solution[s] applied
 - skin solution[s] had dried
 - the procedure (central-line insertion: infection risk factors):
 - catheter type
 - number of lumens
 - guidewire used
 - antiseptic ointment
1. **SHALL** contain [1..1] `@classCode="ACT"` Act (CodeSystem: 2.16.840.1.113883.5.6 HL7ActClass) **STATIC** (CONF:2625).
 2. **SHALL** contain [1..1] `@moodCode="EVN"` Event (CodeSystem: 2.16.840.1.113883.5.1001 HL7ActMood) **STATIC** (CONF:2626).
 3. **SHALL** contain [1..1] `@negationInd="false"` (CONF:2627).
 4. **SHALL** contain [1..1] `code/@code="3108-8"` Central line insertion practice (CodeSystem: 2.16.840.1.113883.6.277 cdcNHSN) **STATIC** (CONF:2628).
 5. **SHALL** contain [1..1] `entryRelationship` (CONF:2629) such that it
 - a. **SHALL** contain [1..1] `@typeCode="COMP"` Has component (CodeSystem: 2.16.840.1.113883.5.1002 HL7ActRelationshipType) **STATIC** (CONF:2630).
 - b. **SHALL** contain [1..1] `sequenceNumber/@value="1"` (CONF:2631).
 - c. **SHALL** contain [1..1] **Central-line Insertion Preparation Organizer** (templateId:2.16.840.1.113883.10.20.5.6.8) (CONF:2632).
 6. **SHALL** contain [1..1] `entryRelationship` (CONF:2633) such that it
 - a. **SHALL** contain [1..1] `@typeCode="COMP"` Has component (CodeSystem: 2.16.840.1.113883.5.1002 HL7ActRelationshipType) **STATIC** (CONF:2634).
 - b. **SHALL** contain [1..1] `sequenceNumber/@value="2"` (CONF:2635).
 - c. **SHALL** contain [1..1] **Solutions Dried Observation** (templateId:2.16.840.1.113883.10.20.5.6.44) (CONF:2636).

7. **SHALL** contain [1..1] **entryRelationship** (CONF:2637) such that it
 - a. **SHALL** contain [1..1] **@typeCode="COMP"** Has component (CodeSystem: 2.16.840.1.113883.5.1002 HL7ActRelationshipType) **STATIC** (CONF:2638).
 - b. **SHALL** contain [1..1] **sequenceNumber/@value="3"** (CONF:2639).
 - c. **SHALL** contain [1..1] **Procedure Risk Factors Clinical Statement in a CLIP Report** (templateId:2.16.840.1.113883.10.20.5.6.36) (CONF:2640).
8. **SHALL** contain [1..1] **entryRelationship** (CONF:2641) such that it
 - a. **SHALL** contain [1..1] **@typeCode="COMP"** Has component (CodeSystem: 2.16.840.1.113883.5.1002 HL7ActRelationshipType) **STATIC** (CONF:2642).
 - b. **SHALL** contain [1..1] **sequenceNumber/@value="4"** (CONF:2643).
 - c. **SHALL** contain [1..1] **Antiseptic Ointment Clinical Statement** (templateId:2.16.840.1.113883.10.20.5.6.3) (CONF:2644).

Figure 32: Central-line insertion practice clinical statement example

```
<act moodCode="EVN" classCode="ACT" negationInd="false">
  <templateId root="2.16.840.1.113883.10.20.5.6.7"/>
  <code code="3108-8"
    codeSystem="2.16.840.1.113883.6.277"
    codeSystemName="cdcNHSN"
    displayName="Central line insertion practice"/>

  <entryRelationship>
    <sequenceNumber value="1"/>
    <organizer>
      <templateId root="2.16.840.1.113883.10.20.5.6.8"/>
      ...
    </organizer>
  </entryRelationship>

  <entryRelationship>
    <sequenceNumber value="2"/>
    <observation>
      <templateId root="2.16.840.1.113883.10.20.5.6.44"/>
      ...
    </observation>
  </entryRelationship>

  <entryRelationship>
    <sequenceNumber value="3"/>
    <procedure>
      <templateId root="2.16.840.1.113883.10.20.5.6.36"/>
      ...
    </procedure>
  </entryRelationship>

  <entryRelationship>
    <sequenceNumber value="4"/>
    <substanceAdministration>
      <templateId root="2.16.840.1.113883.10.20.5.6.3"/>
      ...
    </substanceAdministration>
  </entryRelationship>
</act>
```

5.2.10 Clinical Specialty Observation

[observation: templateId 2.16.840.1.113883.10.20.5.6.9]

This observation records the occupation of a person under consideration for immunization. It is used in the Immunization Report as submitted for healthcare workers, if the occupation is physician or intern or resident.

The value set for clinical specialties is very large and is not reproduced in this DSTU. The codes are available from <http://www.wpc-edi.com/taxonomy>.

1. **SHALL** contain [1..1] **@classCode**="OBS" Observation (CodeSystem: 2.16.840.1.113883.5.6 HL7ActClass) **STATIC** (CONF:2294).
2. **SHALL** contain [1..1] **@moodCode**="DEF" Definition (CodeSystem: 2.16.840.1.113883.5.1001 HL7ActMood) **STATIC** (CONF:2295).
3. **SHALL** contain [1..1] **@negationInd**="false" (CONF:2615).
4. **SHALL** contain [1..1] **code/@code**="3195-5" Clinical specialty (CodeSystem: 2.16.840.1.113883.6.277 cdcNHSN) **STATIC** (CONF:2296).
5. **SHALL** contain [1..1] **statusCode/@code**="completed" Completed (CodeSystem: 2.16.840.1.113883.5.14 HL7ActStatus) **STATIC** (CONF:2297).
6. **SHALL** contain [1..1] **value/@code**, which **SHALL** be selected from ValueSet 2.16.840.1.114222.4.11.3191 NHSNClinicalSpecialtyCode **DYNAMIC** (CONF:2298).

Table 12: Clinical Specialty Value Set

Value Set: NHSNClinicalSpecialtyCode 2.16.840.1.114222.4.11.3191 Code System: NUCCProviderCodes 2.16.840.1.113883.6.101		
Code	Code System	Print Name
The codes are available from http://www.wpc-edi.com/taxonomy .		

Figure 33: Clinical specialty observation example

```
<!-- occupation observation -->
<observation classCode="OBS" moodCode="EVN" negationInd="false">
  <templateId root="2.16.840.1.113883.10.20.5.6.28"/>
  <code code="224361009"
    codeSystem="2.16.840.1.113883.6.96"
    codeSystemName="SNOMED CT"
    displayName="Type of job"/>
  <statusCode code="completed"/>
  <value xsi:type="CD"
    code="207R00000X"
    codeSystem="2.16.840.1.113883.6.101"
    codeSystemName="NUCCProviderCodes"
    displayName="Internal Medicine"/>
  <entryRelationship typeCode="COMP">
    <observation classCode="OBS" moodCode="DEF" negationInd="false">
      <!-- Clinical Specialty Observation -->
      <templateId root="2.16.840.1.113883.10.20.5.6.9"/>
      <code code="3195-5"
        codeSystem="2.16.840.1.113883.6.277"
        codeSystemName="cdcNHSN"
        displayName="Clinical Specialty"/>
      <statusCode code="completed"/>
      <value xsi:type="CD"
        code="394584008"
        codeSystem="2.16.840.1.113883.6.96"
        codeSystemName="SNOMED CT"
        displayName="Gastroenterology"/>
    </observation>
  </entryRelationship>
</observation>
```

5.2.11 Criterion of Diagnosis Observation

[observation: templateId 2.16.840.1.113883.10.20.5.6.10]

This observation records a criterion used in the diagnosis of the infection type. It appears within the Criterion of Diagnosis Organizer.

If the Criterion of Diagnosis was used in arriving at the diagnosis of the infection type, set the value of @negationInd to false. If the criterion was not used, set the value of @negationInd to true.

The NHSNCriterionofDiagnosis value set includes the criteria for Signs & Symptoms, Laboratory Results, and Clinical Diagnosis as a single value-set. The NHSN Protocol specifies which Criterion of Diagnosis Observations must appear in each report type for which they are required. Those rules do not form part of this template.

1. **SHALL** contain [1..1] @classCode="OBS" Observation (CodeSystem: 2.16.840.1.113883.5.6 HL7ActClass) **STATIC** (CONF:2058).
2. **SHALL** contain [1..1] @moodCode="EVN" Event (CodeSystem: 2.16.840.1.113883.5.1001 HL7ActMood) **STATIC** (CONF:2059).
3. **SHALL** contain @negationInd (CONF:2060).

4. **SHALL** contain [1..1] **code/@code**="ASSERTION" Assertion (CodeSystem: 2.16.840.1.113883.5.4 HL7ActCode) **STATIC** (CONF:2061).
5. **SHALL** contain [1..1] **statusCode/@code**="completed" Completed (CodeSystem: 2.16.840.1.113883.5.14 HL7ActStatus) **STATIC** (CONF:2062).
6. **SHALL** contain [1..1] **value/@code**, which **SHALL** be selected from ValueSet 2.16.840.1.114222.4.11.3195 NHSNCriterionOfDiagnosisCode **DYNAMIC** (CONF:2063).

Table 13: Criterion of Diagnosis Value Set (excerpt)

Value Set: NHSNCriterionOfDiagnosisCode 2.16.840.1.114222.4.11.3195 Code System: SNOMED CT 2.16.840.1.113883.6.96 or cdcNHSN 2.16.840.1.113883.6.277		
The full table is shown in Criterion of Diagnosis Value Set		
Code	Code System	Meaning
2403-4	cdcNHSN	1 positive culture with $\geq 10^3$ CFU/ml and $< 10^5$ CFU/ml with no more than 2 species of microorganisms
1942-2	cdcNHSN	>15 colonies cultured from IV cannula tip using semiquantitative culture method
1932-3	cdcNHSN	$\geq 5\%$ BAL cells w/bacteria
1938-0	cdcNHSN	4-fold rise in L. pneumophila antibody titer
1935-6	cdcNHSN	4-fold rise in paired sera for pathogen
128477000	SNOMED CT	Abscess
...		

Figure 34: Criterion of diagnosis observation examples

```
<observation classCode="OBS" moodCode="EVN" negationInd="false">
  <templateId root="2.16.840.1.113883.10.20.5.6.10"/>
  <code codeSystem="2.16.840.1.113883.5.4" code="ASSERTION"/>
  <statusCode code="completed"/>
  <value xsi:type="CD"
    codeSystem="2.16.840.1.113883.6.96"
    codeSystemName="SNOMED"
    code="255320000"
    displayName="Purulent drainage"/>
</observation>

<observation classCode="OBS" moodCode="EVN" negationInd="true">
  <templateId root="2.16.840.1.113883.10.20.5.6.10"/>
  <code codeSystem="2.16.840.1.113883.5.4" code="ASSERTION"/>
  <statusCode code="completed"/>
  <value xsi:type="CD"
    codeSystem="2.16.840.1.113883.6.96"
    codeSystemName="SNOMED"
    code="386661006"
    displayName="Fever"/>
</observation>
```

5.2.12 Death Observation

[observation: templateId 2.16.840.1.113883.10.20.5.6.12]

This observation records whether the patient died and, if so, whether the infection being recorded contributed to that death.

If the patient died, set the value of @negationInd to false. If the patient did not die, set the value of @negationInd to true.

If the patient died, the Death Observation must also indicate whether the infection contributed to the death using an entryRelationship element containing an Infection Contributed to Death Observation. An inversionInd attribute on this entryRelationship element indicates that it should be interpreted as if the roles of the source and target entries were reversed. Thus, the observation reports whether the infection “supported” (contributed to) the death. The CAUS value does not have the force of “cause of death” on a death certificate; it indicates that the infection is causal or contributory to the death.

1. **SHALL** contain [1..1] @classCode="OBS" Observation (CodeSystem: 2.16.840.1.113883.5.6 HL7ActClass) **STATIC** (CONF:2081).
2. **SHALL** contain [1..1] @moodCode="EVN" Event (CodeSystem: 2.16.840.1.113883.5.1001 HL7ActMood) **STATIC** (CONF:2082).
3. **SHALL** contain @negationInd (CONF:2083).
4. **SHALL** contain [1..1] code/@code="ASSERTION" Assertion (CodeSystem: 2.16.840.1.113883.5.4 HL7ActCode) **STATIC** (CONF:2084).
5. **SHALL** contain [1..1] statusCode/@code="completed" Completed (CodeSystem: 2.16.840.1.113883.5.14 HL7ActStatus) **STATIC** (CONF:2085).

6. **SHALL** contain [1..1] **value/@code="419099009"** Dead (CodeSystem: 2.16.840.1.113883.6.96 SNOMEDCT) **STATIC** (CONF:2086).
7. If the patient died, an entryRelationship element **SHALL** be present where the value of @typeCode is CAUS (causal or contributory) and the value of @inversionInd is true. The entryRelationship **SHALL** contain an Infection Contributed to Death Observation (templateId 2.16.840.1.113883.10.20.5.6.22). If the infection contributed to death, the value of entryRelationship/@negationInd **SHALL** be false. If the infection did not contribute to the death, the value of @negationInd **SHALL** be true. (CONF:2599).

Figure 35: Death observation example: patient did not die

```
<!-- "Dead" is negated = patient did not die -->
<observation classCode="OBS" moodCode="EVN" negationInd="true">
  <templateId root="2.16.840.1.113883.10.20.5.6.12"/>
  <code codeSystem="2.16.840.1.113883.5.4"
    code="ASSERTION"/>
  <statusCode code="completed"/>
  <value xsi:type="CD"
    code="419099009"
    codeSystem="2.16.840.1.113883.6.96"
    codeSystemName="SNOMED"
    displayName="Dead"/>
</observation>
```

5.2.13 Diabetes Mellitus Observation

[observation: templateId 2.16.840.1.113883.10.20.5.2.2.7.7]

This observation records whether the person had diabetes mellitus.

If the person did have diabetes, set the value of @negationInd to false. If the person did not have diabetes mellitus, set the value of @negationInd to true.

1. **SHALL** contain [1..1] **@classCode="OBS"** Observation (CodeSystem: 2.16.840.1.113883.5.6 HL7ActClass) **STATIC** (CONF:2299).
2. **SHALL** contain [1..1] **@moodCode="EVN"** Event (CodeSystem: 2.16.840.1.113883.5.1001 HL7ActMood) **STATIC** (CONF:2300).
3. **SHALL** contain **@negationInd** (CONF:2301).
4. **SHALL** contain [1..1] **code/@code="ASSERTION"** Assertion (CodeSystem: 2.16.840.1.113883.5.4 HL7ActCode) **STATIC** (CONF:2302).
5. **SHALL** contain [1..1] **statusCode/@code="completed"** Completed (CodeSystem: 2.16.840.1.113883.5.14 HL7ActStatus) **STATIC** (CONF:2303).
6. **SHALL** contain [1..1] **value/@code="73211009"** Diabetes mellitus (CodeSystem: 2.16.840.1.113883.6.96 SNOMEDCT) **STATIC** (CONF:2304).

Figure 36: Diabetes mellitus observation example

```
<observation classCode="OBS" moodCode="EVN" negationInd="false">
  <templateId root="2.16.840.1.113883.10.20.5.2.2.7.7"/>
  <code code="ASSERTION"
    codeSystem="2.16.840.1.113883.5.4"/>
  <statusCode code="completed"/>
  <value xsi:type="CD"
    code="73211009"
    codeSystem="2.16.840.1.113883.6.96"
    codeSystemName="SNOMED"
    displayName="Diabetes mellitus"/>
</observation>
```

5.2.14 Drug-susceptibility Test Observation

[observation: templateId 2.16.840.1.113883.10.20.5.2.5.1.2]

This observation uses two codes, one to identify the drug, and the other to record the pathogen's susceptibility to it. A LOINC code represents a methodless isolate drug-susceptibility test, an HL7 ObservationInterpretation code represents the susceptibility finding.

1. **SHALL** contain [1..1] @**classCode**="OBS" Observation (CodeSystem: 2.16.840.1.113883.5.6 HL7ActClass) **STATIC** (CONF:2028).
2. **SHALL** contain [1..1] @**moodCode**="EVN" Event (CodeSystem: 2.16.840.1.113883.5.1001 HL7ActMood) **STATIC** (CONF:2029).
3. **SHALL** contain [1..1] **code**/@**code**, which **SHALL** be selected from ValueSet 2.16.840.1.113883.13.15 NHSNDrugSusceptibilityTestCode **DYNAMIC** (CONF:2030).
4. **SHALL** contain [1..1] **statusCode**/@**code**="completed" Completed (CodeSystem: 2.16.840.1.113883.5.14 HL7ActStatus) **STATIC** (CONF:2036).
5. **SHALL** contain [1..1] **interpretationCode** (CONF:2031).
6. If the interpretation result is known, the value of interpretationCode/@code **SHALL** be selected from Value Set 2.16.840.1.113883.13.13 NHSNDrugSusceptibilityFindingCode **STATIC** 20080130. If the drug was not tested, the value of @nullFlavor **SHALL** be NASK. (CONF:2135).

Table 14: Drug-susceptibility Tests Value Set (excerpt)

Value Set: NHSNDrugSusceptibilityTestsCode 2.16.840.1.113883.13.15 Code System: LOINC 2.16.840.1.113883.6.1		
The full table is shown in Drug-susceptibility Tests Value Set		
Code	Code System	Meaning
18860-7	LOINC	Amikacin Susc Islt
18862-3	LOINC	Amoxicillin+Clav Susc Islt
...	LOINC	...

Table 15: Drug-susceptibility Finding Value Set

Value Set: NHSNDrugSusceptibilityFindingCode 2.16.840.1.113883.13.13 Code System: HL7 ObservationInterpretation 2.16.840.1.113883.5.83		
Code	Code System	Meaning
S	HL7 ObservationInterpretation	Susceptible
I	HL7 ObservationInterpretation	Intermediate
R	HL7 ObservationInterpretation	Resistant

Figure 37: Drug-susceptibility test observation example

```

<observation classCode="OBS" moodCode="EVN">
  <templateId root=" 2.16.840.1.113883.10.20.5.2.5.1.2"/>
  <code codeSystem="2.16.840.1.113883.6.1"
    codeSystemName="LOINC"
    code="19000-9"
    displayName="Vancomycin Susc Islt"/>
  <statusCode code="completed"/>
  <interpretationCode codeSystem="2.16.840.1.113883.5.83"
    codeSystemName="HL7 Observation Interpretation"
    code="S"
    displayName="susceptible"/>
</observation>

```

5.2.15 Duration of Labor Observation

[observation: templateId 2.16.840.1.113883.10.20.5.2.2.7.11]

This observation records the duration of labor in value/width. NHSN protocol requires that the duration be expressed as an integer.

1. **SHALL** contain [1..1] **@classCode**="OBS" Observation (CodeSystem: 2.16.840.1.113883.5.6 HL7ActClass) **STATIC** (CONF:2305).
2. **SHALL** contain [1..1] **@moodCode**="EVN" Event (CodeSystem: 2.16.840.1.113883.5.1001 HL7ActMood) **STATIC** (CONF:2306).
3. **SHALL** contain [1..1] **code/@code**="289248003" Duration of labor (CodeSystem: 2.16.840.1.113883.6.96 SNOMEDCT) **STATIC** (CONF:2308).
4. **SHALL** contain [1..1] **statusCode/@code**="completed" Completed (CodeSystem: 2.16.840.1.113883.5.14 HL7ActStatus) **STATIC** (CONF:2309).
5. **SHALL** contain [1..1] **value** (CONF:2310).
 - a. This value **SHALL** contain [1..1] **width** (CONF:2311).
 - i. This width **SHALL** contain **@value** (CONF:2312).
 - ii. This width **SHALL** contain **@unit** (CONF:2313).
6. The value of value/**@xsi:type** **SHALL** be IVL_TS. (CONF:2601).

7. The value of width/@value **SHALL** be a non-negative real number representation the duration of labor in terms of the units specified in @unit. (CONF:2314).

Figure 38: Duration of labor observation example

```
<observation classCode="OBS" moodCode="EVN">
  <templateId root="2.16.840.1.113883.10.20.5.2.2.7.11"/>
  <code code="289248003"
        codeSystem="2.16.840.1.113883.6.96"
        codeSystemName="SNOMED"
        displayName="Duration of labor"/>
  <statusCode code="completed"/>
  <value xsi:type="IVL_TS">
    <width value="8" unit="h"/>
  </value>
</observation>
```

5.2.16 Eligibility Criterion Observation

[observation: templateId 2.16.840.1.113883.10.20.5.6.13]

In the NHSN Influenza Immunization Report, the offer to immunize may have been made:

- to an inpatient who meets one or more of six criteria that put the person at high risk of contracting influenza. These risk factors are recorded as the criteria for making the offer to immunize.
 - to a healthcare worker. The occupation of healthcare worker is recorded as the criterion for making the offer to immunize, and additional information about the person is required (see the [Healthcare Service Location Value Set](#)).
1. **SHALL** contain [1..1] @classCode="OBS" Observation (CodeSystem: 2.16.840.1.113883.5.6 HL7ActClass) **STATIC** (CONF:2645).
 2. **SHALL** contain [1..1] @moodCode="EVN" Event (CodeSystem: 2.16.840.1.113883.5.1001 HL7ActMood) **STATIC** (CONF:2646).
 3. **SHALL** contain [1..1] code/@code="ASSERTION" Assertion (CodeSystem: 2.16.840.1.113883.5.4 HL7ActCode) **STATIC** (CONF:2648).
 4. **SHALL** contain [1..1] statusCode/@code="completed" Completed (CodeSystem: 2.16.840.1.113883.5.14 HL7ActStatus) **STATIC** (CONF:2649).
 5. **SHALL** contain [1..1] code (CONF:2650).
 6. If the observation records a high-risk criterion for influenza, the value of code/@code **SHALL** be selected from Value Set 2.16.840.1.114222.4.11.3186 NHSNInfluenzaHighRiskCriteriaCode **STATIC** 20091101 and @negationInd **SHALL** be present. (CONF:2651).
 7. If the observation records that the person is a healthcare worker, the value of code/@code **SHALL** be 224363007 Employed (finding) 2.16.840.1.113883.6.96 SNOMED. The value of observation/@negationInd **SHALL** be false. A participant element **SHALL** be present where the value of @type is SBJ and the value of role/@code is 223366009 Healthcare worker 2.16.840.1.113883.6.96 SNOMED. A participant element **SHALL** be present,

- representing the person's work location, where the value of @type is LOC and the value of participantRole/@code is selected from Value Set 2.16.840.1.113883.13.19 NHSNHealthcareServiceLocationCode **STATIC** 20091101. (CONF:2652).
8. If the observation records that the person is a healthcare worker, an entryRelationship where the value of @typeCode is COMP **SHALL** be present containing a Patient Care Observation (templateId 2.16.840.1.113883.10.20.5.6.30). (CONF:2653).
 9. If the observation records that the person is a healthcare worker, an entryRelationship where the value of @typeCode is COMP **SHALL** be present containing an Occupation Observation (templateId 2.16.840.1.113883.10.20.5.6.28). (CONF:2654).

Table 16: Influenza High-Risk Criteria Value Set

Value Set: NHSNInfluenzaHighRiskCriteriaCode 2.16.840.1.114222.4.11.3186 Code System: cdcNHSN 2.16.840.1.113883.6.277		
Code	Code System	Print Name
2180-8	cdcNHSN	Child/adolescent aged 6 months - 18 years
2182-4	cdcNHSN	Adult aged ≥ 50 years
2181-6	cdcNHSN	Child/adolescent aged 6 months - 18 years AND receiving long-term aspirin therapy
2185-7	cdcNHSN	Condition/disease/history listed in the NHSN protocol as an indication for high risk of influenza.
2184-0	cdcNHSN	Pregnancy
2183-2	cdcNHSN	Resident of nursing home or other chronic-care facility
2186-5	cdcNHSN	Person who lives with or cares for children younger than 6 months of age
2187-3	cdcNHSN	Person over 6 months of age who has chronic health disorder(s) or compromised immune system

Figure 39: Example for person meeting one or more high-risk criteria for influenza eligibility criterion observation

```
<entryRelationship typeCode="RSON">
<!-- Eligibility Criterion Observation -->
  <observation classCode="OBS" moodCode="EVN" negationInd="true">
    <templateId root="2.16.840.1.113883.10.20.5.6.13"/>
    <code codeSystem="2.16.840.1.113883.5.4"
      code="ASSERTION"/>
    <statusCode code="completed"/>
    <value xsi:type="CD"
      codeSystem="2.16.840.1.113883.6.277"
      codeSystemName="cdcNHSN"
      code="2180-8"
      displayName="Age: 6 months to 18 years"/>
  </observation>
</entryRelationship>

<entryRelationship typeCode="RSON">
<!-- Eligibility Criterion Observation -->
  <observation classCode="OBS" moodCode="EVN" negationInd="true">
    <templateId root="2.16.840.1.113883.10.20.5.6.13"/>
    <code codeSystem="2.16.840.1.113883.5.4"
      code="ASSERTION"/>
    <statusCode code="completed"/>
    <value xsi:type="CD"
      codeSystem="2.16.840.1.113883.6.277"
      codeSystemName="cdcNHSN"
      code="2181-6"
      displayName="Age: 6 months to 18 years
      AND receiving long-term aspirin therapy"/>
  </observation>
</entryRelationship>

...
<!-- Include observations for all values in Influenza High-Risk Criteria value
set -->
...
```

5.2.17 Endoscope Used Clinical Statement

[procedure: templateId 2.16.840.1.113883.10.20.5.2.1.3]

This clinical statement records whether an endoscope was used.

If an endoscope was used, set the value of @negationInd to false. If an endoscope was not used, set the value of @negationInd to true.

1. **SHALL** contain [1..1] @classCode="PROC" Procedure (CodeSystem: 2.16.840.1.113883.5.6 HL7ActClass) **STATIC** (CONF:2315).
2. **SHALL** contain [1..1] @moodCode="EVN" Event (CodeSystem: 2.16.840.1.113883.5.1001 HL7ActMood) **STATIC** (CONF:2316).
3. **SHALL** contain @negationInd (CONF:2317).

4. **SHALL** contain [1..1] **code/@code**="423827005" Endoscopy (CodeSystem: 2.16.840.1.113883.6.96 SNOMEDCT) **STATIC** (CONF:2318).

Figure 40: Endoscope used procedure example

```
<procedure classCode="PROC" moodCode="EVN">
  ...
  <entryRelationship typeCode="COMP">
    <procedure classCode="PROC" moodCode="EVN" negationInd="false">
      <templateId root="2.16.840.1.113883.10.20.5.2.1.3"/>
      <code codeSystem="2.16.840.1.113883.6.96"
        codeSystemName="SNOMED"
        code="423827005"
        displayName="Endoscopy"/>
    </procedure>
  </entryRelationship>
  ...
</procedure>
```

5.2.18 Estimated Maternal Blood Loss Observation

[observation: templateId 2.16.840.1.113883.10.20.5.2.2.7.12]

This observation records the estimated blood loss. NHSN protocol requires that the value be an integer.

1. **SHALL** contain [1..1] **@classCode**="OBS" Observation (CodeSystem: 2.16.840.1.113883.5.6 HL7ActClass) **STATIC** (CONF:2319).
2. **SHALL** contain [1..1] **@moodCode**="EVN" Event (CodeSystem: 2.16.840.1.113883.5.1001 HL7ActMood) **STATIC** (CONF:2320).
3. **SHALL** contain [1..1] **code/@code**="409086003" Estimated maternal blood loss (CodeSystem: 2.16.840.1.113883.6.96 SNOMEDCT) **STATIC** (CONF:2321).
4. **SHALL** contain [1..1] **statusCode/@code**="completed" Completed (CodeSystem: 2.16.840.1.113883.5.14 HL7ActStatus) **STATIC** (CONF:2322).
5. **SHALL** contain [1..1] **value** (CONF:2323).
 - a. This value **SHALL** contain **@value** (CONF:2324).
 - b. This value **SHALL** contain **@unit** (CONF:2325).
6. The value of value/@xsi:type **SHALL** be PQ. (CONF:2602).
7. The value of value/@value **SHALL** be a non-negative real number representing the estimated blood loss in terms of the units specified in @unit. (CONF:2326).

Figure 41: Estimated maternal blood loss observation example

```
<observation classCode="OBS" moodCode="EVN">
  <templateId root="2.16.840.1.113883.10.20.5.2.2.7.12"/>
  <code code="409086003"
    codeSystem="2.16.840.1.113883.6.96"
    codeSystemName="SNOMED"
    displayName="Estimated maternal blood loss"/>
  <statusCode code="completed"/>
  <value xsi:type="PQ" value="250" unit="mL"/>
</observation>
```

5.2.19 Guidewire Used Clinical Statement

[procedure: templateId 2.16.840.1.113883.10.20.5.6.15]

This clinical statement records whether the performance of a central-line exchange used a guidewire.

If the central line was exchanged over a guidewire, set the value of @negationInd to false. If the central line was not exchanged over a guidewire, set the value of @negationInd to true.

1. **SHALL** contain [1..1] @c**lassCode**="PROC" Procedure (CodeSystem: 2.16.840.1.113883.5.6 HL7ActClass) **STATIC** (CONF:2331).
2. **SHALL** contain [1..1] @m**oodCode**="EVN" Event (CodeSystem: 2.16.840.1.113883.5.1001 HL7ActMood) **STATIC** (CONF:2332).
3. **SHALL** contain @n**egationInd** (CONF:2333).
4. **SHALL** contain [1..1] c**ode**/@c**ode**="3121-1" Central line exchanged over guidewire (CodeSystem: 2.16.840.1.113883.6.277 cdcNHSN) **STATIC** (CONF:2334).

Figure 42: Guidewire used clinical statement example

```
<procedure moodCode="EVN" classCode="PROC" negationInd="false">
  <templateId root="2.16.840.1.113883.10.20.5.6.15"/>
  <code code="3121-1"
    codeSystem="2.16.840.1.113883.6.277"
    codeSystemName="cdcNHSN"
    displayName="Central line exchanged over guidewire"/>
</procedure>
```

5.2.20 Hand Hygiene Performed Clinical Statement

[procedure: templateId 2.16.840.1.113883.10.20.5.6.16]

This clinical statement reports whether hand hygiene was performed. It is one of the actions recorded in the first, preparatory step of in the Central-line Insertion Practice sequence.

If the preparation step included hand hygiene, set the value of @negationInd to false. If the preparation step did not include hand hygiene, set the value of @negationInd to true.

1. **SHALL** contain [1..1] **@classCode**="PROC" Procedure (CodeSystem: 2.16.840.1.113883.5.6 HL7ActClass) **STATIC** (CONF:2335).
2. **SHALL** contain [1..1] **@moodCode**="EVN" Event (CodeSystem: 2.16.840.1.113883.5.1001 HL7ActMood) **STATIC** (CONF:2336).
3. **SHALL** contain **@negationInd** (CONF:2337).
4. **SHALL** contain [1..1] **statusCode/@code**="completed" (CodeSystem: 2.16.840.1.113883.5.14 HL7ActStatus) **STATIC** (CONF:2600).
5. **SHALL** contain [1..1] **code/@code**="3109-6" Hand hygiene (CodeSystem: 2.16.840.1.113883.6.277 cdcNHSN) **STATIC** (CONF:2338).

Figure 43: Hand hygiene performed clinical statement example

```
<component>
  <procedure moodCode="EVN" classCode="PROC" negationInd="false">
    <templateId root="2.16.840.1.113883.10.20.5.6.16"/>
    <code code="3109-6"
      codeSystem="2.16.840.1.113883.6.277"
      codeSystemName="cdcNHSN"
      displayName="Hand hygiene"/>
  </procedure>
</component>
```

5.2.21 Height Observation

[observation: templateId 2.16.840.1.113883.10.20.5.2.2.7.9]

This observation records a body height. NHSN protocol requires that the value be an integer.

1. **SHALL** contain [1..1] **@classCode**="OBS" Observation (CodeSystem: 2.16.840.1.113883.5.6 HL7ActClass) **STATIC** (CONF:2339).
2. **SHALL** contain [1..1] **@moodCode**="EVN" Event (CodeSystem: 2.16.840.1.113883.5.1001 HL7ActMood) **STATIC** (CONF:2340).
3. **SHALL** contain [1..1] **code/@code**="50373000" Body height (CodeSystem: 2.16.840.1.113883.6.96 SNOMEDCT) **STATIC** (CONF:2341).
4. **SHALL** contain [1..1] **statusCode/@code**="completed" (CodeSystem: 2.16.840.1.113883.5.14 HL7ActStatus) **STATIC** (CONF:2342).
5. **SHALL** contain [1..1] **value** (CONF:2343).
 - a. This value **SHALL** contain **@value** (CONF:2344).
 - b. This value **SHALL** contain **@unit** (CONF:2345).
6. The value of **value/@xsi:type** **SHALL** be PQ. (CONF:2603).
7. The value of **value/@value** **SHALL** be a non-negative real number representing the body height in terms of the units specified in **@unit**. (CONF:2346).

Figure 44: Height observation example

```
<observation classCode="OBS" moodCode="EVN">
  <templateId root="2.16.840.1.113883.10.20.5.2.2.7.9"/>
  <code code="50373000"
    codeSystem="2.16.840.1.113883.6.96"
    codeSystemName="SNOMED"
    displayName="Body Height"/>
  <statusCode code="completed"/>
  <value xsi:type="PQ" value="190" unit="cm"/>
</observation>
```

5.2.22 History of Object Presence Observation

[observation: templateId 2.16.840.1.113883.10.20.5.6.56]

This observation records a fact about the history of an object's presence.

If the patient had a urinary catheter removed within 48 hours, set the value of @negationInd to false. If the patient did not have a urinary catheter removed within 48 hours, set the value of @negationInd to true.

1. **SHALL** contain [1..1] @**classCode**="OBS" Observation (CodeSystem: 2.16.840.1.113883.5.6 HL7ActClass) **STATIC** (CONF:4209).
2. **SHALL** contain [1..1] @**moodCode**="EVN" Event (CodeSystem: 2.16.840.1.113883.5.1001 HL7ActMood) **STATIC** (CONF:4210).
3. **SHALL** contain @**negationInd** (CONF:4211).
4. **SHALL** contain [1..1] **code**/@**code**="ASSERTION" Assertion (CodeSystem: 2.16.840.1.113883.5.4 HL7ActCode) **STATIC** (CONF:4212).
5. **SHALL** contain [1..1] **statusCode**/@**code**="completed" Completed (CodeSystem: 2.16.840.1.113883.5.14 HL7ActStatus) **STATIC** (CONF:4213).
6. **SHALL** contain [1..1] **value**/@**code**="2404-2" Removed within 48 hours prior (CodeSystem: 2.16.840.1.113883.6.277 cdcNHSN) **STATIC** (CONF:4214).

Figure 45: History of object presence example

```
<observation classCode="OBS" moodCode="EVN" negationInd="false">
  <templateId root="2.16.840.1.113883.10.20.5.6.56"/>
  <code codeSystem="2.16.840.1.113883.5.4"
    code="ASSERTION"/>
  <statusCode code="completed"/>
  <value xsi:type="CD"
    codeSystem="2.16.840.1.113883.6.277"
    codeSystemName="cdcNHSN"
    code="2404-2"
    displayName="Removed within 48 hours prior"/>
</observation>
```

5.2.23 Immunization Clinical Statement

[substanceAdministration: templateId 2.16.840.1.113883.10.20.5.6.17]

The record of immunization—after an offer to immunize has been accepted—is required in the Immunization Report whether or not the immunization is actually administered, and conforms to the HITSP template for an immunization entry. The HITSP template is, in turn, a set of constraints on the CCD model for an immunization. The HITSP and CCD conformance statements are shown in [Appendix K —HITSP and CCD Constraints](#).

The following notes on the resulting structure are provided as a help to the implementer:

The immunization is recorded as a `substanceAdministration` element where the value of `@moodCode` is EVN. If the immunization was not administered, the value of `@negationInd` is true. [\[HITSP\]](#)

In addition to the `templateId` representing conformance to this DSTU, two `templateIds` are required: 2.16.840.1.113883.3.88.11.83.13 representing conformance to [HITSP Immunization Entry](#), and, through it, 2.16.840.1.113883.10.20.1.24 representing conformance to [CCD Medication Template](#). [\[HITSP\]](#)

HITSP requires that immunization be recorded using an HL7 Vaccines Administered (CVX) code. [\[HITSP\]](#)

CCD requires that an `originalText` element be present. [\[CCD\]](#)

HITSP requires an `id` element (its value can be null) and a `statusCode` element with the value completed. [\[HITSP\]](#)

The `consumable` element is required by CDA.

The constraints below record only this DSTU's additional constraints on the HITSP template.

The details required by NHSN differ somewhat depending on whether the person was an inpatient and on whether the immunization was administered. The table [Inpatient and Healthcare Worker Immunization Details](#) compares the inpatient and healthcare worker immunization offer reports.

In the HITSP model, `effectiveTime` and `routeCode` are optional. In this template, if the immunization was administered and the administration was onsite, they are required. (Administration is implicitly onsite for inpatients; for healthcare workers, whether administration was onsite or offsite is explicitly recorded.)

NHSN infers the vaccine manufacturer and type (live attenuated vaccine or inactivated vaccine) from the product code.

If the immunization was administered and was administered onsite, NHSN records the name, facility ID, and job title of the person who performed the immunization and a Vaccine Information Statement Type Observation.

The `performer` element records the facility ID and name of the person who performed the immunization.

If the person immunized is a healthcare worker, additional information is required.

1. An Immunization **SHALL** be represented conformant to the HITSP Immunization Entry (templateId 2.16.840.1.113883.3.88.11.83.13). (CONF:2658).
2. **SHALL** contain [1..1] **code/@code**="88" Influenza virus vaccine NOS (CodeSystem: 2.16.840.1.113883.6.59 CDC Vaccine Code) **STATIC** (CONF:2659).
 - a. This code **SHALL** contain [1..1] **originalText**="Influenza virus vaccine" (CONF:2660).
3. If the immunization was administered and was administered onsite, an **effectiveTime** element **SHALL** be present representing the date administered. (CONF:2661).
4. If the immunization was administered and was administered onsite, a **routeCode** element **SHALL** be present, where the value of code is selected from Value Set 2.16.840.1.114222.4.11.3190 NHSNRouteOfAdministrationCode **STATIC** 20090130. (CONF:2662).
5. A **consumable/manufacturedProduct** element **SHALL** be present where the value of **templateId/@root** is 2.16.840.1.113883.10.20.1.53 (CCD Product Template). (CONF:2663).
6. If the immunization was not administered or was administered offsite, the **consumable/manufacturedProduct/manufacturedMaterial** element **SHALL NOT** contain a code element. (CONF:2664).
7. If the immunization was administered and was administered onsite, the **consumable/manufacturedProduct/manufacturedMaterial** **SHALL** contain a code element where the value of **@code** **SHOULD** be selected from Value Set 2.16.840.1.114222.4.11.3189 NHSNVaccineTypeCode **DYNAMIC**. (CONF:2665).
8. If the immunization was administered and was administered onsite, the **consumable/manufacturedProduct/manufacturedMaterial** element **SHALL** contain a **lotNumberText** element representing the lot number of the vaccine. (CONF:2666).
9. If the immunization was administered and was administered onsite, a **performer** element **SHALL** be present where the value of **assignedEntity/id** represents the facility ID of the person who performed the immunization and the value of **assignedPerson/name** represents that person's name. (CONF:2668).
10. If the immunization was administered and was administered onsite, an **entryRelationship** element **SHALL** be present containing a Vaccine Information Statement Type Observation (templateId 2.16.840.1.113883.10.20.5.6.49). (CONF:2671).
11. If the immunization was administered and the person immunized is a healthcare worker, a **participant** element **SHALL** be present, recording whether the immunization was administered onsite or offsite, where the value of **@typeCode** is LOC and the value of **participantRole/@classCode** is SDLOC and the value of **code/@code** is selected from 2.16.840.1.114222.4.11.3188 NHSNAdministrationLocationType **STATIC** 20090625. (CONF:2672).
12. If the immunization was administered and the person immunized is a healthcare worker, an **entryRelationship** element **SHALL** be present containing a Seasons Immunized Observation (templateId 2.16.840.1.113883.10.20.5.6.40). (CONF:2673).

13. If the immunization was administered and the person immunized is a healthcare worker, an `entryRelationship` element **SHALL** be present where the value of `@typeCode` is `MFST`, for each adverse reaction listed in Value Set `NHSNAdverseReactionCode 2.16.840.1.114222.4.11.3193` **STATIC** 20090130, containing an Adverse Reaction Observation (`templateId 2.16.840.1.113883.10.20.5.6.2`). One additional such component element **MAY** be present recording an uncoded (text) reaction. (CONF:2674).

Table 17: Route of Administration Value Set

Value Set: <code>NHSNRouteOfAdministrationCode 2.16.840.1.114222.4.11.3190</code> Code System: <code>HL7 RouteOfAdministration 2.16.840.1.113883.12.162</code>		
Code	Code System	Print Name
IM	HL7 RouteOfAdministration	Intramuscular
SC	HL7 RouteOfAdministration	Subcutaneous
IN	HL7 RouteOfAdministration	Intranasal

Table 18: Vaccine Type Value Set

Value Set: <code>NHSNVaccineTypeCode 2.16.840.1.114222.4.11.3189</code> Code System: <code>RxNorm 2.16.840.1.113883.6.88</code>		
Code	Code System	Print Name
805510	RxNorm	Afluria®
805516	RxNorm	Fluarix® 2008-2009 formula
805528	RxNorm	Flulaval®
805548	RxNorm	Flumist®
805560	RxNorm	Fluvirin®
545246	RxNorm	Fluzone®

Table 19: Administration Location Type Value Set

Value Set: <code>NHSNAdministrationLocationTypeCode 2.16.840.1.114222.4.11.3188</code> Code System: <code>cdcNHSN 2.16.840.1.113883.6.277</code>		
Code	Code System	Print Name
9170-2	cdcNHSN	offsite
9169-4	cdcNHSN	onsite

Figure 46: Immunization clinical statement example

```
<entryRelationship typeCode="COMP">
  <substanceAdministration classCode="SBADM" moodCode="EVN"
    negationInd="false">
    <templateId root="2.16.840.1.113883.10.20.5.6.17"/> <!-- constraints of
      this guide-->
    <!-- HITSP Immunization Entry -->
    <templateId root="2.16.840.1.113883.3.88.11.83.13"/>
    <!-- CCD Medication Template -->
    <templateId root="2.16.840.1.113883.10.20.1.24"/>

    <id nullFlavor="NI"/>
    <code codeSystem="2.16.840.1.113883.6.59"
      codeSystemName="CDC Vaccine Codes"
      code="88"
      displayName="Influenza virus vaccine NOS">
      <originalText>Influenza virus vaccine</originalText>
    </code>

    <statusCode code="completed"/>
    <effectiveTime value="20080518"/>

    <routeCode codeSystem="2.16.840.1.113883.5.112"
      codeSystemName="HL7 RouteOfAdministration"
      code="IM"
      displayName="Intramuscular injection"/>

    <consumable>
      <manufacturedProduct>
        <!-- CCD Product template -->
        <templateId root="2.16.840.1.113883.10.20.1.53"/>
        <manufacturedMaterial>
          <code codeSystem="2.16.840.1.113883.6.88"
            codeSystemName="RxNorm"
            code="805510"
            displayName="Aflura">
          </code>
          <lotNumberText>23-b</lotNumberText>
        </manufacturedMaterial>
      </manufacturedProduct>
    </consumable>
  </substanceAdministration>
</entryRelationship>
```

```

<performer>
  <assignedEntity>
    <id root="2.16.840.1.113883.3.117.1.1.5.1.1" extension="24242424"/>
    <assignedPerson>
      <name>
        <prefix>RN</prefix>
        <family>Nightingale</family>
        <given>Nancy</given>
      </name>
    </assignedPerson>
  </assignedEntity>
</performer>

<entryRelationship typeCode="COMP">
  <observation classCode="OBS" moodCode="EVN" negationInd="false">
    <templateId root="2.16.840.1.113883.10.20.5.6.49"/>
    ...
  </entryRelationship>
<!-- end of the immunization detail (the result of the offer) -->
</substanceAdministration>
</entryRelationship>

```

Figure 47: Vaccine participant example: recording location of immunization administration

```

<participant typeCode="LOC">
  <participantRole classCode="SDLOC">
    <code codeSystem="2.16.840.1.113883.6.277"
      codeSystemName="cdcNHSN"
      code="9169-4"
      displayName="onsite"/>
  </participantRole>
</participant>

```

5.2.24 Immunization Offer Clinical Statement

[substanceAdministration: templateId 2.16.840.1.113883.10.20.5.6.18]

The Immunization Offer records whether an offer of influenza vaccination was made, with the eligibility criteria (why the offer was considered). Contained within it, if the offer was made, is the immunization itself, whether declined (with reasons) or accepted (with details).

If the offer was made, set the value of @negationInd to false. If the offer was not made, set the value of @negationInd to true. The value of @negationInd will normally be false: the NHSN Healthcare Worker Influenza Vaccination Report is submitted after an offer to immunize has been made. However, the NHSN Inpatient Influenza Vaccination Report records whether or not an offer was made, and thus could record that (despite eligibility for immunization) the offer was not made; this would be an unusual circumstance.

Respecting some differences in the use case, the IHE Immunization entry is not used for the NHSN Immunization Offer. It is used for the actual Immunization (templateId 2.16.840.1.113883.10.20.5.6.17).

The Immunization Offer is the offer of an otherwise unspecified influenza vaccination. The code is selected from the HL7 Vaccines Administered (CVX) codes. [[HITSP C83](#)]

1. **SHALL** contain [1..1] @moodCode="RQO" Request or Offer (CodeSystem: 2.16.840.1.113883.5.1001 HL7ActMood) **STATIC** (CONF:2675).
2. **SHALL** contain [1..1] statusCode/@code="completed" Completed (CodeSystem: 2.16.840.1.113883.5.14 HL7ActStatus) **STATIC** (CONF:2676).
3. **SHALL** contain @negationInd (CONF:3024).
4. **SHALL** contain [1..1] code/@code="88" Influenza virus vaccine NOS (CodeSystem: 2.16.840.1.113883.6.59 CDC Vaccine Code) **STATIC** (CONF:2677).
5. **SHALL NOT** contain [1..1] consumable/manufacturedProduct/manufacturedMaterial/code (CONF:2678).
6. If the reason for making the offer to immunize is that the person is a healthcare worker, one entryRelationship element **SHALL** be present where the value of @typeCode is RSON containing an Eligibility Criterion Observation (templateId 2.16.840.1.113883.10.20.5.6.13). (CONF:2679).
7. If the reason for making the offer to immunize is that the person is an inpatient who meets one or more high-risk criteria for influenza, an entryRelationship element **SHALL** be present, where the value of @typecode is RSON, for each term in Value Set 2.16.840.1.114222.4.11.3186 NHSNInfluenzaHighRiskCriteriaCode **STATIC** 20090625, containing an Eligibility Criterion Observation (templateId 2.16.840.1.113883.10.20.5.6.13). (See [Influenza High-Risk Criteria Value Set](#) table.) (CONF:2680).
8. **SHALL** contain [1..1] entryRelationship (CONF:2681).
 - a. This entryRelationship **SHALL** contain [1..1] @typeCode="COMP" Has component (CodeSystem: 2.16.840.1.113883.5.1002 HL7ActRelationshipType) **STATIC** (CONF:2682).
 - b. This entryRelationship **SHALL** contain [1..1] Offer Declined Observation (templateId:2.16.840.1.113883.10.20.5.6.29) (CONF:2683).

Figure 48: Immunization offer clinical statement example

```
<!-- The Immunization offer. The offer was made -->
<entry typeCode="DRIV">
  <substanceAdministration classCode="SBADM" moodCode="RQO"
negationInd="false">
    <templateId root="2.16.840.1.113883.10.20.5.6.18"/>
    <code codeSystem="2.16.840.1.113883.6.59"
        codeSystemName="CDC Vaccine Codes"
        code="88"
        displayName="Influenza virus vaccine NOS"/>
    <statusCode code="completed"/>

    <consumable>
      <manufacturedProduct>
        <manufacturedMaterial/>
      </manufacturedProduct>
    </consumable>

  <!-- here are the reasons for offering the immunization -->
  <entryRelationship typeCode="RSON">
    <!-- Eligibility Criterion Observation -->
    <observation classCode="OBS" moodCode="EVN" negationInd="true">
      <templateId root="2.16.840.1.113883.10.20.5.6.13"/>
      ...
    </entryRelationship>
    ...

    <entryRelationship typeCode="COMP">
      <!-- Offer Declined Observation -->
      <observation classCode="OBS" moodCode="EVN" negationInd="true">
        <templateId root="2.16.840.1.113883.10.20.5.6.29"/>
        ...
      </entryRelationship>
      ...
    </entryRelationship>
  </entry>
```

5.2.25 Immunocompromised Observation

[observation: templateId 2.16.840.1.113883.10.20.5.6.19]

This observation records whether a patient was immunocompromised.

If the patient was immunocompromised, set the value of @negationInd to false. If the patient was not immunocompromised, set the value of @negationInd to true.

NHSN uses the spelling “immunocompromised”, SNOMED uses “immunocompromized” (with a “z”).

1. **SHALL** contain [1..1] @classCode="OBS" Observation (CodeSystem: 2.16.840.1.113883.5.6 HL7ActClass) **STATIC** (CONF:2348).
2. **SHALL** contain [1..1] @moodCode="EVN" Event (CodeSystem: 2.16.840.1.113883.5.1001 HL7ActMood) **STATIC** (CONF:2349).

3. **SHALL** contain [1..1] **code/@code**="ASSERTION" Assertion (CodeSystem: 2.16.840.1.113883.5.4 HL7ActCode) **STATIC** (CONF:2350).
4. **SHALL** contain [1..1] **statusCode/@code**="completed" (CodeSystem: 2.16.840.1.113883.5.14 HL7ActStatus) **STATIC** (CONF:2351).
5. **SHALL** contain [1..1] **value/@code**="370388006" Patient immunocompromized (CodeSystem: 2.16.840.1.113883.6.96 SNOMEDCT) **STATIC** (CONF:2352).

Figure 49: Immunocompromised observation example

```
<entry>
  <observation classCode="OBS" moodCode="EVN" negationInd="true">
    <templateId root="2.16.840.1.113883.10.20.5.6.19"/>
    <code codeSystem="2.16.840.1.113883.5.4"
      code="ASSERTION"/>
    <statusCode code="completed"/>
    <value xsi:type="CD"
      codeSystem="2.16.840.1.113883.6.96"
      codeSystemName="SNOMED CT"
      code="370388006"
      displayName="Patient Immunocompromized"/>
  </observation>
</entry>
```

5.2.26 Implant Observation

[observation: templateId 2.16.840.1.113883.10.20.5.6.20]

The Implant Observation records whether the procedure being reported included an implant.

If an implant was used in the procedure, set the value of @negationInd to false. If an implant was not used in the procedure, set the value of @negationInd to true.

1. **SHALL** contain [1..1] **@classCode**="OBS" Observation (CodeSystem: 2.16.840.1.113883.5.6 HL7ActClass) **STATIC** (CONF:2353).
2. **SHALL** contain [1..1] **@moodCode**="EVN" Event (CodeSystem: 2.16.840.1.113883.5.1001 HL7ActMood) **STATIC** (CONF:2354).
3. **SHALL** contain **@negationInd** (CONF:2355).
4. **SHALL** contain [1..1] **code/@code**="ASSERTION" (CodeSystem: 2.16.840.1.113883.5.4 HL7ActCode) **STATIC** (CONF:2356).
5. **SHALL** contain [1..1] **statusCode/@code**="completed" (CodeSystem: 2.16.840.1.113883.5.14 HL7ActStatus) **STATIC** (CONF:2357).
6. **SHALL** contain [1..1] **value/@code**="71861002" Implantation (CodeSystem: 2.16.840.1.113883.6.96 SNOMEDCT) **STATIC** (CONF:2358).

Figure 50: Implant observation example

```
<!-- patient did have implant -->
<observation classCode="OBS" moodCode="EVN" negationInd="false">
  <templateId root="2.16.840.1.113883.10.20.5.6.20"/>
  <code codeSystem="2.16.840.1.113883.5.4"
    code="ASSERTION"/>
  <statusCode code="completed"/>
  <value xsi:type="CD"
    code="71861002"
    codeSystem="2.16.840.1.113883.6.96"
    codeSystemName="SNOMED"
    displayName="Implantation"/>
</observation>
```

5.2.27 Infection Condition Observation

[observation: templateId 2.16.840.1.113883.10.20.5.6.21]

This observation records the infection condition being reported.

1. **SHALL** contain [1..1] @**classCode**="OBS" Observation (CodeSystem: 2.16.840.1.113883.5.6 HL7ActClass) **STATIC** (CONF:2145).
2. **SHALL** contain [1..1] @**moodCode**="EVN" Event (CodeSystem: 2.16.840.1.113883.5.1001 HL7ActMood) **STATIC** (CONF:2146).
3. **SHALL** contain [1..1] **code**/@**code**="ASSERTION" Assertion (CodeSystem: 2.16.840.1.113883.5.4 HL7ActCode) **STATIC** (CONF:2147).
4. **SHALL** contain [1..1] **statusCode**/@**code**="completed" Completed (CodeSystem: 2.16.840.1.113883.5.14 HL7ActStatus) **STATIC** (CONF:2148).
5. **SHALL** contain [1..1] **value**/@**code**, which **SHALL** be selected from ValueSet 2.16.840.1.114222.4.11.3196 NHSNInfectionConditionCode **STATIC** 20100114 (CONF:2149).

Table 20: Infection Condition Value Set (excerpt)

Value Set: NHSNInfectionConditionCode 2.16.840.1.114222.4.11.3196 Code System: SNOMED CT 2.16.840.1.113883.6.96 or cdcNHSN 2.16.840.1.113883.6.277		
The full table is shown in Infection Condition Value Set		
Code	Code System	Meaning
1623-8	cdcNHSN	Arterial or venous infection
2402-6	cdcNHSN	Asymptomatic Bacteremic UTI (ABUTI)
1601-4	cdcNHSN	Breast abscess or mastitis
1603-0	cdcNHSN	Clinical sepsis
...		...

Figure 51: Infection condition observation example

```
<observation classCode="OBS" moodCode="EVN">
  <templateId root="2.16.840.1.113883.10.20.5.6.21"/>
  <code codeSystem="2.16.840.1.113883.5.4" code="ASSERTION"/>
  <statusCode code="completed"/>
  <value xsi:type="CD"
    codeSystem="2.16.840.1.113883.6.277"
    codeSystemName="cdcNHSN "
    code="1601-4"
    displayName=" Breast abscess or mastitis"/>
</observation>
```

5.2.28 Infection Contributed to Death Observation

[observation: templateId 2.16.840.1.113883.10.20.5.6.22]

In some HAI Reports this observation is required in a Death Observation if the patient died.

1. **SHALL** contain [1..1] @**classCode**="OBS" Observation (CodeSystem: 2.16.840.1.113883.5.6 HL7ActClass) **STATIC** (CONF:2045).
2. **SHALL** contain [1..1] @**moodCode**="EVN" Event (CodeSystem: 2.16.840.1.113883.5.1001 HL7ActMood) **STATIC** (CONF:2046).
3. **SHALL** contain [1..1] **code**/@**code**="ASSERTION" Assertion (CodeSystem: 2.16.840.1.113883.5.4 HL7ActCode) **STATIC** (CONF:2049).
4. **SHALL** contain [1..1] **id** (CONF:2047).
5. The value of the **id** **SHALL** be the same as the value of the **id** element in the Infection-type Observation (templateId 2.16.840.1.113883.10.20.5.6.23). (CONF:2048).
6. **SHALL** contain [1..1] **statusCode**/@**code**="completed" Completed (CodeSystem: 2.16.840.1.113883.5.14 HL7ActStatus) **STATIC** (CONF:2050).

Figure 52: Infection contributed to death example

```
<!-- patient did die -->
<observation classCode="OBS" moodCode="EVN" negationInd="false">
  <templateId root="2.16.840.1.113883.10.20.5.6.12"/>
  <code codeSystem="2.16.840.1.113883.5.4"
    code="ASSERTION"/>
  <statusCode code="completed"/>
  <value xsi:type="CD"
    code="419099009"
    codeSystem="2.16.840.1.113883.6.96"
    codeSystemName="SNOMED"
    displayName="Dead"/>

  <!--infection did not contribute to death -->
  <entryRelationship typeCode="CAUS" inversionInd="true" negationInd="true">
    <observation classCode="OBS" moodCode="EVN">
      <templateId root="2.16.840.1.113883.10.20.5.6.22"/>
      <id root="2.16.840.1.113883.3.117.1.1.5.1.1.XXX" extension="21987654321"/>
      <code codeSystem="2.16.840.1.113883.5.4"
        code="ASSERTION" />
      <statusCode code="completed"/>
    </observation>
  </entryRelationship>
</observation>
```

5.2.29 Infection Risk Factors Measurement Observation

[observation: templateId 2.16.840.1.113883.10.20.5.2.1.1.2]

This observation records a risk factor that reports a value, such as birth weight. Both BSI and the Pneumonia Infection reports use the Infection Risk Factors Measurement Observation. The NHSN Protocol specifies which measurements are required for each report type. Those rules do not form part of the guide.

1. **SHALL** contain [1..1] **@classCode="OBS"** Observation (CodeSystem: 2.16.840.1.113883.5.6 HL7ActClass) **STATIC** (CONF:2064).
2. **SHALL** contain [1..1] **@moodCode="EVN"** Event (CodeSystem: 2.16.840.1.113883.5.1001 HL7ActMood) **STATIC** (CONF:2065).
3. **SHALL** contain [1..1] **code/@code**, which **SHALL** be selected from ValueSet 2.16.840.1.113883.13.6 NHSNInfectionRiskFactorsCode **STATIC** 20090130 (CONF:2066).
4. **SHALL** contain [1..1] **statusCode/@code="completed"** Completed (CodeSystem: 2.16.840.1.113883.5.14 HL7ActStatus) **STATIC** (CONF:2067).
5. **SHALL** contain [1..1] **value** (CONF:2068).
6. The value of value/@xsi:type **SHALL** be PQ. (CONF:2604).

Figure 53: Infection risk factors measurement example

```
<entry>
  <observation classCode="OBS" moodCode="EVN">
    <code code="364589006" codeSystem="2.16.840.1.113883.6.96"
      displayName="Birth weight"/>
    <statusCode code="completed"/>
    <value xsi:type="PQ" value="700" unit="g"/>
  </observation>
</entry>
```

5.2.30 Infection Risk Factors Observation

[observation: templateId 2.16.840.1.113883.10.20.5.2.1.1.1]

This observation records the presence of infection risk factors. See also the [Infection Risk Factors Measurement Observation](#).

The [NHSNInfectionRiskFactorsCode](#) Value Set includes infection risk factors for all reports in this guide. The NSHN Protocol specifies which risk factors are to be recorded in each report type. Those rules do not form part of the guide.

If the risk factor is present, set the value of @negationInd to false. If the risk factor is not present, set the value of @negationInd to true.

1. **SHALL** contain [1..1] @classCode="OBS" Observation (CodeSystem: 2.16.840.1.113883.5.6 HL7ActClass) **STATIC** (CONF:2069).
2. **SHALL** contain [1..1] @moodCode="EVN" Event (CodeSystem: 2.16.840.1.113883.5.1001 HL7ActMood) **STATIC** (CONF:2070).
3. **SHALL** contain @negationInd (CONF:2071).
4. **SHALL** contain [1..1] code/@code="ASSERTION" Assertion (CodeSystem: 2.16.840.1.113883.5.4 HL7ActCode) **STATIC** (CONF:2072).
5. **SHALL** contain [1..1] statusCode/@code="completed" Completed (CodeSystem: 2.16.840.1.113883.5.14 HL7ActStatus) **STATIC** (CONF:2073).
6. **SHALL** contain [1..1] value/@code, which **SHALL** be selected from ValueSet 2.16.840.1.113883.13.6 NHSNInfectionRiskFactorsCode **STATIC** 20090130 (CONF:2074).

Table 21: Infection Risk Factors Value Set

Value Set: NHSNInfectionRiskFactorsCode 2.16.840.1.113883.13.6 Code systems: cdcNHSN 2.16.840.1.113883.6.277 or SNOMED CT 2.16.840.1.113883.6.96		
Code	Code System	Meaning
1002-5	cdcNHSN	(unspecified) central line
1003-3	cdcNHSN	permanent central line
1005-8	cdcNHSN	temporary central line
1001-7	cdcNHSN	umbilical catheter

Figure 54: Infection risk factors observation example

```
<observation classCode="OBS" moodCode="EVN" negationInd="false">
  <templateId root="2.16.840.1.113883.10.20.5.2.1.1.1"/>
  <code codeSystem="2.16.840.1.113883.5.4" code="ASSERTION"/>
  <statusCode code="completed"/>
  <value xsi:type="CD"
    codeSystem="2.16.840.1.113883.6.277"
    codeSystemName=" cdcNHSN"
    code="1002-5"/>
</observation>
```

5.2.31 Infection-type Observation

[observation: templateId 2.16.840.1.113883.10.20.5.6.23]

The Infection-type Observation is used in all infection reports. It is an assertion of the infection type, and contains entryRelationships to record the “criteria”—the information used to arrive at a diagnosis of the infection type.

The value of the id element must be globally unique and need not be an ID used outside the document. Its function within the document is to identify this infection as being the same as that recorded in the Infection Contributed to Death Observation, if present.

1. **SHALL** contain [1..1] @classCode="OBS" Observation (CodeSystem: 2.16.840.1.113883.5.6 HL7ActClass) **STATIC** (CONF:2095).
2. **SHALL** contain [1..1] @moodCode="EVN" Event (CodeSystem: 2.16.840.1.113883.5.1001 HL7ActMood) **STATIC** (CONF:2096).
3. **SHALL** contain [1..1] id (CONF:2097).
4. **SHALL** contain [1..1] code/@code="ASSERTION" Assertion (CodeSystem: 2.16.840.1.113883.5.4 HL7ActCode) **STATIC** (CONF:3025).
5. **SHALL** contain [1..1] statusCode/@code="completed" Completed (CodeSystem: 2.16.840.1.113883.5.14 HL7ActStatus) **STATIC** (CONF:2099).
6. **SHALL** contain [1..1] effectiveTime (CONF:2100).
7. **SHALL** contain [1..1] value/@code, which **SHALL** be selected from ValueSet 2.16.840.1.113883.13.20 NHSNInfectionTypeCode **DYNAMIC** (CONF:2101).
8. **SHALL** contain [1..1] entryRelationship (CONF:2215) such that it
 - a. **SHALL** contain [1..1] @typeCode="SPRT" Supports (CodeSystem: 2.16.840.1.113883.5.1002 HL7ActRelationshipType) **STATIC** (CONF:2103).
 - b. **SHALL** contain [1..1] Criteria of Diagnosis Organizer (templateId:2.16.840.1.113883.10.20.5.6.11) (CONF:2102).
9. If the report is an Infection-type Report and the infection type is not BSI or a Generic Infection Report, an entryRelationship element **SHALL** be present where the value of @typeCode is REFR, containing an Infection Condition Observation (templateId 2.16.840.1.113883.10.20.5.6.21). In a Generic Infection Report, an entryRelationship element **MAY** be present where the value of @typeCode is

- REFR, containing an Infection Condition Observation (templateId 2.16.840.1.113883.10.20.5.6.21). (CONF:2606).
10. If the report is an Infection-type Report and the infection type is not BSI or a Generic Infection Report, an entryRelationship element **SHALL** be present where the value of @typeCode is REFR, containing a Secondary Bloodstream Infection Observation (templateId 2.16.840.1.113883.10.20.5.2.2.7.15). In a Generic Infection Report, an entryRelationship element **MAY** be present where the value of @typeCode is REFR, containing a Secondary Bloodstream Infection Observation (templateId 2.16.840.1.113883.10.20.5.2.2.7.15). (CONF:2607).
 11. If the report is a BSI Report, an entryRelationship element **SHALL** be present where the value of @typeCode is COMP, containing a Bloodstream Infection Evidence Type Observation (templateId 2.16.840.1.113883.10.20.5.6.4). (CONF:2608).
 12. If the report is an SSI Report, an entryRelationship element **SHALL** be present where the value of @typeCode is COMP, containing an Occasion of HAI Detection Observation (templateId 2.16.840.1.113883.10.20.5.6.27). (CONF:2609).
 13. If the infection is a CDAD infection (templateId 2.16.840.1.113883.10.20.5.6.5), an entryRelationship element **SHALL** be present where the value of @typeCode is REFR, containing an Admission to ICU clinical statement (templateId 2.16.840.1.113883.10.20.5.6.1). (CONF:2610).
 14. If the infection is a CDAD infection (templateId 2.16.840.1.113883.10.20.5.6.5), an entryRelationship element **SHALL** be present where the value of @typeCode is RSON, containing a CDAD-related Surgery clinical statement (templateId 2.16.840.1.113883.10.20.5.6.6). (CONF:2611).
 15. If the report is a Pneumonia Infection Report an entryRelationship element **SHALL** be present where the value of @typeCode is SUBJ and the value of @inversionInd is true. The entryRelationship element **SHALL** contain a Post-Procedure Observation (templateId 2.16.840.1.113883.10.20.5.6.31). (CONF:2612).

Table 22: Infection-type Value Set

Value Set: NHSNInfectionTypeCode 2.16.840.1.113883.13.20 Code System: cdcNHSN 2.16.840.1.113883.6.277 or SNOMED CT 2.16.840.1.113883.6.96		
Code	Code System	Meaning
431193003	SNOMED CT	Bloodstream Infection
233604007	SNOMED CT	Pneumonia
433202001	SNOMED CT	Surgical Site Infection
68566005	SNOMED CT	Urinary Tract Infection
1792-1	cdcNHSN	MDRO Infection
1795-4	cdcNHSN	CDAD Infection
Generic (Custom) Infection Report types		
312158001	SNOMED CT	Gastrointestinal Infection
1796-2	cdcNHSN	Infection of the Reproduction System
1797-0	cdcNHSN	Infection of the Ear/Eyes/Nose or Throat
50417007	SNOMED CT	Lower respiratory Infection

Value Set: NHSNInfectionTypeCode 2.16.840.1.113883.13.20 Code System: cdcNHSN 2.16.840.1.113883.6.277 or SNOMED CT 2.16.840.1.113883.6.96		
Code	Code System	Meaning
128402005	SNOMED CT	Infection of the cardiovascular system
128116006	SNOMED CT	Infection of the Central Nervous System
19824006	SNOMED CT	Skin or Soft Tissue Infection
1798-8	cdcNHSN	Bone or Joint Infection
91302008	SNOMED CT	Systemic Infection

Figure 55: Infection-type observation example

```

<observation classCode="OBS" moodCode="EVN">
  <templateId root="2.16.840.1.113883.10.20.5.6.23"/>
  <id root="2.16.840.1.113883.3.117.1.1.5.1.1.XXX" extension="21987654321"/>
  <code codeSystem="2.16.840.1.113883.5.4" code="ASSERTION"/>
  <statusCode code="completed"/>
  <effectiveTime value="20081205"/>
  <value xsi:type="CD"
    codeSystem="2.16.840.1.113883.6.277"
    codeSystemName=" cdcNHSN"
    code="1795-4"
    displayName="CDAD Infection">
  </value>

  <entryRelationship typeCode="SPRT">
    <organizer>
      <templateId root="2.16.840.1.113883.10.20.5.6.11"/>
    </organizer>
  </entryRelationship>

  ...
</observation>

```

5.2.32 MDRO Observation

[observation: templateId 2.16.840.1.113883.10.20.5.6.24]

This observation records whether the primary infection being reported was caused by a multi-drug-resistant organism (MDRO). It is a general or summary observation not associated with any individual pathogen in the Findings Section.

If the infection organism was multi-drug resistant, set the value of @negationInd to false. If the infection organism was not multi-drug resistant, set the value of @negationInd to true.

1. **SHALL** contain [1..1] @classCode="OBS" Observation (CodeSystem: 2.16.840.1.113883.5.6 HL7ActClass) **STATIC** (CONF:2023).
2. **SHALL** contain [1..1] @moodCode="EVN" Event (CodeSystem: 2.16.840.1.113883.5.1001 HL7ActMood) **STATIC** (CONF:2024).

3. **SHALL** contain @negationInd (CONF:2025).
4. **SHALL** contain [1..1] **code**/@code="ASSERTION" Assertion (CodeSystem: 2.16.840.1.113883.5.4 HL7ActCode) **STATIC** (CONF:2026).
5. **SHALL** contain [1..1] **statusCode**/@code="completed" Completed (CodeSystem: 2.16.840.1.113883.5.14 HL7ActStatus) **STATIC** (CONF:2037).
6. **SHALL** contain [1..1] **value**/@code="1792-1" MDRO Infection (CodeSystem: 2.16.840.1.113883.6.277 cdcNHSN) **STATIC** (CONF:2027).

Figure 56: MDRO observation example

```
<!-- The observation is negated, i.e. MDRO=no -->
<observation classCode="OBS" moodCode="EVN" negationInd="true">
  <templateId root="2.16.840.1.113883.10.20.5.6.24"/>
  <code codeSystem="2.16.840.1.113883.5.4" code="ASSERTION"/>
  <statusCode code="completed"/>
  <value xsi:type="CD"
    codeSystem="2.16.840.1.113883.6.277"
    codeSystemName="cdcNHSN"
    code="1792-1"
    displayName="MDRO Infection"/>
</observation>
```

5.2.33 Multiple Procedures Observation

[observation: templateId 2.16.840.1.113883.10.20.5.2.2.7.6]

This observation records whether multiple procedures were performed.

If multiple procedures were performed, set the value of @negationInd to false. If multiple procedures were not performed, set the value of @negationInd to true.

1. **SHALL** contain [1..1] @classCode="OBS" Observation (CodeSystem: 2.16.840.1.113883.5.6 HL7ActClass) **STATIC** (CONF:2359).
2. **SHALL** contain [1..1] @moodCode="EVN" Event (CodeSystem: 2.16.840.1.113883.5.1001 HL7ActMood) **STATIC** (CONF:2360).
3. **SHALL** contain @negationInd (CONF:2361).
4. **SHALL** contain [1..1] **code**/@code="ASSERTION" (CodeSystem: 2.16.840.1.113883.5.4 HL7ActCode) **STATIC** (CONF:2362).
5. **SHALL** contain [1..1] **statusCode**/@code="completed" (CodeSystem: 2.16.840.1.113883.5.14 HL7ActStatus) **STATIC** (CONF:2363).
6. **SHALL** contain [1..1] **value**/@code="3113-8" Multiple procedures performed (CodeSystem: 2.16.840.1.113883.6.277 cdcNHSN) **STATIC** (CONF:2364).

Figure 57: Multiple procedures observation example

```
<observation classCode="OBS" moodCode="EVN" negationInd="false">
  <templateId root="2.16.840.1.113883.10.20.5.2.2.7.6"/>
  <code codeSystem="2.16.840.1.113883.5.4"
    code="ASSERTION"/>
  <statusCode code="completed"/>
  <value xsi:type="CD"
    codeSystem="2.16.840.1.113883.6.277"
    codeSystemName="cdcNHSN"
    code="3113-8"
    displayName="Multiple procedures"/>
</observation>
```

5.2.34 Non-autologous Transplant Observation

[observation: templateId 2.16.840.1.113883.10.20.5.6.25]

This observation records whether a transplant was autologous or non-autologous.

If a non-autologous transplant occurred, set the value of @negationInd to false. If a non-autologous transplant did not occur, set the value of @negationInd to true.

1. **SHALL** contain [1..1] @**classCode**="OBS" Observation (CodeSystem: 2.16.840.1.113883.5.6 HL7ActClass) **STATIC** (CONF:2365).
2. **SHALL** contain [1..1] @**moodCode**="EVN" Event (CodeSystem: 2.16.840.1.113883.5.1001 HL7ActMood) **STATIC** (CONF:2366).
3. **SHALL** contain @**negationInd** (CONF:2367).
4. **SHALL** contain [1..1] **code**/@**code**="ASSERTION" (CodeSystem: 2.16.840.1.113883.5.4 HL7ActCode) **STATIC** (CONF:2368).
5. **SHALL** contain [1..1] **statusCode**/@**code**="completed" (CodeSystem: 2.16.840.1.113883.5.14 HL7ActStatus) **STATIC** (CONF:2369).
6. **SHALL** contain [1..1] **value**/@**code**="3189-8" Non-autologous transplant (CodeSystem: 2.16.840.1.113883.6.277 cdcNHSN) **STATIC** (CONF:2370).

Figure 58: Non-autologous transplant observation example

```
<!-- Patient had a Non-Autologous transplant -->
<observation classCode="OBS" moodCode="EVN" negationInd="false">
  <templateId root="2.16.840.1.113883.10.20.5.6.25"/>
  <code codeSystem="2.16.840.1.113883.5.4" code="ASSERTION"/>
  <statusCode code="completed"/>
  <value xsi:type="CD"
    code="3189-8"
    codeSystem="2.16.840.1.113883.6.277"
    codeSystemName="cdcNHSN"
    displayName="Non-autologous transplant"/>
</observation>
```

5.2.35 Number of Lumens Observation

[observation: templateId 2.16.840.1.113883.10.20.5.6.26]

This observation records catheter lumens.

1. **SHALL** contain [1..1] **@classCode**="OBS" Observation (CodeSystem: 2.16.840.1.113883.5.6 HL7ActClass) **STATIC** (CONF:2371).
2. **SHALL** contain [1..1] **@moodCode**="EVN" Event (CodeSystem: 2.16.840.1.113883.5.1001 HL7ActMood) **STATIC** (CONF:2372).
3. **SHALL** contain [1..1] **@negationInd**="false" (CONF:2373).
4. **SHALL** contain [1..1] **code/@code**="3164-1" Number of catheter lumens (CodeSystem: 2.16.840.1.113883.6.277 cdcNHSN) **STATIC** (CONF:2374).
5. **SHALL** contain [1..1] **statusCode/@code**="completed" (CodeSystem: 2.16.840.1.113883.5.14 HL7ActStatus) **STATIC** (CONF:2375).
6. **SHALL** contain [1..1] **value** (CONF:3020).
7. The value of **value/@xsi:type** **SHALL** be INT (integer). (CONF:2376).

Figure 59: Number of lumens observation example

```
<observation moodCode="EVN" classCode="OBS" negationInd="false">
  <templateId root="2.16.840.1.113883.10.20.5.6.26"/>
  <code code="3164-1"
    codeSystem="2.16.840.1.113883.6.277"
    codeSystemName="cdcNHSN"
    displayName="Number of catheter lumens"/>
  <statusCode code="completed"/>
  <value xsi:type="PQ"
    unit="lumens"
    value="3"/>
</observation>
```

5.2.36 Occasion of HAI Detection Observation

[observation: templateId 2.16.840.1.113883.10.20.5.6.27]

This observation records when, in relation to an admission (a surgery stay), an HAI was detected.

1. **SHALL** contain [1..1] **@classCode**="OBS" Observation (CodeSystem: 2.16.840.1.113883.5.6 HL7ActClass) **STATIC** (CONF:2140).
2. **SHALL** contain [1..1] **@moodCode**="EVN" Event (CodeSystem: 2.16.840.1.113883.5.1001 HL7ActMood) **STATIC** (CONF:2141).
3. **SHALL** contain [1..1] **code/@code**="ASSERTION" Assertion (CodeSystem: 2.16.840.1.113883.5.4 HL7ActCode) **STATIC** (CONF:2142).
4. **SHALL** contain [1..1] **statusCode/@code**="completed" Completed (CodeSystem: 2.16.840.1.113883.5.14 HL7ActStatus) **STATIC** (CONF:2143).
5. **SHALL** contain [1..1] **value/@code**, which **SHALL** be selected from ValueSet 2.16.840.1.113883.13.12 NHSNOccasionOfDetectionCode **STATIC** 2009625 (CONF:2144).

Table 23: Occasion of HAI Detection Value Set

Value Set: NHSNOccasionOfDetectionCode 2.16.840.1.113883.13.12 Code System: cdcNHSN 2.16.840.1.113883.6.277		
Code	Code System	Meaning
1510-7	cdcNHSN	Admission (during the stay in which the surgery was performed)
1505-7	cdcNHSN	Post Discharge Surveillance
1515-6	cdcNHSN	Re-admission (during a stay that is subsequent to the stay in which the surgery was performed)

Figure 60: Occasion of HAI detection example

```
<observation classCode="OBS" moodCode="EVN">
  <templateId root="2.16.840.1.113883.10.20.5.6.27"/>
  <code code="ASSERTION"
    codeSystem="2.16.840.1.113883.5.4"/>
  <statusCode code="completed"/>

  <value xsi:type="CD"
    codeSystem="2.16.840.1.113883.6.277"
    codeSystemName="cdcNHSN"
    code="1510-7"
    displayName="During Admission (Stay)"/>
</observation>
```

5.2.37 Occupation and Clinical Specialty Observation

[observation: templateId 2.16.840.1.113883.10.20.5.6.28]

This observation records the occupation of a person under consideration for immunization. It is used in the Immunization Report as submitted for healthcare workers.

The value set for occupations is a subset of the codes available from <http://phinvads.cdc.gov/vads/SearchVocab.action>.

When the person under consideration for immunization is a physician or intern or resident, NHSN also records the person's clinical specialty.

1. **SHALL** contain [1..1] @**classCode**="OBS" Observation (CodeSystem: 2.16.840.1.113883.5.6 HL7ActClass) **STATIC** (CONF:2489).
2. **SHALL** contain [1..1] @**moodCode**="EVN" Event (CodeSystem: 2.16.840.1.113883.5.1001 HL7ActMood) **STATIC** (CONF:2490).
3. **SHALL** contain [1..1] @**negationInd**="false" (CONF:2491).
4. **SHALL** contain [1..1] **code**/@**code**="224361009" Type of job (CodeSystem: 2.16.840.1.113883.6.96 SNOMEDCT) **STATIC** (CONF:2492).
5. **SHALL** contain [1..1] **statusCode**/@**code**="completed" Completed (CodeSystem: 2.16.840.1.113883.5.14 HL7ActStatus) **STATIC** (CONF:2493).

6. **SHALL** contain [1..1] **value/@code**, which **SHALL** be selected from ValueSet 2.16.840.1.114222.4.11.887 Occupation **DYNAMIC** (CONF:2494).
7. **MAY** contain [0..1] **entryRelationship** (CONF:2495).
 - a. This entryRelationship, if present, **SHALL** contain [1..1] **@typeCode="COMP"** Has component, which **SHALL** be selected from ValueSet (CodeSystem: 2.16.840.1.113883.5.1002 HL7ActRelationshipType) **STATIC** (CONF:2496).
 - b. This entryRelationship, if present, **SHALL** contain [1..1] **Clinical Specialty Observation** (templateId:2.16.840.1.113883.10.20.5.6.9) (CONF:2497).

Table 24: Occupation Value Set (excerpt)

Value Set: NHSNOccupationCode 2.16.840.1.114222.4.11.887		
Code System: Standard Occupational Classification (SOC) 2.16.840.1.113883.6.243		
or cdcNHSN 2.16.840.1.113883.6.277		
or NUCCProviderCodes 2.16.840.1.113883.6.101		
or UMLS 2.16.840.1.113883.6.86		
For the full value set table see Occupation Value Set		
Code	Code System	Print Name
3747A0650X	NUCC Provider Codes	Attendant/orderly
2205-3	cdcNHSN	Clerical/administrative
367500000X	NUCC Provider Codes	Nurse Anesthetist
367A00000X	NUCC Provider Codes	Nurse Midwife
...		

Figure 61: Occupation observation example

```

<!-- occupation observation -->
<observation classCode="OBS" moodCode="EVN" negationInd="false">
  <templateId root="2.16.840.1.113883.10.20.5.6.28"/>
  <code code="224361009"
    codeSystem="2.16.840.1.113883.6.96"
    codeSystemName="SNOMED CT"
    displayName="Type of job"/>
  <statusCode code="completed"/>
  <value xsi:type="CD"
    code="224543004"
    codeSystem="2.16.840.1.113883.6.96"
    codeSystemName="SNOMED CT"
    displayName="Diabetic nurse"
  />
</observation>

```

5.2.38 Offer Declined Observation

[observation: templateId 2.16.840.1.113883.10.20.5.6.29]

This observation records whether an offer to immunize was declined (and if so, the reasons for declining) or accepted (and if so, the details of the immunization, whether administered or not). It could be generalized to record any type of offer declined.

If the offer was declined, set the value of @negationInd to false. If the offer was accepted, set the value of @negationInd to true.

If the offer was declined, the reasons for declining are recorded. The reasons to be recorded differ according to whether the offer was made because the person is a healthcare worker or because the person is an inpatient who meets NHSN's criteria for being at high risk of contracting influenza.

1. **SHALL** contain [1..1] @classCode="OBS" Observation (CodeSystem: 2.16.840.1.113883.5.6 HL7ActClass) **STATIC** (CONF:2684).
2. **SHALL** contain [1..1] @moodCode="EVN" Event (CodeSystem: 2.16.840.1.113883.5.1001 HL7ActMood) **STATIC** (CONF:2685).
3. **SHALL** contain @negationInd (CONF:2686).
4. **SHALL** contain [1..1] code/@code="ASSERTION" Assertion (CodeSystem: 2.16.840.1.113883.5.4 HL7ActCode) **STATIC** (CONF:2687).
5. **SHALL** contain [1..1] statusCode/@code="completed" Completed (CodeSystem: 2.16.840.1.113883.5.14 HL7ActStatus) **STATIC** (CONF:2688).
6. **SHALL** contain [1..1] value/@code="315640000" Influenza vaccination declined (CodeSystem: 2.16.840.1.113883.6.96 SNOMEDCT) **STATIC** (CONF:2689).
7. If the offer was accepted, an entryRelationship element **SHALL** be present where the value of @typeCode is COMP, containing an Immunization clinical statement (templateId 2.16.840.1.113883.10.20.5.6.17). (CONF:2690).
8. If the offer was made to an inpatient because of high-risk factors for influenza, and was declined, an entryRelationship **SHALL** be present where the value of @moodCode is RSON containing a Reason Declined Observation (templateId 2.16.840.1.113883.10.20.5.6.37) either for each personal reason or each medical contraindication in the Value Set 2.16.840.1.114222.4.11.3187 NHSNReasonForDeclineVaccineCode **STATIC** 20090625. (CONF:2691).
9. If the offer was made to an inpatient because of high-risk factors for influenza, and was declined, and medical contraindications are recorded, one additional such entryRelationship **MAY** be present recording an uncoded (text) medical contraindication for declining. (CONF:2692).
10. If the offer was made to an inpatient because of high-risk factors for influenza, and was declined, and personal reasons are recorded, one additional such entryRelationship **MAY** be present recording an uncoded (text) personal reason for declining. (CONF:2693).
11. If the offer was made because the person was a healthcare worker, and was declined, an entryRelationship **SHALL** be present where the value of @moodCode is RSON containing a Reason Declined Observation (templateId 2.16.840.1.113883.10.20.5.6.37) for each personal reason in the Value Set

2.16.840.1.114222.4.11.3187 NHSNReasonForDeclineVaccineCode **STATIC** 20090625. (CONF:2694).

12. If the offer was made because the person was a healthcare worker, and was declined, an additional such entryRelationship **SHALL** be present where the value of observation/code/@code is 397745006 Medical contraindications 2.16.840.1.113883.6.96 SNOMED CT **STATIC**. (CONF:2695).
13. If the offer was made because the person was a healthcare worker, and was declined, one additional such entryRelationship **MAY** be present recording an uncoded (text) reason for declining. (CONF:2696).

Figure 62: Offer declined observation example

```
<entryRelationship typeCode="COMP">

<!-- Offer Declined Observation -->
<observation classCode="OBS" moodCode="EVN" negationInd="true">
  <templateId root="2.16.840.1.113883.10.20.5.6.29"/>
  <code codeSystem="2.16.840.1.113883.5.4"
    code="ASSERTION"/>
  <statusCode code="completed"/>
  <value xsi:type="CD"
    codeSystem="2.16.840.1.113883.6.96"
    codeSystemName="SNOMED CT"
    code="315640000"
    displayName="Influenza vaccination declined"/>

  <!-- The offer was accepted, so we have details of the
    immunization (whether actually administered or not).
    If the offer was declined, the reasons for declining
    would be given here instead. -->

  <!-- This immunization was administered (the usual case) -->

  <entryRelationship typeCode="COMP">
    <substanceAdministration classCode="SBADM" moodCode="EVN"
      negationInd="false">

      <templateId root="2.16.840.1.113883.10.20.5.6.17"/> <!-- constraints of
        this guide -->

      ...
    </entryRelationship>

    ...
  </entryRelationship>

  ...
</entryRelationship>
```

5.2.39 Pathogen Identified Observation

[observation: templateId 2.16.840.1.113883.10.20.5.2.5.1]

A Pathogen Identified Observation either represents a pathogen identified (in which case it appears in an organizer with detail about the pathogen) or records that no pathogens were identified.

In many cases, the value-set table provides a code for an unspecified species, for example, "Acidaminococcus species" (SNOMED CT 131202007, NHSN ACISP), for use when a more precise code is not available. The code for an unspecified species is preferred to a genus-level code.

The NHSN Pathogen Code Value Set includes a code for the case in which no pathogens were identified.

1. **SHALL** contain [1..1] **@classCode="OBS"** Observation (CodeSystem: 2.16.840.1.113883.5.6 HL7ActClass) **STATIC** (CONF:2040).
2. **SHALL** contain [1..1] **@moodCode="EVN"** Event (CodeSystem: 2.16.840.1.113883.5.1001 HL7ActMood) **STATIC** (CONF:2041).
3. **SHALL** contain [1..1] **code/@code="41852-5"** Microorganism identified (CodeSystem: 2.16.840.1.113883.6.1 LOINC) **STATIC** (CONF:2042).
4. **SHALL** contain [1..1] **statusCode/@code="completed"** Completed (CodeSystem: 2.16.840.1.113883.5.14 HL7ActStatus) **STATIC** (CONF:2043).
5. **SHALL** contain [1..1] **value/@code**, which **SHALL** be selected from ValueSet 2.16.840.1.113883.13.16 NHSNPathogenCode **DYNAMIC** (CONF:2044).

Table 25: Pathogen Value Set (excerpt)

Value Set: NHSNPathogenCode 2.16.840.1.113883.13.16 Code System: SNOMED CT 2.16.840.1.113883.6.96 or cdcNHSN 2.16.840.1.113883.6.277			
The full table is shown in Pathogen Value Set			
Category	cdcNHSN	Display Name	SDO Fully Specified Name
--	3119-7	No pathogen identified	
Category	SNOMED CT Concept ID	Display Name	SNOMED CT Fully Specified Name
BACTERIUM	372391001	Abiotrophia species	Abiotrophia species (organism)
PARASITE	50875003	Acanthamoeba	Acanthamoeba (organism)
BACTERIUM	413423003	Achromobacter spp.	Achromobacter species (organism)
BACTERIUM	413424009	Achromobacter xylosoxidans	Achromobacter xylosoxidans (organism)
...			

Figure 63: Pathogen identified observation example

```
<observation classCode="OBS" moodCode="EVN">
  <templateId root="2.16.840.1.113883.10.20.5.2.5.1"/>
  <code codeSystem="2.16.840.1.113883.6.1"
    codeSystemName="LOINC"
    code="41852-5"
    displayName="Microorganism identified"/>
  <statusCode code="completed"/>
  <value xsi:type="CD"
    codeSystem="2.16.840.1.113883.6.96"
    codeSystemName="SNOMED"
    code="116197008"
    displayName="Staphylococcus, coagulase negative (organism)"/>
</observation>
```

5.2.40 Pathogen Identified Observation (LIO)

[observation: templateId 2.16.840.1.113883.10.20.5.6.52]

The Pathogen Identified Observation in a LIO Report records a laboratory-identified micro-organism, details of the specimen collection, and whether the facility has prior documentation of the patient being infected or colonized by the organism reported. The microorganism is recorded in the same way as in the Findings Organizer in Infection Reports.

1. **SHALL** contain [1..1] **@classCode="OBS"** Observation (CodeSystem: 2.16.840.1.113883.5.6 HL7ActClass) **STATIC** (CONF:3058).
2. **SHALL** contain [1..1] **@moodCode="EVN"** Event (CodeSystem: 2.16.840.1.113883.5.1001 HL7ActMood) **STATIC** (CONF:3059).
3. **SHALL** contain [1..1] **code/@code="41852-5"** Microorganism identified (CodeSystem: 2.16.840.1.113883.6.1 LOINC) **STATIC** (CONF:3060).
4. **SHALL** contain [1..1] **statusCode/@code="completed"** Completed (CodeSystem: 2.16.840.1.113883.5.14 HL7ActStatus) **STATIC** (CONF:3061).
5. **SHALL** contain [1..1] **value/@code**, which **SHALL** be selected from ValueSet 2.16.840.1.113883.13.16 NHSNPathogenCode **DYNAMIC** (CONF:3062).
6. **SHALL** contain [1..1] **entryRelationship** (CONF:3063) such that it
 - a. **SHALL** contain [1..1] **Specimen Collection Procedure (LIO)** (templateId:2.16.840.1.113883.10.20.5.6.53) (CONF:3064).
7. **SHALL** contain [1..1] **entryRelationship** (CONF:3065) such that it
 - a. **SHALL** contain [1..1] **Prior Documentation Observation** (templateId:2.16.840.1.113883.10.20.5.6.55) (CONF:3066).

5.2.41 Pathogen Ranking Observation

[observation: templateId 2.16.840.1.113883.10.20.5.2.5.1.1]

The NHSN pathogen findings record up to three pathogens. This observation records the relative importance of a pathogen in that set with respect to its role in the infection.

The value is a coded ordinal, where the value of @code is the number 1 or 2 or 3: 1 represents the highest-ranked pathogen of up to three pathogens recorded.

1. **SHALL** contain [1..1] @classCode="OBS" Observation (CodeSystem: 2.16.840.1.113883.5.6 HL7ActClass) **STATIC** (CONF:2032).
2. **SHALL** contain [1..1] @moodCode="EVN" Event (CodeSystem: 2.16.840.1.113883.5.1001 HL7ActMood) **STATIC** (CONF:2033).
3. **SHALL** contain [1..1] code/@code="ASSERTION" Assertion (CodeSystem: 2.16.840.1.113883.5.4 HL7ActCode) **STATIC** (CONF:2034).
4. **SHALL** contain [1..1] statusCode/@code="completed" Completed (CodeSystem: 2.16.840.1.113883.5.14 HL7ActStatus) **STATIC** (CONF:2035).
5. **SHALL** contain [1..1] value (CONF:2039).
6. The value of value/@xsi:type **SHALL** be CO (Coded Ordinal), the value of value/@codeSystem **SHALL** be 2.16.840.1.113883.6.277 cdcNHSN, and the value of value/@code **SHALL** be the number 1 or 2 or 3, where 1 represents the highest-ranked pathogen of up to three pathogens recorded. (CONF:2915).

Figure 64: Pathogen ranking observation example

```
<observation classCode="OBS" moodCode="EVN">
  <templateId root="2.16.840.1.113883.10.20.5.2.5.1.1"/>
  <code codeSystem="2.16.840.1.113883.5.4"
    codeSystemName="HL7"
    code="ASSERTION"/>
  <statusCode code="completed"/>
  <value xsi:type="CO"
    codeSystem="2.16.840.1.113883.6.277"
    codeSystemName="cdcNHSN"
    code="1"
    displayName="Pathogen ranking 1"/>
</observation>
```

5.2.42 Patient Care Observation

[observation: templateId 2.16.840.1.113883.10.20.5.6.30]

This observation records whether a person performs direct patient care. It is used in the Immunization Report as submitted for healthcare workers under consideration for immunization.

If the person performs direct patient care, set the value of @negationInd to false. If the person does not perform direct patient care, set the value of @negationInd to true.

1. **SHALL** contain [1..1] @classCode="OBS" Observation (CodeSystem: 2.16.840.1.113883.5.6 HL7ActClass) **STATIC** (CONF:2379).

2. **SHALL** contain [1..1] @moodCode="EVN" Event (CodeSystem: 2.16.840.1.113883.5.1001 HL7ActMood) **STATIC** (CONF:2380).
3. **SHALL** contain @negationInd (CONF:2381).
4. **SHALL** contain [1..1] code/@code="ASSERTION" Assertion (CodeSystem: 2.16.840.1.113883.5.4 HL7ActCode) **STATIC** (CONF:2382).
5. **SHALL** contain [1..1] statusCode/@code="completed" Completed (CodeSystem: 2.16.840.1.113883.5.14 HL7ActStatus) **STATIC** (CONF:2383).
6. **SHALL** contain [1..1] value/@code="3163-3" Performs direct patient care (CodeSystem: 2.16.840.1.113883.6.277 cdcNHSN) **STATIC** (CONF:2384).

Figure 65: Patient care observation example

```
<!-- Patient care observation -->
<observation classCode="OBS" moodCode="EVN" negationInd="false">
  <!-- the person performs direct patient care -->
  <templateId root="2.16.840.1.113883.10.20.5.6.30"/>
  <code code="ASSERTION" codeSystem="2.16.840.1.113883.5.4"/>
  <statusCode code="completed"/>
  <value xsi:type="CD"
    code="3163-3"
    codeSystem="2.16.840.1.113883.6.277"
    codeSystemName="cdcNHSN"
    displayName="Performs direct patient care"/>
</observation>
```

5.2.43 Post-procedure Observation

[observation: templateId 2.16.840.1.113883.10.20.5.6.31]

In the context in which it is used in the HAI IG, this observation records whether the reported infection occurred during a post-procedure period.

If the infection was post-procedure, set the value of @negationInd to false. If the infection was not post-procedure, set the value of @negationInd to true.

1. **SHALL** contain [1..1] @classCode="OBS" Observation (CodeSystem: 2.16.840.1.113883.5.6 HL7ActClass) **STATIC** (CONF:2273).
2. **SHALL** contain [1..1] @moodCode="EVN" Event (CodeSystem: 2.16.840.1.113883.5.1001 HL7ActMood) **STATIC** (CONF:2274).
3. **SHALL** contain @negationInd (CONF:2275).
4. **SHALL** contain [1..1] code/@code="ASSERTION" (CodeSystem: 2.16.840.1.113883.5.4 HL7ActCode) **STATIC** (CONF:2276).
5. **SHALL** contain [1..1] statusCode/@code="completed" (CodeSystem: 2.16.840.1.113883.5.14 HL7ActStatus) **STATIC** (CONF:2277).
6. **SHALL** contain [1..1] value/@code="3188-0" Infection occurred post-procedure (CodeSystem: 2.16.840.1.113883.6.277 cdcNHSN) **STATIC** (CONF:2278).

Figure 66: Post-procedure observation example

```
<entryRelationship typeCode="SUBJ" inversionInd="true">
  <observation classCode="OBS" moodCode="EVN" negationInd="true">
    <templateId root="2.16.840.1.113883.10.20.5.6.31"/>
    <code codeSystem="2.16.840.1.113883.5.4"
      code="ASSERTION"/>
    <statusCode code="completed"/>
    <value xsi:type="CD"
      codeSystem="2.16.840.1.113883.6.277"
      codeSystemName="cdcNHSN"
      code="3188-0"
      displayName="Infection occurred post-procedure"/>
  </observation>
</entryRelationship>
```

5.2.44 Prior Discharge Encounter

[encounter: templateId 2.16.840.1.113883.10.20.5.6.51]

The Prior Discharge Encounter records the date of a prior discharge from the facility. It is required in a LIO Report if there was such a previous discharge and the organism reported is *C.difficile*. This template conforms to the [CCD Encounter Activity template](#) (templateId 2.16.840.1.113883.10.20.1.21).

1. **SHALL** contain [1..1] @classCode="ENC" Encounter (CodeSystem: 2.16.840.1.113883.5.6 HL7ActClass) **STATIC** (CONF:3074).
2. **SHALL** contain [1..1] @moodCode="EVN" Event (CodeSystem: 2.16.840.1.113883.5.1001 HL7ActMood) **STATIC** (CONF:3075).
3. **SHALL** contain [1..1] id (CONF:3076).
 - a. This id **SHALL** contain [1..1] @nullFlavor="NI" No information (CodeSystem: 2.16.840.1.113883.5.1008 HL7NullFlavor) **STATIC** (CONF:3208).
4. **SHALL** contain [1..1] code/@code="IMP" Inpatient encounter (CodeSystem: 2.16.840.1.113883.5.4 HL7ActCode) **STATIC** (CONF:3077).
5. **SHALL** contain [1..1] effectiveTime/high/@value (CONF:3078).

5.2.45 Prior Documentation Observation

[observation: templateId 2.16.840.1.113883.10.20.5.6.55]

In the LIO Report, this observation records whether there is prior documentation at this facility of the patient being infected or colonized by the organism reported.

If there is such documentation, set the value of @negationInd to false. If there is no such documentation, set the value of @negationInd to true.

1. **SHALL** contain [1..1] @classCode="OBS" Observation (CodeSystem: 2.16.840.1.113883.5.6 HL7ActClass) **STATIC** (CONF:3027).
2. **SHALL** contain [1..1] @moodCode="EVN" Event (CodeSystem: 2.16.840.1.113883.5.1001 HL7ActMood) **STATIC** (CONF:3028).
3. **SHALL** contain @negationInd (CONF:3029).

4. **SHALL** contain [1..1] **code/@code="ASSERTION"** Assertion (CodeSystem: 2.16.840.1.113883.5.4 HL7ActCode) **STATIC** (CONF:3030).
5. **SHALL** contain [1..1] **statusCode/@code="completed"** Completed (CodeSystem: 2.16.840.1.113883.5.14 HL7ActStatus) **STATIC** (CONF:3031).
6. **SHALL** contain [1..1] **value/@code="3001-5"** Patient ventilated (CodeSystem: 2.16.840.1.113883.6.277 cdcNHSN) **STATIC** (CONF:3032).

Figure 67: Prior documentation observation example

```
<observation classCode="OBS" moodCode="EVN" negationInd="false">
  <templateId root="2.16.840.1.113883.10.20.5.6.55"/>
  <code codeSystem="2.16.840.1.113883.5.4" code="ASSERTION"/>
  <statusCode code="completed"/>
  <value xsi:type="CD"
    codeSystem="2.16.840.1.113883.6.277"
    codeSystemName="cdcNHSN"
    code="3001-5"
    displayName="Prior documentation of the patient being infected or
      colonized with the organism currently being reported."/>
</observation>
```

5.2.46 Procedure Details Clinical Statement

5.2.46.1 Comparison Table

The Procedure Details clinical statement is used in the SSI, CLIP, and Procedure Reports. The information recorded in the Procedure Details clinical statement differs substantially according to report type; accordingly the clinical statement has a different `templateId` in each report. The table below summarizes the differences.

NHSN links Procedure Reports with SSI Reports using the value of the `id` element in their respective Procedure Details clinical statements. Identical values for the Procedure Details `procedure/id` in a Procedure Report and an SSI Report support this linking.

The value of the `procedure/id` element must be globally unique and in general need not be an ID used outside the document. Its function is to identify this procedure as being the same as the one documented in the Details Section of the same report. ID values are also used to establish a relationship between two reports, such as the link created between a Procedure Report and an SSI Report. To establish this NHSN link, the procedure ID must be the same in the two reports.

Table 26: Procedure Details Clinical Statement in SSI, CLIP, and Procedure Reports

In all reports		
A procedure element a procedure id a code element recording the NHSN Procedure Category code a templateId		
In SSI Report	In CLIP Report	In Procedure Report
SSI Location Type effectiveTime low = procedure date	Insertion Site Performer Role Recorder Observation Reason for Procedure Observation effectiveTime	General anesthesia If spinal fusion or refusion: Spinal fusion level Spinal fusion approach If hip replacement or knee replacement: Type effectiveTime low = procedure date width = procedure duration

5.2.46.2 Procedure Details Clinical Statement in a Procedure Report

[procedure: templateId 2.16.840.1.113883.10.20.5.6.33]

This clinical statement records the detail required in a Procedure Report about a procedure. For NHSN to establish a link between a Procedure Report and an SSI Report, the value of the procedure id element must be the same in both reports.

1. **SHALL** contain [1..1] @classCode="PROC" Procedure (CodeSystem: 2.16.840.1.113883.5.6 HL7ActClass) **STATIC** (CONF:2713).
2. **SHALL** contain [1..1] @moodCode="EVN" Event (CodeSystem: 2.16.840.1.113883.5.1001 HL7ActMood) **STATIC** (CONF:2714).
3. **SHALL** contain [1..1] id (CONF:2715).
4. **SHALL** contain [1..1] code/@code, which **SHALL** be selected from ValueSet 2.16.840.1.113883.13.17 NHSNProcedureCategoryCode **DYNAMIC** (CONF:2716).
5. **SHALL** contain [1..1] effectiveTime (CONF:2717).
 - a. This effectiveTime **SHALL** contain [1..1] low (CONF:2718).
 - b. This effectiveTime **SHALL** contain [1..1] width (CONF:3200).
6. **SHALL** contain [1..1] entryRelationship (CONF:2719) such that it
 - a. **SHALL** contain [1..1] @typeCode="COMP" Has component, which **SHALL** be selected from ValueSet (CodeSystem: 2.16.840.1.113883.5.1002 HL7ActRelationshipType) **STATIC** (CONF:2720).
 - b. **SHALL** contain [1..1] Anesthesia Administration Clinical Statement (templateId:2.16.840.1.113883.10.20.5.2.2.7.3) (CONF:2721).

7. **SHALL** contain [1..1] **entryRelationship** (CONF:2722) such that it
 - a. **SHALL** contain [1..1] **@typeCode="COMP"** Has component (CodeSystem: 2.16.840.1.113883.5.1002 HL7ActRelationshipType) **STATIC** (CONF:2723).
 - b. **SHALL** contain [1..1] **Implant Observation** (templateId:2.16.840.1.113883.10.20.5.6.20) (CONF:2724).
8. **SHALL** contain [1..1] **entryRelationship** (CONF:2725) such that it
 - a. **SHALL** contain [1..1] **@typeCode="COMP"** Has component (CodeSystem: 2.16.840.1.113883.5.1002 HL7ActRelationshipType) **STATIC** (CONF:2726).
 - b. **SHALL** contain [1..1] **Non-autologous Transplant Observation** (templateId:2.16.840.1.113883.10.20.5.6.25) (CONF:2727).
9. If the procedure is a fusion or refusion (code/@code is either 2137-8 or 2135-2), an approachSiteCode element **SHALL** be present where the value of @code is selected from Value Set 2.16.840.1.113883.13.2 NHSNSpinalFusionApproachCode **STATIC** 20090625. (CONF:2728).
10. If the procedure is a fusion or refusion, an entryRelationship element where the value of @typeCode is COMP **SHALL** be present, containing a Spinal Fusion Level Observation (templateId 2.16.840.1.113883.10.20.5.2.2.7.8). (CONF:2729).
11. If the procedure category code represents a hip replacement, a methodCode element **SHALL** be present where the value of @code is selected from Value Set 2.16.840.1.113883.13.3 NHSNHipReplacementCode **STATIC** 20090625. (CONF:2730).
12. If the procedure category code represents a knee replacement, a methodCode element **SHALL** be present where the value of @code is selected from Value Set 2.16.840.1.113883.13.4 NHSNKneeReplacementCode **STATIC** 20090625. (CONF:2731).

Table 27: Spinal Fusion Approach Value Set

Value Set: NHSNSpinalFusionApproachCode 2.16.840.1.113883.13.2 Code System: cdcNHSN 2.16.840.1.113883.6.277 or SNOMED CT 2.16.840.1.113883.6.96		
Code	Code System	Meaning
255549009	SNOMED CT	Anterior
255551008	SNOMED CT	Posterior
1205-4	cdcNHSN	anterior posterior
1210-4	cdcNHSN	lateral transverse

Figure 68: Spinal fusion approach example

```
<procedure classCode="PROC" moodCode="EVN">
  <templateId root="2.16.840.1.113883.10.20.5.6.33"/>
  <id root="2.16.840.1.113883.3.117.1.1.5.2.1.1.4" extension="92"/> ...
  <approachSiteCode codeSystem="2.16.840.1.113883.6.277"
    codeSystemName="cdcNHSN"
    code="1205-4"
    displayName="anterior posterior"/>

  <entryRelationship typeCode="COMP">
    <observation>
      ...
    </observation>
  </entryRelationship>
  ...
</procedure>
```

Table 28: Hip Replacement Value Set

Value Set: NHSNHipReplacementCode 2.16.840.1.113883.13.3 Code System: cdcNHSN 2.16.840.1.113883.6.277		
Code	Code System	Meaning
1305-2	cdcNHSN	partial primary
1310-2	cdcNHSN	partial revision
1320-1	cdcNHSN	total primary
1315-1	cdcNHSN	total revision

Figure 69: Hip replacement methodCode example

```
<procedure>
  ...
  <methodCode codeSystem="2.16.840.1.113883.6.277"
    codeSystemName="cdcNHSN"
    code="1320-1"
    displayName="total primary"/>
</procedure>
```

Table 29: Knee Replacement Value Set

Value Set: NHSNKneeReplacementCode 2.16.840.1.113883.13.4 Code System: cdcNHSN 2.16.840.1.113883.6.277		
Code	Code System	Meaning
1410-0	cdcNHSN	primary (total)
1405-0	cdcNHSN	revision (total or partial)

Figure 70: Knee replacement methodCode example

```
<procedure>
...
<methodCode codeSystem="2.16.840.1.113883.6.277"
             codeSystemName="cdcNHSN"
             code="1410-0"
             displayName="total primary"/>
</procedure>
```

5.2.46.3 Procedure Details Clinical Statement in an SSI Report

[procedure: templateId 2.16.840.1.113883.10.20.5.6.34]

This clinical statement records the detail required in an SSI Report about a procedure.

1. **SHALL** contain [1..1] **@classCode**="PROC" Procedure (CodeSystem: 2.16.840.1.113883.5.6 HL7ActClass) **STATIC** (CONF:2155).
2. **SHALL** contain [1..1] **@moodCode**="EVN" Event (CodeSystem: 2.16.840.1.113883.5.1001 HL7ActMood) **STATIC** (CONF:2156).
3. **SHALL** contain [1..1] **id** (CONF:2157).
4. **SHALL** contain [1..1] **code/@code**, which **SHALL** be selected from ValueSet 2.16.840.1.113883.13.17 NHSNProcedureCategoryCode **DYNAMIC** (CONF:2158).
5. **SHALL** contain [1..1] **effectiveTime** (CONF:2159).
 - a. This effectiveTime **SHALL** contain [1..1] **low** (CONF:2160).

Table 30: Procedure Category Value Set (excerpt)

Value Set: NHSNProcedureCategoryCode 2.16.840.1.113883.13.17 Code System: cdcNHSN 2.16.840.1.113883.6.277		
The full table is shown Procedure Category Value Set		
Code	Code System	Meaning
2105-5	cdcNHSN	Abdominal aortic aneurysm repair
2126-1	cdcNHSN	Limb amputation
2108-9	cdcNHSN	Appendix surgery
2102-2	cdcNHSN	AV shunt for dialysis
....	

Figure 71: Procedure details example in an SSI report

```
<procedure classCode="PROC" moodCode="EVN">
  <templateId root="2.16.840.1.113883.10.20.5.6.34"/>
  <id root="2.16.840.1.113883.3.117.1.1.5.2.1.1.4" extension="92"/>
  <code codeSystem="2.16.840.1.113883.6.277"
        codeSystemName="cdcNHSN"
        code="2108-9"
        displayName="Appendix Surgery"/>

  <effectiveTime>
    <low value="20061223"/>
  </effectiveTime>
  ...
</procedure>
```

5.2.46.4 Procedure Details Clinical Statement in a CLIP Report

[procedure: templateId 2.16.840.1.113883.10.20.5.6.32]

This clinical statement records the detail required in an CLIP Report about a procedure.

The value of the `procedure/id` element must be globally unique and in general need not be an ID used outside the document. Its function is to identify this procedure as being the same as the one documented in the Risk Factors clinical statement of the same report.

The performer element records the ID and role of the person who performed the procedure.

1. **SHALL** contain [1..1] `@classCode="PROC"` Procedure (CodeSystem: 2.16.840.1.113883.5.6 HL7ActClass) **STATIC** (CONF:2697).
2. **SHALL** contain [1..1] `@moodCode="EVN"` Event (CodeSystem: 2.16.840.1.113883.5.1001 HL7ActMood) **STATIC** (CONF:2698).
3. **SHALL** contain [1..1] `id` (CONF:2699).
4. **SHALL** contain [1..1] `code/@code="233527006"` Central-line insertion (CodeSystem: 2.16.840.1.113883.6.96 SNOMEDCT) **STATIC** (CONF:2700).
5. **SHALL** contain [1..1] `effectiveTime` (CONF:2701).
6. **SHALL** contain [1..1] `targetSiteCode/@code`, which **SHALL** be selected from ValueSet 2.16.840.1.114222.4.11.3180 NHSNInsertionSiteCode **DYNAMIC** (CONF:2702).
7. **SHALL** contain [1..1] `performer/assignedEntity` (CONF:2703).
 - a. This performer/assignedEntity **SHALL** contain [1..1] `id` (CONF:2704).
 - b. This performer/assignedEntity **SHALL** contain [1..1] `code/@code`, which **SHALL** be selected from ValueSet 2.16.840.1.114222.4.11.3181 NHSNRoleOfPerformerCode **STATIC** 2009625 (CONF:2705).
8. If the performer ID is not known, the value of `performer/assignedEntity/id/@nullFlavor` **SHALL** be UNK. (CONF:2706).

9. **SHALL** contain [1..1] **entryRelationship** (CONF:2707) such that it
- a. **SHALL** contain [1..1] **@typeCode="COMP"** Has component, which **SHALL** be selected from ValueSet (CodeSystem: 2.16.840.1.113883.5.1002 HL7ActRelationshipType) **STATIC** (CONF:2708).
 - b. **SHALL** contain [1..1] **Recorder Observation** (templateId:2.16.840.1.113883.10.20.5.6.39) (CONF:2709).
10. **SHALL** contain [1..1] **entryRelationship** (CONF:2710) such that it
- a. **SHALL** contain [1..1] **@typeCode="RSON"** Has reason, which **SHALL** be selected from ValueSet (CodeSystem: 2.16.840.1.113883.5.1002 HL7ActRelationshipType) **STATIC** (CONF:2711).
 - b. **SHALL** contain [1..1] **Reason for Procedure Observation** (templateId:2.16.840.1.113883.10.20.5.6.38) (CONF:2712).

Table 31: Insertion Site Value Set

Value Set: NHSNInsertionSiteCode 2.16.840.1.114222.4.11.3180 Code System: SNOMED-CT 2.16.840.1.113883.6.96		
Code	Code System	Print Name
83419000	SNOMED-CT	Femoral vein
63190004	SNOMED-CT	Jugular vein
122775001	SNOMED-CT	Vein of upper extremity
122774002	SNOMED-CT	Vein of lower extremity
307054003	SNOMED-CT	Vein of scalp
9454009	SNOMED-CT	Subclavian vein
408728001	SNOMED-CT	Umbilical vein or artery

Table 32: Role of Performer Value Set

Value Set: NHSNRoleOfPerformerCode 2.16.840.1.114222.4.11.3181 Code System: SNOMED-CT 2.16.840.1.113883.6.96 or cdcNHSN 2.16.840.1.113883.6.277		
Code	Code System	Print Name
405279007	SNOMED-CT	Attending physician
4100-4	cdcNHSN	IV Team
405277009	SNOMED-CT	Intern/resident
4101-2	cdcNHSN	Physician assistant
4102-0	cdcNHSN	Medical staff not otherwise specified
398130009	SNOMED-CT	Student (medical)
65853000	SNOMED-CT	Student (not medical)
4103-8	cdcNHSN	Fellow

Figure 72: Procedure details example in a CLIP report

```
<procedure moodCode="EVN" classCode="PROC">
  <templateId root="2.16.840.1.113883.10.20.5.6.32"/>
  <id root="1.2.3.4" extension="1.2.3.4"/> <!-- Same ID as Risk Factors
    procedure -->
  <code code="233527006"
    codeSystem="2.16.840.1.113883.6.96"
    codeSystemName="SNOMED CT" displayName="Central-line Insertion"/>
  <effectiveTime value="20080805"/>
  <targetSiteCode code="83419000"
    codeSystem="2.16.840.1.113883.6.96"
    codeSystemName="SNOMED CT"
    displayName="Femoral vein"/>

  <performer>
    <assignedEntity>
      <id nullFlavor="UNK"/>
      <code code="4101-2" codeSystem="2.16.840.1.113883.6.277"
        codeSystemName="cdcNHSN"
        displayName="Physician assistant"/>
    </assignedEntity>
  </performer>

  <entryRelationship typeCode="COMP">
    <observation moodCode="EVN" classCode="OBS" negationInd="false">
      <templateId root="2.16.840.1.113883.10.20.5.6.39"/>
      ...
    </observation>
  </entryRelationship>

  <entryRelationship typeCode="RSON">
    <observation moodCode="EVN" classCode="OBS" negationInd="false">
      <templateId root="2.16.840.1.113883.10.20.5.6.38"/>
      ...
    </observation>
  </entryRelationship>
</procedure>
```

5.2.47 Procedure Risk Factors Clinical Statement in a Procedure Report

[procedure: templateId 2.16.840.1.113883.10.20.5.6.35]

This clinical statement records the detail required in a Procedure Report about the circumstances in which a procedure was performed.

The value of the `id` element must be globally unique and in general need not be an ID used outside the document. Its function is to identify this procedure as being the same as the one documented in the Details Section of the same report

1. **SHALL** contain [1..1] **@classCode="PROC"** Procedure (CodeSystem: 2.16.840.1.113883.5.6 HL7ActClass) **STATIC** (CONF:2732).
2. **SHALL** contain [1..1] **@moodCode="EVN"** Event (CodeSystem: 2.16.840.1.113883.5.1001 HL7ActMood) **STATIC** (CONF:2733).

3. **SHALL** contain [1..1] **id** (CONF:2734).
4. The value of the **id** element **SHALL** be the same as the value of the corresponding procedure/**id** element in the Details Section of the report. (CONF:2735).
5. If the procedure was an emergency, the procedure element **SHALL** contain a **methodCode** element where the value of @code is 373110003 Emergency procedure 2.16.840.1.113883.6.96 SNOMED CT **STATIC**. (CONF:2736).
6. **SHALL** contain [1..1] **entryRelationship** (CONF:2737) such that it
 - a. **SHALL** contain [1..1] **@typeCode**="COMP" Has component (CodeSystem: 2.16.840.1.113883.5.1002 HL7ActRelationshipType) **STATIC** (CONF:2738).
 - b. **SHALL** contain [1..1] **Wound Class Observation** (templateId:2.16.840.1.113883.10.20.5.2.1.2) (CONF:2739).
7. **SHALL** contain [1..1] **entryRelationship** (CONF:2740) such that it
 - a. **SHALL** contain [1..1] **@typeCode**="COMP" Has component (CodeSystem: 2.16.840.1.113883.5.1002 HL7ActRelationshipType) **STATIC** (CONF:2741).
 - b. **SHALL** contain [1..1] **Endoscope Used Clinical Statement** (templateId:2.16.840.1.113883.10.20.5.2.1.3) (CONF:2742).
8. **SHALL** contain [1..1] **entryRelationship** (CONF:2743) such that it
 - a. **SHALL** contain [1..1] **@typeCode**="COMP" Has component (CodeSystem: 2.16.840.1.113883.5.1002 HL7ActRelationshipType) **STATIC** (CONF:2744).
 - b. **SHALL** contain [1..1] **Multiple Procedures Observation** (templateId:2.16.840.1.113883.10.20.5.2.2.7.6) (CONF:2745).

Figure 73: Procedure risk factors example

```
<procedure classCode="PROC" moodCode="EVN">
  <templateId root="2.16.840.1.113883.10.20.5.6.35"/>
  <id root="2.16.840.1.113883.3.117.1.1.5.2.1.1.4" extension="92"/>
  ...
</procedure>
```

5.2.48 Procedure Risk Factors Clinical Statement in a CLIP Report

[procedure: templateId 2.16.840.1.113883.10.20.5.6.36]

This clinical statement represents the 3rd step in the Central-line Insertion Practice sequence, the central-line insertion procedure itself. It is identified, by means of its **id**, with the procedure element in the Procedure Details Section, where details such as the insertion site are recorded.

The value of the **id** element must be globally unique and in general need not be an ID used outside the document. Its function is to identify this procedure as being the same as the one documented in the Details Section of the same report.

The participant element identifies the catheter type.

1. **SHALL** contain [1..1] **@classCode**="PROC" Procedure (CodeSystem: 2.16.840.1.113883.5.6 HL7ActClass) **STATIC** (CONF:2746).
2. **SHALL** contain [1..1] **@moodCode**="EVN" Event (CodeSystem: 2.16.840.1.113883.5.1001 HL7ActMood) **STATIC** (CONF:2747).
3. **SHALL** contain [1..1] **id** (CONF:2748).
4. The value of the **id** element **SHALL** be the same as the value of the corresponding procedure/**id** element in the Details Section of the report. (CONF:2749).
5. **SHALL** contain [1..1] **participant** (CONF:2750).
 - a. This participant **SHALL** contain [1..1] **@typeCode**="DEV" Device (CodeSystem: 2.16.840.1.113883.5.90 HL7ParticipationType) **STATIC** (CONF:2751).
 - b. This participant **SHALL** contain [1..1] **participantRole** (CONF:2752).
 - i. This participantRole **SHALL** contain [1..1] **@classCode**="MANU" Manufactured product (CodeSystem: 2.16.840.1.113883.5.110 HL7RoleClass) **STATIC** (CONF:2753).
 - ii. This participantRole **SHALL** contain [1..1] **playingDevice** (CONF:2754).
 1. This playingDevice **SHALL** contain [1..1] **code/@code**, which **SHALL** be selected from ValueSet 2.16.840.1.114222.4.11.3185 NHSNCatheterTypeCode **STATIC** 2009625 (CONF:2755).
6. **SHALL** contain [1..1] **entryRelationship** (CONF:2756) such that it
 - a. **SHALL** contain [1..1] **@typeCode**="COMP" Has component (CodeSystem: 2.16.840.1.113883.5.1002 HL7ActRelationshipType) **STATIC** (CONF:2757).
 - b. **SHALL** contain [1..1] **Number of Lumens Observation** (templateId:2.16.840.1.113883.10.20.5.6.26) (CONF:2758).
7. **SHALL** contain [1..1] **entryRelationship** (CONF:2759) such that it
 - a. **SHALL** contain [1..1] **@typeCode**="COMP" Has component (CodeSystem: 2.16.840.1.113883.5.1002 HL7ActRelationshipType) **STATIC** (CONF:2760).
 - b. **SHALL** contain [1..1] **Guidewire Used Clinical Statement** (templateId:2.16.840.1.113883.10.20.5.6.15) (CONF:2761).

Table 33: Catheter Type Value Set

Value Set: NHSNCatheterTypeCode 2.16.840.1.114222.4.11.3185 Code System: cdcNHSN 2.16.840.1.113883.6.277		
Code	Code System	Print Name
3115-3	cdcNHSN	PICC
1119-7	cdcNHSN	Non-tunneled, dialysis
1120-5	cdcNHSN	Non-tunneled, other than dialysis
1117-1	cdcNHSN	Tunneled, dialysis
1118-9	cdcNHSN	Tunneled, other than dialysis
1116-3	cdcNHSN	Umbilical

Figure 74: Procedure risk factors example in a CLIP report

```
<sequenceNumber value="3"/>
<procedure moodCode="EVN" classCode="PROC">
  <templateId root="2.16.840.1.113883.10.20.5.6.36"/>
  <id root="1.2.3.4" extension="1.2.3.4"/> <!-- Same ID as procedure in
    Details-->

  <participant typeCode="DEV">
    <participantRole classCode="MANU">
      <playingDevice>
        <code codeSystem="2.16.840.1.113883.6.277"
          codeSystemName="cdcNHSN"
          code="1119-7"
          displayName="Non-tunneled, dialysis"/>
      </playingDevice>
    </participantRole>
  </participant>

  <entryRelationship typeCode="COMP">
    <observation>
      <templateId root="2.16.840.1.113883.10.20.5.6.26"/>
      ...
    </observation>
  </entryRelationship>

  <entryRelationship typeCode="COMP">
    <procedure>
      <templateId root="2.16.840.1.113883.10.20.5.6.15"/>
      ...
    </procedure>
  </entryRelationship>
</procedure>
```

5.2.49 Reason for Procedure Observation

[observation: templateId 2.16.840.1.113883.10.20.5.6.38]

This observation records the reason a procedure was performed. It is used in the HAI CLIP Report to record the reason a central-line insertion procedure was performed.

1. **SHALL** contain [1..1] @classCode="OBS" Observation (CodeSystem: 2.16.840.1.113883.5.6 HL7ActClass) **STATIC** (CONF:2393).
2. **SHALL** contain [1..1] @moodCode="EVN" Event (CodeSystem: 2.16.840.1.113883.5.1001 HL7ActMood) **STATIC** (CONF:2394).
3. **SHALL** contain [1..1] @negationInd="false" (CONF:2395).
4. **SHALL** contain [1..1] code/@code="ASSERTION" Assertion (CodeSystem: 2.16.840.1.113883.5.4 HL7ActCode) **STATIC** (CONF:2396).
5. **SHALL** contain [1..1] statusCode/@code="completed" Completed (CodeSystem: 2.16.840.1.113883.5.14 HL7ActStatus) **STATIC** (CONF:2397).

6. **SHALL** contain [1..1] **value/@code**, which **SHALL** be selected from ValueSet 2.16.840.1.114222.4.11.3182 ReasonForInsertionCode **STATIC** 2009625 (CONF:2398).

Table 34: Reason for Procedure Value Set

Value Set: NHSNReasonForInsertionCode 2.16.840.1.114222.4.11.3182 Code System: cdcNHSN 2.16.840.1.113883.6.277		
Code	Code System	Print Name
5105-2	cdcNHSN	[To address] A new indication for a central line.
5106-0	cdcNHSN	[To replace] An existing, malfunctioning central line.
5107-8	cdcNHSN	[To replace] An existing central line where infection was suspected.

Figure 75: Reason for procedure observation example

```
<observation classCode="OBS" moodCode="EVN" negationInd="false">
  <templateId root=" 2.16.840.1.113883.10.20.5.6.38"/>
  <code codeSystem="2.16.840.1.113883.5.4"
    code="ASSERTION"
    codeSystemName="HL7 Act Code"/>
  <statusCode code="completed"/>
  <value xsi:type="CD" code="5106-0"
    codeSystem="2.16.840.1.113883.6.277"
    codeSystemName="cdcNHSN"
    displayName="[To replace] An existing, malfunctioning central line."/>
</observation>
```

5.2.50 Reason Offer Declined Observation

[observation: templateId 2.16.840.1.113883.10.20.5.6.37]

This observation records the reason(s) given for declining an offer. It is used in the Immunization Report to record whether specified reasons were or were not a factor in declining an offer to vaccinate.

If the reason reported was a factor in declining the offer, set the value of @negationInd to false. If the reason was not a factor in declining the offer, set the value of @negationInd to true.

The template allows the reason for declining to be recorded as a code or as text.

1. **SHALL** contain [1..1] **@classCode="OBS"** Observation (CodeSystem: 2.16.840.1.113883.5.6 HL7ActClass) **STATIC** (CONF:2385).
2. **SHALL** contain [1..1] **@moodCode="EVN"** Event (CodeSystem: 2.16.840.1.113883.5.1001 HL7ActMood) **STATIC** (CONF:2386).
3. **SHALL** contain **@negationInd** (CONF:2387).
4. **SHALL** contain [1..1] **code/@code="ASSERTION"** Assertion (CodeSystem: 2.16.840.1.113883.5.4 HL7ActCode) **STATIC** (CONF:2388).

5. **SHALL** contain [1..1] **statusCode/@code**="completed" Completed (CodeSystem: 2.16.840.1.113883.5.14 HL7ActStatus) **STATIC** (CONF:2389).
6. **SHALL** contain [1..1] **value** (CONF:2390).
7. When the reason is recorded as a code, the value of @code **SHALL** be selected from 2.16.840.1.114222.4.11.3187 NHSNReasonForDeclineVaccineCode **STATIC** 20091101. When the reason is recorded as text, if it is not specified whether the reason is personal or medical, the value of @nullFlavor **SHALL** be OTH. (CONF:2392).

Table 35: Reason for Declining Vaccine Value Set

Value Set: NHSNReasonForDeclineVaccineCode 2.16.840.1.114222.4.11.3187 Code System: SNOMED CT 2.16.840.1.113883.6.96 or cdcNHSN 2.16.840.1.113883.6.277		
Code	Code System	Print Name
Medical Contraindications		
294640001	SNOMED CT	Allergy to vaccine components
7186-0	cdcNHSN	History of Guillian-Barre syndrome within 6 weeks of previous influenza vaccine
7187-7	cdcNHSN	Current febrile illness (Temp > 101.5)
Personal Reasons		
279926005	SNOMED CT	Fear of needles/injections
7165-4	cdcNHSN	Fear of side effects
7166-2	cdcNHSN	Perceived ineffectiveness of vaccine
7167-0	cdcNHSN	Religious or philosophical objections
7168-8	cdcNHSN	Concern for transmitting vaccine virus to contacts

Figure 76: Reason offer declined observation example

```
<!-- the reason was a factor in declining the immunizing offer -->
<observation classCode="OBS" moodCode="EVN" negationInd="false">
  <templateId root="2.16.840.1.113883.10.20.5.6.37"/>
  <code code="ASSERTION" codeSystem="2.16.840.1.113883.5.4"/>
  <statusCode code="completed"/>
  <value xsi:type="CD"
    code="294640001"
    codeSystem="2.16.840.1.113883.6.96"
    codeSystemName="SNOMED"
    displayName="Allergy to vaccine components"/>
</observation>
```

5.2.51 Recorder Observation

[observation: templateId 2.16.840.1.113883.10.20.5.6.39]

This observation records whether the person who recorded the sequence of steps in a practice was also the performer of those steps. It is used in the Central-line Insertion Practice clinical statement.

If the recorder was the performer, set the value of @negationInd to false. If the recorder was not the performer (i.e., was an observer), set the value of @negationInd to true.

1. **SHALL** contain [1..1] @classCode="OBS" Observation (CodeSystem: 2.16.840.1.113883.5.6 HL7ActClass) **STATIC** (CONF:2399).
2. **SHALL** contain [1..1] @moodCode="EVN" Event (CodeSystem: 2.16.840.1.113883.5.1001 HL7ActMood) **STATIC** (CONF:2400).
3. **SHALL** contain @negationInd (CONF:2401).
4. **SHALL** contain [1..1] code/@code="ASSERTION" Assertion (CodeSystem: 2.16.840.1.113883.5.4 HL7ActCode) **STATIC** (CONF:2402).
5. **SHALL** contain [1..1] statusCode/@code="completed" Completed (CodeSystem: 2.16.840.1.113883.5.14 HL7ActStatus) **STATIC** (CONF:2403).
6. **SHALL** contain [1..1] value/@code="3104-7" Recorder was performer (CodeSystem: 2.16.840.1.113883.6.277 cdcNHSN) **STATIC** 2009625 (CONF:2404).

Figure 77: Recorder observation example

```
<observation classCode="OBS" moodCode="EVN" negationInd="false">
  <templateId root=" 2.16.840.1.113883.10.20.5.6.39"/>
  <code codeSystem="2.16.840.1.113883.5.4"
    code="ASSERTION"
    codeSystemName="HL7 Act Code"/>
  <statusCode code="completed"/>
  <value xsi:type="CD" code="3104-7"
    codeSystem="2.16.840.1.113883.6.277"
    codeSystemName="cdcNHSN"
    displayName="Recorder was performer"/>
</observation>
```

5.2.52 Seasons Immunized Observation

[observation: templateId 2.16.840.1.113883.10.20.5.6.40]

This observation records the seasons for which an immunization is administered. It is used in the HAI Immunization Report as submitted for healthcare workers.

The effectiveTime/low element represents the starting year of the period; the effectiveTime/high element represents the ending year of the period.

1. **SHALL** contain [1..1] @classCode="OBS" Observation (CodeSystem: 2.16.840.1.113883.5.6 HL7ActClass) **STATIC** (CONF:2405).
2. **SHALL** contain [1..1] @moodCode="EVN" Event (CodeSystem: 2.16.840.1.113883.5.1001 HL7ActMood) **STATIC** (CONF:2406).

3. **SHALL** contain [1..1] **@negationInd**="false" (CONF:2410).
4. **SHALL** contain [1..1] **code/@code**="3192-2" Seasons immunized (CodeSystem: 2.16.840.1.113883.6.277 cdcNHSN) **STATIC** (CONF:2407).
5. **SHALL** contain [1..1] **statusCode/@code**="completed" (CodeSystem: 2.16.840.1.113883.5.14 HL7ActStatus) **STATIC** (CONF:2408).
6. **SHALL** contain [1..1] **effectiveTime** (CONF:2411).
 - a. This effectiveTime **SHALL** contain [1..1] **high** (CONF:2413).
 - b. This effectiveTime **SHALL** contain [1..1] **low** (CONF:2412).

Figure 78: Seasons immunized observation example

```

<!-- Seasons Immunized Observation -->
<observation classCode="OBS" moodCode="EVN" negationInd="false">
  <templateId root="2.16.840.1.113883.10.20.5.6.40"/>
  <code code="3192-2"
    codeSystem="2.16.840.1.113883.6.277"
    codeSystemName="cdcNHSN"
    displayName="Seasons immunized"/>
  <statusCode code="completed"/>
  <effectiveTime>
    <low value="1998"/>
    <high value="2002"/>
  </effectiveTime>
</observation>

```

5.2.53 Secondary Bloodstream Infection Observation

[observation: templateId 2.16.840.1.113883.10.20.5.2.2.7.15]

This observation records whether a secondary bloodstream infection was present.

If a secondary bloodstream infection was present, set the value of observation/@negationInd to false. If a secondary bloodstream infection was not present, set the value of observation/@negationInd to true.

1. **SHALL** contain [1..1] **@classCode**="OBS" Observation (CodeSystem: 2.16.840.1.113883.5.6 HL7ActClass) **STATIC** (CONF:2150).
2. **SHALL** contain [1..1] **@moodCode**="EVN" Event (CodeSystem: 2.16.840.1.113883.5.1001 HL7ActMood) **STATIC** (CONF:2151).
3. **SHALL** contain **@negationInd** (CONF:2224).
4. **SHALL** contain [1..1] **code/@code**="ASSERTION" Assertion (CodeSystem: 2.16.840.1.113883.5.4 HL7ActCode) **STATIC** (CONF:2152).
5. **SHALL** contain [1..1] **statusCode/@code**="completed" Completed (CodeSystem: 2.16.840.1.113883.5.14 HL7ActStatus) **STATIC** (CONF:2153).
6. **SHALL** contain [1..1] **value/@code**="3111-2" Secondary bloodstream infection (CodeSystem: 2.16.840.1.113883.6.277 cdcNHSN) **STATIC** (CONF:2154).

Figure 79: Secondary bloodstream infection observation example

```
<observation classCode="OBS" moodCode="EVN" negationInd="false">
  <templateId root="2.16.840.1.113883.10.20.5.2.2.7.15"/>
  <code code="ASSERTION"
    codeSystem="2.16.840.1.113883.5.4"/>
  <statusCode code="completed"/>
  <value
    xsi:type="CD"
    code="3111-2"
    codeSystem="2.16.840.1.113883.6.277"
    codeSystemName="cdcNHSN"
    displayName="Secondary bloodstream infection"/>
</observation>
```

5.2.54 Significant Pathogens Observation

[observation: templateId 2.16.840.1.113883.10.20.5.6.41]

This observation records the finding of up to three of the most significant pathogens. This is recorded separately from the drug-test Findings Organizer in the Findings Section of an HAI MDRO/CDAD Infection Report.

1. **SHALL** contain [1..1] @**classCode**="OBS" Observation (CodeSystem: 2.16.840.1.113883.5.6 HL7ActClass) **STATIC** (CONF:2279).
2. **SHALL** contain [1..1] @**moodCode**="EVN" Event (CodeSystem: 2.16.840.1.113883.5.1001 HL7ActMood) **STATIC** (CONF:2280).
3. **SHALL** contain [1..1] **code**/@**code**="41852-5" Microorganism Identified (CodeSystem: 2.16.840.1.113883.6.1 LOINC) **STATIC** (CONF:2281).
4. **SHALL** contain [1..1] **statusCode**/@**code**="completed" (CodeSystem: 2.16.840.1.113883.5.14 HL7ActStatus) **STATIC** (CONF:2282).
5. **SHALL** contain [1..3] **value**/@**code**, which **SHALL** be selected from ValueSet 2.16.840.1.114222.4.11.3194 NHSNSignificantPathogenCode **STATIC** 2009625 (CONF:2283).

Figure 80: Significant pathogens observation example

```
<observation classCode="OBS" moodCode="EVN">
  <templateId root="2.16.840.1.113883.10.20.5.6.41"/>
  <code codeSystem="2.16.840.1.113883.6.1"
    codeSystemName="LOINC"
    code="41852-5"
    displayName="Microorganism identified"/>

  <value xsi:type="CD"
    codeSystem="2.16.840.1.113883.6.96"
    codeSystemName="SNOMED"
    code="5933001"
    displayName="CDIF"/>
  <statusCode code="completed"/>
  <value xsi:type="CD"
    codeSystem="2.16.840.1.113883.6.96"
    codeSystemName="SNOMED"
    code="113727004"
    displayName="VRE"/>
</observation>
```

Table 36: Significant Pathogens Value Set

Value Set: NHSNSignificantPathogenCode 2.16.840.1.114222.4.11.3194 Code System: SNOMED CT 2.16.840.1.113883.6.96 or cdcNHSN 2.16.840.1.113883.6.277		
Code	Code System	Meaning
115329001	SNOMED CT	MRSA
417943000	SNOMED CT	MSSA
113727004	SNOMED CT	VRE
2015-6	cdcNHSN	MDR-KLEB
2010-7	cdcNHSN	MDR-ACINE
5933001	SNOMED CT	CDIF

5.2.55 Skin Preparation Clinical Statement

[substanceAdministration: templateId 2.16.840.1.113883.10.20.5.6.42]

This observation records a skin-preparation solution. It is used in the Skin-preparation Solutions Applied clinical statement, which is one action in the first, preparatory step in the sequence recorded for the Central-line Insertion Practice.

If the preparation step included application of the solution specified, set the value of @negationInd to false. If the preparation step did not include application of the solution specified, set the value of @negationInd to true.

1. **SHALL** contain [1..1] @classCode="SBADM" Substance administration (CodeSystem: 2.16.840.1.113883.5.6 HL7ActClass) **STATIC** (CONF:2414).

2. **SHALL** contain [1..1] @moodCode="EVN" Event (CodeSystem: 2.16.840.1.113883.5.1001 HL7ActMood) **STATIC** (CONF:2415).
3. **SHALL** contain @negationInd (CONF:3209).
4. **SHALL** contain [1..1] consumable/manufacturedProduct (CONF:2416).
 - a. This consumable/manufacturedProduct **SHALL** contain [1..1] @classCode="MANU" Manufactured product (CodeSystem: 2.16.840.1.113883.5.110 HL7RoleClass) **STATIC** (CONF:2417).
 - b. This consumable/manufacturedProduct **SHALL** contain [1..1] manufacturedMaterial (CONF:2418).
 - i. This manufacturedMaterial **SHALL** contain [1..1] @classCode="MMAT" Manufactured material (CodeSystem: 2.16.840.1.113883.5.41 HL7EntityClass) **STATIC** (CONF:2419).
 - ii. This manufacturedMaterial **SHALL** contain [1..1] code/@code, which **SHALL** be selected from ValueSet 2.16.840.1.114222.4.11.3183 NHSNSkinPreparationCode **STATIC** 20090130 (CONF:2420).

Table 37: Skin Preparations Value Set

Value Set: NHSNSkinPreparationCode 2.16.840.1.114222.4.11.3183 Code System: RxNorm 2.16.840.1.113883.6.88		
Code	Code System	Print Name
20791	RxNorm	Chlorhexidine gluconate
8611	RxNorm	Povidone iodine
6052	RxNorm	Alcohol

Figure 81: Skin preparation clinical statement example

```

<substanceAdministration moodCode="EVN" classCode="SBADM" negationInd="true">
  <templateId root="2.16.840.1.113883.10.20.5.6.42"/>

  <consumable>
    <manufacturedProduct classCode="MANU">
      <manufacturedMaterial classCode="MMAT">
        <code code="8611"
          codeSystem="2.16.840.1.113883.6.88"
          codeSystemName="RxNorm"
          displayName="Povidone iodine"/>
      </manufacturedMaterial>
    </manufacturedProduct>
  </consumable>

</substanceAdministration>

```


5.2.56 Solutions Dried Observation

[observation: templateId 2.16.840.1.113883.10.20.5.6.44]

This clinical statement represents the second step in the Central-line Insertion Practice sequence: whether the skin-preparation solution(s) applied had dried before the next step, which is the central-line insertion itself.

If the step was completed at this place in the sequence, set the value of @negationInd to false. If this step was not completed at this place in the sequence, set the value of @negationInd to true.

1. **SHALL** contain [1..1] @classCode="OBS" Observation (CodeSystem: 2.16.840.1.113883.5.6 HL7ActClass) **STATIC** (CONF:2421).
2. **SHALL** contain [1..1] @moodCode="EVN" Event (CodeSystem: 2.16.840.1.113883.5.1001 HL7ActMood) **STATIC** (CONF:2422).
3. **SHALL** contain @negationInd (CONF:2423).
4. **SHALL** contain [1..1] code/@code="ASSERTION" Assertion (CodeSystem: 2.16.840.1.113883.5.4 HL7ActCode) **STATIC** (CONF:2424).
5. **SHALL** contain [1..1] statusCode/@code="completed" Completed (CodeSystem: 2.16.840.1.113883.5.14 HL7ActStatus) **STATIC** (CONF:2425).
6. **SHALL** contain [1..1] value/@code="3114-6" Solution(s) had dried (CodeSystem: 2.16.840.1.113883.6.277 cdcNHSN) **STATIC** (CONF:2426).

Figure 82: Solutions dried observation example

```
<sequenceNumber value="2"/>
<observation moodCode="EVN" classCode="OBS" negationInd="false">
  <templateId root="2.16.840.1.113883.10.20.5.6.44"/>
  <code code="ASSERTION"
    codeSystem="2.16.840.1.113883.5.4"
    codeSystemName="HL7 Act Code"/>
  <statusCode code="completed"/>
  <value xsi:type="CD"
    code="3114-6"
    codeSystem="2.16.840.1.113883.6.277"
    codeSystemName="cdcNHSN"
    displayName="Solution(s) had dried"/>
</observation>
```

5.2.57 Specimen Collection Encounter (LIO)

[encounter: templateId 2.16.840.1.113883.10.20.5.6.54]

The Specimen Collection Encounter (LIO) records the in-facility location where a specimen was collected and, if the patient was an inpatient, the date the patient was admitted or transferred to that in-facility location.

This template conforms to the [CCD Encounter Activity template](#) (templateId 2.16.840.1.113883.10.20.1.21). That template requires an id; in the NHSN LIO Report, the id of the encounter is not reported.

The participant element represents the in-facility location where the specimen was drawn, and conforms to the [CCD Encounter Location template](#) (templateId 2.16.840.1.113883.10.20.1.45). The value of participantRole/id/@root will be the same as the healthCareFacility in the encompassingEncounter, but here it is scoping the in-facility location where the specimen was collected, represented in the @extension.

1. **SHALL** contain [1..1] **id** (CONF:3034).
 - a. This id **SHALL** contain [1..1] **@nullFlavor="NI"** No information (CodeSystem: 2.16.840.1.113883.5.1002 HL7ActRelationshipType) **STATIC** (CONF:3210).
2. If the patient was an inpatient, an effectiveTime/low element **SHALL** be present representing the date the patient was admitted or transferred to that location. (CONF:3035).
3. **SHALL** contain [1..1] **participant** (CONF:3036).
 - a. This participant **SHALL** contain [1..1] **@typeCode="LOC"** Location (CodeSystem: 2.16.840.1.113883.5.90 HL7ParticipationType) **STATIC** (CONF:3037).
 - b. This participant **SHALL** contain [1..1] **participantRole** (CONF:3038).
 - i. This participantRole **SHALL** contain [1..1] **@classCode="SDLOC"** Service delivery location (CodeSystem: 2.16.840.1.113883.5.110 HL7RoleClass) **STATIC** (CONF:3039).
 - ii. This participantRole **SHALL** contain [1..1] **id** (CONF:3040).
 1. This id **SHALL** contain @root (CONF:3041).
 2. This id **SHALL** contain @extension (CONF:3042).
 - iii. This participantRole **SHALL** contain [1..1] **playingEntity** (CONF:3043).
 1. This playingEntity **SHALL** contain [1..1] **@classCode="PLC"** Place (CodeSystem: 2.16.840.1.113883.5.41 HL7EntityClass) **STATIC** (CONF:3044).
 2. This playingEntity **SHALL** contain [1..1] **code/@code**, which **SHALL** be selected from ValueSet 2.16.840.1.113883.13.19 NHSNHealthcareServiceLocationCode **STATIC** 20091101 (CONF:3045).

Figure 83: Specimen collection location and admission date example

```
<encounter classCode="ENC" moodCode="EVN">
  <templateId root="2.16.840.1.113883.10.20.5.6.54"/>

  <id nullFlavor="NI" />

  <!-- If person was an inpatient at the in-facility location
       where the specimen was taken:
       date admitted/transferred there -->
  <effectiveTime>
    <low value="20090117" />
  </effectiveTime>
```

```

<!-- The in-facility location where the specimen was taken -->
<participant typeCode="LOC">
  <templateId root="2.16.840.1.113883.10.20.1.45"/> <!-- CCD -->

  <participantRole classCode="SDLOC">
    <id root="2.16.840.1.113883.3.117.1.1.5.1.1" extension="9W"/>

    <playingEntity classCode="PLC">
      <code codeSystem="2.16.840.1.113883.6.259"
        codeSystemName="HL7 Healthcare Service Location Code"
        code="1029-8"
        displayName="Medical/Surgical Critical Care"/>
    </playingEntity>

  </participantRole>
</participant>
</encounter>

```

5.2.58 Specimen Collection Procedure (LIO)

[procedure: templateId 2.16.840.1.113883.10.20.5.6.53]

The Specimen Collection Procedure (LIO) records the date a specimen was collected and the type of specimen. It includes a Specimen Collection Encounter (LIO) which records the in-facility location where the specimen was drawn and, for an inpatient, the date the patient was admitted or transferred to that in-facility location.

The template is derived from the NICV Specimen Collection Procedure (templateId 2.16.840.1.113883.10.20.15.3.2). In the NHSN LIO Report, a collection procedure code is not recorded. The `effectiveTime` element records the date when the specimen was collected. The `participant` element records the specimen type.

1. **SHALL** contain [1..1] `@classCode="PROC"` Procedure (CodeSystem: 2.16.840.1.113883.5.6 HL7ActClass) **STATIC** (CONF:3046).
2. **SHALL** contain [1..1] `@moodCode="EVN"` Event (CodeSystem: 2.16.840.1.113883.5.1001 HL7ActMood) **STATIC** (CONF:3047).
3. **SHALL** contain [1..1] `effectiveTime/@value` (CONF:3048).
4. **SHALL** contain [1..1] `participant` (CONF:3049).
 - a. This participant **SHALL** contain [1..1] `@typeCode="PRD"` Product (CodeSystem: 2.16.840.1.113883.5.90 HL7ParticipationType) **STATIC** (CONF:3050).
 - b. This participant **SHALL** contain [1..1] `participantRole` (CONF:3051).
 - i. This participantRole **SHALL** contain [1..1] `@classCode="SPEC"` Specimen (CodeSystem: 2.16.840.1.113883.5.110 HL7RoleClass) **STATIC** (CONF:3052).
 - ii. This participantRole **SHALL** contain [1..1] `playingEntity/code/@code`, which **SHALL** be selected from ValueSet 2.16.840.1.114222.4.11.3249 NHSNSpecimenTypeCode **STATIC** 2009731 (CONF:3053).

5. **SHALL** contain [1..1] **entryRelationship** (CONF:3054).
 - a. This entryRelationship **SHALL** contain [1..1] **@typeCode="COMP"** Has component (CodeSystem: 2.16.840.1.113883.5.1002 HL7ActRelationshipType) **STATIC** (CONF:3055).
 - b. This entryRelationship **SHALL** contain [1..1] **@inversionInd="true"** (CONF:3056).
 - c. This entryRelationship **SHALL** contain [1..1] **Specimen Collection Encounter (LIO)** (templateId:2.16.840.1.113883.10.20.5.6.54) (CONF:3057).

Table 38: Specimen Type Value Set (excerpt)

Value Set: NSHNSpecimenTypeCode 2.16.840.1.114222.4.11.3249 Code System: SNOMED CT 2.16.840.1.113883.6.96		
The full table is shown in Specimen Type Value Set		
SNOMED CT Concept ID	SNOMED CT Fully Specified Name	NHSN Description
258541006	Cardiovascular sample (specimen)	Cardiovascular (NOS)
309479002	Artery sample (specimen)	Artery sample
119297000	Blood specimen (specimen)	Blood specimen
258452003	Chylous fluid sample (specimen)	Chylous fluid sample
127462005	Specimen from heart (specimen)	Specimen from heart
...		

Figure 84: Specimen collection date and type example

```

<procedure classCode="PROC" moodCode="EVN">
  <templateId root="2.16.840.1.113883.10.20.5.6.53"/>

  <!-- Date specimen collected -->
  <effectiveTime value="20090121"/>

  <!-- Specimen type -->
  <participant typeCode="PRD">
    <participantRole classCode="SPEC">
      <playingEntity>
        <code codeSystem="2.16.840.1.113883.6.96"
              codeSystemName="SNOMED CT"
              code="122571007"
              displayName="Pericardial fluid"> </code>
      </playingEntity>
    </participantRole>
  </participant>
  ...
</procedure>

```

5.2.59 Spinal Fusion Level Observation

[observation: templateId 2.16.840.1.113883.10.20.5.2.2.7.8]

This observation records the spinal level of a spinal fusion procedure.

1. **SHALL** contain [1..1] **@classCode**="OBS" Observation (CodeSystem: 2.16.840.1.113883.5.6 HL7ActClass) **STATIC** (CONF:2433).
2. **SHALL** contain [1..1] **@moodCode**="EVN" Event (CodeSystem: 2.16.840.1.113883.5.1001 HL7ActMood) **STATIC** (CONF:2434).
3. **SHALL** contain [1..1] **code/@code**="ASSERTION" Assertion (CodeSystem: 2.16.840.1.113883.5.4 HL7ActCode) **STATIC** (CONF:2436).
4. **SHALL** contain [1..1] **statusCode/@code**="completed" Completed (CodeSystem: 2.16.840.1.113883.5.14 HL7ActStatus) **STATIC** (CONF:2437).
5. **SHALL** contain [1..1] **value** (CONF:2438).
6. The value of **value/@xsi:type** **SHALL** be CD. (CONF:2613).
7. If the spinal fusion level is known, the value of **value/@code** **SHALL** be selected from Value Set 2.16.840.1.113883.13.11 NHSNSpinalFusionLevelCode **STATIC** 20090625. If the spinal fusion level is not known, the value of **value/@nullFlavor** **SHALL** be NI. (CONF:2439).

Table 39: Spinal Fusion Level Value Set

Value Set: NHSNSpinalFusionLevelCode 2.16.840.1.113883.13.11 Code System: cdcNHSN 2.16.840.1.113883.6.277		
Code	Code System	Print Name
1101-5	cdcNHSN	atlas-axis (C1-C2 only)
1102-3	cdcNHSN	atlas-axis/cervical (C1-C7: any combination)
1103-1	cdcNHSN	cervical (C3-C7: any combination)
1104-9	cdcNHSN	cervical/dorsal/dorsolumbar (Extends from any cervical through any lumbar levels)
1105-6	cdcNHSN	dorsal/dorsolumbar (T1-L5: any combination)
1106-4	cdcNHSN	lumbar/lumbosacral (L1-S5: any combination)

Figure 85: Spinal fusion level observation example

```
<observation classCode="OBS" moodCode="EVN">
  <templateId root="2.16.840.1.113883.10.20.5.2.2.7.8"/>
  <code codeSystem="2.16.840.1.113883.5.4"
    code="ASSERTION"/>
  <statusCode code="completed"/>
  <value xsi:type="CD"
    codeSystem="2.16.840.1.113883.6.277"
    codeSystemName="cdcNSHNS"
    code="1101-5"
    displayName="Spinal Fusion of Atlas-Axis"/>
</observation>
```

5.2.60 Sterile Barriers Applied Clinical Statement

[procedure: templateId 2.16.840.1.113883.10.20.5.6.45]

This clinical statement records sterile barriers applied. It is used in the first, preparatory step in the Central-line Insertion Practice.

1. **SHALL** contain [1..1] **@classCode**="PROC" Procedure (CodeSystem: 2.16.840.1.113883.5.6 HL7ActClass) **STATIC** (CONF:2440).
2. **SHALL** contain [1..1] **@moodCode**="EVN" Event (CodeSystem: 2.16.840.1.113883.5.1001 HL7ActMood) **STATIC** (CONF:2441).
3. **SHALL** contain [1..1] **@negationInd**="false" (CONF:2442).
4. **SHALL** contain [1..1] **code/@code**="370822003" Use of sterile technique (CodeSystem: 2.16.840.1.113883.6.96 SNOMEDCT) **STATIC** (CONF:2443).
5. **MAY** contain [0..*] **participant** (CONF:2444).
 - a. Such participants, if present, **SHALL** contain [1..1] **@typeCode**="DEV" Device (CodeSystem: 2.16.840.1.113883.5.90 HL7ParticipationType) **STATIC** (CONF:2445).
 - b. Such participants, if present, **SHALL** contain [1..1] **participantRole** (CONF:2446).
 - i. This participantRole **SHALL** contain [1..1] **@classCode**="MANU" (CodeSystem: 2.16.840.1.113883.5.110 HL7RoleClass) **STATIC** (CONF:2447).
 - ii. This participantRole **SHALL** contain [1..1] **playingDevice/code/@code**, which **SHALL** be selected from ValueSet 2.16.840.1.114222.4.11.3184 NHSNSterileBarrierCode **STATIC** 2009625 (CONF:2448).

Table 40: Sterile Barrier Applied Value Set

Value Set: NHSNSterileBarrierCode 2.16.840.1.114222.4.11.3184 Code System: cdcNHSN 2.16.840.1.113883.6.277		
Code	Code System	Print Name
6122-6	cdcNHSN	Cap
6112-7	cdcNHSN	Large sterile drape
6110-1	cdcNHSN	Mask/Eye shield
6113-5	cdcNHSN	Sterile gloves
6111-9	cdcNHSN	Sterile gown

Figure 86: Sterile barrier applied example

```
<procedure moodCode="EVN" classCode="PROC" negationInd="false">
  <templateId root="2.16.840.1.113883.10.20.5.6.45"/>
  <code code="370822003"
    codeSystem="2.16.840.1.113883.6.96"
    codeSystemName="SNOMED CT"
    displayName="Use of Sterile Technique"/>

  <participant typeCode="DEV">
    <participantRole classCode="MANU">
      <playingDevice>
        <code code="6110-1"
          codeSystem="2.16.840.1.113883.6.277"
          codeSystemName="cdcNHSN"
          displayName="Mask/Eye shield"/>
      </playingDevice>
    </participantRole>
  </participant>
  ...
</procedure>
```

5.2.61 Summary Data Observation

[observation: templateId 2.16.840.1.113883.10.20.5.6.46]

The Summary Data Observation is used in population-summary reports.

Most population-summary reports contain a single encounter with a few Summary Data Observations recording integer values such as number of patient days and number of urinary catheter days.

The NICU and Process Outcome Measures (POM) reports have more structure:

- The NICU report contains an encounter for each sub-group of participants, such as inpatients whose birth weight is under 750g.
- In the POM report, the encounter contains (within an entryRelationship) a Summary Data Observation for each organism monitored and, within such an

observation, the timing and eligibility criteria used in that monitoring and the data being reported by it.

1. **SHALL** contain [1..1] **@classCode**="OBS" Observation (CodeSystem: 2.16.840.1.113883.5.6 HL7ActClass) **STATIC** (CONF:3442).
2. **SHALL** contain [1..1] **@moodCode**="EVN" Event (CodeSystem: 2.16.840.1.113883.5.1001 HL7ActMood) **STATIC** (CONF:3443).
3. **SHALL** contain [1..1] **code/@code**, which **SHALL** be selected from ValueSet 2.16.840.1.113883.13.14 NHSNSummaryDataCode **DYNAMIC** (CONF:3130).
4. **SHALL** contain [1..1] **statusCode/@code**="completed" (CodeSystem: 2.16.840.1.113883.5.14 HL7ActStatus) **STATIC** (CONF:3131).
5. **SHALL** contain [1..1] **value** (CONF:3132).
6. If the observation reports a number of days, the value of **value/xsi:type** **SHALL** be PQ and the value of **value/@unit** **SHALL** be d. If the observation reports a number of patients, the value of **value/@xsi:type** **SHALL** be INT. If the value is a code, the value of **value/@xsi:type** **SHALL** be CD. (CONF:3175).
7. If the observation records which organism was monitored, the value of **value/@nullFlavor** **SHALL** be NA, and the observation **SHALL** contain, as **entryRelationships** where the value of **@typeCode** is COMP, Summary Data Observations (templateId 2.16.840.1.113883.10.20.5.6.46) for the data collected for that class. The specific data required are specified by the NHSN protocol. (CONF:3160).
8. If the observation records which organism was monitored, the value of **value/@code** **SHALL** be selected from Value Set NHSNOrganismASTCode 2.16.840.1.114222.4.11.3283 **STATIC** 20091030. (CONF:3462).
9. If the observation records the timing of monitoring, the value of **value/@code** **SHALL** be selected from Value Set 2.16.840.1.114222.4.11.3247 NHSNTimingCode **STATIC** 20091030. (CONF:3463).
10. If the observation records eligibility criteria for monitoring, the value of **value/@code** **SHALL** be selected from Value Set 2.16.840.1.114222.4.11.3248 NHSNEligibilityCode **STATIC** 20091030. (CONF:3464).

Table 41: Summary Data Value Set

Value Set: NHSNSummaryDataCode 2.16.840.1.113883.13.14 Code System: cdcNHSN 2.16.840.1.113883.6.277		
Code	Code System	Meaning
Data to report central lines in an ICU Report		
1851-5	cdcNHSN	Number of Patient Days
1833-3	cdcNHSN	Number of Central Line Days
1853-1	cdcNHSN	Number of Urinary Catheter Days
1852-3	cdcNHSN	Number of Ventilator Days
Data to report in a Specialty Care Area (SCA) Report		
1851-5	cdcNHSN	Number of Patient Days
3305-0	cdcNHSN	Number of Temporary Central Line Days

Value Set: NHSNSummaryDataCode 2.16.840.1.113883.13.14		
Code System: cdcNHSN 2.16.840.1.113883.6.277		
Code	Code System	Meaning
3306-8	cdcNHSN	Number of Permanent Central Line Days
1853-1	cdcNHSN	Number of Urinary Catheter Days
1852-3	cdcNHSN	Number of Ventilator Days
Data to report in a Neonatal Intensive Care Unit (NICU) Report		
1851-5	cdcNHSN	Number of Patient Days
1833-3	cdcNHSN	Number of Central Line Days
3307-6	cdcNHSN	Number of Umbilical Catheter Days
1852-3	cdcNHSN	Number of Ventilator Days
Data to report influenza vaccinations using Method A		
1851-5	cdcNHSN	Number of Patient Days
1856-4	cdcNHSN	Number of patients meeting high risk criteria for influenza vaccination
1857-2	cdcNHSN	Number of patients previously vaccinated for influenza during current influenza season
1858-0	cdcNHSN	Number of patients meeting high risk criteria and previously vaccinated for influenza during current influenza season
1859-8	cdcNHSN	Number of patients meeting high risk criteria for influenza vaccination and offered influenza vaccination and declining for reasons other than medical contraindication.
1860-6	cdcNHSN	Number of patients meeting high risk criteria and offered influenza vaccination and [declining because of] having medical contraindication
1861-4	cdcNHSN	Number of patients meeting high risk criteria and receiving vaccination during admission
Data to report influenza vaccinations using Method B		
1851-5	cdcNHSN	Number of Patient Days
1857-2	cdcNHSN	Number of patients previously vaccinated for influenza during current influenza season
1858-0	cdcNHSN	Number of patients meeting high risk criteria and previously vaccinated for influenza during current influenza season
Data required in a POM Report (inpatient location)		
1851-5	cdcNHSN	Number of Patient Days
1862-2	cdcNHSN	Number of admissions

Value Set: NHSNSummaryDataCode 2.16.840.1.113883.13.14 Code System: cdcNHSN 2.16.840.1.113883.6.277		
Code	Code System	Meaning
Data required in a POM Report (outpatient location)		
1863-0	cdcNHSN	Number of encounters
Data to report hand hygiene in a POM Report		
1864-8	cdcNHSN	Number of observations in which hand hygiene was indicated
1865-5	cdcNHSN	Number of observations in which hand hygiene was performed
Data to report use of gown and gloves in a POM Report		
1866-3	cdcNHSN	Number of observations in which the use of gown and gloves was indicated
1867-1	cdcNHSN	Number of observations in which gown and gloves were used
Data to report AST protocol factors in a POM Report		
3193-0	cdcNHSN	AST Organism Monitored
1870-5	cdcNHSN	Timing
1871-3	cdcNHSN	Eligibility
Data to report AST observations in a POM Report (within observation reporting AST for an organism)		
1872-1	cdcNHSN	Number of patients eligible for monitoring at admission/transfer in
1873-9	cdcNHSN	Number of patients on which monitoring was performed at admission/transfer in
1874-7	cdcNHSN	Number of patients eligible for monitoring at discharge/transfer out
1875-4	cdcNHSN	Number of patients on which monitoring was performed at discharge/transfer out
1876-2	cdcNHSN	Number of prevalent cases identified by monitoring (clinical positive)
1877-0	cdcNHSN	Number of prevalent cases previously known
1878-8	cdcNHSN	Number of incident cases identified by monitoring (clinical positive)

Table 42: AST Organism Monitored Code

Value Set: NHSNOrganismASTCode 2.16.840.1.114222.4.11.3283 Code System: SNOMED CT 2.16.840.1.113883.6.96		
Code	Code System	Meaning
115329001	SNOMED CT	MRSA
113727004	SNOMED CT	VRE

Table 43: NHSN Timing Value Set

Value Set: NHSNTimingCode 2.16.840.1.114222.4.11.3247 Code System: cdcNHSN 2.16.840.1.113883.6.277		
Code	Code System	Meaning
2201-2	cdcNHSN	On admission only
2202-0	cdcNHSN	On admission and on discharge/transfer

Table 44: NHSN Eligibility Value Set

Value Set: NHSNEligibilityCode 2.16.840.1.114222.4.11.3248 Code System: cdcNHSN 2.16.840.1.113883.6.277		
Code	Code System	Meaning
2301-0	cdcNHSN	All patients
2302-8	cdcNHSN	Only patients with no prior documentation of colonization or infection

Figure 87: Summary data observation example (1)

```

<encounter classCode="ENC" moodCode="EVN">
  <templateId root="2.16.840.1.113883.10.20.5.2.6.47"/>
  <entryRelationship typeCode="COMP">

    <observation classCode="OBS" moodCode="EVN">
      <templateId root="2.16.840.1.113883.10.20.5.6.46"/>
      <code codeSystem="2.16.840.1.113883.6.277"
            codeSystemName="cdcNHSN"
            code="1851-5"
            displayName="Patient Days"/>
      <statusCode code="completed"/>
      <value xsi:type="PQ" unit="d" value="100"/>
    </observation>

  </entryRelationship>
  ...
</encounter>

```

Figure 88: Summary data observation example (2) – POM (showing AST for MRSA)

```

<entry>

  <!-- Template for Entry - Summary Data -->
  <encounter classCode="ENC" moodCode="EVN">
    <templateId root="2.16.840.1.113883.10.20.5.6.47"/>
    ...

    <!-- Number of inpatient days -->
    ...
    <!-- Number of admissions -->

```

```

...

<!-- entryRelationship: the organism monitored was MRSA.
      This observation turn contains entryRelationships with
      additional information about the monitoring, and
      the data reported by the monitoring. -->

<!-- AST Organism Monitored -->
<entryRelationship typeCode="COMP" negationInd="false">
  <observation classCode="OBS" moodCode="EVN">
    <templateId root="2.16.840.1.113883.10.20.5.6.46"/>
    <code codeSystem="2.16.840.1.113883.6.277"
          codeSystemName="cdcNHSN"
          code="3193-0"
          displayName="AST Organism Monitored"/>
    <statusCode="completed"/>
    <value xsi:type="CD"
          codeSystem="2.16.840.1.113883.6.96"
          codeSystemName="SNOMED CT"
          code="115329001"
          displayName="MRSA"/>

  <!-- The observations below are part of of
        the observation of what organism was monitored -->

  <!-- Timing of monitoring -->
  <entryRelationship typeCode="COMP">
    <observation classCode="OBS" moodCode="EVN">
      <templateId root="2.16.840.1.113883.10.20.5.6.46"/>
      ...
    </observation>
  </entryRelationship>

  <!-- Eligibility for monitoring -->
  <entryRelationship typeCode="COMP">
    <observation classCode="OBS" moodCode="EVN">
      <templateId root="2.16.840.1.113883.10.20.5.6.46"/>
      ...
    </observation>
  </entryRelationship>

  <!-- Number eligible on admission-->
  ...
  <!-- Number performed on admission-->
  ...
  <!-- Number eligible on discharge/transfer -->
  ...
  <!-- Number performed on discharge/transfer-->
  ...

  <!-- Number prevalent cases AST/clinical positive-->
  ...
  <!-- Number prevalent cases previously known-->
  ...
  <!-- Number incident cases -->
  ...

```

```

        </observation>
        <!-- end of data about monitoring for this organism -->

    </entryRelationship>
    <!-- end of data about monitoring -->

</encounter>
</entry>

```

5.2.62 Summary Encounter

[encounter: templateId 2.16.840.1.113883.10.20.5.6.47]

The Summary Encounter records a set of summary data for a population such as the patients in a ward. A participant element in the encounter records the unit ID and location type of the in-facility location reporting the data. If the subject of the report is flu immunization, the in-facility location and location type data are not reported, and can be recorded with nullFlavors.

If the report contains data for more than one category of population, each category is represented by a Summary Encounter, and a second participant element records the distinguishing characteristic of the category.

1. **SHALL** contain [1..1] @**classCode**="ENC" Encounter (CodeSystem: 2.16.840.1.113883.5.6 HL7ActClass) **STATIC** (CONF:3134).
2. **SHALL** contain [1..1] @**moodCode**="EVN" Event (CodeSystem: 2.16.840.1.113883.5.1001 HL7ActMood) **STATIC** (CONF:3135).
3. **SHALL** contain [1..1] **participant** (CONF:3136).
 - a. This participant **SHALL** contain [1..1] @**typeCode**="LOC" Location (CodeSystem: 2.16.840.1.113883.5.90 HL7ParticipationType) **STATIC** (CONF:3143).
 - b. This participant **SHALL** contain [1..1] **participantRole** (CONF:3145).
 - i. This participantRole **SHALL** contain [1..1] @**classCode**="SDLOC" Service Delivery Location (CodeSystem: 2.16.840.1.113883.5.41 HL7EntityClass) **STATIC** (CONF:3146).
 - ii. This participantRole **SHALL** contain [1..1] **id** (CONF:3137).
 1. This id **SHALL** contain @**root** (CONF:3138).
 2. This id **SHALL** contain @**extension** (CONF:3139).
 - iii. This participantRole **SHALL** contain [1..1] **playingEntity** (CONF:3212).
 1. This playingEntity **SHALL** contain [1..1] @**classCode**="PLC" Place (CodeSystem: 2.16.840.1.113883.5.41 HL7EntityClass) **STATIC** (CONF:3213).
 2. This playingEntity **SHALL** contain [1..1] **code/@code**, which **SHALL** be selected from ValueSet 2.16.840.1.113883.13.19 NHSNHealthcareServiceLocationCode **STATIC** 20091101 (CONF:3140).

4. If the report records data for more than one category of population, each category is recorded in a separate Summary Encounter, and each such Summary Encounter **SHALL** contain a participant element recording the distinguishing characteristic of the category. That participant, if present, is recorded as follows: (CONF:3141).
5. **MAY** contain [0..1] **participant** (CONF:3142).
 - a. This participant, if present, **SHALL** contain [1..1] **@typeCode="SBJ"** Subject (CodeSystem: 2.16.840.1.113883.5.90 HL7ParticipationType) **STATIC** (CONF:3147).
 - b. This participant, if present, **SHALL** contain [1..1] **@contextControlCode="OP"** (CodeSystem: 2.16.840.1.113883.5.1057 HL7 Context Control Code) **STATIC** (CONF:3148).
 - c. This participant, if present, **SHALL** contain [1..1] **participantRole** (CONF:3149).
 - i. This participantRole **SHALL** contain [1..1] **@classCode="PRS"** Person (CodeSystem: 2.16.840.1.113883.5.41 HL7EntityClass) **STATIC** (CONF:3150).
 - ii. This participantRole **SHALL** contain [1..1] **code/@code**, which **SHALL** be selected from ValueSet 2.16.840.1.114222.4.11.3234 NHSNPopulationCategoryCode **STATIC** 2009625 (CONF:3151).
6. **SHALL** contain [1..*] **entryRelationship** (CONF:3152).
 - a. Such entryRelationships **SHALL** contain [1..1] **@typeCode="COMP"** Has component (CodeSystem: 2.16.840.1.113883.5.1002 HL7ActRelationshipType) **STATIC** (CONF:3153).
 - b. Such entryRelationships **SHALL** contain [1..1] **Summary Data Observation** (templateId:2.16.840.1.113883.10.20.5.6.46) (CONF:3154).

Table 45: Population Category Value Set

Value Set: NHSNPopulationCategoryCode 2.16.840.1.114222.4.11.3234 Code System: cdcNHSN 2.16.840.1.113883.6.277		
Code	Code System	Print Name
3300-1	cdcNHSN	The subset of patients whose birth weight is under 750gm
3301-9	cdcNHSN	Birth weight 751-1000gm [same for all rows]
3302-7	cdcNHSN	Birth weight 1001-1500gm
3303-5	cdcNHSN	Birth weight 1501-2500gm
3304-3	cdcNHSN	Birth weight over 2500gm

Figure 89: Summary encounter example (1) – unit ID and type

```
<encounter classCode="ENC" moodCode="EVN">
  <templateId root="2.16.840.1.113883.10.20.5.6.47"/>

  <!-- the in-facility location ID and type -->
  <participant typeCode="LOC">
    <participantRole classCode="SDLOC">

      <!-- the facility OID scopes the in-facility location ID -->
      <id root="2.16.840.1.113883.3.117.1.1.5.1.1" extension="9W"/>

      <playingEntity classCode="PLC">
        <code codeSystem="2.16.840.1.113883.6.259"
          codeSystemName="HL7 Healthcare Service Location Code"
          code="1029-8"
          displayName="Medical/Surgical Critical Care"/>
      </playingEntity>

    </participantRole>
  </participant>

  <!-- The data -->
  <entryRelationship typeCode="COMP">
    <observation classCode="OBS" moodCode="EVN">
      <templateId root="2.16.840.1.113883.10.20.5.6.46"/>
      ...
    </observation>
  </entryRelationship>

  <entryRelationship typeCode="COMP">
    <observation classCode="OBS" moodCode="EVN">
      <templateId root="2.16.840.1.113883.10.20.5.6.46"/>
      ...
    </observation>
  </entryRelationship>
  ...
</encounter>
```

Figure 90: Summary encounter example (2) – a subgroup

```
<encounter classCode="ENC" moodCode="EVN">
  <templateId root="2.16.840.1.113883.10.20.5.6.47"/>

  <!-- Unit ID and type -->
  ...

  <!-- Data for a subgroup of the total population reported on -->
  <participant typeCode="SBJ" contextControlCode="OP">
    <participantRole classCode="PRS">
      <code codeSystem="2.16.840.1.113883.6.277"
        codeSystemName="cdcNHSN"
        code="3300-1"
        displayName="The subset of inpatients whose
          birth weight is under 750gm"/>
    </participantRole>
  </participant>

  <entryRelationship typeCode="COMP">
    <observation classCode="OBS" moodCode="EVN">
      <templateId root="2.16.840.1.113883.10.20.5.6.46"/>
      ...
    </observation>
  </entryRelationship>

  ...
</encounter>
```

5.2.63 Trauma Observation

[observation: templateId 2.16.840.1.113883.10.20.5.2.2.7.5]

This observation records whether the person had trauma. It is used in reporting the circumstances of a procedure.

If trauma was involved, set the value of @negationInd to false. If trauma was not involved, set the value of @negationInd to true.

1. **SHALL** contain [1..1] @classCode="OBS" Observation (CodeSystem: 2.16.840.1.113883.5.6 HL7ActClass) **STATIC** (CONF:2450).
2. **SHALL** contain [1..1] @moodCode="EVN" Event (CodeSystem: 2.16.840.1.113883.5.1001 HL7ActMood) **STATIC** (CONF:2451).
3. **SHALL** contain @negationInd (CONF:2452).
4. **SHALL** contain [1..1] code/@code="ASSERTION" Assertion (CodeSystem: 2.16.840.1.113883.5.4 HL7ActCode) **STATIC** (CONF:2453).
5. **SHALL** contain [1..1] statusCode/@code="completed" Completed (CodeSystem: 2.16.840.1.113883.5.14 HL7ActStatus) **STATIC** (CONF:2454).
6. **SHALL** contain [1..1] value/@code="417746004" Trauma (CodeSystem: 2.16.840.1.113883.6.96 SNOMEDCT) **STATIC** (CONF:2455).

Figure 91: Trauma observation example

```
<observation classCode="OBS" moodCode="EVN" negationInd="false">
  <templateId root="2.16.840.1.113883.10.20.5.2.2.7.5"/>
  <code codeSystem="2.16.840.1.113883.5.4" code="ASSERTION"/>
  <statusCode code="completed"/>
  <value xsi:type="CD"
    code="417746004"
    codeSystem="2.16.840.1.113883.6.96"
    codeSystemName="SNOMED"
    displayName="Trauma"/>
</observation>
```

5.2.64 Urinary Catheter Observation

[observation: templateId 2.16.840.1.113883.10.20.5.6.48]

This observation records whether the person was using a urinary catheter.

If a urinary catheter is present, set the value of @negationInd to false. If the urinary catheter is not present, set the value of @negationInd to true.

1. **SHALL** contain [1..1] @**classCode**="OBS" Observation (CodeSystem: 2.16.840.1.113883.5.6 HL7ActClass) **STATIC** (CONF:2456).
2. **SHALL** contain [1..1] @**moodCode**="EVN" Event (CodeSystem: 2.16.840.1.113883.5.1001 HL7ActMood) **STATIC** (CONF:2457).
3. **SHALL** contain @**negationInd** (CONF:2458).
4. **SHALL** contain [1..1] **code**/@**code**="ASSERTION" Assertion (CodeSystem: 2.16.840.1.113883.5.4 HL7ActCode) **STATIC** (CONF:2459).
5. **SHALL** contain [1..1] **statusCode**/@**code**="completed" Completed (CodeSystem: 2.16.840.1.113883.5.14 HL7ActStatus) **STATIC** (CONF:2460).
6. **SHALL** contain [1..1] **value**/@**code**="3191-4" Urinary catheter present (CodeSystem: 2.16.840.1.113883.6.277 cdcNHSN) **STATIC** (CONF:2461).
7. If a urinary catheter is not present (@negationInd="true"), an entryRelationship **SHALL** be present where the value of @typeCode is COMP containing a History of Object Presence Observation (templateId:2.16.840.1.113883.10.20.5.6.56) . (CONF:4208).

Figure 92: Urinary catheter observation example

```
<entry>
  <observation classCode="OBS" moodCode="EVN" negationInd="false">
    <templateId root="2.16.840.1.113883.10.20.5.6.48"/>
    <code codeSystem="2.16.840.1.113883.5.4"
      code="ASSERTION"/>
    <statusCode code="completed"/>
    <value xsi:type="CD"
      codeSystem="2.16.840.1.113883.6.277"
      codeSystemName="cdcNHSN"
      code="3191-4"
      displayName="Urinary Catheter Present"/>
  </observation>
</entry>
```

5.2.65 Vaccine Information Statement Type

[observation: templateId 2.16.840.1.113883.10.20.5.6.49]

This observation records the vaccination information statement provided to the person to whom immunization was administered.

1. **SHALL** contain [1..1] **@classCode="OBS"** Observation (CodeSystem: 2.16.840.1.113883.5.6 HL7ActClass) **STATIC** (CONF:2462).
2. **SHALL** contain [1..1] **@moodCode="EVN"** Event (CodeSystem: 2.16.840.1.113883.5.1001 HL7ActMood) **STATIC** (CONF:2463).
3. **SHALL** contain [1..1] **@negationInd="false"** (CONF:2464).
4. **SHALL** contain [1..1] **code/@code="ASSERTION"** Assertion (CodeSystem: 2.16.840.1.113883.5.4 HL7ActCode) **STATIC** (CONF:2465).
5. **SHALL** contain [1..1] **statusCode/@code="completed"** Completed (CodeSystem: 2.16.840.1.113883.5.14 HL7ActStatus) **STATIC** (CONF:2466).
6. **SHALL** contain [1..1] **value/@code**, which **SHALL** be selected from ValueSet 2.16.840.1.114222.4.11.3192 NHSNInformationStatementCode **STATIC** 2009625 (CONF:2467).

Table 46: Vaccine Information Statement Value Set

Value Set: NHSNInformationStatementCode 2.16.840.1.114222.4.11.3192 Code System: cdcNHSN 2.16.840.1.113883.6.277		
Code	Code System	Print Name
8178-6	cdcNHSN	Live Attenuated Influenza Vaccine Information Statement
8179-4	cdcNHSN	Inactivated Influenza Vaccine Information Statement

Figure 93: Vaccine information statement example

```
<!-- Vaccine Information Statement Type Observation -->
<observation classCode="OBS" moodCode="EVN" negationInd="false">
  <templateId root="2.16.840.1.113883.10.20.5.6.49"/>
  <code codeSystem="2.16.840.1.113883.5.4"
    code="ASSERTION"/>
  <statusCode code="completed"/>
  <value xsi:type="CD"
    code="8178-6"
    codeSystem="2.16.840.1.113883.6.277"
    codeSystemName="cdcNHSN"
    displayName="Live Attenuated Influenza Vaccine Information
    Statement"/>
</observation>
```

5.2.66 Ventilator Observation

[observation: templateId 2.16.840.1.113883.10.20.5.6.50]

This observation records whether the person was on a ventilator.

If the patient was on a ventilator, set the value of @negationInd to false. If the patient was not on a ventilator, set the value of @negationInd to true.

1. **SHALL** contain [1..1] @**classCode**="OBS" Observation (CodeSystem: 2.16.840.1.113883.5.6 HL7ActClass) **STATIC** (CONF:2468).
2. **SHALL** contain [1..1] @**moodCode**="EVN" Event (CodeSystem: 2.16.840.1.113883.5.1001 HL7ActMood) **STATIC** (CONF:2469).
3. **SHALL** contain @**negationInd** (CONF:2470).
4. **SHALL** contain [1..1] **code**/@**code**="ASSERTION" Assertion (CodeSystem: 2.16.840.1.113883.5.4 HL7ActCode) **STATIC** (CONF:2471).
5. **SHALL** contain [1..1] **statusCode**/@**code**="completed" Completed (CodeSystem: 2.16.840.1.113883.5.14 HL7ActStatus) **STATIC** (CONF:2472).
6. **SHALL** contain [1..1] **value**/@**code**="371820004" Patient ventilated (CodeSystem: 2.16.840.1.113883.6.96 SNOMEDCT) **STATIC** (CONF:2473).

Figure 94: Ventilator observation example

```
<entry>
  <observation classCode="OBS" moodCode="EVN" negationInd="true">
    <templateId root="2.16.840.1.113883.10.20.5.6.50"/>
    <code codeSystem="2.16.840.1.113883.5.4"
      code="ASSERTION"/>
    <statusCode code="completed"/>
    <value xsi:type="CD"
      codeSystem="2.16.840.1.113883.6.96"
      codeSystemName="SNOMED CT"
      code="371820004"
      displayName="Patient ventilated"/>
  </observation>
</entry>
```

5.2.67 Weight Observation

[observation: templateId 2.16.840.1.113883.10.20.5.2.2.7.10]

This observation records a body weight. NHSN protocol requires that the value be an integer.

1. **SHALL** contain [1..1] **@classCode="OBS"** Observation (CodeSystem: 2.16.840.1.113883.5.6 HL7ActClass) **STATIC** (CONF:2482).
2. **SHALL** contain [1..1] **@moodCode="EVN"** Event (CodeSystem: 2.16.840.1.113883.5.1001 HL7ActMood) **STATIC** (CONF:2483).
3. **SHALL** contain [1..1] **code/@code="27113001"** Body weight (CodeSystem: 2.16.840.1.113883.6.96 SNOMEDCT) **STATIC** (CONF:2484).
4. **SHALL** contain [1..1] **statusCode/@code="completed"** Completed (CodeSystem: 2.16.840.1.113883.5.14 HL7ActStatus) **STATIC** (CONF:2485).
5. **SHALL** contain [1..1] **value** (CONF:2486).
6. The value of value/@xsi:type **SHALL** be PQ. (CONF:2914).
7. The value of value/@value **SHALL** be a non-negative real number representing the body weight. (CONF:2488).

Figure 95: Weight observation example

```
<observation classCode="OBS" moodCode="EVN">
  <templateId root="2.16.840.1.113883.10.20.5.2.2.7.10"/>
  <code code="27113001"
    codeSystem="2.16.840.1.113883.6.96"
    codeSystemName="SNOMED"
    displayName="Body weight"/>
  <statusCode code="completed"/>
  <value xsi:type="PQ" value="65" unit="kg"/>
</observation>
```

5.2.68 Wound Class Observation

[observation: templateId 2.16.840.1.113883.10.20.5.2.1.2]

NHSN patient safety protocol on this topic is an adaptation of (not a change to) the American College of Surgeons (ACoS) definitions, which are the definitions used by SNOMED. Thus, SNOMED wound-class codes are appropriate for use with this observation.

1. **SHALL** contain [1..1] **@classCode**="OBS" Observation (CodeSystem: 2.16.840.1.113883.5.6 HL7ActClass) **STATIC** (CONF:2474).
2. **SHALL** contain [1..1] **@moodCode**="EVN" Event (CodeSystem: 2.16.840.1.113883.5.1001 HL7ActMood) **STATIC** (CONF:2475).
3. **SHALL** contain [1..1] **code/@code**="420089007" CDC Wound Classification Category (CodeSystem: 2.16.840.1.113883.6.96 SNOMEDCT) **STATIC** (CONF:2477).
4. **SHALL** contain [1..1] **statusCode/@code**="completed" Completed (CodeSystem: 2.16.840.1.113883.5.14 HL7ActStatus) **STATIC** (CONF:2478).
5. **SHALL** contain [1..1] **value** (CONF:2598).
6. If the wound classification is known, the value of value/@code **SHALL** be selected from Value Set 2.16.840.1.113883.13.9 NHSNWoundClassCode **STATIC** 20080130. If the wound classification is not known, the value of value/@nullFlavor **SHALL** be UNK. (CONF:2597).

Table 47: Wound Class Value Set

Value Set: NHSNWoundClassCode 2.16.840.1.113883.13.9 Code System: SNOMED CT 2.16.840.1.113883.6.96		
Code	Code System	Print Name
418780004	SNOMED CT	Class I/Clean (Clean)
418115006	SNOMED CT	Class II/Clean Contaminated (Clean-contaminated)
419877002	SNOMED CT	Class III/Contaminated (Contaminated)
418422005	SNOMED CT	Class IV/Dirty Infected (Dirty)

Figure 96: Wound class observation example

```
<observation classCode="OBS" moodCode="EVN">
  <templateId root="2.16.840.1.113883.10.20.5.2.1.2"/>
  <code codeSystem="2.16.840.1.113883.6.96"
    codeSystemName="SNOMED"
    code="420089007"
    displayName="CDC Wound Classification Category"/>
  <statusCode code="completed"/>
  <value xsi:type="CD"
    codeSystem="2.16.840.1.113883.6.96"
    codeSystemName="SNOMED"
    code="418115006"
    displayName="Class II/Clean Contaminated"/>
</observation>
```

If the wound class is unknown:

```
<observation classCode="OBS" moodCode="EVN">
  <templateId root="2.16.840.1.113883.10.20.5.2.1.2"/>
  <code codeSystem="2.16.840.1.113883.6.96"
    codeSystemName="SNOMED"
    code="420089007"
    displayName="CDC Wound Classification Category"/>
  <statusCode code="completed"/>
  <value nullFlavor="UNK"/>
</observation>
```

6 REFERENCES

- Dolin RH, Alschuler L, Boyer S, Beebe C, Behlen FM, Biron PV, Shabo A, (Editors). HL7 Clinical Document Architecture, Release 2.0. ANSI-approved HL7 Standard; May 2005. Ann Arbor, Mich.: Health Level Seven, Inc. Available at: http://www.hl7.org/documentcenter/private/standards/cda/r2/cda_r2_normativewebedition.zip.
- LOINC®: Logical Observation Identifiers Names and Codes, Regenstrief Institute. Available at: <http://www.regenstrief.org/medinformatics/loinc/>
- SNOMED CT®: SNOMED Clinical Terms SNOMED International Organization. Available at: <http://www.ihtsdo.org/>.
- Schematron, www.schematron.com.
- Extensible Markup Language, www.w3.org/XML.
- Dolin RH, Alschuler L, Boyer S, Beebe C, Behlen FM, Biron PV, Shabo A., HL7 Clinical Document Architecture, Release 2. J Am Med Inform Assoc. 2006;13:30-39. Available at: <http://www.jamia.org/cgi/reprint/13/1/30>.
- "The Clinical Document Architecture Quick Start Guide (CDA QSG)" Alschuler Associates, LLC. Available at: <http://www.alschulerassociates.com/cda/?topic=quick-start-guides>.
- The German federal institute for medical documentation provides a comprehensible set of catalogs for procedures. International organizations considering this guide for implementation should review terminology available (in German): <http://www.dimdi.de/static/de/klassi/prozeduren/ops301/opshtml2008/fr-ops.htm>. The different versions of this catalog are listed in its table 0396.

APPENDIX A — ACRONYMS AND ABBREVIATIONS

ACoS	American College of Surgeons
BSI	Bloodstream Infection
CCD	Continuity of Care Document
CDA	Clinical Document Architecture
CDAD	Clostridium-difficile-associated Disease
CDC	Centers for Disease Control and Prevention
CHI	Consolidated Health Informatics
CLIP	Central-line Insertion Practices
DSTU	Draft Standard for Trial Use
HAI	Healthcare Associated Infection
HL7	Health Level Seven
ICP	infection control professional
ICU	Intensive Care Unit
IG	implementation guide
LIO	Laboratory-identified Organism
MDRO	Multi-drug-resistant Organism
NCPDCID	National Center for Preparedness, Detection, and Control of Infectious Diseases
NHSN	National Healthcare Safety Network
NICU	Neonatal Intensive Care Unit
OID	object identifier
PHCR	Public Health Case Reports
PHIN VADS	Public Health Information Network Vocabulary Access and Distribution System
PNEU	Pneumonia
POM	Prevention Process and Outcome Measures Monthly Monitoring)
RIM	Reference Information Model
RMIM	Refined Message Information Model
SCA	Specialty Care Area
SDWG	Structured Documents Working Group
SSI	Surgical Site Infection
UTI	Urinary Tract Infection
XML	Extensible Mark-up Language

APPENDIX B — DOCUMENT AND SECTION CODES (NON-NORMATIVE)

This DSTU uses LOINC codes to identify the document type and section types.

Table 48: Document and Section Codes

codeSystem	Name	code	Meaning
2.16.840.1.113883.6.1	LOINC	51897-7	Healthcare Associated Infection Report
		51898-5	Risk Factors Section
		51899-3	Details Section
		18769-0	Findings Section
		51900-9	Summary Data Section

APPENDIX C — TEMPLATE IDS (NON-NORMATIVE)

This appendix lists all templates in this implementation guide: NHSN templates by [template OID](#), by [template title](#), and by [template type](#), as well as [HITSP templates](#) and [CCD templates](#).

The [Sequence of Sections / Templates within Report Types](#) table in section [3.1](#) provides an overview of the NHSN template requirements across report types.

Table 49: NHSN Templates by Template OID

Template OID	Template Title
2.16.840.1.113883.10.20.5.10	HAI Pneumonia Infection Numerator Report (PNEU)
2.16.840.1.113883.10.20.5.11	HAI Urinary Tract Infection Numerator Report (UTI)
2.16.840.1.113883.10.20.5.12	HAI Central-line Insertion Practice Numerator Report
2.16.840.1.113883.10.20.5.13	HAI Immunization Numerator Report
2.16.840.1.113883.10.20.5.14	HAI Generic Infection Numerator Report
2.16.840.1.113883.10.20.5.15	HAI Population Summary Report
2.16.840.1.113883.10.20.5.16	HAI Procedure Denominator Report
2.16.840.1.113883.10.20.5.17	HAI Laboratory-identified Organism (LIO) Report
2.16.840.1.113883.10.20.5.2.1.1.1	Infection Risk Factors Observation
2.16.840.1.113883.10.20.5.2.1.1.2	Infection Risk Factors Measurement Observation
2.16.840.1.113883.10.20.5.2.1.2	Wound Class Observation
2.16.840.1.113883.10.20.5.2.1.3	Endoscope Used Clinical Statement
2.16.840.1.113883.10.20.5.2.2.7.3	Anesthesia Administration Clinical Statement
2.16.840.1.113883.10.20.5.2.2.7.4	ASA Class Observation
2.16.840.1.113883.10.20.5.2.2.7.5	Trauma Observation
2.16.840.1.113883.10.20.5.2.2.7.6	Multiple Procedures Observation
2.16.840.1.113883.10.20.5.2.2.7.7	Diabetes Mellitus Observation
2.16.840.1.113883.10.20.5.2.2.7.8	Spinal Fusion Level Observation
2.16.840.1.113883.10.20.5.2.2.7.9	Height Observation
2.16.840.1.113883.10.20.5.2.2.7.10	Weight Observation
2.16.840.1.113883.10.20.5.2.2.7.11	Duration of Labor Observation
2.16.840.1.113883.10.20.5.2.2.7.12	Estimated Maternal Blood Loss Observation
2.16.840.1.113883.10.20.5.2.2.7.15	Secondary Bloodstream Infection Observation
2.16.840.1.113883.10.20.5.2.5.1	Pathogen Identified Observation
2.16.840.1.113883.10.20.5.2.5.1.1	Pathogen Ranking Observation
2.16.840.1.113883.10.20.5.2.5.1.2	Drug-susceptibility Test Observation
2.16.840.1.113883.10.20.5.2.6	Summary Data Section
2.16.840.1.113883.10.20.5.4.19	Healthcare Associated Infection Report
2.16.840.1.113883.10.20.5.4.1	Header Constraints, HAI Single-person Reports

Template OID	Template Title
2.16.840.1.113883.10.20.5.4.2	Header Constraints, HAI Population-summary Reports
2.16.840.1.113883.10.20.5.4.3	HAI Section Generic Constraints
2.16.840.1.113883.10.20.5.5.1	Infection Risk Factors Section in a BSI Report
2.16.840.1.113883.10.20.5.5.2	Infection Risk Factors Section in a Procedure Report
2.16.840.1.113883.10.20.5.5.3	Infection Risk Factors Section in a Pneumonia Infection Report
2.16.840.1.113883.10.20.5.5.4	Infection Risk Factors Section in a UTI Report
2.16.840.1.113883.10.20.5.5.5	Infection Risk Factors Section in a CLIP Report
2.16.840.1.113883.10.20.5.5.6	Infection Details Section in a BSI Report
2.16.840.1.113883.10.20.5.5.7	Infection Details Section in an SSI Report
2.16.840.1.113883.10.20.5.5.8	Infection Details Section in an MDRO/CDAD Infection Report
2.16.840.1.113883.10.20.5.5.9	Infection Details Section in a Pneumonia Infection Report
2.16.840.1.113883.10.20.5.5.10	Infection Details Section in a UTI Report
2.16.840.1.113883.10.20.5.5.11	Infection Details Section in a Generic Infection Report
2.16.840.1.113883.10.20.5.5.12	Procedure Details Section in an Immunization Report
2.16.840.1.113883.10.20.5.5.13	Procedure Details Section in a CLIP Report
2.16.840.1.113883.10.20.5.5.14	Procedure Details Section in a Procedure Report
2.16.840.1.113883.10.20.5.5.15	Findings Section
2.16.840.1.113883.10.20.5.5.16	Encounters Section in a LIO Report
2.16.840.1.113883.10.20.5.5.17	Findings Section (LIO)
2.16.840.1.113883.10.20.5.6.1	Admission to ICU Clinical Statement
2.16.840.1.113883.10.20.5.6.2	Adverse Reaction Observation
2.16.840.1.113883.10.20.5.6.3	Antiseptic Ointment Clinical Statement
2.16.840.1.113883.10.20.5.6.4	Bloodstream Infection Evidence Type Observation
2.16.840.1.113883.10.20.5.6.5	CDAD Observation
2.16.840.1.113883.10.20.5.6.6	CDAD-related Surgery
2.16.840.1.113883.10.20.5.6.7	Central-line Insertion Practice Clinical Statement
2.16.840.1.113883.10.20.5.6.8	Central-line Insertion Preparation Organizer
2.16.840.1.113883.10.20.5.6.9	Clinical Specialty Observation
2.16.840.1.113883.10.20.5.6.10	Criterion of Diagnosis Observation
2.16.840.1.113883.10.20.5.6.11	Criteria of Diagnosis Organizer
2.16.840.1.113883.10.20.5.6.12	Death Observation
2.16.840.1.113883.10.20.5.6.13	Eligibility Criterion Observation
2.16.840.1.113883.10.20.5.6.14	Findings Organizer
2.16.840.1.113883.10.20.5.6.15	Guidewire Used Clinical Statement
2.16.840.1.113883.10.20.5.6.16	Hand Hygiene Performed Clinical Statement

Template OID	Template Title
2.16.840.1.113883.10.20.5.6.17	Immunization Clinical Statement
2.16.840.1.113883.10.20.5.6.18	Immunization Offer Clinical Statement
2.16.840.1.113883.10.20.5.6.19	Immunocompromised Observation
2.16.840.1.113883.10.20.5.6.20	Implant Observation
2.16.840.1.113883.10.20.5.6.21	Infection Condition Observation
2.16.840.1.113883.10.20.5.6.22	Infection Contributed to Death Observation
2.16.840.1.113883.10.20.5.6.23	Infection-type Observation
2.16.840.1.113883.10.20.5.6.24	MDRO Observation
2.16.840.1.113883.10.20.5.6.25	Non-autologous Transplant Observation
2.16.840.1.113883.10.20.5.6.26	Number of Lumens Observation
2.16.840.1.113883.10.20.5.6.27	Occasion of HAI Detection Observation
2.16.840.1.113883.10.20.5.6.28	Occupation and Clinical Specialty Observation
2.16.840.1.113883.10.20.5.6.29	Offer Declined Observation
2.16.840.1.113883.10.20.5.6.30	Patient Care Observation
2.16.840.1.113883.10.20.5.6.31	Post-procedure Observation
2.16.840.1.113883.10.20.5.6.32	Procedure Details Clinical Statement in a CLIP Report
2.16.840.1.113883.10.20.5.6.33	Procedure Details Clinical Statement in a Procedure Report
2.16.840.1.113883.10.20.5.6.34	Procedure Details Clinical Statement in an SSI Report
2.16.840.1.113883.10.20.5.6.35	Procedure Risk Factors Clinical Statement in a Procedure Report
2.16.840.1.113883.10.20.5.6.36	Procedure Risk Factors Clinical Statement in a CLIP Report
2.16.840.1.113883.10.20.5.6.37	Reason Offer Declined Observation
2.16.840.1.113883.10.20.5.6.38	Reason for Procedure Observation
2.16.840.1.113883.10.20.5.6.39	Recorder Observation
2.16.840.1.113883.10.20.5.6.40	Seasons Immunized Observation
2.16.840.1.113883.10.20.5.6.41	Significant Pathogens Observation
2.16.840.1.113883.10.20.5.6.42	Skin Preparation Clinical Statement
2.16.840.1.113883.10.20.5.6.43	Skin-preparation Solutions Applied Organizer
2.16.840.1.113883.10.20.5.6.44	Solutions Dried Observation
2.16.840.1.113883.10.20.5.6.45	Sterile Barriers Applied Clinical Statement
2.16.840.1.113883.10.20.5.6.46	Summary Data Observation
2.16.840.1.113883.10.20.5.6.47	Summary Encounter
2.16.840.1.113883.10.20.5.6.48	Urinary Catheter Observation
2.16.840.1.113883.10.20.5.6.49	Vaccine Information Statement Type
2.16.840.1.113883.10.20.5.6.50	Ventilator Observation
2.16.840.1.113883.10.20.5.6.51	Prior Discharge Encounter

Template OID	Template Title
2.16.840.1.113883.10.20.5.6.52	Pathogen Identified Observation (LIO)
2.16.840.1.113883.10.20.5.6.53	Specimen Collection Procedure (LIO)
2.16.840.1.113883.10.20.5.6.54	Specimen Collection Encounter (LIO)
2.16.840.1.113883.10.20.5.6.55	Prior Documentation Observation
2.16.840.1.113883.10.20.5.6.56	History of Object Presence Observation
2.16.840.1.113883.10.20.5.7	HAI Bloodstream Infection Report (BSI)
2.16.840.1.113883.10.20.5.8	HAI Surgical Site Infection Report (SSI)
2.16.840.1.113883.10.20.5.9	HAI MDRO/CDAD Infection Numerator Report

Table 50: NHSN Templates by Template Title

Template Title	Template OID
Admission to ICU Clinical Statement	2.16.840.1.113883.10.20.5.6.1
Adverse Reaction Observation	2.16.840.1.113883.10.20.5.6.2
Anesthesia Administration Clinical Statement	2.16.840.1.113883.10.20.5.2.2.7.3
Antiseptic Ointment Clinical Statement	2.16.840.1.113883.10.20.5.6.3
ASA Class Observation	2.16.840.1.113883.10.20.5.2.2.7.4
Bloodstream Infection Evidence Type Observation	2.16.840.1.113883.10.20.5.6.4
CDAD Observation	2.16.840.1.113883.10.20.5.6.5
CDAD-related Surgery	2.16.840.1.113883.10.20.5.6.6
Central-line Insertion Practice Clinical Statement	2.16.840.1.113883.10.20.5.6.7
Central-line Insertion Preparation Organizer	2.16.840.1.113883.10.20.5.6.8
Clinical Specialty Observation	2.16.840.1.113883.10.20.5.6.9
Criteria of Diagnosis Organizer	2.16.840.1.113883.10.20.5.6.11
Criterion of Diagnosis Observation	2.16.840.1.113883.10.20.5.6.10
Death Observation	2.16.840.1.113883.10.20.5.6.12
Diabetes Mellitus Observation	2.16.840.1.113883.10.20.5.2.2.7.7
Drug-susceptibility Test Observation	2.16.840.1.113883.10.20.5.2.5.1.2
Duration of Labor Observation	2.16.840.1.113883.10.20.5.2.2.7.11
Eligibility Criterion Observation	2.16.840.1.113883.10.20.5.6.13
Encounters Section in a LIO Report	2.16.840.1.113883.10.20.5.5.16
Endoscope Used Clinical Statement	2.16.840.1.113883.10.20.5.2.1.3
Estimated Maternal Blood Loss Observation	2.16.840.1.113883.10.20.5.2.2.7.12
Findings Organizer	2.16.840.1.113883.10.20.5.6.14
Findings Section	2.16.840.1.113883.10.20.5.5.15
Findings Section (LIO)	2.16.840.1.113883.10.20.5.5.17
Guidewire Used Clinical Statement	2.16.840.1.113883.10.20.5.6.15
HAI Bloodstream Infection Report (BSI)	2.16.840.1.113883.10.20.5.7
HAI Central-line Insertion Practice Numerator Report	2.16.840.1.113883.10.20.5.12

Template Title	Template OID
HAI Generic Infection Numerator Report	2.16.840.1.113883.10.20.5.14
HAI Immunization Numerator Report	2.16.840.1.113883.10.20.5.13
HAI Laboratory-identified Organism (LIO) Report	2.16.840.1.113883.10.20.5.17
HAI MDRO/CDAD Infection Numerator Report	2.16.840.1.113883.10.20.5.9
HAI Pneumonia Infection Numerator Report (PNEU)	2.16.840.1.113883.10.20.5.10
HAI Population Summary Report	2.16.840.1.113883.10.20.5.15
HAI Procedure Denominator Report	2.16.840.1.113883.10.20.5.16
HAI Section Generic Constraints	2.16.840.1.113883.10.20.5.4.3
HAI Surgical Site Infection Report (SSI)	2.16.840.1.113883.10.20.5.8
HAI Urinary Tract Infection Numerator Report (UTI)	2.16.840.1.113883.10.20.5.11
Hand Hygiene Performed Clinical Statement	2.16.840.1.113883.10.20.5.6.16
Header Constraints, HAI Population-summary Reports	2.16.840.1.113883.10.20.5.4.2
Header Constraints, HAI Single-person Reports	2.16.840.1.113883.10.20.5.4.1
Healthcare Associated Infection Report	2.16.840.1.113883.10.20.5.4.19
Height Observation	2.16.840.1.113883.10.20.5.2.2.7.9
History of Object Presence Observation	2.16.840.1.113883.10.20.5.6.56
Immunization Clinical Statement	2.16.840.1.113883.10.20.5.6.17
Immunization Offer Clinical Statement	2.16.840.1.113883.10.20.5.6.18
Immunocompromised Observation	2.16.840.1.113883.10.20.5.6.19
Implant Observation	2.16.840.1.113883.10.20.5.6.20
Infection Condition Observation	2.16.840.1.113883.10.20.5.6.21
Infection Contributed to Death Observation	2.16.840.1.113883.10.20.5.6.22
Infection Details Section in a BSI Report	2.16.840.1.113883.10.20.5.5.6
Infection Details Section in a Generic Infection Report	2.16.840.1.113883.10.20.5.5.11
Infection Details Section in a Pneumonia Infection Report	2.16.840.1.113883.10.20.5.5.9
Infection Details Section in a UTI Report	2.16.840.1.113883.10.20.5.5.10
Infection Details Section in an MDRO/CDAD Infection Report	2.16.840.1.113883.10.20.5.5.8
Infection Details Section in an SSI Report	2.16.840.1.113883.10.20.5.5.7
Infection Risk Factors Measurement Observation	2.16.840.1.113883.10.20.5.2.1.1.2
Infection Risk Factors Observation	2.16.840.1.113883.10.20.5.2.1.1.1
Infection Risk Factors Section in a BSI Report	2.16.840.1.113883.10.20.5.5.1
Infection Risk Factors Section in a CLIP Report	2.16.840.1.113883.10.20.5.5.5
Infection Risk Factors Section in a Pneumonia Infection Report	2.16.840.1.113883.10.20.5.5.3
Infection Risk Factors Section in a Procedure Report	2.16.840.1.113883.10.20.5.5.2
Infection Risk Factors Section in a UTI Report	2.16.840.1.113883.10.20.5.5.4
Infection-type Observation	2.16.840.1.113883.10.20.5.6.23
MDRO Observation	2.16.840.1.113883.10.20.5.6.24

Template Title	Template OID
Multiple Procedures Observation	2.16.840.1.113883.10.20.5.2.2.7.6
Non-autologous Transplant Observation	2.16.840.1.113883.10.20.5.6.25
Number of Lumens Observation	2.16.840.1.113883.10.20.5.6.26
Occasion of HAI Detection Observation	2.16.840.1.113883.10.20.5.6.27
Occupation and Clinical Specialty Observation	2.16.840.1.113883.10.20.5.6.28
Offer Declined Observation	2.16.840.1.113883.10.20.5.6.29
Pathogen Identified Observation	2.16.840.1.113883.10.20.5.2.5.1
Pathogen Identified Observation (LIO)	2.16.840.1.113883.10.20.5.6.52
Pathogen Ranking Observation	2.16.840.1.113883.10.20.5.2.5.1.1
Patient Care Observation	2.16.840.1.113883.10.20.5.6.30
Post-procedure Observation	2.16.840.1.113883.10.20.5.6.31
Prior Discharge Encounter	2.16.840.1.113883.10.20.5.6.51
Prior Documentation Observation	2.16.840.1.113883.10.20.5.6.55
Procedure Details Clinical Statement in a CLIP Report	2.16.840.1.113883.10.20.5.6.32
Procedure Details Clinical Statement in a Procedure Report	2.16.840.1.113883.10.20.5.6.33
Procedure Details Clinical Statement in an SSI Report	2.16.840.1.113883.10.20.5.6.34
Procedure Details Section in a CLIP Report	2.16.840.1.113883.10.20.5.5.13
Procedure Details Section in a Procedure Report	2.16.840.1.113883.10.20.5.5.14
Procedure Details Section in an Immunization Report	2.16.840.1.113883.10.20.5.5.12
Procedure Risk Factors Clinical Statement in a CLIP Report	2.16.840.1.113883.10.20.5.6.36
Procedure Risk Factors Clinical Statement in a Procedure Report	2.16.840.1.113883.10.20.5.6.35
Reason for Procedure Observation	2.16.840.1.113883.10.20.5.6.38
Reason Offer Declined Observation	2.16.840.1.113883.10.20.5.6.37
Recorder Observation	2.16.840.1.113883.10.20.5.6.39
Seasons Immunized Observation	2.16.840.1.113883.10.20.5.6.40
Secondary Bloodstream Infection Observation	2.16.840.1.113883.10.20.5.2.2.7.15
Significant Pathogens Observation	2.16.840.1.113883.10.20.5.6.41
Skin Preparation Clinical Statement	2.16.840.1.113883.10.20.5.6.42
Skin-preparation Solutions Applied Organizer	2.16.840.1.113883.10.20.5.6.43
Solutions Dried Observation	2.16.840.1.113883.10.20.5.6.44
Specimen Collection Encounter (LIO)	2.16.840.1.113883.10.20.5.6.54
Specimen Collection Procedure (LIO)	2.16.840.1.113883.10.20.5.6.53
Spinal Fusion Level Observation	2.16.840.1.113883.10.20.5.2.2.7.8
Sterile Barriers Applied Clinical Statement	2.16.840.1.113883.10.20.5.6.45
Summary Data Observation	2.16.840.1.113883.10.20.5.6.46
Summary Data Section	2.16.840.1.113883.10.20.5.2.6
Summary Encounter	2.16.840.1.113883.10.20.5.6.47

Template Title	Template OID
Trauma Observation	2.16.840.1.113883.10.20.5.2.2.7.5
Urinary Catheter Observation	2.16.840.1.113883.10.20.5.6.48
Vaccine Information Statement Type	2.16.840.1.113883.10.20.5.6.49
Ventilator Observation	2.16.840.1.113883.10.20.5.6.50
Weight Observation	2.16.840.1.113883.10.20.5.2.2.7.10
Wound Class Observation	2.16.840.1.113883.10.20.5.2.1.2

Table 51: NHSN Templates by Template Type

Template Title	Template OID
Document Templates	
HAI Bloodstream Infection Report (BSI)	2.16.840.1.113883.10.20.5.7
HAI Central-line Insertion Practice Numerator Report	2.16.840.1.113883.10.20.5.12
HAI Generic Infection Numerator Report	2.16.840.1.113883.10.20.5.14
HAI Immunization Numerator Report	2.16.840.1.113883.10.20.5.13
HAI Laboratory-identified Organism (LIO) Report	2.16.840.1.113883.10.20.5.17
HAI MDRO/CDAD Infection Numerator Report	2.16.840.1.113883.10.20.5.9
HAI Pneumonia Infection Numerator Report (PNEU)	2.16.840.1.113883.10.20.5.10
HAI Population Summary Report	2.16.840.1.113883.10.20.5.15
HAI Procedure Denominator Report	2.16.840.1.113883.10.20.5.16
HAI Surgical Site Infection Report (SSI)	2.16.840.1.113883.10.20.5.8
HAI Urinary Tract Infection Numerator Report (UTI)	2.16.840.1.113883.10.20.5.11
Header Constraints, HAI Population-summary Reports	2.16.840.1.113883.10.20.5.4.2
Header Constraints, HAI Single-person Reports	2.16.840.1.113883.10.20.5.4.1
Healthcare Associated Infection Report	2.16.840.1.113883.10.20.5.4.19
Section Templates	
Encounters Section in a LIO Report	2.16.840.1.113883.10.20.5.5.16
Findings Section	2.16.840.1.113883.10.20.5.5.15
Findings Section (LIO)	2.16.840.1.113883.10.20.5.5.17
HAI Section Generic Constraints	2.16.840.1.113883.10.20.5.4.3
Infection Details Section in a BSI Report	2.16.840.1.113883.10.20.5.5.6
Infection Details Section in a Generic Infection Report	2.16.840.1.113883.10.20.5.5.11
Infection Details Section in a Pneumonia Infection Report	2.16.840.1.113883.10.20.5.5.9
Infection Details Section in a UTI Report	2.16.840.1.113883.10.20.5.5.10
Infection Details Section in an MDRO/CDAD Infection Report	2.16.840.1.113883.10.20.5.5.8
Infection Details Section in an SSI Report	2.16.840.1.113883.10.20.5.5.7

Template Title	Template OID
Infection Risk Factors Section in a BSI Report	2.16.840.1.113883.10.20.5.5.1
Infection Risk Factors Section in a CLIP Report	2.16.840.1.113883.10.20.5.5.5
Infection Risk Factors Section in a Pneumonia Infection Report	2.16.840.1.113883.10.20.5.5.3
Infection Risk Factors Section in a Procedure Report	2.16.840.1.113883.10.20.5.5.2
Infection Risk Factors Section in a UTI Report	2.16.840.1.113883.10.20.5.5.4
Procedure Details Section in a CLIP Report	2.16.840.1.113883.10.20.5.5.13
Procedure Details Section in a Procedure Report	2.16.840.1.113883.10.20.5.5.14
Procedure Details Section in an Immunization Report	2.16.840.1.113883.10.20.5.5.12
Summary Data Section	2.16.840.1.113883.10.20.5.2.6
Clinical Statement Templates	
Admission to ICU Clinical Statement	2.16.840.1.113883.10.20.5.6.1
Adverse Reaction Observation	2.16.840.1.113883.10.20.5.6.2
Anesthesia Administration Clinical Statement	2.16.840.1.113883.10.20.5.2.2.7.3
Antiseptic Ointment Clinical Statement	2.16.840.1.113883.10.20.5.6.3
ASA Class Observation	2.16.840.1.113883.10.20.5.2.2.7.4
Bloodstream Infection Evidence Type Observation	2.16.840.1.113883.10.20.5.6.4
CDAD Observation	2.16.840.1.113883.10.20.5.6.5
CDAD-related Surgery	2.16.840.1.113883.10.20.5.6.6
Central-line Insertion Practice Clinical Statement	2.16.840.1.113883.10.20.5.6.7
Central-line Insertion Preparation Organizer	2.16.840.1.113883.10.20.5.6.8
Clinical Specialty Observation	2.16.840.1.113883.10.20.5.6.9
Criteria of Diagnosis Organizer	2.16.840.1.113883.10.20.5.6.11
Criterion of Diagnosis Observation	2.16.840.1.113883.10.20.5.6.10
Death Observation	2.16.840.1.113883.10.20.5.6.12
Diabetes Mellitus Observation	2.16.840.1.113883.10.20.5.2.2.7.7
Drug-susceptibility Test Observation	2.16.840.1.113883.10.20.5.2.5.1.2
Duration of Labor Observation	2.16.840.1.113883.10.20.5.2.2.7.11
Eligibility Criterion Observation	2.16.840.1.113883.10.20.5.6.13
Endoscope Used Clinical Statement	2.16.840.1.113883.10.20.5.2.1.3
Estimated Maternal Blood Loss Observation	2.16.840.1.113883.10.20.5.2.2.7.12
Findings Organizer	2.16.840.1.113883.10.20.5.6.14
Guidewire Used Clinical Statement	2.16.840.1.113883.10.20.5.6.15
Hand Hygiene Performed Clinical Statement	2.16.840.1.113883.10.20.5.6.16
Height Observation	2.16.840.1.113883.10.20.5.2.2.7.9
History of Object Presence Observation	2.16.840.1.113883.10.20.5.6.56
Immunization Clinical Statement	2.16.840.1.113883.10.20.5.6.17
Immunization Offer Clinical Statement	2.16.840.1.113883.10.20.5.6.18
Immunocompromised Observation	2.16.840.1.113883.10.20.5.6.19

Template Title	Template OID
Implant Observation	2.16.840.1.113883.10.20.5.6.20
Infection Condition Observation	2.16.840.1.113883.10.20.5.6.21
Infection Contributed to Death Observation	2.16.840.1.113883.10.20.5.6.22
Infection Risk Factors Measurement Observation	2.16.840.1.113883.10.20.5.2.1.1.2
Infection Risk Factors Observation	2.16.840.1.113883.10.20.5.2.1.1.1
Infection-type Observation	2.16.840.1.113883.10.20.5.6.23
MDRO Observation	2.16.840.1.113883.10.20.5.6.24
Multiple Procedures Observation	2.16.840.1.113883.10.20.5.2.2.7.6
Non-autologous Transplant Observation	2.16.840.1.113883.10.20.5.6.25
Number of Lumens Observation	2.16.840.1.113883.10.20.5.6.26
Occasion of HAI Detection Observation	2.16.840.1.113883.10.20.5.6.27
Occupation and Clinical Specialty Observation	2.16.840.1.113883.10.20.5.6.28
Offer Declined Observation	2.16.840.1.113883.10.20.5.6.29
Pathogen Identified Observation	2.16.840.1.113883.10.20.5.2.5.1
Pathogen Identified Observation (LIO)	2.16.840.1.113883.10.20.5.6.52
Pathogen Ranking Observation	2.16.840.1.113883.10.20.5.2.5.1.1
Patient Care Observation	2.16.840.1.113883.10.20.5.6.30
Post-procedure Observation	2.16.840.1.113883.10.20.5.6.31
Prior Discharge Encounter	2.16.840.1.113883.10.20.5.6.51
Prior Documentation Observation	2.16.840.1.113883.10.20.5.6.55
Procedure Details Clinical Statement in a CLIP Report	2.16.840.1.113883.10.20.5.6.32
Procedure Details Clinical Statement in a Procedure Report	2.16.840.1.113883.10.20.5.6.33
Procedure Details Clinical Statement in an SSI Report	2.16.840.1.113883.10.20.5.6.34
Procedure Risk Factors Clinical Statement in a CLIP Report	2.16.840.1.113883.10.20.5.6.36
Procedure Risk Factors Clinical Statement in a Procedure Report	2.16.840.1.113883.10.20.5.6.35
Reason for Procedure Observation	2.16.840.1.113883.10.20.5.6.38
Reason Offer Declined Observation	2.16.840.1.113883.10.20.5.6.37
Recorder Observation	2.16.840.1.113883.10.20.5.6.39
Seasons Immunized Observation	2.16.840.1.113883.10.20.5.6.40
Secondary Bloodstream Infection Observation	2.16.840.1.113883.10.20.5.2.2.7.15
Significant Pathogens Observation	2.16.840.1.113883.10.20.5.6.41
Skin Preparation Clinical Statement	2.16.840.1.113883.10.20.5.6.42
Skin-preparation Solutions Applied Organizer	2.16.840.1.113883.10.20.5.6.43
Solutions Dried Observation	2.16.840.1.113883.10.20.5.6.44
Specimen Collection Encounter (LIO)	2.16.840.1.113883.10.20.5.6.54
Specimen Collection Procedure (LIO)	2.16.840.1.113883.10.20.5.6.54
Spinal Fusion Level Observation	2.16.840.1.113883.10.20.5.6.53

Template Title	Template OID
Sterile Barriers Applied Clinical Statement	2.16.840.1.113883.10.20.5.6.45
Summary Data Observation	2.16.840.1.113883.10.20.5.6.46
Summary Encounter	2.16.840.1.113883.10.20.5.6.47
Trauma Observation	2.16.840.1.113883.10.20.5.2.2.7.5
Urinary Catheter Observation	2.16.840.1.113883.10.20.5.6.48
Vaccine Information Statement Type	2.16.840.1.113883.10.20.5.6.49
Ventilator Observation	2.16.840.1.113883.10.20.5.6.50
Weight Observation	2.16.840.1.113883.10.20.5.2.2.7.10
Wound Class Observation	2.16.840.1.113883.10.20.5.2.1.2

Table 52: HITSP Template IDs

Template Title	Template OID
IHE Immunizations entry (C83-1 – C83-4)	1.3.6.1.4.1.19376.1.5.3.1.4.12
HITSP Immunizations entry	2.16.840.1.113883.3.88.11.83.13

Table 53: CCD Template IDs

Template Title	Template OID
Encounter Activity Template (conf. 485-470)	2.16.840.1.113883.10.20.1.21
Encounter Location Template (conf. 471-479)	2.16.840.1.113883.10.20.1.45
Medication Activity Template (conf. 304-315)	2.16.840.1.113883.10.20.1.24
Reaction Observation Template (conf. 282-286)	2.16.840.1.113883.10.20.1.54
Representation of a Product Template (conf. 354-370)	2.16.840.1.113883.10.20.1.53

APPENDIX D — TEMPLATE ID CHANGE SUMMARY (NON-NORMATIVE)

In the R4 Guide, the following templates were added:

Table 54: NHSN Template IDs Added in This Release

Added templateId	Asserts Conformance to Constraints for:
...20.5.4.1	Header Constraints, HAI Single-person Reports
...20.5.4.2	Header Constraints, HAI Population-summary Report
...20.5.4.3	HAI Section Generic Constraints
...20.5.5.16	Encounters Section (LIO)
...20.5.5.17	Findings Section (LIO)
...20.5.6.51	Prior Discharge Encounter
...20.5.6.52	Pathogen Identified Observation (LIO)
...20.5.6.53	Specimen Collection Procedure (LIO)
...20.5.6.54	Specimen Collection Encounter (LIO)
...20.5.6.55	Prior Documentation Observation
...20.5.6.56	History of Object Presence Observation
...20.5.17	HAI Laboratory-identified Organism (LIO) Report

APPENDIX E — EXAMPLE INSTANCE IDENTIFIERS (NON-NORMATIVE)

As discussed in [1.3.2 Development of This Specification](#), much of the development of this DSTU was driven by a pilot project in July 2007. The pilot project assigned example OIDs to a fictional facility and vendor to illustrate the numbering schemes for which facilities and vendors are responsible. In practice, these identifiers will be assigned by facilities and software applications within those facilities participating in the NHSN.

The example OIDs used in this IG and in the accompanying sample files all begin with 2.16.840.1.113883.3.117.1.1.5. and are documented below for reference.

Each OID-owner such as a facility or vendor controls the structure of the OIDs it assigns under its root, and is responsible for ensuring that each identifier it issues is globally unique. A vendor must, for example, ensure that there is no duplication amongst the `setIds` issued by its various software installations. The example instance identifiers in this guide use the following plan for assigning instance identifiers:

Table 55: Structure of Example OIDs

Usage	OID
a healthcare facility OID	2.16.840.1.113883.3.117.1.1.5.1.1
its patient IDs	2.16.840.1.113883.3.117.1.1.5.1.1.1
its non-patient IDs	2.16.840.1.113883.3.117.1.1.5.1.1.2
a vendor OID	2.16.840.1.113883.3.117.1.1.5.2.1
its first software installation	2.16.840.1.113883.3.117.1.1.5.2.1.1
its <code>setIds</code>	2.16.840.1.113883.3.117.1.1.5.2.1.1.1
its document IDs	2.16.840.1.113883.3.117.1.1.5.2.1.1.2
its encompassing encounter IDs	2.16.840.1.113883.3.117.1.1.5.2.1.1.3
its procedure IDs	2.16.840.1.113883.3.117.1.1.5.2.1.1.4

Conformant to that structure, the following example instance identifiers are used in this guide and in the sample files.

Table 56: Values of Example Instance Identifiers Used in This Guide

Facility IDs and Facility-assigned OIDs		
Usage	OID	extension
a location in a facility	2.16.840.1.113883.3.117.1.1.5.1.1	9W
a patient ID	2.16.840.1.113883.3.117.1.1.5.1.1.1	123456
an author ID	2.16.840.1.113883.3.117.1.1.5.1.1.2	anAuthorID
a legal authenticator ID	2.16.840.1.113883.3.117.1.1.5.1.1.2	aLegalAuthenticatorID
Vendor IDs and Vendor-assigned OIDs		
Usage	OID	extension
a setId	2.16.840.1.113883.3.117.1.1.5.2.1.1.1	31
a document ID	2.16.840.1.113883.3.117.1.1.5.2.1.1.2	20202201
an encompassingEncounter ID	2.16.840.1.113883.3.117.1.1.5.2.1.1.3	31
a procedure ID	2.16.840.1.113883.3.117.1.1.5.2.1.1.4	92

APPENDIX F — VOCABULARY HEURISTICS FOR CODES AND VALUE SETS (NON-NORMATIVE)

The CDC has identified questions and allowable responses for HAI form fields. In many cases these questions and responses have been mapped to local CDC/NHSN codes, and it is the CDC's intention to identify corresponding standard codes. Within the CDC, different groups have done vocabulary mapping work (e.g., with HL7 V2 messages), often with different results, and efforts are underway to not only reconcile internal CDC vocabulary usage, but also reconcile CDC vocabulary usage with HITSP recommendations.

Vocabularies recommended in this guide are primarily standard vocabularies recommended for use in particular domains. In many cases these vocabularies are further constrained into value sets for use within this guide or were previously constrained into value sets by the CDC and maintained in PHIN VADs for use in the Public Health domain.

The incremental strategy for vocabulary reconciliation for codes, code systems, and value sets in this document is as follows.

Code and codeSystem Selection

- Where there is conflicting precedent within the CDC, CDC will advise on the preferred CDC code system.
- Where there is a preferred code system within the CDC that is consistent with HITSP recommendations, existing CDC-cited code systems are used.
- Where there is a preferred code system within the CDC that is not consistent with HITSP recommendations, divergence from HITSP is flagged, and reconciliation between CDC and HITSP is planned (but outside the scope of this document).
- Where there is no established precedent within the CDC, available HITSP recommendations will be followed.
- Where there is no established precedent within the CDC and no HITSP recommendations, precedent in prior CDA Implementation Guides will be followed.
- Where there is no established precedent within the CDC, no HITSP recommendations, and no prior CDA IG precedent:
 - An attempt will be made to map CDC/NHSN local codes to standard codes (e.g., SNOMED, HL7 V3 vocabularies).
 - Where there is no corresponding standard code, the CDC/NHSN local code will be cited. (Submitting local CDC/NHSN codes to SNOMED is outside the scope of this document.)
- If post-coordination of SNOMED terms and codes would be required to capture the CDC/NHSN concept, the local CDC/NHSN code will be used.

Value Set Assignment and Maintenance

- Where there is conflicting precedent within the CDC, CDC will advise on the preferred CDC value set.
- Where there is a preferred CDC value set that is consistent with HITSP recommendations, existing CDC value sets are used.
- Where there is a preferred CDC value set that is not consistent with HITSP recommendations, divergence from HITSP is flagged, and reconciliation between CDC and HITSP is planned (but outside the scope of this document).
- Where there is no established precedent within the CDC, available HITSP recommendations will be followed.
- Where there is no established precedent within the CDC and no HITSP recommendations, then precedent in prior CDA Implementation Guides will be followed.
- Where there is no established precedent within the CDC, no HITSP recommendations, and no prior CDA IG precedent, new value sets will be created, each having a value set OID assigned by the CDC.

APPENDIX G — SUMMARY OF VOCABULARIES (NON-NORMATIVE)

For the user's convenience, this table summarizes the vocabularies (code systems) used in this DSTU.

Table 57: List of Vocabularies

Root OIDs	
codeSystem	codeSystemName
2.16.840.1.113883.5.25	HL7 Confidentiality Code
2.16.840.1.113883.5.4	HL7 ActCode
2.16.840.1.113883.5.83	HL7 Observation Interpretation
2.16.840.1.113883.6.259	HL7 HealthcareServiceLocation
2.16.840.1.113883.12.162	HL7 RouteOfAdministration
2.16.840.1.113883.6.1	LOINC
2.16.840.1.113883.6.88	RxNorm
2.16.840.1.113883.6.96	SNOMED CT
2.16.840.1.113883.6.104	ICD-9-CM Procedure
2.16.840.1.113883.6.59	CVX
2.16.840.1.113883.6.243	Standard Occupational Classification (SOC)
2.16.840.1.113883.6.101	NUCCProviderCodes
2.16.840.1.113883.6.277	cdcNHSN
2.16.840.1.113883.6.86	UMLS

APPENDIX H — SUMMARY OF NHSN SINGLE-VALUE BINDINGS (NON-NORMATIVE)

The following tables summarize single-value bindings for NHSN, SNOMED, and other vocabularies.

Table 58: NHSN Single-value Bindings

Single-value Bindings: NHSN Vocabulary				
code	NHSN Display Name	Standard code Display Name	codeSystem	codeSystem Name
3121-1	Central line exchanged over guidewire		2.16.840.1.113883.6.277	cdcNHSN
3108-8	Central line insertion practice		2.16.840.1.113883.6.277	cdcNHSN
3195-5	Clinical specialty		2.16.840.1.113883.6.277	cdcNHSN
3109-6	Hand hygiene		2.16.840.1.113883.6.277	cdcNHSN
3188-0	Infection occurred post procedure		2.16.840.1.113883.6.277	cdcNHSN
3113-8	Multiple procedures		2.16.840.1.113883.6.277	cdcNHSN
3189-8	Non-autologous transplant		2.16.840.1.113883.6.277	cdcNHSN
3164-1	Number of catheter lumens		2.16.840.1.113883.6.277	cdcNHSN
3163-3	Performs direct patient care		2.16.840.1.113883.6.277	cdcNHSN
3001-5	Prior documentation of the patient being infected or colonized with the organism currently being reported.		2.16.840.1.113883.6.277	cdcNHSN
3104-7	Recorder was performer		2.16.840.1.113883.6.277	cdcNHSN
2404-2	Removed within 48 hours prior		2.16.840.1.113883.6.277	cdcNHSN
3192-2	Seasons immunized		2.16.840.1.113883.6.277	cdcNHSN
3111-2	Secondary bloodstream infection		2.16.840.1.113883.6.277	cdcNHSN
3114-6	Solution(s) had dried		2.16.840.1.113883.6.277	cdcNHSN
3191-4	Urinary Catheter Present		2.16.840.1.113883.6.277	cdcNHSN

Table 59: Single-value Bindings from SNOMED CT

Single-value Bindings: SNOMED CT Vocabulary				
code	NHSN Display Name	Standard code Display Name	codeSystem	codeSystem Name
305351004	Admitted to ICU	Intensive Care Environment	2.16.840.1.113883.6.96	SNOMED CT
364589006	Birth weight		2.16.840.1.113883.6.96	SNOMED CT
420089007		CDC Wound Classification Category	2.16.840.1.113883.6.96	SNOMED CT
233527006	Central-line Insertion		2.16.840.1.113883.6.96	SNOMED CT
419099009	Dead	Dead	2.16.840.1.113883.6.96	SNOMED CT
73211009	Diabetes	Diabetes mellitus	2.16.840.1.113883.6.96	SNOMED CT
315640000	Did person decline [influenza] vaccine?	Influenza vaccination declined	2.16.840.1.113883.6.96	SNOMED CT
289248003	Duration of labor	Duration of labor	2.16.840.1.113883.6.96	SNOMED CT
373110003	Emergency procedure	Emergency Procedure	2.16.840.1.113883.6.96	SNOMED CT
224363007	Employed	Employed (finding)	2.16.840.1.113883.6.96	SNOMED CT
423827005	Endoscopy	Endoscopy	2.16.840.1.113883.6.96	SNOMED CT
409086003	Estimated blood loss	Estimated maternal blood loss	2.16.840.1.113883.6.96	SNOMED CT
84451006		General anesthesia	2.16.840.1.113883.6.96	SNOMED CT
223366009	Healthcare worker		2.16.840.1.113883.6.96	SNOMED CT
71861002	Implant	Implantation	2.16.840.1.113883.6.96	SNOMED CT
32485007	Hospital admission		2.16.840.1.113883.6.96	SNOMED CT
86198006	Influenza vaccination	Influenza vaccination	2.16.840.1.113883.6.96	SNOMED CT
397745006	Medical contraindications	Medical contraindications	2.16.840.1.113883.6.96	SNOMED CT
224361009	Occupation	Type of job	2.16.840.1.113883.6.96	SNOMED CT
50373000	Patient height	Body Height	2.16.840.1.113883.6.96	SNOMED CT
370388006	Patient immunocompromized	Patient immunocompromized	2.16.840.1.113883.6.96	SNOMED CT
371820004	Patient ventilated		2.16.840.1.113883.6.96	SNOMED CT
27113001	Patient weight	Body weight	2.16.840.1.113883.6.96	SNOMED CT
233604007	Pneumonia		2.16.840.1.113883.6.96	SNOMED CT
387713003	Surgery	Surgical Procedure	2.16.840.1.113883.6.96	SNOMED CT
417746004	Trauma	Trauma	2.16.840.1.113883.6.96	SNOMED CT
68566005	Urinary tract infection	Urinary tract infectious disease	2.16.840.1.113883.6.96	SNOMED CT
370822003	Use of Sterile Technique		2.16.840.1.113883.6.96	SNOMED CT

Table 60: Single-value Bindings from Other Vocabularies

Single-value Bindings: Various Vocabularies				
code	NHSN Display Name	Standard code Display Name	codeSystem	codeSystem Name
C11180	Antiseptic Ointment		2.16.840.1.113883.3.26.1.5	NDFRT
88	Influenza virus vaccine NOS	Influenza virus vaccine NOS	2.16.840.1.113883.6.59	CVX
1024-9	Admission to intensive care		2.16.840.1.113883.6.259	HL7 HealthcareServiceLocation
41852-5	Microorganism identified	Microorganism identified	2.16.840.1.113883.6.1	LOINC

APPENDIX I — SUMMARY OF NHSN VALUE SETS (NON-NORMATIVE)

The following table summarizes the NHSN value sets. Single-value bindings are not included here, but are listed in [Appendix H](#)—Summary of NHSN Single-Value Bindings (Non-normative). **Note:** all value sets are **STATIC** unless noted as **DYNAMIC**.

Table 61: NSHN Value Sets – Summary Table

ValueSetOID (localValueSetName)	code	NHSN Display Name	Standard code Display Name	codeSystem	codeSystem Name
2.16.840.1.113883.13.7 (NHSNBloodstreamInfectionEvidenceTypeCode)	1603-0	Clinical sepsis		2.16.840.1.113883.6.277	cdcNHSN
	1613-9	Laboratory-confirmed bloodstream infection		2.16.840.1.113883.6.277	cdcNHSN
2.16.840.1.113883.13.9 (NHSNWoundClassCode)	418780004	Clean	Class I/Clean	2.16.840.1.113883.6.96	SNOMED CT
	418115006	Clean-contaminated	Class II/Clean Contaminated	2.16.840.1.113883.6.96	SNOMED CT
	419877002	Contaminated	Class III/Contaminated	2.16.840.1.113883.6.96	SNOMED CT
	418422005	Dirty	Class IV/Dirty Infected	2.16.840.1.113883.6.96	SNOMED CT
2.16.840.1.113883.13.10 (NHSNASAClassCode)	413495001	Normally healthy patient	ASA physical status class 1	2.16.840.1.113883.6.96	SNOMED CT
	413496000	Patient with mild systemic disease	ASA physical status class 2	2.16.840.1.113883.6.96	SNOMED CT
	413497009	Patient with severe systemic disease not	ASA physical status class 3	2.16.840.1.113883.6.96	SNOMED CT

ValueSetOID (localValueSetName)	code	NHSN Display Name	Standard code Display Name	codeSystem	codeSystem Name
		incapacitating			
	413498004	Patient with incapacitating systemic disease, constant threat to life	ASA physical status class 4	2.16.840.1.113883.6.96	SNOMED CT
	413499007	Moribund patient, < 24 hour life expectancy	413499007 ASA physical status class 5	2.16.840.1.113883.6.96	SNOMED CT
2.16.840.1.113883.13.16 (NHSNPathogenCode excerpt) DYNAMIC	372391001	Abiotrophia species	Abiotrophia species (organism)	2.16.840.1.113883.6.96	SNOMED CT
	50875003	Acanthamoeba	Acanthamoeba (organism)	2.16.840.1.113883.6.96	SNOMED CT
	413423003	Achromobacter spp.	Achromobacter species (organism)	2.16.840.1.113883.6.96	SNOMED CT
See the entire table in Pathogen Value Set	....	....	....	....	....
2.16.840.1.113883.13.13 (NHSNDrugSusceptibilityFindingCode)	S	Susceptible	Susceptible	2.16.840.1.113883.5.83	HL7 Observation Interpretation
	I	Intermediate	Intermediate	2.16.840.1.113883.5.83	HL7 Observation Interpretation
	R	Resistant	Resistant	2.16.840.1.113883.5.83	HL7 Observation Interpretation
2.16.840.1.113883.13.19 See the entire table in Healthcare Service Location Value Set	1026-4	Burn Critical Care	Burn Critical Care	2.16.840.1.113883.6.259	HL7 Healthcare Service Location
	1028-0	Medical Cardiac Critical Care	Medical Cardiac Critical Care	2.16.840.1.113883.6.259	HL7 Healthcare Service Location

ValueSetOID (localValueSetName)	code	NHSN Display Name	Standard code Display Name	codeSystem	codeSystem Name
2.16.840.1.113883.13.1 (NHSNEncounterTypeCode)	1027-2	Medical Critical Care	Medical Critical Care	2.16.840.1.113883.6.259	HL7 Healthcare Service Location

	AMB	Outpatient	Ambulatory	2.16.840.1.113883.5.4	HL7 ActCode
2.16.840.1.113883.13.15 (NHSNDrugSusceptibilityTestsCode excerpt) DYNAMIC	IMP	Inpatient	Inpatient	2.16.840.1.113883.5.4	HL7 ActCode
	18860-7	Amikacin Susc IsIt	Amikacin Susc IsIt	2.16.840.1.113883.6.1	LOINC
	18862-3	Amoxicillin+ Clav Susc IsIt	Amoxicillin+Cla v Susc IsIt	2.16.840.1.113883.6.1	LOINC
See entire table in Drug-susceptibility Test Value Set	18864-9	Ampicillin Susc IsIt	Ampicillin Susc IsIt	2.16.840.1.113883.6.1	LOINC
	18865-6	Ampicillin+ Sulbac Susc IsIt	Ampicillin+ Sulbac Susc IsIt	2.16.840.1.113883.6.1	LOINC
	...	...	...	2.16.840.1.113883.6.1	LOINC
2.16.840.1.113883.13.6 (NHSNInfectionRiskFactorsCode)	1002-5	(unspecified) central line		2.16.840.1.113883.6.277	cdcNHSN
	1003-3	permanent central line		2.16.840.1.113883.6.277	cdcNHSN
	1005-8	temporary central line		2.16.840.1.113883.6.277	cdcNHSN
364589006	1001-7	umbilical catheter		2.16.840.1.113883.6.277	cdcNHSN
		birth weight	birth weight	2.16.840.1.113883.6.96	SNOMED CT
	1101-5	atlas-axis		2.16.840.1.113883.6.277	cdcNHSN

ValueSetOID (localValueSetName)	code	NHSN Display Name	Standard code Display Name	codeSystem	codeSystem Name
(NHSNSpinalFusionLevelCode)		(C1-C2 only)			
	1102-3	atlas- axis/ cervical (C1-C7: any combination)		2.16.840.1.113883.6.277	cdcNHSN
	1103-1	cervical (C3-C7: any combination)		2.16.840.1.113883.6.277	cdcNHSN
	1104-9	cervical/ dorsal/ dorsolumbar (Extends from any cervical through any lumbar levels)		2.16.840.1.113883.6.277	cdcNHSN
	1105-6	dorsal/ dorsolu mbar (T1-L5: any combination)		2.16.840.1.113883.6.277	cdcNHSN
	1106-4	lumbar/ lumbos acral (L1-S5: any combination)		2.16.840.1.113883.6.277	cdcNHSN
2.16.840.1.113883.13.2 (NHSNSpinalFusionApproachCode)	255549009		anterior	2.16.840.1.113883.6.96	SNOMED CT
	255551008		posterior	2.16.840.1.113883.6.96	SNOMED CT
	1205-4	anterior posterior		2.16.840.1.113883.6.277	cdcNHSN
	1210-4	lateral transverse		2.16.840.1.113883.6.277	cdcNHSN
2.16.840.1.113883.13.3 (NHSNHipReplacementCode)	1305-2	partial primary		2.16.840.1.113883.6.277	cdcNHSN
	1310-2	partial revision		2.16.840.1.113883.6.277	cdcNHSN

ValueSetOID (localValueSetName)	code	NHSN Display Name	Standard code Display Name	codeSystem	codeSystem Name
2.16.840.1.113883.13.4 (NHSNKneeReplacementCode)	1315-1	total revision		2.16.840.1.113883.6.277	cdcNHSN
	1320-1	total primary		2.16.840.1.113883.6.277	cdcNHSN
	1410-0	primary (total)		2.16.840.1.113883.6.277	cdcNHSN
	1405-0	revision (total or partial)		2.16.840.1.113883.6.277	cdcNHSN
2.16.840.1.113883.13.12 (NHSNOccasionOfDetectionCode)	1510-7	Admission (during the stay in which the surgery was performed)		2.16.840.1.113883.6.277	cdcNHSN
	1505-7	Post Discharge Surveillance		2.16.840.1.113883.6.277	cdcNHSN
	1515-6	Re-admission (during a stay that is subse- quent to the stay in which the surgery was performed)		2.16.840.1.113883.6.277	cdcNHSN
2.16.840.1.113883.13.17 (NHSNProcedureCategoryCode excerpt) DYNAMIC	2105-5	Abdominal aortic aneurysm repair		2.16.840.1.113883.6.277	cdcNHSN
	2126-1	Limb amputation		2.16.840.1.113883.6.277	cdcNHSN
	2108-9	Appendix surgery		2.16.840.1.113883.6.277	cdcNHSN
	2102-2	AV shunt for dialysis		2.16.840.1.113883.6.277	cdcNHSN
See entire table in Procedure Category Value Set	...	...	
	1623-8	Arterial or venous infection		2.16.840.1.113883.6.277	cdcNHSN
2.16.840.1.114222.4.11.3196 (NHSNInfectionConditionCode)					

ValueSetOID (localValueSetName)	code	NHSN Display Name	Standard code Display Name	codeSystem	codeSystem Name
See the entire table in Infection Condition Value Set	2402-6	Asymptomatic Bacteremic UTI (ABUTI)		2.16.840.1.113883.6.277	cdcNHSN
	1601-4	Breast abscess or mastitis		2.16.840.1.113883.6.277	cdcNHSN
	1923-2	Clinical sepsis		2.16.840.1.113883.6.277	cdcNHSN
	1604-8	Deep incisional primary SSI		2.16.840.1.113883.6.277	cdcNHSN
	1605-5	Deep incisional secondary SSI		2.16.840.1.113883.6.277	cdcNHSN
	1607-1	Ear or mastoid infection (otitis externa, otitis media, otitis interna, mastoiditis)		2.16.840.1.113883.6.277	cdcNHSN
	78623009	Endometritis		2.16.840.1.113883.6.96	SNOMED CT
	1608-9	Eye infection, other than conjunctivitis		2.16.840.1.113883.6.277	cdcNHSN
	1609-7	Gastrointestinal tract infection (esophagus, stomach, small and large bowel, and rectum) excluding gastroenteritis and appendicitis		2.16.840.1.113883.6.277	cdcNHSN

	1851-5	Number of Patient Days		2.16.840.1.113883.6.277	cdcNHSN
	2.16.840.1.113883.13.14 (NHSNSummaryDataCode)				

ValueSetOID (localValueSetName)	code	NHSN Display Name	Standard code Display Name	codeSystem	codeSystem Name
DYNAMIC	1833-3	Number of Central Line Days		2.16.840.1.113883.6.277	cdcNHSN
	1853-1	Number of Urinary Catheter Days		2.16.840.1.113883.6.277	cdcNHSN
	1852-3	Number of Ventilator Days		2.16.840.1.113883.6.277	cdcNHSN
	1856-4	Number of patients meeting high risk criteria for influenza vaccination		2.16.840.1.113883.6.277	cdcNHSN
	1857-2	Number of patients previously vaccinated for influenza during current influenza season		2.16.840.1.113883.6.277	cdcNHSN
	1858-0	Number of patients meeting high risk criteria and previously vaccinated for influenza during current influenza season		2.16.840.1.113883.6.277	cdcNHSN

ValueSetOID (localValueSetName)	code	NHSN Display Name	Standard code Display Name	codeSystem	codeSystem Name
	1859-8	Number of patients meeting high risk criteria for influenza vaccination and offered influenza vaccination and declining for reasons other than medical contraindication		2.16.840.1.113883.6.277	cdcNHSN
	1860-6	Number of patients meeting high risk criteria and offered influenza vaccination and [declining because of] having medical contraindication		2.16.840.1.113883.6.277	cdcNHSN
	1861-4	Number of patients meeting high risk criteria and receiving vaccination during admission		2.16.840.1.113883.6.277	cdcNHSN
	3305-0	Number of Temporary Central-Line Days		2.16.840.1.113883.6.277	cdcNHSN

ValueSetOID (localValueSetName)	code	NHSN Display Name	Standard code Display Name	codeSystem	codeSystem Name
	3306-8	Number of Permanent Central-Line Days		2.16.840.1.113883.6.277	cdcNHSN
	3307-6	Number of Umbilical Catheter Days		2.16.840.1.113883.6.277	cdcNHSN
	1862-2	Number of admissions	Number of admissions	2.16.840.1.113883.6.277	cdcNHSN
	1863-0	Number of encounters	Number of encounters	2.16.840.1.113883.6.277	cdcNHSN
	1864-8	Number of observations in which hand hygiene was indicated	Number of observations in which hand hygiene was indicated	2.16.840.1.113883.6.277	cdcNHSN
	1865-5	Number of observations in which hand hygiene was performed	Number of observations in which hand hygiene was performed	2.16.840.1.113883.6.277	cdcNHSN
	1866-3	Number of observations in which the use of gown and gloves was indicated	Number of observations in which the use of gown and gloves was indicated	2.16.840.1.113883.6.277	cdcNHSN
	1867-1	Number of observations in which gown and gloves were used	Number of observations in which gown and gloves were used	2.16.840.1.113883.6.277	cdcNHSN

ValueSetOID (localValueSetName)	code	NHSN Display Name	Standard code Display Name	codeSystem	codeSystem Name
	3193-0	Organism were under Active Surveillance Testing (AST)		2.16.840.1.113883.6.277	cdcNHSN
	1870-5	Timing	Value set for timing of Active Surveillance Testing	2.16.840.1.113883.6.277	cdcNHSN
	1871-3	Eligibility	Value set for eligibility of Active Surveillance Testing	2.16.840.1.113883.6.277	cdcNHSN
	1872-1	Number eligible on admission	Number of AST eligible upon admission	2.16.840.1.113883.6.277	cdcNHSN
	1873-9	Number performed on admission	Number of AST performed upon admission	2.16.840.1.113883.6.277	cdcNHSN
	1874-7	Number eligible on discharge/transfer out	Number of AST eligible upon discharge/transfer out	2.16.840.1.113883.6.277	cdcNHSN
	1875-4	Number performed on discharge/transfer out	Number of AST performed upon discharge/transfer out	2.16.840.1.113883.6.277	cdcNHSN
	1876-2	Number prevalent cases identified by AST (clinical positive)	Number of prevalent cases identified by AST (clinical positive)	2.16.840.1.113883.6.277	cdcNHSN

ValueSetOID (localValueSetName)	code	NHSN Display Name	Standard code Display Name	codeSystem	codeSystem Name
	1877-0	Number prevalent cases previously known	Number of prevalent cases previously known	2.16.840.1.113883.6.277	cdcNHSN
	1878-8	Number incident cases identified by AST (clinical positive)	Number of incident cases identified by AST (clinical positive)	2.16.840.1.113883.6.277	cdcNHSN
2.16.840.1.114222.4.11.3283 NHSNOrganismsASTCode	115329001	MRSA		2.16.840.1.113883.6.96	SNOMED
	113727004	VRE		2.16.840.1.113883.6.96	SNOMED
2.16.840.1.114222.4.11.3247 NHSN Timing Code	2201-2	On admission only	On admission only	2.16.840.1.113883.6.277	cdcNHSN
	2202-0	On admission and on discharge/trans fer	On admission and on discharge/trans fer	2.16.840.1.113883.6.277	cdcNHSN
2.16.840.1.114222.4.11.3248 NHSN Eligibility Code	2301-0	All patients	All patients	2.16.840.1.113883.6.277	cdcNHSN
	2302-8	Only patients with no prior documentation of colonization or infection	Only patients with no prior documentation of colonization or infection	2.16.840.1.113883.6.277	cdcNHSN
2.16.840.1.113883.13.20 (NHSNInfectionTypeCode) DYNAMIC	431193003	Bloodstream infection		2.16.840.1.113883.6.96	SNOMED CT
	1798-8	Bone or Joint Infection		2.16.840.1.113883.6.277	cdcNHSN
	1795-4	CDAD Infection		2.16.840.1.113883.6.277	cdcNHSN
	312158001	Gastrointestinal Infection		2.16.840.1.113883.6.96	SNOMED CT

ValueSetOID (localValueSetName)	code	NHSN Display Name	Standard code Display Name	codeSystem	codeSystem Name
	128402005	Infection of the cardiovascular system		2.16.840.1.113883.6.96	SNOMED CT
	128116006	Infection of the Central Nervous System		2.16.840.1.113883.6.96	SNOMED CT
	1797-0	Infection of the Ear/Eyes/Nose or Throat		2.16.840.1.113883.6.277	cdcNHSN
	1796-2	Infection of the Reproduction System		2.16.840.1.113883.6.277	cdcNHSN
	50417007	Lower respiratory Infection		2.16.840.1.113883.6.96	SNOMED CT
	1792-1	MDRO Infection		2.16.840.1.113883.6.277	cdcNHSN
	233604007	Pneumonia		2.16.840.1.113883.6.96	SNOMED CT
	19824006	Skin or Soft Tissue Infection		2.16.840.1.113883.6.96	SNOMED CT
	433202001	Surgical site infection		2.16.840.1.113883.6.96	SNOMED CT
	91302008	Systemic Infection		2.16.840.1.113883.6.96	SNOMED CT
	68566005	Urinary Tract Infection		2.16.840.1.113883.6.96	SNOMED CT

ValueSetOID (localValueSetName)	code	NHSN Display Name	Standard code Display Name	codeSystem	codeSystem Name
2.16.840.1.114222.4.11.3195 (NHSNCriterionOfDiagnosis excerpt) DYNAMIC	2403-4	1 positive culture with ≥103 CFU/ml and < 105 CFU/ml with no more than 2 species of microorganisms		2.16.840.1.113883.6.277	cdcNHSN
	1942-2	>15 colonies cultured from IV cannula tip using semiquantitative culture method		2.16.840.1.113883.6.277	cdcNHSN
	1932-3	>=5% BAL cells w/bacteria		2.16.840.1.113883.6.277	cdcNHSN
	1938-0	4-fold rise in L. pneumophila antibody titer		2.16.840.1.113883.6.277	cdcNHSN
	1935-6	4-fold rise in paired sera for pathogen		2.16.840.1.113883.6.277	cdcNHSN
	128477000	Abscess		2.16.840.1.113883.6.96	SNOMED CT
	...				
	115329001	MRSA		2.16.840.1.113883.6.96	SNOMED CT
	417943000	MSSA		2.16.840.1.113883.6.96	SNOMED CT
	113727004	VRE		2.16.840.1.113883.6.96	SNOMED CT
2.16.840.1.114222.4.11.3194 (NHSNSignificantPathogenCode)	2015-6	MDR-KLEB		2.16.840.1.113883.6.277	cdcNHSN
	2010-7	MDR-ACINE		2.16.840.1.113883.6.277	cdcNHSN
	5933001	CDIF		2.16.840.1.113883.6.96	SNOMED CT
	83419000	Femoral vein		2.16.840.1.113883.6.96	SNOMED CT

See entire table in [Criterion of Diagnosis Value Set](#)

ValueSetOID (localValueSetName)	code	NHSN Display Name	Standard code Display Name	codeSystem	codeSystem Name
DYNAMIC (NHSNInsertionSiteCode)	63190004	Jugular vein		2.16.840.1.113883.6.96	SNOMED CT
	122775001	Vein of upper extremity		2.16.840.1.113883.6.96	SNOMED CT
	122774002	Vein of lower extremity		2.16.840.1.113883.6.96	SNOMED-CT
	307054003	Vein of scalp		2.16.840.1.113883.6.96	SNOMED-CT
	9454009	Subclavian vein		2.16.840.1.113883.6.96	SNOMED-CT
	408728001	Umbilical vein or artery		2.16.840.1.113883.6.96	SNOMED-CT
2.16.840.1.114222.4.11.3181 (NHSNRoleOfPerformerCode)	405279007	Attending physician		2.16.840.1.113883.6.96	SNOMED-CT
	4100-4	IV Team		2.16.840.1.113883.6.277	cdcNHSN
	405277009	Intern/resident		2.16.840.1.113883.6.96	SNOMED-CT
	4101-2	Physician assistant		2.16.840.1.113883.6.277	cdcNHSN
	4102-0	Medical staff not otherwise specified		2.16.840.1.113883.6.277	cdcNHSN
	398130009	Student (medical)		2.16.840.1.113883.6.96	SNOMED-CT
2.16.840.1.114222.4.11.3182 (NHSNReasonForInsertionCode)	65853000	Student (not medical)		2.16.840.1.113883.6.96	SNOMED-CT
	4103-8	Fellow		2.16.840.1.113883.6.277	cdcNHSN
	5105-2	[To address] A new indication for a central line.		2.16.840.1.113883.6.277	cdcNHSN

ValueSetOID (localValueSetName)	code	NHSN Display Name	Standard code Display Name	codeSystem	codeSystem Name
	5106-0	[To replace] An existing, malfunctioning central line.		2.16.840.1.113883.6.277	cdcNHSN
	5107-8	[To replace] An existing central line where infection was suspected.		2.16.840.1.113883.6.277	cdcNHSN
2.16.840.1.114222.4.11.3183 (NHSNSkinPreparationCode)	20791	Chlorhexidine gluconate		2.16.840.1.113883.6.88	RxNorm
	8611	Povidone iodine		2.16.840.1.113883.6.88	RxNorm
	6052	Alcohol		2.16.840.1.113883.6.88	RxNorm
2.16.840.1.114222.4.11.3184 (NHSNSterileBarrierCode)	6122-6	Cap		2.16.840.1.113883.6.277	cdcNHSN
	6110-1	Mask/Eye shield		2.16.840.1.113883.6.277	cdcNHSN
	6112-7	Large sterile drape		2.16.840.1.113883.6.277	cdcNHSN
	6113-5	Sterile gloves		2.16.840.1.113883.6.277	cdcNHSN
	6111-9	Sterile gown		2.16.840.1.113883.6.277	cdcNHSN
2.16.840.1.114222.4.11.3185 (NHSNCatheterTypeCode)	3115-3	PICC		2.16.840.1.113883.6.277	cdcNHSN
	1119-7	Non-tunneled, dialysis		2.16.840.1.113883.6.277	cdcNHSN
	1120-5	Non-tunneled, other than dialysis		2.16.840.1.113883.6.277	cdcNHSN
	1117-1	Tunneled, dialysis		2.16.840.1.113883.6.277	cdcNHSN

ValueSetOID (localValueSetName)	code	NHSN Display Name	Standard code Display Name	codeSystem	codeSystem Name
2.16.840.1.114222.4.11.3186 (NHSNInfluenzaHighRiskCriteriaCode)	1118-9	Tunneled, other than dialysis		2.16.840.1.113883.6.277	cdcNHSN
	1116-3	Umbilical		2.16.840.1.113883.6.277	cdcNHSN
	2180-8	Child/adolescent aged 6 months - 18 years		2.16.840.1.113883.6.277	cdcNHSN
	2182-4	Adult aged ≥ 50 years		2.16.840.1.113883.6.277	cdcNHSN
	2181-6	Child/adolescent aged 6 months - 18 years AND receiving long-term aspirin therapy		2.16.840.1.113883.6.277	cdcNHSN
	2185-7	Condition/disease/history listed in the NHSN protocol as an indication for high risk of influenza.		2.16.840.1.113883.6.277	cdcNHSN
	2184-0	Pregnancy		2.16.840.1.113883.6.277	cdcNHSN
	2183-2	Resident of nursing home or other chronic-care facility		2.16.840.1.113883.6.277	cdcNHSN
	2186-5	Person who lives with or cares for children younger than 6 months of age		2.16.840.1.113883.6.277	cdcNHSN

ValueSetOID (localValueSetName)	code	NHSN Display Name	Standard code Display Name	codeSystem	codeSystem Name
2.16.840.1.114222.4.1.1.3187 (NHSNReasonForDeclineVaccineCode)	2187-3	Person over 6 months of age who has chronic health disorder(s) or compromised immune system		2.16.840.1.113883.6.277	cdcNHSN
	294640001	Allergy to vaccine components		2.16.840.1.113883.6.96	SNOMED-CT
	7186-0	History of Guillian-Barre syndrome within 6 weeks of previous influenza vaccine		2.16.840.1.113883.6.277	cdcNHSN
	7187-7	Current febrile illness (Temp > 101.5)		2.16.840.1.113883.6.277	cdcNHSN
	279926005	Fear of needles/injections		2.16.840.1.113883.6.96	SNOMED-CT
	7165-4	Fear of side effects		2.16.840.1.113883.6.277	cdcNHSN
	7166-2	Perceived ineffectiveness of vaccine		2.16.840.1.113883.6.277	cdcNHSN
	7167-0	Religious or philosophical objections		2.16.840.1.113883.6.277	cdcNHSN

ValueSetOID (localValueSetName)	code	NHSN Display Name	Standard code Display Name	codeSystem	codeSystem Name
	7168-8	Concern for transmitting vaccine virus to contacts		2.16.840.1.113883.6.277	cdcNHSN
2.16.840.1.114222.4.11.3188 (NHSNAdministrationLocationTypeCode) 2.16.840.1.114222.4.11.3189 (NHSNVaccineTypeCode) DYNAMIC	9170-2	offsite		2.16.840.1.113883.6.277	cdcNHSN
	9169-4	onsite		2.16.840.1.113883.6.277	cdcNHSN
	805510	Afluria®		2.16.840.1.113883.6.88	RxNorm
	805516	Fluarix® 2008- 2009 formula		2.16.840.1.113883.6.88	RxNorm
	805528	Flulaval®		2.16.840.1.113883.6.88	RxNorm
	805548	Flumist®		2.16.840.1.113883.6.88	RxNorm
	805560	Fluvirin®		2.16.840.1.113883.6.88	RxNorm
	545246	Fluzone®		2.16.840.1.113883.6.88	RxNorm
	IM	Intramuscular		2.16.840.1.113883.12.162	HL7 RouteOfAdministration
	SC	Subcutaneous		2.16.840.1.113883.12.162	HL7 RouteOfAdministration
2.16.840.1.114222.4.11.3190 (NHSNRouteOfAdministrationCode)	IN	Intranasal		2.16.840.1.113883.12.162	HL7 RouteOfAdministration

ValueSetOID (localValueSetName)	code	NHSN Display Name	Standard code Display Name	codeSystem	codeSystem Name
2.16.840.1.114222.4.11.887 (NHSNOccupationCode excerpt) DYNAMIC See entire table in Occupation Value Set Codes are available from http://phinvads.cdc.gov/vads/SearchVocab.action	3747A0650 X	Attendant/orderly		2.16.840.1.113883.6.101	NUCC Provider Codes
	2205-3	Clerical/administrative		2.16.840.1.113883.6.277	cdcNHSN
	367500000 X	Nurse Anesthetist		2.16.840.1.113883.6.101	NUCC Provider Codes
	367A00000 X	Nurse Midwife		2.16.840.1.113883.6.101	NUCC Provider Codes
	332B00000 X	Central Supply		2.16.840.1.113883.6.101	NUCC Provider Codes
	21-1000	Counselor/Social Worker		2.16.840.1.113883.6.243	Occupation (SOC 2000)
	...				
2.16.840.1.114222.4.11.3191 (NHSNClinicalSpecialtyCode) DYNAMIC Codes are available from http://www.wpc-edi.com/taxonomy				2.16.840.1.113883.6.101	NUCCProviderCodes
	8178-6	Live Attenuated Influenza Vaccine Information Statement		2.16.840.1.113883.6.277	cdcNHSN
2.16.840.1.114222.4.11.3192 (NHSNInformationStatementCode)	8179-4	Inactivated Influenza Vaccine Information Statement		2.16.840.1.113883.6.277	cdcNHSN

ValueSetOID (localValueSetName)	code	NHSN Display Name	Standard code Display Name	codeSystem	codeSystem Name
2.16.840.1.114222.4.11.3193 (NHSNAdverseReactionCode)	57676002	Arthralgia		2.16.840.1.113883.6.96	SNOMED-CT
	43724002	Chills		2.16.840.1.113883.6.96	SNOMED-CT
	49727002	Cough		2.16.840.1.113883.6.96	SNOMED-CT
	386661006	Fever		2.16.840.1.113883.6.96	SNOMED-CT
	25064002	Headache		2.16.840.1.113883.6.96	SNOMED-CT
	247472004	Hives		2.16.840.1.113883.6.96	SNOMED-CT
	271795006	Malaise/fatigue		2.16.840.1.113883.6.96	SNOMED-CT
	68962001	Myalgia		2.16.840.1.113883.6.96	SNOMED-CT
	68235000	Nasal congestion		2.16.840.1.113883.6.96	SNOMED-CT
	95388000	Pain/soreness at injection site		2.16.840.1.113883.6.96	SNOMED-CT
	271807003	Rash		2.16.840.1.113883.6.96	SNOMED-CT
	64531003	Rhinorrhea		2.16.840.1.113883.6.96	SNOMED-CT
	267036007	Shortness of breath/difficulty breathing		2.16.840.1.113883.6.96	SNOMED-CT
2.16.840.1.114222.4.11.3234 (NHSNPopulationCategoryCode)	162397003	Sore throat		2.16.840.1.113883.6.96	SNOMED-CT
	65124004	Swelling		2.16.840.1.113883.6.96	SNOMED-CT
	3300-1	Birth weight under 750gm		2.16.840.1.113883.6.277	cdcNHSN
	3301-9	Birth weight 751-1000gm		2.16.840.1.113883.6.277	cdcNHSN
	3302-7	Birth weight 1001-1500gm		2.16.840.1.113883.6.277	cdcNHSN
	3303-5	Birth weight 1501-2500gm		2.16.840.1.113883.6.277	cdcNHSN
	3304-3	Birth weight over 2500gm		2.16.840.1.113883.6.277	cdcNHSN

ValueSetOID (localValueSetName)	code	NHSN Display Name	Standard code Display Name	codeSystem	codeSystem Name
2.16.840.1.114222.4.11.3249 NHSN Specimen Type Code (excerpt) See entire table in Specimen Type Value Set	258541006	Cardiovascular (NOS)	Cardiovascular sample (specimen)	2.16.840.1.113883.6.96	SNOMED CT
	309479002	Artery sample	Artery sample (specimen)	2.16.840.1.113883.6.96	SNOMED CT
	119297000	Blood specimen	Blood specimen (specimen)	2.16.840.1.113883.6.96	SNOMED CT
	258452003	Chylous fluid sample	Chylous fluid sample (specimen)	2.16.840.1.113883.6.96	SNOMED CT
	127462005	Specimen from heart	Specimen from heart (specimen)	2.16.840.1.113883.6.96	SNOMED CT
...					

APPENDIX J — LARGE VOCABULARIES

Drug-susceptibility Test Codes

This is a **DYNAMIC** value set. See [0 In addition](#), in preparing this release, all of the HAI constraints were recorded in a Templates Database that also houses the templates for “HL7 Implementation Guide for CDA Release 2, CDA for Public Health Case Reports, Based on HL7 CDA Release 2.0” balloted in May 2009. The conformance statements in this release are generated directly from the database and use a new format, which consolidates explanatory text for each template. The conformance-statement format is consistent with that used for PHCR.

In addition, the conditional conformance statements in the header section were updated with specialization templates for single-person and population-summary reports.

Change Notification Process to obtain any changes made since issuance of this implementation guide.

Table 62: Drug-susceptibility Tests Value Set

Value Set: NHSNDrugSusceptibilityTestsCode 2.16.840.1.113883.13.15 Code System: LOINC 2.16.840.1.113883.6.1	
LOINC Code	LOINC Short Name
18860-7	Amikacin Susc Islt
18862-3	Amoxicillin+Clav Susc Islt
18864-9	Ampicillin Susc Islt
18865-6	Ampicillin+Sulbac Susc Islt
18866-4	Azithromycin Susc Islt
18868-0	Aztreonam Susc Islt
18878-9	Cefazolin Susc Islt
18879-7	Cefepime Susc Islt
18886-2	Cefotaxime Susc Islt
18887-0	Cefotetan Susc Islt
18888-8	Cefoxitin Susc Islt
18893-8	Ceftazidime Susc Islt
18895-3	Ceftriaxone Susc Islt
35783-0	Cefuroxime Oral Susc Islt
18900-1	Cephalothin Susc Islt
18906-8	Ciprofloxacin Susc Islt
18907-6	Clarithro Susc Islt
18908-4	Clindamycin Susc Islt
35789-7	Daptomycin Susc Islt
35802-8	Ertapenem Susc Islt
18919-1	Erythromycin Susc Islt
31038-3	Gatifloxacin Susc Islt
18928-2	Gentamicin Susc Islt

Value Set: NHSNDrugSusceptibilityTestsCode 2.16.840.1.113883.13.15 Code System: LOINC 2.16.840.1.113883.6.1	
LOINC Code	LOINC Short Name
18932-4	Imipenem Susc Islt
20629-2	L-Floxacin Susc Islt
29258-1	Linezolid Susc Islt
18943-1	Meropenem Susc Islt
31039-1	Moxifloxacin Susc Islt
18959-7	Ofloxacin Susc Islt
18961-3	Oxacillin Susc Islt
18965-4	Penicillin G Susc Islt
18970-4	Piperacillin+Tazobac Susc Islt
18969-6	Piperacillin Susc Islt
23640-6	Quinupristin+Dalbaprist Susc Islt
18974-6	Rifampin Susc Islt
18993-6	Tetracycline Susc Islt
18995-1	Ticarcillin+Clav Susc Islt
18994-4	Ticarcillin Susc Islt
18996-9	Tobramycin Susc Islt
18998-5	TMP SMX Susc Islt
19000-9	Vancomycin Susc Islt

Pathogen Codes

In this table of pathogen codes, the first column categorizes the type of organism. For bacteria only, in a Findings Section, NHSN requires at least one drug-susceptibility test.

This is a **DYNAMIC** value set. See [0 In addition](#), in preparing this release, all of the HAI constraints were recorded in a Templates Database that also houses the templates for “HL7 Implementation Guide for CDA Release 2, CDA for Public Health Case Reports, Based on HL7 CDA Release 2.0” balloted in May 2009. The conformance statements in this release are generated directly from the database and use a new format, which consolidates explanatory text for each template. The conformance-statement format is consistent with that used for PHCR.

In addition, the conditional conformance statements in the header section were updated with specialization templates for single-person and population-summary reports.

Change Notification Process to obtain any changes made since issuance of this implementation guide.

Table 63: Pathogen Value Set

Value Set: NHSNPathogenCode 2.16.840.1.113883.13.16 Code System: SNOMED CT 2.16.840.1.113883.6.96 or cdcNHSN 2.16.840.1.113883.6.277			
Category	cdcNHSN	Display Name	SDO Fully Specified Name
--	3119-7	No pathogen identified	
Category	SNOMED CT Concept ID	Display Name	SNOMED CT Fully Specified Name
BACTERIUM	372391001	Abiotrophia species	Abiotrophia species (organism)
PARASITE	50875003	Acanthamoeba	Acanthamoeba (organism)
BACTERIUM	413423003	Achromobacter spp.	Achromobacter species (organism)
BACTERIUM	413424009	Achromobacter xylosoxidans	Achromobacter xylosoxidans (organism)
BACTERIUM	423897003	Achromobacter xylosoxidans xylosoxidans	Achromobacter xylosoxidans xylosoxidans (organism)
BACTERIUM	59995003	Achromobacter, group Vd biotype 1	Achromobacter, group Vd biotype 1 (organism)
BACTERIUM	55156008	Achromobacter, group Vd biotype 2	Achromobacter, group Vd biotype 2 (organism)
BACTERIUM	63005002	Acidaminococcus fermentans	Acidaminococcus fermentans (organism)
BACTERIUM	131202007	Acidaminococcus spp.	Acidaminococcus species (organism)
BACTERIUM	82550008	Acinetobacter calcoaceticus	Acinetobacter calcoaceticus (organism)
BACTERIUM	113376007	Acinetobacter calcoaceticus-baumannii complex (ACCA)	Acinetobacter calcoaceticus-Acinetobacter baumannii complex (organism)
BACTERIUM	113377003	Acinetobacter genospecies 3	Acinetobacter genospecies 3 (organism)

Value Set: NHSNPathogenCode 2.16.840.1.113883.13.16 Code System: SNOMED CT 2.16.840.1.113883.6.96 or cdcNHSN 2.16.840.1.113883.6.277			
BACTERIUM	77045006	Acinetobacter haemolyticus	Acinetobacter haemolyticus (organism)
BACTERIUM	252000	Acinetobacter johnsonii	Acinetobacter johnsonii (organism)
BACTERIUM	13879009	Acinetobacter junii	Acinetobacter junii (organism)
BACTERIUM	83088009	Acinetobacter lwoffii	Acinetobacter lwoffii (organism)
BACTERIUM	7757008	Acinetobacter spp.	Genus Acinetobacter (organism)

Value Set: NHSNPathogenCode 2.16.840.1.113883.13.16
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or cdcNHSN 2.16.840.1.113883.6.277

Category	SNOMED CT Concept ID	Display Name	SNOMED CT Fully Specified Name
FUNGUS	63996006	Acremonium	Acremonium (organism)
BACTERIUM	113766007	Actinobacillus actinomycetemcomitans	Haemophilus actinomycetemcomitans (organism)
BACTERIUM	27165004	Actinobacillus equuli	Actinobacillus equuli (organism)
BACTERIUM	78043002	Actinobacillus lignieresii	Actinobacillus lignieresii (organism)
BACTERIUM	116383006	Actinobacillus spp.	Actinobacillus species (organism)
BACTERIUM	112272003	Actinobacillus suis	Actinobacillus suis (organism)
BACTERIUM	1839009	Actinobacillus ureae	Actinobacillus ureae (organism)
BACTERIUM	59806008	Actinomyces bovis	Actinomyces bovis (organism)
BACTERIUM	113415003	Actinomyces georgiae	Actinomyces georgiae (organism)
BACTERIUM	113416002	Actinomyces gerencseriae	Actinomyces gerencseriae (organism)
BACTERIUM	46369004	Actinomyces israelii	Actinomyces israelii (organism)
BACTERIUM	3174002	Actinomyces meyeri	Actinomyces meyeri (organism)
BACTERIUM	8940004	Actinomyces naeslundii	Actinomyces naeslundii (organism)
BACTERIUM	12069003	Actinomyces odontolyticus	Actinomyces odontolyticus (organism)
BACTERIUM	258933002	Actinomyces pyogenes	Arcanobacterium pyogenes (organism)
BACTERIUM	40560008	Actinomyces spp.	Genus Actinomyces (organism)
BACTERIUM	33529006	Actinomyces viscosus	Actinomyces viscosus (organism)
VIRUS	424470006	Adenovirus	Family Adenoviridae (organism)
BACTERIUM	131206005	Aerococcus spp.	Aerococcus species (organism)
BACTERIUM	243230001	Aerococcus urinae	Aerococcus urinae (organism)
BACTERIUM	78803006	Aerococcus viridans	Aerococcus viridans (organism)
BACTERIUM	115036005	Aeromonas caviae	Aeromonas punctata (organism)
BACTERIUM	85823000	Aeromonas hydrophila	Aeromonas hydrophila (organism)
BACTERIUM	115034008	Aeromonas jandaei	Aeromonas jandei (organism)
BACTERIUM	65192005	Aeromonas media	Aeromonas media (organism)
BACTERIUM	30334005	Aeromonas salmonicida	Aeromonas salmonicida (organism)
BACTERIUM	115039003	Aeromonas schubertii	Aeromonas schubertii (organism)
BACTERIUM	43731003	Aeromonas sobria	Aeromonas sobria (organism)
BACTERIUM	131207001	Aeromonas spp.	Aeromonas species (organism)
BACTERIUM	243316008	Aeromonas trota	Aeromonas trota (organism)

Value Set: NHSNPathogenCode 2.16.840.1.113883.13.16
 Code System: SNOMED CT 2.16.840.1.113883.6.96
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Category	SNOMED CT Concept ID	Display Name	SNOMED CT Fully Specified Name
BACTERIUM	9281006	Aeromonas veronii	Aeromonas veronii (organism)
BACTERIUM	425549009	Aeromonas veronii biovar sobria	Aeromonas veronii biovar sobria (organism)
BACTERIUM	425796003	Aeromonas veronii biovar veronii	Aeromonas veronii biovar veronii (organism)
BACTERIUM	131208006	Agrobacterium spp.	Agrobacterium species (organism)
BACTERIUM	113423001	Agrobacterium tumefaciens	Agrobacterium tumefaciens (organism)
BACTERIUM	25223004	Alcaligenes faecalis	Alcaligenes fecalis (organism)
BACTERIUM	58251005	Alcaligenes piechaudii	Alcaligenes piechaudii (organism)
BACTERIUM	131201000	Alcaligenes spp.	Alcaligenes species (organism)
BACTERIUM	42947002	Alcaligenes xylosoxidans subsp denit	Alcaligenes xylosoxidans ss. denitrificans (organism)
BACTERIUM	53735001	Alcaligenes xylosoxidans subsp. xylosox.	Alcaligenes xylosoxidans ss. xylosoxidans (organism)
BACTERIUM	302608002	Alpha non-hemolytic streptococcus	Alpha non-hemolytic streptococcus (organism)
FUNGUS	75059003	Alternaria	Genus Alternaria (organism)
BACTERIUM	59343002	Anaerobe spp.	Anaerobic bacteria (organism)
BACTERIUM	131212000	Anaerobiospirillum spp.	Anaerobiospirillum species (organism)
BACTERIUM	46934005	Anaerobiospirillum succinoproducens	Anaerobiospirillum succinoproducens (organism)
BACTERIUM	24716009	Anaerorhabdus furcosus	Anaerorhabdus furcosus (organism)
BACTERIUM	131213005	Anaerorhabdus spp.	Anaerorhabdus species (organism)
PARASITE	17113000	Ancylostoma	Ancylostoma (organism)
PARASITE	7153002	Angiostrongylus	Angiostrongylus (organism)
BACTERIUM	44723000	Arcanobacterium haemolyticum	Arcanobacterium haemolyticum (organism)
BACTERIUM	131216002	Arcanobacterium spp.	Arcanobacterium species (organism)
BACTERIUM	7858008	Arcobacter cryaerophilus	Campylobacter cryaerophila (organism)
BACTERIUM	408629003	Arcobacter nitrofigilis	Arcobacter nitrofigilis (organism)
BACTERIUM	131407003	Arcobacter spp.	Arcobacter species (organism)
VIRUS	58234003	Arenavirus type unspecified	Genus Arenavirus (organism)

Value Set: NHSNPathogenCode 2.16.840.1.113883.13.16
 Code System: SNOMED CT 2.16.840.1.113883.6.96
 or cdcNHSN 2.16.840.1.113883.6.277

Category	SNOMED CT Concept ID	Display Name	SNOMED CT Fully Specified Name
PARASITE	66953006	Ascaris	Ascaris (organism)
FUNGUS	66821001	Aspergillus flavus	Aspergillus flavus (organism)
FUNGUS	32684000	Aspergillus fumigatus	Aspergillus fumigatus (organism)
FUNGUS	89354002	Aspergillus niger	Aspergillus niger (organism)
FUNGUS	35805009	Aspergillus oryzae	Aspergillus oryzae (organism)
FUNGUS	115994009	Aspergillus spp.	Aspergillus species (organism)
PARASITE	35029001	Babesia	Babesia (organism)
PARASITE	76828008	Babesia microti	Babesia microti (organism)
BACTERIUM	21927003	Bacillus anthracis	Bacillus anthracis
BACTERIUM	84408007	Bacillus cereus	Bacillus cereus (organism)
BACTERIUM	71812004	Bacillus circulans	Bacillus circulans (organism)
BACTERIUM	81346002	Bacillus coagulans	Bacillus coagulans (organism)
BACTERIUM	13430008	Bacillus firmus	Bacillus firmus (organism)
BACTERIUM	3020006	Bacillus lentus	Bacillus lentus (organism)
BACTERIUM	74867004	Bacillus licheniformis	Bacillus licheniformis (organism)
BACTERIUM	79109002	Bacillus megaterium	Bacillus megaterium (organism)
BACTERIUM	16580009	Bacillus pumilus	Bacillus pumilus (organism)
BACTERIUM	413352001	Bacillus species not Bacillus anthracis	Bacillus species not Bacillus anthracis (organism)
BACTERIUM	70313006	Bacillus sphaericus	Bacillus sphaericus (organism)
BACTERIUM	372377007	Bacillus spp.	Bacillus species (organism)
BACTERIUM	25484005	Bacillus stearothermophilus	Bacillus stearothermophilus (organism)
BACTERIUM	83512007	Bacillus subtilis	Bacillus subtilis (organism)
BACTERIUM	413621007	Bacillus subtilis group	Bacillus subtilis group (organism)
BACTERIUM	64840009	Bacillus thuringiensis	Bacillus thuringiensis (organism)
BACTERIUM	14342006	Bacteroides caccae	Bacteroides caccae (organism)
BACTERIUM	48496008	Bacteroides capillosus	Bacteroides capillosus (organism)
BACTERIUM	86193002	Bacteroides coagulans	Bacteroides coagulans (organism)
BACTERIUM	45863003	Bacteroides distasonis	Bacteroides distasonis (organism)
BACTERIUM	90072006	Bacteroides eggerthii	Bacteroides eggerthii (organism)

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Category	SNOMED CT Concept ID	Display Name	SNOMED CT Fully Specified Name
BACTERIUM	86930002	Bacteroides forsythus	Bacteroides forsythus (organism)
BACTERIUM	55247009	Bacteroides fragilis	Bacteroides fragilis (organism)
BACTERIUM	113528007	Bacteroides gracilis	Campylobacter gracilis (organism)
BACTERIUM	114165005	Bacteroides levii	Porphyromonas levii (organism)
BACTERIUM	38895000	Bacteroides merdae	Bacteroides merdae (organism)
BACTERIUM	86936008	Bacteroides ovatus	Bacteroides ovatus
BACTERIUM	114170003	Bacteroides pneumosintes	Dialister pneumosintes (organism)
BACTERIUM	66172007	Bacteroides putredinis	Bacteroides putredinis (organism)
BACTERIUM	59313004	Bacteroides splanchnicus	Bacteroides splanchnicus (organism)
BACTERIUM	131218001	Bacteroides spp.	Bacteroides species (organism)
BACTERIUM	163009	Bacteroides stercoris	Bacteroides stercoris (organism)
BACTERIUM	85541000	Bacteroides tectum	Bacteroides tectum (organism)
BACTERIUM	34236001	Bacteroides thetaiotaomicron	Bacteroides thetaiotaomicron (organism)
BACTERIUM	59604009	Bacteroides uniformis	Bacteroides uniformis (organism)
BACTERIUM	36392001	Bacteroides ureolyticus	Bacteroides ureolyticus (organism)
BACTERIUM	52798008	Bacteroides vulgatus	Bacteroides vulgatus (organism)
PARASITE	14479005	Balantidium	Balantidium (organism)
BACTERIUM	243352007	Bartonella bacilliformis	Bartonella bacilliformis (organism)
BACTERIUM	131413007	Bartonella spp.	Bartonella species (organism)
FUNGUS	26217004	Basidiobolus	Basidiobolus (organism)
FUNGUS	66193005	Beauveria	Beauveria (organism)
BACTERIUM	413643004	Beta-hemolytic Streptococcus, group A	Beta-hemolytic Streptococcus, group A (organism)
BACTERIUM	406609007	Beta-hemolytic streptococcus, non-Group A, non-Group B	Beta-hemolytic streptococcus, non-Group A, non-Group B (organism)
BACTERIUM	27108000	Bifidobacterium bifidum	Bifidobacterium bifidum (organism)
BACTERIUM	35011006	Bifidobacterium breve	Bifidobacterium breve (organism)
BACTERIUM	36623007	Bifidobacterium dentium	Bifidobacterium dentium (organism)
BACTERIUM	35848003	Bifidobacterium infantis	Bifidobacterium infantis (organism)
BACTERIUM	19464000	Bifidobacterium longum	Bifidobacterium longum (organism)
BACTERIUM	116384000	Bifidobacterium spp.	Bifidobacterium species (organism)
BACTERIUM	131425005	Bilophila spp.	Bilophila species (organism)

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Category	SNOMED CT Concept ID	Display Name	SNOMED CT Fully Specified Name
BACTERIUM	114243003	Bilophila wadsworthia	Bilophia wadsworthia (organism)
FUNGUS	65615007	Blastomyces dermatitidis	Blastomyces dermatitidis (organism)
FUNGUS	115995005	Blastomyces spp.	Blastomyces species (organism)
FUNGUS	67999003	Blastoschizomyces pseudotrichosporon	Blastoschizomyces pseudotrichosporon (organism)
BACTERIUM	43354005	Bordetella avium	Bordetella avium (organism)
BACTERIUM	10620008	Bordetella bronchiseptica	Bordetella bronchiseptica (organism)
BACTERIUM	26183002	Bordetella parapertussis	Bordetella parapertussis (organism)
BACTERIUM	5247005	Bordetella pertussis	Bordetella pertussis (organism)
BACTERIUM	131220003	Bordetella spp.	Bordetella species (organism)
BACTERIUM	76327009	Borrelia burgdorferi	Borrelia burgdorferi (organism)
BACTERIUM	113497007	Borrelia garinii	Borrelia garinii (organism)
BACTERIUM	62748005	Borrelia hermsii	Borrelia hermsii (organism)
BACTERIUM	41704008	Borrelia parkeri	Borrelia parkeri (organism)
BACTERIUM	34726005	Borrelia recurrentis	Borrelia recurrentis (organism)
BACTERIUM	131221004	Borrelia spp.	Borrelia species (organism)
BACTERIUM	24986006	Borrelia turicatae	Borrelia turicatae (organism)
BACTERIUM	114117009	Brevibacillus brevis	Brevibacillus brevis (organism)
BACTERIUM	114121002	Brevibacillus laterosporus	Brevibacillus laterosporus (organism)
BACTERIUM	24224000	Brucella abortus	Brucella abortus (organism)
BACTERIUM	38025008	Brucella canis	Brucella canis (organism)
BACTERIUM	72829003	Brucella melitensis	Brucella melitensis (organism)
BACTERIUM	116505000	Brucella spp.	Brucella species (organism)
BACTERIUM	48317004	Brucella suis	Brucella suis (organism)
BACTERIUM	75464008	Budvicia aquatica	Budvicia aquatica (organism)
BACTERIUM	131253008	Budvicia spp.	Budvicia species (organism)
VIRUS	64979004	Bunyavirus California encephalitis group	California encephalitis virus (organism)
VIRUS	79875007	Bunyavirus Crimean-Congo hemorrhagic	Crimean-Congo hemorrhagic fever virus (organism)
VIRUS	28335002	Bunyavirus Rift Valley fever	Rift Valley fever virus (organism)
VIRUS	243615000	Bunyavirus type unspecified	Family Bunyaviridae (organism)
BACTERIUM	113669008	Burkholderia cepacia	Burkholderia cepacia (organism)

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Category	SNOMED CT Concept ID	Display Name	SNOMED CT Fully Specified Name
BACTERIUM	113671008	Burkholderia gladioli	Burkholderia gladioli (organism)
BACTERIUM	113674000	Burkholderia mallei	Burkholderia mallei (organism)
BACTERIUM	114053008	Burkholderia pickettii	Ralstonia picketti (organism)
BACTERIUM	116399000	Burkholderia pseudomallei	Burkholderia pseudomallei (organism)
BACTERIUM	116201008	Burkholderia spp.	Burkholderia species (organism)
BACTERIUM	10969007	Buttiauxella agrestis	Buttiauxella agrestis (organism)
BACTERIUM	131254002	Buttiauxella spp.	Buttiauxella species (organism)
VIRUS	243627002	Calicivirus	Family Caliciviridae (organism)
BACTERIUM	417443008	Calymmatobacterium granulomatis	Klebsiella granulomatis (organism)
BACTERIUM	131231006	Calymmatobacterium spp.	Calymmatobacterium species (organism)
BACTERIUM	40614002	Campylobacter coli	Campylobacter coli (organism)
BACTERIUM	40614002	Campylobacter concisus	Campylobacter coli (organism)
BACTERIUM	116037008	Campylobacter curvus (anaerobic)	Campylobacter curvus (organism)
BACTERIUM	64589009	Campylobacter fetus ss. fetus	Campylobacter fetus ss. fetus (organism)
BACTERIUM	84210007	Campylobacter fetus ssp unspecified	Campylobacter fetus (organism)
BACTERIUM	60817000	Campylobacter fetus ssp venerealis	Campylobacter fetus ss. venerealis (organism)
BACTERIUM	9041007	Campylobacter hyointestinalis	Campylobacter hyointestinalis (organism)
BACTERIUM	113523003	Campylobacter jejuni ssp. doylei	Campylobacter jejuni ss doylei (organism)
BACTERIUM	113524009	Campylobacter jejuni ssp. jejuni	Campylobacter jejuni ss jejuni (organism)
BACTERIUM	66543000	Campylobacter jejuni ssp. unspecified	Campylobacter jejuni (organism)
BACTERIUM	116386003	Campylobacter lari	Campylobacter lari (organism)
BACTERIUM	87402003	Campylobacter mucosalis	Campylobacter mucosalis (organism)
BACTERIUM	113525005	Campylobacter rectus (anaerobic)	Campylobacter rectus (organism)
BACTERIUM	116457002	Campylobacter spp.	Campylobacter species (organism)

Value Set: NHSNPathogenCode 2.16.840.1.113883.13.16
 Code System: SNOMED CT 2.16.840.1.113883.6.96
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Category	SNOMED CT Concept ID	Display Name	SNOMED CT Fully Specified Name
BACTERIUM	19552006	Campylobacter sputorum ssp bubulus	Campylobacter sputorum ss. bubulus (organism)
BACTERIUM	58928003	Campylobacter sputorum ssp sputorum	Campylobacter sputorum ss. sputorum (organism)
FUNGUS	53326005	Candida albicans	Candida albicans (organism)
FUNGUS	283868009	Candida catenulata	Candida catenulata (organism)
FUNGUS	283867004	Candida ciferrii	Candida ciferrii (organism)
FUNGUS	115952006	Candida dubliniensis	Candida dubliniensis (organism)
FUNGUS	415888004	Candida famata	Candida famata (organism)
FUNGUS	16557001	Candida guilliermondii	Candida guilliermondii (organism)
FUNGUS	283874009	Candida guilliermondii var membranaefaciens	Candida guilliermondii var membranaefaciens (organism)
FUNGUS	243452008	Candida haemulonii	Candida haemulonii (organism)
FUNGUS	283871001	Candida inconspicua	Candida inconspicua (organism)
FUNGUS	243455005	Candida intermedia	Candida intermedia (organism)
FUNGUS	243431000	Candida kefyr	Kluyveromyces marxianus
FUNGUS	76995003	Candida krusei	Candida krusei (organism)
FUNGUS	116458007	Candida lambica	Candida lambica (organism)
FUNGUS	63775007	Candida lipolytica	Candida lipolytica (organism)
FUNGUS	47608006	Candida lusitanae	Candida lusitanae (organism)
FUNGUS	243458007	Candida norvegensis	Candida norvegensis (organism)
FUNGUS	61302002	Candida parapsilosis	Candida parapsilosis (organism)
FUNGUS	115953001	Candida pelliculosa	Candida pelliculosa (organism)
FUNGUS	283870000	Candida pintolopesii	Candida pintolopesii (organism)
FUNGUS	243431000	Candida pseudotropicalis (organism)	Kluyveromyces marxianus
FUNGUS	243459004	Candida pulcherrima	Candida pulcherrima (organism)
FUNGUS	23773004	Candida rugosa	Candida rugosa (organism)
FUNGUS	372381007	Candida spp.	Candida species (organism)
FUNGUS	20849004	Candida stellatoidea	Candida stellatoidea (organism)
FUNGUS	47885008	Candida tropicalis	Candida tropicalis (organism)
FUNGUS	243464000	Candida utilis	Candida utilis (organism)

Value Set: NHSNPathogenCode 2.16.840.1.113883.13.16
 Code System: SNOMED CT 2.16.840.1.113883.6.96
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Category	SNOMED CT Concept ID	Display Name	SNOMED CT Fully Specified Name
FUNGUS	45362004	Candida vini	Candida vini (organism)
FUNGUS	243465004	Candida viswanathii	Candida viswanathii (organism)
FUNGUS	243466003	Candida zeylanoides	Candida zeylanoides (organism)
BACTERIUM	113529004	Capnocytophaga canimorsus	Capnocytophaga canimorsus (organism)
BACTERIUM	66463009	Capnocytophaga gingivalis	Capnocytophaga gingivalis (organism)
BACTERIUM	4256006	Capnocytophaga ochracea	Capnocytophaga ochracea (organism)
BACTERIUM	116387007	Capnocytophaga spp.	Capnocytophaga species (organism)
BACTERIUM	89892005	Capnocytophaga sputigena	Capnocytophaga sputigena (organism)
BACTERIUM	7333005	Cardiobacterium hominis	Cardiobacterium hominis (organism)
BACTERIUM	131232004	Cardiobacterium spp.	Cardiobacterium species (organism)
BACTERIUM	116405002	CDC group EF-4b	Centers for Disease Control and Prevention (CDC) group EF-4b (organism)
BACTERIUM	127534000	CDC group IVc-2	Centers for Disease Control and Prevention (CDC) group IVc-2 (organism)
BACTERIUM	413797008	CDC Group Vb-3	Centers for Disease Control and Prevention (CDC) Group Vb-3 (organism)
BACTERIUM	30854004	Cedecea davisae	Cedecea davisae (organism)
BACTERIUM	2345009	Cedecea lapagei	Cedecea lapagei (organism)
BACTERIUM	83767006	Cedecea neteri	Cedecea neteri (organism)
BACTERIUM	243292007	Cedecea species 3	Cedecea species 3 (organism)
BACTERIUM	243293002	Cedecea species 5	Cedecea species 5 (organism)
BACTERIUM	131255001	Cedecea spp.	Cedecea species (organism)
BACTERIUM	72002007	Centipeda periodontii	Centipeda periodontii (organism)
BACTERIUM	131239008	Centipeda spp.	Centipeda species (organism)
BACTERIUM	131418003	Chlamydia spp.	Chlamydia species (organism)
BACTERIUM	103514009	Chlamydia pneumoniae	Chlamydophila pneumoniae (organism)
BACTERIUM	14590003	Chlamydia psittaci	Chlamydophila psittaci (organism)

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Category	SNOMED CT Concept ID	Display Name	SNOMED CT Fully Specified Name
BACTERIUM	63938009	Chlamydia trachomatis	Chlamydia trachomatis (organism)
BACTERIUM	116459004	Chromobacterium spp.	Chromobacterium species (organism)
BACTERIUM	11042002	Chromobacterium violaceum	Chromobacterium violaceum (organism)
BACTERIUM	113548000	Chryseobacterium gleum	Chryseobacterium gleum (organism)
BACTERIUM	113549008	Chryseobacterium indologenes	Chryseobacterium indologenes (organism)
BACTERIUM	116388002	Chryseobacterium species	Chryseobacterium species (organism)
BACTERIUM	33919008	Chryseomonas luteola	Chryseomonas luteola (organism)
BACTERIUM	131233009	Chryseomonas spp.	Chryseomonas species (organism)
BACTERIUM	55744003	Citrobacter amalonaticus	Citrobacter amalonaticus (organism)
BACTERIUM	114262000	Citrobacter braakii	Citrobacter braakii (organism)
BACTERIUM	114264004	Citrobacter diversus	Citrobacter koseri (organism)
BACTERIUM	114263005	Citrobacter farmeri	Citrobacter farmeri (organism)
BACTERIUM	6265002	Citrobacter freundii	Citrobacter freundii (organism)
BACTERIUM	114264004	Citrobacter koseri	Citrobacter koseri (organism)
BACTERIUM	114265003	Citrobacter sedlakii	Citrobacter sedlakii (organism)
BACTERIUM	131256000	Citrobacter spp.	Citrobacter species (organism)
BACTERIUM	114442006	Citrobacter werkmanii	Citrobacter werkmanii (organism)
BACTERIUM	114443001	Citrobacter youngae	Citrobacter youngae (organism)
FUNGUS	372389009	Cladosporium spp.	Cladosporium species (organism)
BACTERIUM	84958008	Clostridium absonum	Clostridium sardiniense (organism)
BACTERIUM	113565009	Clostridium argentinense	Clostridium argentiense (organism)
BACTERIUM	31169007	Clostridium baratii	Clostridium baratii (organism)
BACTERIUM	8208007	Clostridium bifermentans	Clostridium bifermentans (organism)
BACTERIUM	13080008	Clostridium botulinum	Clostridium botulinum (organism)
BACTERIUM	18065004	Clostridium botulinum, type A	Clostridium botulinum, type A (organism)
BACTERIUM	8386006	Clostridium botulinum, type E	Clostridium botulinum, type E (organism)
BACTERIUM	32829006	Clostridium botulinum, type F	Clostridium botulinum, type F (organism)

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BACTERIUM	19084008	Clostridium butyricum	Clostridium butyricum (organism)
BACTERIUM	16616000	Clostridium cadaveris	Clostridium cadaveris (organism)
BACTERIUM	7889007	Clostridium carnis	Clostridium carnis (organism)
BACTERIUM	53220001	Clostridium clostridiiforme	Clostridium clostridiiforme (organism)
BACTERIUM	76955000	Clostridium cochlearium	Clostridium cochlearium (organism)
BACTERIUM	5933001	Clostridium difficile	Clostridium difficile (organism)
BACTERIUM	14264000	Clostridium fallax	Clostridium fallax (organism)
BACTERIUM	10467001	Clostridium ghonii	Clostridium ghonii (organism)
BACTERIUM	112279007	Clostridium glycolicum	Clostridium glycolicum (organism)
BACTERIUM	45724004	Clostridium haemolyticum	Clostridium haemolyticum (organism)
BACTERIUM	19185007	Clostridium hastiforme	Clostridium hastiforme (organism)
BACTERIUM	87443003	Clostridium histolyticum	Clostridium histolyticum (organism)
BACTERIUM	50884003	Clostridium indolis	Clostridium indolis (organism)
BACTERIUM	19415008	Clostridium innocuum	Clostridium innocuum (organism)
BACTERIUM	40423006	Clostridium irregulare	Clostridium irregulare (organism)
BACTERIUM	48305001	Clostridium limosum	Clostridium limosum (organism)
BACTERIUM	12948002	Clostridium malenominatum	Clostridium malenominatum (organism)
BACTERIUM	53591005	Clostridium novyi type A	Clostridium novyi, type A (organism)
BACTERIUM	29280008	Clostridium oroticum	Clostridium oroticum (organism)
BACTERIUM	41966004	Clostridium paraputrificum	Clostridium paraputrificum (organism)
BACTERIUM	8331005	Clostridium perfringens	Clostridium perfringens (organism)
BACTERIUM	22321006	Clostridium putrefaciens	Clostridium putrefaciens (organism)
BACTERIUM	13080008	Clostridium putrificum	Clostridium botulinum (organism)
BACTERIUM	42706008	Clostridium ramosum	Clostridium ramosum (organism)
BACTERIUM	33101000	Clostridium septicum	Clostridium septicum (organism)
BACTERIUM	89313005	Clostridium sordellii	Clostridium sordellii (organism)
BACTERIUM	65891000	Clostridium sphenoides	Clostridium sphenoides (organism)
BACTERIUM	41468005	Clostridium sporogenes	Clostridium sporogenes (organism)
BACTERIUM	116460009	Clostridium spp.	Clostridium species (organism)

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BACTERIUM	58838009	Clostridium subterminale	Clostridium subterminale (organism)
BACTERIUM	48321006	Clostridium symbiosum	Clostridium symbiosum (organism)
BACTERIUM	81909005	Clostridium tertium	Clostridium tertium (organism)
BACTERIUM	30917009	Clostridium tetani	Clostridium tetani (organism)
BACTERIUM	114216008	Clostridium villosum	Filifactor villosus (organism)
FUNGUS	23439005	Coccidioides immitis	Coccidioides immitis (organism)
FUNGUS	115996006	Coccidioides spp.	Coccidioides species (organism)
BACTERIUM	77309002	Coliform spp.	Coliform bacteria (organism)
VIRUS	34212000	Colorado tick fever virus	Colorado tick fever virus (organism)
BACTERIUM	20432002	Comamonas acidovorans	Delftia acidovorans (organism)
BACTERIUM	131240005	Comamonas spp.	Comamonas species (organism)
BACTERIUM	81829007	Comamonas terrigena	Comamonas terrigena (organism)
BACTERIUM	43721005	Comamonas testosteroni	Comamonas testosteroni (organism)
FUNGUS	42178002	Conidiobolus	Genus Conidiobolus (organism)
VIRUS	243608008	Coronavirus type unspecified	Genus Coronavirus (organism)
BACTERIUM	65736001	Corynebacterium aquaticum	Corynebacterium aquaticum (organism)
BACTERIUM	44885001	Corynebacterium bovis	Corynebacterium bovis (organism)
BACTERIUM	50169005	Corynebacterium cystitidis	Corynebacterium cystitidis (organism)
BACTERIUM	5851001	Corynebacterium diphtheriae	Corynebacterium diphtheriae (organism)
BACTERIUM	89651003	Corynebacterium glutamicum	Corynebacterium glutamicum (organism)
BACTERIUM	243280007	Corynebacterium group G-2	Centers for Disease Control and Prevention (CDC) Corynebacterium group G-2 (organism)
BACTERIUM	63410006	Corynebacterium jeikeium (Group JK)	Corynebacterium jeikeium (organism)
BACTERIUM	88575000	Corynebacterium kutscheri	Corynebacterium kutscheri (organism)
BACTERIUM	89922004	Corynebacterium matruchotii	Corynebacterium matruchotii (organism)
BACTERIUM	83594007	Corynebacterium minutissimum	Corynebacterium minutissimum (organism)

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BACTERIUM	58879005	Corynebacterium mycetoides	Corynebacterium mycetoides (organism)
BACTERIUM	81368007	Corynebacterium pilosum	Corynebacterium pilosum (organism)
BACTERIUM	12050008	Corynebacterium pseudodiphtheriticum	Corynebacterium pseudodiphtheriticum (organism)
BACTERIUM	55084001	Corynebacterium pseudotuberculosis	Corynebacterium pseudotuberculosis (organism)
BACTERIUM	62000003	Corynebacterium renale	Corynebacterium renale (organism)
BACTERIUM	116463006	Corynebacterium spp.	Corynebacterium species (organism)
BACTERIUM	63815007	Corynebacterium striatum	Corynebacterium striatum (organism)
BACTERIUM	103428000	Corynebacterium ulcerans	Corynebacterium ulcerans (organism)
BACTERIUM	113613004	Corynebacterium urealyticum	Corynebacterium urealyticum (organism)
BACTERIUM	27101006	Corynebacterium xerosis	Corynebacterium xerosis (organism)
BACTERIUM	22533000	Coxiella burnetii	Coxiella burnetii (organism)
BACTERIUM	131412002	Coxiella spp.	Coxiella species (organism)
FUNGUS	74062009	Cryptococcus albidus	Cryptococcus albidus (organism)
FUNGUS	419816002	Cryptococcus humicola	Cryptococcus humicola (organism)
FUNGUS	7299008	Cryptococcus laurentii	Cryptococcus laurentii (organism)
FUNGUS	48261005	Cryptococcus luteolus	Cryptococcus luteolus (organism)
FUNGUS	67168003	Cryptococcus neoformans	Cryptococcus neoformans (organism)
FUNGUS	17579001	Cryptococcus spp.	Cryptococcus (organism)
FUNGUS	41637000	Cryptococcus terreus	Cryptococcus terreus (organism)
FUNGUS	112402002	Cryptococcus uniguttulatus	Cryptococcus uniguttulatus (organism)
PARASITE	83821001	Cryptosporidium	Cryptosporidium (organism)
FUNGUS	5214001	Curvularia	Genus Curvularia (organism)
PARASITE	78167007	Cysticercus	Cysticercus (organism)
VIRUS	243579005	Cytomegalovirus	Human cytomegalovirus 5 (organism)
VIRUS	34348001	Dengue virus	Dengue virus (organism)
BACTERIUM	113776005	Dermacoccus nishionmiyeaensis	Dermacoccus nishionmiyeaensis (organism)
BACTERIUM	43560009	Desulfomonas pigra	Desulfomonas pigra (organism)

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BACTERIUM	131245000	Desulfomonas spp.	Desulfomonas species (organism)
BACTERIUM	243394005	Desulfovibrio desulfuricans	Desulfovibrio desulfuricans (organism)
BACTERIUM	243393004	Desulfovibrio spp.	Genus Desulfovibrio (organism)
PARASITE	48262003	Dibothriocephalus	Diphyllobothrium (organism)
BACTERIUM	114168007	Dichelobacter nodosus	Dichelobacter nodosus (organism)
BACTERIUM	131400001	Dichelobacter spp.	Dichelobacter species (organism)
BACTERIUM	54642001	Diphtheroids	Diphtheroids (organism)
PARASITE	21041005	Dipylidium	Dipylidium (organism)
FUNGUS	73185003	Drechslera	Genus Drechslera (organism)
VIRUS	243601002	Eastern equine encephalitis virus	Eastern equine encephalitis virus (organism)
VIRUS	424206003	Ebolavirus	Genus Ebolavirus (organism)
PARASITE	47622006	Echinococcus	Genus Echinococcus (organism)
BACTERIUM	4280005	Edwardsiella hoshinae	Edwardsiella hoshinae (organism)
BACTERIUM	68227003	Edwardsiella ictaluri	Edwardsiella ictaluri (organism)
BACTERIUM	131257009	Edwardsiella spp.	Edwardsiella species (organism)
BACTERIUM	74672006	Edwardsiella tarda	Edwardsiella tarda (organism)
BACTERIUM	114447000	Edwardsiella tarda biogroup 1	Edwardsiella tarda, biogroup 1 (organism)
BACTERIUM	116403009	EF-4	Centers for Disease Control and Prevention (CDC) group EF-4 (organism)
BACTERIUM	52591004	Eikenella corrodens	Eikenella corrodens (organism)
BACTERIUM	131247008	Eikenella spp.	Eikenella species (organism)
PARASITE	79235009	Entamoeba coli	Entamoeba coli (organism)
PARASITE	4716008	Entamoeba histolytica	Entamoeba histolytica (organism)
PARASITE	372407009	Entamoeba spp.	Entamoeba species (organism)
BACTERIUM	114261007	Enteric Group 59	Buttiauxella noackiae (organism)
BACTERIUM	106544002	Enteric other	Family Enterobacteriaceae (organism)
BACTERIUM	62592009	Enterobacter aerogenes	Enterobacter aerogenes (organism)
BACTERIUM	115015008	Enterobacter agglomerans group	Pantoea agglomerans (organism)
BACTERIUM	114452005	Enterobacter amnigenus Biogroup 1	Enterobacter amnigenus biogroup I (organism)

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BACTERIUM	114453000	Enterobacter amnigenus Biogroup 2	Enterobacter amnigenus biogroup II (organism)
BACTERIUM	84221003	Enterobacter amnigenus unspecified	Enterobacter amnigenus (organism)
BACTERIUM	33115003	Enterobacter asburiae	Enterobacter asburiae (organism)
BACTERIUM	114451003	Enterobacter cancerogenus	Enterobacter cancerogenus (organism)
BACTERIUM	14385002	Enterobacter cloacae	Enterobacter cloacae (organism)
BACTERIUM	5381002	Enterobacter gergoviae	Enterobacter gergoviae (organism)
BACTERIUM	114454006	Enterobacter hormaechei	Enterobacter hormaechei (organism)
BACTERIUM	35165009	Enterobacter intermedius	Enterobacter intermedius (organism)
BACTERIUM	77614008	Enterobacter sakazakii	Enterobacter sakazakii (organism)
BACTERIUM	58683007	Enterobacter spp.	Genus Enterobacter (organism)
BACTERIUM	114451003	Enterobacter taylorae	Enterobacter cancerogenus (organism)
PARASITE	88569009	Enterobius	Enterobius (organism)
BACTERIUM	87875008	Enterococcus avium	Enterococcus avium (organism)
BACTERIUM	30949009	Enterococcus casseliflavus	Enterococcus casseliflavus (organism)
BACTERIUM	113724006	Enterococcus dispar	Enterococcus dispar (organism)
BACTERIUM	46464008	Enterococcus durans	Enterococcus durans (organism)
BACTERIUM	78065002	Enterococcus faecalis	Enterococcus faecalis (organism)
BACTERIUM	90272000	Enterococcus faecium	Enterococcus faecium (organism)
BACTERIUM	30949009	Enterococcus flavescens	Enterococcus casseliflavus (organism)
BACTERIUM	53233007	Enterococcus gallinarum	Enterococcus gallinarum (organism)
BACTERIUM	73852008	Enterococcus hirae	Enterococcus hirae (organism)
BACTERIUM	10262005	Enterococcus malodoratus	Enterococcus malodoratus (organism)
BACTERIUM	38004008	Enterococcus mundtii	Enterococcus mundtii (organism)
BACTERIUM	103436009	Enterococcus pseudoavium	Enterococcus pseudoavium (organism)
BACTERIUM	103437000	Enterococcus raffinosus	Enterococcus raffinosus (organism)
BACTERIUM	431990001	Enterococcus solitarius	Tetragenococcus solitarius (organism)
BACTERIUM	2785000	Enterococcus spp.	Genus Enterococcus (organism)

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BACTERIUM	103429008	Enterohemorrhagic Escherichia coli, serotype O157:H7	Enterohemorrhagic Escherichia coli, serotype O157:H7 (organism)
VIRUS	243633006	Enterovirus	Genus Enterovirus (organism)
FUNGUS	112403007	Epidermophyton	Epidermophyton (organism)
BACTERIUM	131258004	Erwinia spp.	Erwinia species (organism)
BACTERIUM	48666005	Erysipelothrix rhusiopathiae	Erysipelothrix rhusiopathiae (organism)
BACTERIUM	131298002	Erysipelothrix spp.	Erysipelothrix species (organism)
BACTERIUM	419388003	Escherichia albertii	Escherichia albertii (organism)
BACTERIUM	91550008	Escherichia blattae	Escherichia blattae (organism)
BACTERIUM	112283007	Escherichia coli	Escherichia coli (organism)
BACTERIUM	83285000	Escherichia coli (enteropathogenic A)	Enteropathogenic Escherichia coli (organism)
BACTERIUM	417207000	Escherichia coli, inactive	Escherichia coli, inactive (organism)
BACTERIUM	72461005	Escherichia fergusonii	Escherichia fergusonii (organism)
BACTERIUM	85786000	Escherichia hermannii	Escherichia hermannii (organism)
BACTERIUM	131259007	Escherichia spp.	Escherichia species (organism)
BACTERIUM	53013003	Escherichia vulneris	Escherichia vulneris (organism)
BACTERIUM	417399007	Eubacterium aerofaciens	Collinsella aerofaciens (organism)
BACTERIUM	113828002	Eubacterium alactolyticum	Pseudoramibacter alactolyticus (organism)
BACTERIUM	12734008	Eubacterium brachy	Eubacterium brachy (organism)
BACTERIUM	13257008	Eubacterium combesii	Eubacterium combesii (organism)
BACTERIUM	59949005	Eubacterium contortum	Eubacterium contortum (organism)
BACTERIUM	414077004	Eubacterium lentum	Eggerthella lenta (organism)
BACTERIUM	87632000	Eubacterium limosum	Eubacterium limosum (organism)
BACTERIUM	46192006	Eubacterium moniliforme	Eubacterium moniliforme (organism)
BACTERIUM	22777005	Eubacterium nitrogenens	Eubacterium nitrogenens (organism)
BACTERIUM	48215005	Eubacterium nodatum	Eubacterium nodatum (organism)
BACTERIUM	41543005	Eubacterium saburreum	Eubacterium saburreum (organism)
BACTERIUM	116465004	Eubacterium spp.	Eubacterium species (organism)
BACTERIUM	29575000	Eubacterium tenue	Eubacterium tenue
BACTERIUM	417280000	Eubacterium timidum	Mogibacterium timidum (organism)

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BACTERIUM	4791002	Eubacterium yurii ssp unspecified	Eubacterium yurii (organism)
BACTERIUM	19027003	Ewingella americana	Ewingella americana (organism)
BACTERIUM	131262005	Ewingella spp.	Ewingella species (organism)
BACTERIUM	243312005	Fermentative Gram-negative bacillus	Fermentative Gram-negative bacillus (organism)
BACTERIUM	113931000	Flavimonas oryzihabitans	Pseudomonas oryzihabitans (organism)
BACTERIUM	57032008	Flavimonas spp.	Genus Pseudomonas (organism)
BACTERIUM	113629007	Flavobacterium breve	Empedobacter brevis (organism)
BACTERIUM	425774009	Flavobacterium meningosepticum	Elizabethkingia meningoseptica (organism)
BACTERIUM	113558001	Flavobacterium odoratum	Myroides odoratus (organism)
BACTERIUM	113549008	Flavobacterium sp. group II b	Chryseobacterium indologenes (organism)
BACTERIUM	127530009	Flavobacterium sp. group II e	Centers for Disease Control and Prevention (CDC) group Ile (organism)
BACTERIUM	127532001	Flavobacterium sp. group II h	Centers for Disease Control and Prevention (CDC) group IIh (organism)
BACTERIUM	127533006	Flavobacterium sp. group II i	Centers for Disease Control and Prevention (CDC) group Ili (organism)
BACTERIUM	125037002	Flavobacterium spp.	Flavobacterium species (organism)
BACTERIUM	49037001	Flexispira rappini	Helicobacter rappini (organism)
FUNGUS	23639003	Fonsecaea	Genus Fonsecaea (organism)
BACTERIUM	131308009	Francisella spp.	Francisella species (organism)
BACTERIUM	51526001	Francisella tularensis	Francisella tularensis (organism)
FUNGUS	23496000	Fungus	Fungus (organism)
FUNGUS	35238009	Fusarium	Fusarium (organism)
BACTERIUM	431367004	Fusobacterium alocis	Filifactor alocis (organism)
BACTERIUM	84644009	Fusobacterium gonidiaformans	Fusobacterium gonidiaformans (organism)
BACTERIUM	112330001	Fusobacterium mortiferum	Fusobacterium mortiferum (organism)

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BACTERIUM	33311002	Fusobacterium naviforme	Fusobacterium naviforme (organism)
BACTERIUM	17304009	Fusobacterium necrogenes	Fusobacterium necrogenes (organism)
BACTERIUM	113757008	Fusobacterium necroph. ssp. funduliforme	Fusobacterium necrophorum subspecies fundiliforme (organism)
BACTERIUM	113758003	Fusobacterium necroph. ssp. necrophorum	Fusobacterium necrophorum subspecies necrophorum (organism)
BACTERIUM	27274008	Fusobacterium necrophorum ssp. unspec.	Fusobacterium necrophorum (organism)
BACTERIUM	113760001	Fusobacterium nucleatum ssp. fusiforme	Fusobacterium nucleatum subspecies fusiforme (organism)
BACTERIUM	113761002	Fusobacterium nucleatum ssp. nucleatum	Fusobacterium nucleatum subspecies nucleatum (organism)
BACTERIUM	113762009	Fusobacterium nucleatum ssp. polymorphum	Fusobacterium nucleatum subspecies polymorphum (organism)
BACTERIUM	32763000	Fusobacterium nucleatum ssp. unspec.	Fusobacterium nucleatum (organism)
BACTERIUM	69601004	Fusobacterium periodonticum	Fusobacterium periodonticum (organism)
BACTERIUM	85226004	Fusobacterium russii	Fusobacterium russii (organism)
BACTERIUM	116467007	Fusobacterium spp.	Fusobacterium species (organism)
BACTERIUM	432171006	Fusobacterium sulci	Eubacterium sulci (organism)
BACTERIUM	113764005	Fusobacterium ulcerans	Fusobacterium ulcerans (organism)
BACTERIUM	1972005	Fusobacterium varium	Fusobacterium varium (organism)
BACTERIUM	131309001	Gardnerella spp.	Gardnerella species (organism)
BACTERIUM	64071004	Gardnerella vaginalis	Gardnerella vaginalis (organism)
BACTERIUM	37511002	Gemella haemolysans	Gemella haemolysans (organism)
BACTERIUM	113765006	Gemella morbillorum (anaerobic)	Gemella morbillorum (organism)
BACTERIUM	131311005	Gemella spp.	Gemella species (organism)
BACTERIUM	52864008	Genus Micrococcus	Genus Micrococcus (organism)
VIRUS	407487005	Genus Respirivirus	Genus Respirivirus (organism)
FUNGUS	34324005	Geotrichum	Genus Geotrichum (organism)
FUNGUS	41625002	Geotrichum candidum	Geotrichum candidum (organism)
PARASITE	61419001	Giardia	Giardia (organism)

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BACTERIUM	87172008	Gram-negative bacillus	Gram-negative bacillus (organism)
BACTERIUM	18383003	Gram-negative coccus	Gram-negative coccus (organism)
BACTERIUM	83514008	Gram-positive bacillus	Gram-positive bacillus (organism)
BACTERIUM	59206002	Gram-positive coccus	Gram-positive coccus (organism)
BACTERIUM	414365002	Granulicatella species	Granulicatella species (organism)
VIRUS	442352004	H1N1 - Novel Influenza A virus	Influenza A virus subtype H1N1 (organism)
BACTERIUM	27784005	Haemophilus aegyptius	Haemophilus aegyptius (organism)
BACTERIUM	46143000	Haemophilus aphrophilus	Haemophilus aphrophilus (organism)
BACTERIUM	64889004	Haemophilus ducreyi	Haemophilus ducreyi (organism)
BACTERIUM	54950008	Haemophilus haemolyticus	Haemophilus haemolyticus (organism)
BACTERIUM	115407004	Haemophilus influenzae (not type b)	Haemophilus influenzae, not B (organism)
BACTERIUM	103442008	Haemophilus influenzae (type b)	Haemophilus influenzae type B (organism)
BACTERIUM	103441001	Haemophilus influenzae type A	Haemophilus influenzae type A (organism)
BACTERIUM	44470000	Haemophilus influenzae type unspecified	Haemophilus influenzae (organism)
BACTERIUM	127505006	Haemophilus influenzae, biotype I	Haemophilus influenzae, biotype I (organism)
BACTERIUM	127506007	Haemophilus influenzae, biotype II	Haemophilus influenzae, biotype II (organism)
BACTERIUM	127507003	Haemophilus influenzae, biotype III	Haemophilus influenzae, biotype III (organism)
BACTERIUM	127508008	Haemophilus influenzae, biotype IV	Haemophilus influenzae, biotype IV (organism)
BACTERIUM	127509000	Haemophilus influenzae, biotype V	Haemophilus influenzae, biotype V (organism)
BACTERIUM	127510005	Haemophilus influenzae, biotype VI	Haemophilus influenzae, biotype VI (organism)
BACTERIUM	127511009	Haemophilus influenzae, biotype VII	Haemophilus influenzae, biotype VII (organism)
BACTERIUM	127512002	Haemophilus influenzae, biotype VIII	Haemophilus influenzae, biotype VIII (organism)
BACTERIUM	89800007	Haemophilus parahaemolyticus	Haemophilus parahaemolyticus (organism)

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BACTERIUM	51593004	Haemophilus parainfluenzae	Haemophilus parainfluenzae (organism)
BACTERIUM	127513007	Haemophilus parainfluenzae, biotype I	Haemophilus parainfluenzae, biotype I (organism)
BACTERIUM	127514001	Haemophilus parainfluenzae, biotype II	Haemophilus parainfluenzae, biotype II (organism)
BACTERIUM	127515000	Haemophilus parainfluenzae, biotype III	Haemophilus parainfluenzae, biotype III (organism)
BACTERIUM	127516004	Haemophilus parainfluenzae, biotype IV	Haemophilus parainfluenzae, biotype IV (organism)
BACTERIUM	127517008	Haemophilus parainfluenzae, biotype V	Haemophilus parainfluenzae, biotype V (organism)
BACTERIUM	127518003	Haemophilus parainfluenzae, biotype VI	Haemophilus parainfluenzae, biotype VI (organism)
BACTERIUM	127519006	Haemophilus parainfluenzae, biotype VII	Haemophilus parainfluenzae, biotype VII (organism)
BACTERIUM	127520000	Haemophilus parainfluenzae, biotype VIII	Haemophilus parainfluenzae, biotype VIII (organism)
BACTERIUM	34902001	Haemophilus paraphrophilus	Haemophilus paraphrophilus (organism)
BACTERIUM	116469005	Haemophilus spp.	Haemophilus species (organism)
BACTERIUM	76694001	Hafnia alvei	Hafnia alvei (organism)
BACTERIUM	116046002	Hafnia alvei biogroup 1	Hafnia alvei biogroup I (organism)
BACTERIUM	116047006	Hafnia spp.	Hafnia species (organism)
BACTERIUM	29258005	Helicobacter cinaedi	Helicobacter cinaedi (organism)
BACTERIUM	58177005	Helicobacter fennelliae	Helicobacter fennelliae (organism)
BACTERIUM	10402009	Helicobacter mustelae	Helicobacter mustelae (organism)
BACTERIUM	80774000	Helicobacter pylori	Helicobacter pylori (organism)
BACTERIUM	131234003	Helicobacter spp.	Helicobacter species (organism)
VIRUS	83617006	Hepatitis D virus	Hepatitis D virus (organism)
VIRUS	78475006	Hepatitis E virus	Hepatitis E virus (organism)
VIRUS	397582004	Hepatitis G virus	Hepatitis G virus (organism)
VIRUS	62944002	Hepatitis non-A non-B	Hepatitis C virus (organism)
VIRUS	32452004	Hepatitis type A	Human enterovirus 72 (organism)

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VIRUS	81665004	Hepatitis type B	Hepatitis B virus (organism)
VIRUS	62944002	Hepatitis type C	Hepatitis C virus (organism)
VIRUS	15302007	Herpes simplex type 1	Human herpes simplex virus type 1 (organism)
VIRUS	13687007	Herpes simplex type 2	Human herpes simplex virus type 2 (organism)
VIRUS	19965007	Herpes simplex unspecified	Human herpes simplex virus (organism)
VIRUS	40168006	Herpes type Epstein-Barr virus	Human herpesvirus 4 (organism)
VIRUS	128377001	Herpes type unspecified	Family Herpesviridae (organism)
FUNGUS	56596006	Histoplasma capsulatum	Histoplasma capsulatum (organism)
FUNGUS	115997002	Histoplasma spp.	Histoplasma species (organism)
VIRUS	53744000	Human coxsackievirus A	Human coxsackievirus A (organism)
VIRUS	49018005	Human coxsackievirus B	Human coxsackievirus B (organism)
VIRUS	39164004	Human echovirus	Human echovirus (organism)
VIRUS	36115006	Human immunodeficiency virus type 2	Human immunodeficiency virus type 2 (organism)
VIRUS	89293008	Human immunodeficiency virus type I	Human immunodeficiency virus type I (organism)
VIRUS	44172002	Human poliovirus	Human poliovirus (organism)
VIRUS	77457007	Human T-lymphotropic virus 1	Human T-lymphotropic virus 1 (organism)
VIRUS	30417003	Human T-lymphotropic virus 2	Human T-lymphotropic virus 2 (organism)
PARASITE	76403008	Hymenolepis	Hymenolepis (organism)
VIRUS	407482004	Influenza C Virus	Influenza C virus (organism)
VIRUS	407479009	Influenzae A	Influenza A virus (organism)
VIRUS	407480007	Influenzae B	Influenza B virus (organism)
VIRUS	420362005	Influenzavirus type A, avian, H1N1 strain	Influenzavirus type A, avian, H1N1 strain (organism)
PARASITE	26704001	Isospora	Isospora (organism)
BACTERIUM	113769000	Jonesia denitrificans	Jonesia denitrificans (organism)
BACTERIUM	131314002	Jonesia spp.	Jonesia species (organism)
BACTERIUM	78676004	Kingella denitrificans	Kingella denitrificans (organism)

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BACTERIUM	116392009	Kingella indologenes	Suttonella indologenes (organism)
BACTERIUM	90422000	Kingella kingae	Kingella kingae (organism)
BACTERIUM	131313008	Kingella spp.	Kingella species (organism)
BACTERIUM	416832000	Klebsiella ornithinolytica	Raoultella ornithinolytica (organism)
BACTERIUM	40886007	Klebsiella oxytoca	Klebsiella oxytoca (organism)
BACTERIUM	416264004	Klebsiella planticola	Raoultella planticola (organism)
BACTERIUM	56415008	Klebsiella pneumoniae	Klebsiella pneumoniae (organism)
BACTERIUM	65186004	Klebsiella pneumoniae ss. ozaenae	Klebsiella pneumoniae ss. ozaenae (organism)
BACTERIUM	18400002	Klebsiella pneumoniae ss. pneumoniae	Klebsiella pneumoniae ss. pneumoniae (organism)
BACTERIUM	17688001	Klebsiella rhinoscleromatis	Klebsiella pneumoniae ss. rhinoscleromatis (organism)
BACTERIUM	131269001	Klebsiella spp.	Klebsiella species (organism)
BACTERIUM	416096003	Klebsiella terrigena	Raoultella terrigena (organism)
FUNGUS	415933002	Kloeckera species	Kloeckera species (organism)
BACTERIUM	58493008	Kluyvera ascorbata	Kluyvera ascorbata (organism)
BACTERIUM	32547006	Kluyvera cryocrescens	Kluyvera cryocrescens (organism)
BACTERIUM	131270000	Kluyvera spp.	Kluyvera species (organism)
FUNGUS	243430004	Kluyveromyces lactis	Kluyveromyces lactis (organism)
BACTERIUM	113772007	Kocuria kristinae	Kocuria kristinae (organism)
BACTERIUM	113773002	Kocuria rosea	Kocuria rosea (organism)
BACTERIUM	113774008	Kocuria varians	Kocuria varians (organism)
BACTERIUM	243283009	Kurthia bessonii	Kurthia bessoni (organism)
BACTERIUM	69512006	Kurthia spp.	Genus Kurthia (organism)
BACTERIUM	113775009	Kytococcus sedentarius	Kytococcus sedentarius (organism)
BACTERIUM	45707005	Lactobacillus acidophilus	Lactobacillus acidophilus (organism)
BACTERIUM	9534006	Lactobacillus amylovorus	Lactobacillus amylovorus (organism)
BACTERIUM	90396007	Lactobacillus brevis	Lactobacillus brevis (organism)
BACTERIUM	1017006	Lactobacillus casei	Lactobacillus casei (organism)
BACTERIUM	59836004	Lactobacillus cateniformis	Lactobacillus cateniformis (organism)
BACTERIUM	89237007	Lactobacillus crispatus	Lactobacillus crispatus (organism)
BACTERIUM	65506008	Lactobacillus fermentum	Lactobacillus fermentum (organism)

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BACTERIUM	71158000	Lactobacillus gasseri	Lactobacillus gasseri (organism)
BACTERIUM	65904004	Lactobacillus jensenii	Lactobacillus jensenii (organism)
BACTERIUM	113786006	Lactobacillus johnsonii	Lactobacillus johnsonii (organism)
BACTERIUM	113630002	Lactobacillus minutus (anaerobic)	Atopobium minutum (organism)
BACTERIUM	87480009	Lactobacillus oris	Lactobacillus oris (organism)
BACTERIUM	113632005	Lactobacillus rimae (anaerobic)	Atopobium rimae (organism)
BACTERIUM	116472003	Lactobacillus spp.	Lactobacillus species (organism)
BACTERIUM	113829005	Lactobacillus uli (anaerobic)	Lactobacillus uli (organism)
BACTERIUM	113803005	Lactobacillus vaginalis	Lactobacillus vaginalis (organism)
VIRUS	85944001	Lassa virus	Lassa virus (organism)
BACTERIUM	57459006	Leclercia adecarboxylata	Leclercia adecarboxylata (organism)
BACTERIUM	43590002	Leclercia spp.	Genus Leclercia (organism)
BACTERIUM	18214000	Legionella anisa	Legionella anisa (organism)
BACTERIUM	22592008	Legionella birminghamensis	Legionella birminghamensis (organism)
BACTERIUM	113719008	Legionella bozemanii	Fluoribacter bozemaniae (organism)
BACTERIUM	103448007	Legionella brunensis	Legionella brunensis (organism)
BACTERIUM	52462004	Legionella cherri	Legionella cherrii (organism)
BACTERIUM	58923007	Legionella cincinnatiensis	Legionella cincinnatiensis (organism)
BACTERIUM	113720002	Legionella dumoffii	Fluoribacter dumoffii (organism)
BACTERIUM	28109006	Legionella erythra	Legionella erythra (organism)
BACTERIUM	17083009	Legionella feelei	Legionella feeleii (organism)
BACTERIUM	103450004	Legionella geestiana	Legionella geestiana (organism)
BACTERIUM	113721003	Legionella gormanii	Fluoribacter gormanii (organism)
BACTERIUM	58939000	Legionella hackeliae	Legionella hackeliae (organism)
BACTERIUM	3128001	Legionella israelensis	Legionella israelensis (organism)
BACTERIUM	89709001	Legionella jamestowniensis	Legionella janestowniensis (organism)
BACTERIUM	39739007	Legionella jordanis	Legionella jordanis (organism)
BACTERIUM	103453002	Legionella londoniensis	Legionella londiniensis (organism)
BACTERIUM	89605004	Legionella longbeachae	Legionella longbeachae (organism)
BACTERIUM	116379006	Legionella maceachernii	Tatlockia macaechernii (organism)

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BACTERIUM	116380009	Legionella micdadei	Tatlockia micdadei (organism)
BACTERIUM	103454008	Legionella moravica	Legionella moravica (organism)
BACTERIUM	103455009	Legionella nautarum	Legionella nautarum (organism)
BACTERIUM	638008	Legionella oakridgensis	Legionella oakridgensis (organism)
BACTERIUM	38322001	Legionella parisiensis	Legionella parisiensis (organism)
BACTERIUM	80897008	Legionella pneumophila	Legionella pneumophila (organism)
BACTERIUM	113807006	Legionella quateriensis	Legionella quateirensis (organism)
BACTERIUM	103459003	Legionella quinlivanii	Legionella quinlivanii (organism)
BACTERIUM	17298000	Legionella rubrilucens	Legionella rubilucens (organism)
BACTERIUM	87271006	Legionella sainthelens	Legionella sainthelens (organism)
BACTERIUM	72814000	Legionella santicrucis	Legionella santicrucis (organism)
BACTERIUM	103460008	Legionella shakespearei	Legionella shakespearei (organism)
BACTERIUM	64930007	Legionella spiritensis	Legionella spiritensis (organism)
BACTERIUM	115514004	Legionella spp.	Legionella species (organism)
BACTERIUM	14121003	Legionella steigerwaltii	Legionella steigerwaltii (organism)
BACTERIUM	103461007	Legionella tucsonensis	Legionella tucsonensis (organism)
BACTERIUM	8147000	Legionella wadsworthii	Legionella wadsworthii (organism)
BACTERIUM	103462000	Legionella worsliensis	Legionella worsleiensis (organism)
PARASITE	79357004	Leishmania	Leishmania (organism)
BACTERIUM	74357002	Leminorella grimonitii	Leminorella grimonitii (organism)
BACTERIUM	45354007	Leminorella richardii	Leminorella richardii (organism)
BACTERIUM	131273003	Leminorella spp.	Leminorella species (organism)
BACTERIUM	19251003	Leptospira int. sgp. icterohaemorrhagiae	Leptospira interrogans, serogroup icterohemorrhagiae (organism)
BACTERIUM	26615002	Leptospira interr sgp grippotyphosa	Leptospira interrogans, serogroup grippotyphosa (organism)
BACTERIUM	116401006	Leptospira interrogans serogrp unspec	Leptospira interrogans (organism)
BACTERIUM	26870001	Leptospira interrogans sgp bataviae	Leptospira interrogans, serogroup bataviae (organism)
BACTERIUM	45882007	Leptospira interrogans sgp. autumnalis	Leptospira interrogans, serogroup autumnalis (organism)
BACTERIUM	59217001	Leptospira interrogans sgp. ballum	Leptospira interrogans, serogroup balhum (organism)

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BACTERIUM	54933006	Leptospira interrogans sgp. canicola	Leptospira interrogans, serogroup canicola (organism)
BACTERIUM	47840007	Leptospira interrogans sgp. pomona	Leptospira interrogans, serogroup pomona (organism)
BACTERIUM	83409006	Leptospira interrogans sgp. pyrogenes	Leptospira interrogans, serogroup pyrogenes (organism)
BACTERIUM	116200009	Leptospira spp.	Leptospira species (organism)
BACTERIUM	85744006	Leptotrichia buccalis	Leptotrichia buccalis (organism)
BACTERIUM	131328008	Leptotrichia spp.	Leptotrichia species (organism)
BACTERIUM	113821008	Leuconostoc citreum	Leuconostoc citreum (organism)
BACTERIUM	70285009	Leuconostoc lactis	Leuconostoc lactis (organism)
BACTERIUM	71403009	Leuconostoc mesenteroides	Leuconostoc mesenteroides (organism)
BACTERIUM	243235006	Leuconostoc pseudomesenteroides	Leuconostoc pseudomesenteroides (organism)
BACTERIUM	131329000	Leuconostoc spp.	Leuconostoc species (organism)
BACTERIUM	67816007	Listeria grayi	Listeria grayi (organism)
BACTERIUM	48331004	Listeria innocua	Listeria innocua (organism)
BACTERIUM	36094007	Listeria monocytogenes	Listeria monocytogenes (organism)
BACTERIUM	67816007	Listeria murrayi	Listeria grayi (organism)
BACTERIUM	43091008	Listeria seeligeri	Listeria seeligeri (organism)
BACTERIUM	131330005	Listeria spp.	Listeria species (organism)
FUNGUS	90959007	Loboa	Loboa (organism)
PARASITE	420973007	Louse	Family Pediculidae (organism)
VIRUS	82518003	Lymphocytic choriomeningitis virus	Lymphocytic choriomeningitis virus (organism)
BACTERIUM	416613009	Micrococcus caseolyticus	Micrococcus caseolyticus (organism)
FUNGUS	23009007	Madurella	Genus Madurella (organism)
FUNGUS	18097004	Malassezia	Malassezia (organism)
FUNGUS	29619007	Malassezia furfur	Malassezia furfur (organism)
FUNGUS	51257000	Malassezia pachydermatis	Malassezia pachydermatis (organism)
VIRUS	424421007	Marburgvirus	Genus Marburgvirus (organism)
VIRUS	52584002	Measles virus	Measles virus (organism)
BACTERIUM	26044001	Megasphaera elsdenii	Megasphaera elsdenii (organism)

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BACTERIUM	131334001	Megasphaera spp.	Megasphaera species (organism)
BACTERIUM	103486003	Methylobacterium mesophilicum	Methylobacterium mesophilicum (organism)
BACTERIUM	116476000	Methylobacterium spp.	Methylobacterium species (organism)
BACTERIUM	48299003	Micrococcus luteus	Micrococcus luteus (organism)
BACTERIUM	61376003	Micrococcus lylae	Micrococcus lylae (organism)
BACTERIUM	116486004	Micrococcus spp.	Micrococcus species (organism)
FUNGUS	11983001	Microsporum	Microsporum (organism)
BACTERIUM	114137008	Mitsuokella dentalis	Prevotella dentalis (organism)
BACTERIUM	55553008	Mitsuokella multiacidus	Mitsuokella multacida (organism)
BACTERIUM	131336004	Mitsuokella spp.	Mitsuokella species (organism)
BACTERIUM	30224004	Mobiluncus curtisii ss. unspecified	Mobiluncus curtisii (organism)
BACTERIUM	13716002	Mobiluncus mulieris	Mobiluncus mulieris (organism)
BACTERIUM	131335000	Mobiluncus spp.	Mobiluncus species (organism)
BACTERIUM	131272008	Moellerella spp.	Moellerella species (organism)
BACTERIUM	37107002	Moellerella wisconsensis	Moellerella wisconsensis (organism)
VIRUS	59774002	Monkeypox virus	Monkeypox virus (organism)
BACTERIUM	47491001	Moraxella atlantae	Moraxella atlantae (organism)
BACTERIUM	19425003	Moraxella bovis	Moraxella bovis (organism)
BACTERIUM	24226003	Moraxella catarrhalis	Moraxella catarrhalis (organism)
BACTERIUM	84066001	Moraxella lacunata	Moraxella lacunata (organism)
BACTERIUM	46455003	Moraxella nonliquefaciens	Moraxella nonliquefaciens (organism)
BACTERIUM	72401008	Moraxella osloensis	Moraxella osloensis (organism)
BACTERIUM	113941002	Moraxella phenylpyruvica	Psychrobacter phenylpyruvicus (organism)
BACTERIUM	131337008	Moraxella spp.	Moraxella species (organism)
BACTERIUM	243301005	Morganella morganii	Morganella morganii (organism)
BACTERIUM	114460006	Morganella morganii biogroup 1	Morganella morganii, biogroup 1 (organism)
BACTERIUM	243303008	Morganella morganii ss. sibonii	Morganella morganii subsp sibonii (organism)
BACTERIUM	372316007	Morganella spp.	Morganella species (organism)
FUNGUS	79297004	Mucor ramosissimus	Mucor ramosissimus (organism)

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FUNGUS	372317003	Mucor spp.	Mucor species (organism)
VIRUS	50384007	Mumps virus	Mumps virus (organism)
BACTERIUM	113838007	Mycobacterium abscessus	Mycobacterium abscessus (organism)
BACTERIUM	51320008	Mycobacterium africanum	Mycobacterium africanum (organism)
BACTERIUM	113839004	Mycobacterium alvei	Mycobacterium alvei (organism)
BACTERIUM	44760001	Mycobacterium asiaticum	Mycobacterium asiaticum (organism)
BACTERIUM	48134004	Mycobacterium aurum	Mycobacterium aurum (organism)
BACTERIUM	83723009	Mycobacterium avium	Mycobacterium avium (organism)
BACTERIUM	27142009	Mycobacterium bovis	Mycobacterium bovis (organism)
BACTERIUM	243377008	Mycobacterium chelonae ss. chelonae	Mycobacterium chelonae (organism)
BACTERIUM	113845007	Mycobacterium confluentis	Mycobacterium confluentis (organism)
BACTERIUM	5885000	Mycobacterium flavescens	Mycobacterium flavescens (organism)
BACTERIUM	243378003	Mycobacterium fortuitum	Mycobacterium fortuitum (organism)
BACTERIUM	103474001	Mycobacterium fortuitum complex	Mycobacterium fortuitum complex (organism)
BACTERIUM	333873003	Mycobacterium fortuitum ssp fortuitum	Mycobacterium fortuitum subsp fortuitum (organism)
BACTERIUM	112333004	Mycobacterium fortuitum ssp peregrinum	Mycobacterium fortuitum biovar. peregrinum (organism)
BACTERIUM	70463000	Mycobacterium gastri	Mycobacterium gastri (organism)
BACTERIUM	103476004	Mycobacterium genavense	Mycobacterium genavense (organism)
BACTERIUM	24871004	Mycobacterium gordonae	Mycobacterium gordonae (organism)
BACTERIUM	21996001	Mycobacterium haemophilum	Mycobacterium haemophilum (organism)
BACTERIUM	83841006	Mycobacterium intracellulare	Mycobacterium intracellulare (organism)
BACTERIUM	1507005	Mycobacterium kansasii	Mycobacterium kansasii (organism)
BACTERIUM	58242002	Mycobacterium leprae	Mycobacterium leprae (organism)
BACTERIUM	73576007	Mycobacterium malmoense	Mycobacterium malmoense (organism)

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BACTERIUM	58869008	Mycobacterium marinum	Mycobacterium marinum (organism)
BACTERIUM	21433000	Mycobacterium nonchromogenicum	Mycobacterium nonchromogenicum (organism)
BACTERIUM	78112006	Mycobacterium phlei	Mycobacterium phlei (organism)
BACTERIUM	20141004	Mycobacterium scrofulaceum	Mycobacterium scrofulaceum (organism)
BACTERIUM	79817008	Mycobacterium shimoidei	Mycobacterium shimoidei (organism)
BACTERIUM	84180005	Mycobacterium simiae	Mycobacterium simiae (organism)
BACTERIUM	53114006	Mycobacterium smegmatis	Mycobacterium smegmatis (organism)
BACTERIUM	131339006	Mycobacterium spp.	Mycobacterium species (organism)
BACTERIUM	65613000	Mycobacterium szulgai	Mycobacterium szulgai (organism)
BACTERIUM	45662006	Mycobacterium terrae	Mycobacterium terrae (organism)
BACTERIUM	20973006	Mycobacterium thermoresistibile	Mycobacterium thermoresistibile (organism)
BACTERIUM	40333002	Mycobacterium triviale	Mycobacterium triviale (organism)
BACTERIUM	113861009	Mycobacterium tuberculosis	Mycobacterium tuberculosis (organism)
BACTERIUM	40713003	Mycobacterium ulcerans	Mycobacterium ulcerans (organism)
BACTERIUM	54925005	Mycobacterium vaccae	Mycobacterium vaccae (organism)
BACTERIUM	58663006	Mycobacterium xenopi	Mycobacterium xenopi (organism)
BACTERIUM	58503001	Mycobacterium, avium-intracellulare group	Mycobacterium, avium-intracellulare group (organism)
BACTERIUM	112338008	Mycoplasma buccale	Mycoplasma buccale (organism)
BACTERIUM	76010005	Mycoplasma faucium	Mycoplasma faucium (organism)
BACTERIUM	88263009	Mycoplasma fermentans	Mycoplasma fermentans (organism)
BACTERIUM	5056007	Mycoplasma genitalium	Mycoplasma genitalium (organism)
BACTERIUM	1290001	Mycoplasma hominis	Mycoplasma hominis (organism)
BACTERIUM	11412008	Mycoplasma lipophilum	Mycoplasma lipophilum (organism)
BACTERIUM	46705005	Mycoplasma orale	Mycoplasma orale (organism)
BACTERIUM	113884002	Mycoplasma penetrans	Mycoplasma penetrans (organism)
BACTERIUM	58720004	Mycoplasma pneumoniae	Mycoplasma pneumoniae (organism)
BACTERIUM	112337003	Mycoplasma primum	Mycoplasma primum (organism)
BACTERIUM	2654003	Mycoplasma salivarium	Mycoplasma salivarium (organism)

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BACTERIUM	113890003	Mycoplasma spermatophilum	Mycoplasma spermatophilum (organism)
BACTERIUM	116487008	Mycoplasma spp.	Mycoplasma species (organism)
BACTERIUM	131237005	Myroides species	Myroides species (organism)
VIRUS	55014007	Myxovirus type unspecified	Family Orthomyxoviridae (organism)
PARASITE	18441007	Naegleria	Naegleria (organism)
PARASITE	46112007	Necator	Necator (organism)
BACTERIUM	54978009	Neisseria canis	Neisseria canis (organism)
BACTERIUM	69312007	Neisseria cinerea	Neisseria cinerea (organism)
BACTERIUM	12638001	Neisseria elongata	Neisseria elongata (organism)
BACTERIUM	113895008	Neisseria elongata ss nitroreducens	Neisseria elongata ss nitroreducens (organism)
BACTERIUM	75566007	Neisseria flavescens	Neisseria flavescens (organism)
BACTERIUM	68704007	Neisseria gonorrhoeae	Neisseria gonorrhoeae (organism)
BACTERIUM	54915000	Neisseria lactamica	Neisseria lactamica (organism)
BACTERIUM	17872004	Neisseria meningitidis	Neisseria meningitidis (organism)
BACTERIUM	81795000	Neisseria mucosa	Neisseria mucosa (organism)
BACTERIUM	113894007	Neisseria parelongata	Neisseria weaveri (organism)
BACTERIUM	66768001	Neisseria polysaccharea	Neisseria polysaccharea (organism)
BACTERIUM	49074002	Neisseria sicca	Neisseria sicca (organism)
BACTERIUM	131340008	Neisseria spp.	Neisseria species (organism)
BACTERIUM	77700001	Neisseria subflava	Neisseria subflava (organism)
BACTERIUM	30092002	Nocardia asteroides	Nocardia asteroides (organism)
BACTERIUM	58970008	Nocardia brasiliensis	Nocardia brasiliensis (organism)
BACTERIUM	63087008	Nocardia otitidis caviarum	Nocardia otitidiscaviarum (organism)
BACTERIUM	127524009	Nocardia spp.	Nocardia species (organism)
BACTERIUM	243328000	Non-fermentative Gram-negative bacillus	Non-fermentative Gram-negative bacillus (organism)
VIRUS	10514003	Norwalk virus	Norwalk virus (organism)
BACTERIUM	28501001	Obesumbacterium Biogroup 2	Obesumbacterium proteus (organism)
BACTERIUM	131274009	Obesumbacterium spp.	Obesumbacterium species (organism)
BACTERIUM	116490002	Ochrobactrum anthropi	Ochrobactrum anthropi (organism)
BACTERIUM	116489006	Ochrobactrum spp.	Ochrobactrum species (organism)

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BACTERIUM	113900007	Oerskovia spp.	Oerskovia species (organism)
BACTERIUM	10459009	Oerskovia turbata	Oerskovia turbata (organism)
BACTERIUM	409862004	Oerskovia xanthineolytica	Cellulosimicrobium cellulans (organism)
BACTERIUM	131344004	Oligella spp.	Oligella species (organism)
BACTERIUM	11309009	Oligella ureolytica	Oligella ureolytica (organism)
BACTERIUM	90341001	Oligella urethralis	Oligella urethralis (organism)
VIRUS	44725007	Orbivirus	Genus Orbivirus (organism)
VIRUS	64753004	Orf virus	Orf virus (organism)
BACTERIUM	114088008	Paenibacillus alvei	Paenibacillus alvei (organism)
BACTERIUM	114101003	Paenibacillus macerans	Paenibacillus macerans (organism)
BACTERIUM	114105007	Paenibacillus polymyxa	Paenibacillus polymyxa (organism)
BACTERIUM	115015008	Pantoea agglomerans	Pantoea agglomerans (organism)
BACTERIUM	115017000	Pantoea dispersa	Pantoea dispersa (organism)
BACTERIUM	131301003	Pantoea other	Pantoea species (organism)
VIRUS	407453000	Papillomaviridae	Family Papillomaviridae (organism)
VIRUS	83397001	Papovavirus BK virus	BK polyomavirus (organism)
VIRUS	9482002	Papovavirus human wart	Human papillomavirus (organism)
VIRUS	36319009	Papovavirus JC virus	JC virus (organism)
FUNGUS	112405000	Paracoccidioides	Paracoccidioides (organism)
BACTERIUM	415033004	Paracoccus yeei	Paracoccus yeei (organism)
VIRUS	407498006	Parainfluenzae	Human parainfluenza viruses (organism)
VIRUS	407487005	Paramyxovirus type unspecified	Genus Respirovirus (organism)
VIRUS	11970002	Parvovirus type unspecified	Genus Parvovirus (organism)
BACTERIUM	87075007	Pasteurella aerogenes	Pasteurella aerogenes (organism)
BACTERIUM	113902004	Pasteurella bettyae	Pasteurella bettyae (organism)
BACTERIUM	7784009	Pasteurella canis	Pasteurella canis (organism)
BACTERIUM	80948000	Pasteurella dagmatis	Pasteurella dagmatis (organism)
BACTERIUM	429076006	Pasteurella gallinarum	Avibacterium gallinarum (organism)
BACTERIUM	128385005	Pasteurella haemolytica	Mannheimia haemolytica (organism)
BACTERIUM	10879005	Pasteurella multocida ssp.	Pasteurella multocida (organism)

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BACTERIUM	1743002	Pasteurella multocida ssp. gallicida	Pasteurella multocida ss. gallicida (organism)
BACTERIUM	71068007	Pasteurella multocida ssp. multocida	Pasteurella multocida ss. multocida (organism)
BACTERIUM	14298009	Pasteurella multocida ssp. septica	Pasteurella multocida ss. septica (organism)
BACTERIUM	32562008	Pasteurella pneumotropica	Pasteurella pneumotropica (organism)
BACTERIUM	131346002	Pasteurella spp.	Pasteurella species (organism)
BACTERIUM	422013009	Pectobacterium	Genus Pectobacterium (organism)
BACTERIUM	243237003	Pediococcus acidilactici	Pediococcus acidilactici (organism)
BACTERIUM	243242006	Pediococcus pentosaceus	Pediococcus pentosaceus (organism)
BACTERIUM	419110005	Pediococcus spp.	Pediococcus species (organism)
FUNGUS	42993004	Penicillium	Penicillium (organism)
BACTERIUM	112344007	Peptococcus niger	Peptococcus niger (organism)
BACTERIUM	20585006	Peptococcus spp.	Genus Peptococcus (organism)
BACTERIUM	19217002	Peptostreptococcus anaerobius	Peptostreptococcus anaerobius (organism)
BACTERIUM	89268006	Peptostreptococcus asaccharolyticus	Peptostreptococcus asaccharolyticus (organism)
BACTERIUM	413519008	Peptostreptococcus hydrogenalis	Anaerococcus hydrogenalis (organism)
BACTERIUM	19204000	Peptostreptococcus indolicus	Peptostreptococcus indolicus (organism)
BACTERIUM	113909008	Peptostreptococcus lacrimalis	Peptostreptococcus lacrimalis (organism)
BACTERIUM	413520002	Peptostreptococcus lactolyticus	Anaerococcus lactolyticus (organism)
BACTERIUM	417469002	Peptostreptococcus magnus	Finegoldia magna (organism)
BACTERIUM	62890009	Peptostreptococcus micros	Peptostreptococcus micros (organism)
BACTERIUM	113631003	Peptostreptococcus parvulus	Atopobium parvulum (living organism)
BACTERIUM	413522005	Peptostreptococcus prevotii	Anaerococcus prevotii (organism)
BACTERIUM	113946007	Peptostreptococcus productus	Ruminococcus productus (organism)
BACTERIUM	116491003	Peptostreptococcus spp	Peptostreptococcus species (organism)

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BACTERIUM	413524006	Peptostreptococcus tetradius	Anaerococcus tetradius (organism)
BACTERIUM	413525007	Peptostreptococcus vaginalis	Anaerococcus vaginalis (organism)
FUNGUS	91088000	Petriellidum boydii	Pseudallescheria boydii (organism)
FUNGUS	51929003	Phaeococcomyces exophialae	Phaeococcomyces exophialae (organism)
FUNGUS	41402008	Phialophora	Genus Phialophora (organism)
FUNGUS	61019006	Phoma	Phoma (organism)
FUNGUS	427041001	Pichia anomala	Pichia anomala (organism)
FUNGUS	243433002	Pichia farinosa	Pichia farinosa (organism)
FUNGUS	33001002	Pichia ohmeri	Pichia ohmeri (organism)
FUNGUS	427187009	Pichia polymorpha	Pichia polymorpha (organism)
VIRUS	407345007	Picornavirus type unspecified	Genus Picornavirus (organism)
FUNGUS	50411008	Piedraia	Genus Piedraia (organism)
PARASITE	30020004	Plasmodium falciparum	Plasmodium falciparum (organism)
PARASITE	56395006	Plasmodium malariae	Plasmodium malariae (organism)
PARASITE	18508006	Plasmodium ovale	Plasmodium ovale (organism)
PARASITE	372332005	Plasmodium spp.	Plasmodium species (organism)
PARASITE	74746009	Plasmodium vivax	Plasmodium vivax (organism)
BACTERIUM	38643006	Plesiomonas shigelloides	Plesiomonas shigelloides (organism)
BACTERIUM	131347006	Plesiomonas spp	Plesiomonas species (organism)
FUNGUS	639000	Pneumocystis carinii	Pneumocystis carinii (organism)
VIRUS	407455007	Polyomaviridae	Family Polyomaviridae (organism)
BACTERIUM	115950003	Porphyromonas asaccharolytica	Porphyromonas asaccharolyticus (organism)
BACTERIUM	2401005	Porphyromonas endodontalis	Bacteroides endodontalis (organism)
BACTERIUM	114163003	Porphyromonas gingivalis	Porphyromonas gingivalis (organism)
BACTERIUM	114166006	Porphyromonas salivosa	Porphyromonas macacae (organism)
BACTERIUM	131398000	Porphyromonas spp	Porphyromonas species (organism)
VIRUS	424976006	Poxviridae	Family Poxviridae (organism)
VIRUS	68855006	Poxviridae molluscum contagiosum	Molluscum contagiosum virus (organism)
BACTERIUM	115025003	Pragia fontium	Pragia fontium (organism)
BACTERIUM	131306008	Pragia spp	Pragia species (organism)

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BACTERIUM	114131009	Prevotella bivia	Prevotella bivia (organism)
BACTERIUM	114134001	Prevotella buccae	Prevotella buccae (organism)
BACTERIUM	114135000	Prevotella buccalis	Prevotella buccalis (organism)
BACTERIUM	114136004	Prevotella corporis	Prevotella corporis (organism)
BACTERIUM	114138003	Prevotella denticola	Prevotella denticola (organism)
BACTERIUM	114139006	Prevotella disiens	Prevotella disiens (organism)
BACTERIUM	114141007	Prevotella heparinolytica	Prevotella heparinolytica (organism)
BACTERIUM	114142000	Prevotella intermedia	Prevotella intermedia (organism)
BACTERIUM	50654008	Prevotella loescheii	Bacteroides loescheii (organism)
BACTERIUM	114144004	Prevotella melaninogenica	Prevotella melaninogenica (organism)
BACTERIUM	114145003	Prevotella nigrescens	Prevotella nigrescens (organism)
BACTERIUM	114146002	Prevotella oralis	Prevotella oralis (organism)
BACTERIUM	114147006	Prevotella oris	Prevotella oris (organism)
BACTERIUM	419466004	Prevotella oulorum	Prevotella oulorum (organism)
BACTERIUM	115949003	Prevotella ruminicola	Prevotella ruminicola (organism)
BACTERIUM	131397005	Prevotella spp	Prevotella species (organism)
BACTERIUM	114152001	Prevotella veroralis	Prevotella veroralis (organism)
BACTERIUM	425729002	Prevotella zoogloformans	Bacteroides zoogloformans (organism)
BACTERIUM	39473003	Propionibacterium acnes	Propionibacterium acnes (organism)
BACTERIUM	47473006	Propionibacterium avidum	Propionibacterium avidum (organism)
BACTERIUM	87755005	Propionibacterium granulosum	Propionibacterium granulosum (organism)
BACTERIUM	26102005	Propionibacterium lymphophilum	Propionibacterium lymphophilum (organism)
BACTERIUM	427413007	Propionibacterium propionicum	Propionibacterium propionicum (organism)
BACTERIUM	131348001	Propionibacterium spp	Propionibacterium species (organism)
BACTERIUM	73457008	Proteus mirabilis	Proteus mirabilis (organism)
BACTERIUM	86145008	Proteus myxofaciens	Proteus myxofaciens (organism)
BACTERIUM	45298005	Proteus penneri	Proteus penneri (organism)
BACTERIUM	131275005	Proteus spp	Proteus species (organism)
BACTERIUM	45834001	Proteus vulgaris	Proteus vulgaris (organism)

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FUNGUS	37563009	Prototheca	Prototheca (organism)
FUNGUS	70523003	Prototheca wickerhamii	Prototheca wickerhamii (organism)
FUNGUS	32768009	Prototheca zopfii	Prototheca zopfii (organism)
BACTERIUM	46349009	Providencia alcalifaciens	Providencia alcalifaciens (organism)
BACTERIUM	47300009	Providencia heimbachae	Providencia heimbachae (organism)
BACTERIUM	14196002	Providencia rettgeri	Providencia rettgeri (organism)
BACTERIUM	19196004	Providencia rustigianii	Providencia rustigianii (organism)
BACTERIUM	131276006	Providencia spp	Providencia species (organism)
BACTERIUM	1445008	Providencia stuartii	Providencia stuartii (organism)
BACTERIUM	57032008	Pseudomonas	Genus Pseudomonas (organism)
BACTERIUM	52499004	Pseudomonas aeruginosa	Pseudomonas aeruginosa (organism)
BACTERIUM	46247008	Pseudomonas alcaligenes	Pseudomonas alcaligenes (organism)
BACTERIUM	63949003	Pseudomonas chlororaphis	Pseudomonas chlororaphis (organism)
BACTERIUM	113685003	Pseudomonas delafieldii	Acidovorax delafieldii (organism)
BACTERIUM	113689009	Pseudomonas diminuta	Brevundimonas diminuta (organism)
BACTERIUM	39289003	Pseudomonas fluorescens	Pseudomonas fluorescens (organism)
BACTERIUM	59419001	Pseudomonas mendocina	Pseudomonas mendocina (organism)
BACTERIUM	17191002	Pseudomonas pertucigena	Pseudomonas pertucinogena (organism)
BACTERIUM	30955004	Pseudomonas pseudoalcaligenes	Pseudomonas pseudoalcaligenes (organism)
BACTERIUM	68608003	Pseudomonas putida	Pseudomonas putida (organism)
BACTERIUM	90187004	Pseudomonas sp. group 1	Pseudomonas, group VA-1 (organism)
BACTERIUM	116493000	Pseudomonas spp	Pseudomonas species (organism)
BACTERIUM	58024003	Pseudomonas stutzeri	Pseudomonas stutzeri (organism)
BACTERIUM	415236004	Pseudomonas thomasi	Ralstonia mannitolilytica (organism)
BACTERIUM	113690000	Pseudomonas vesicularis	Brevundimonas vesicularis (organism)
BACTERIUM	70465007	Psychrobacter immobilis	Psychrobacter immobilis (organism)
BACTERIUM	131349009	Psychrobacter species	Psychrobacter species (organism)
FUNGUS	33478003	Pyrenochaeta	Pyrenochaeta (organism)
VIRUS	59881000	Rabies virus	Rabies virus (organism)

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BACTERIUM	48569008	Rahnella	Genus Rahnella (organism)
BACTERIUM	10021006	Rahnella aquatilis	Rahnella aquatilis (organism)
BACTERIUM	116198003	Ralstonia paucula	Ralstonia paucula (organism)
VIRUS	243591001	Reovirus type unspecified (organism)	Genus Orthoreovirus (organism)
VIRUS	6415009	Respiratory Syncytial virus	Human respiratory syncytial virus (organism)
VIRUS	407327007	Rhabdovirus type unspecified	Genus Rhabdovirus (organism)
FUNGUS	65470001	Rhinosporidium	Genus Rhinosporidium (organism)
VIRUS	90389005	Rhinovirus	Genus Rhinovirus (organism)
BACTERIUM	438107000	Rhizobium radiobacter	Rhizobium radiobacter (organism)
FUNGUS	17683005	Rhizopus	Rhizopus (organism)
BACTERIUM	80771008	Rhodococcus equi	Rhodococcus equi (organism)
BACTERIUM	131350009	Rhodococcus spp.	Rhodococcus species (organism)
FUNGUS	51976007	Rhodotorula	Rhodotorula (organism)
FUNGUS	69250004	Rhodotorula glutinis	Rhodotorula glutinis (organism)
FUNGUS	416777007	Rhodotorula minuta	Rhodotorula minuta (organism)
FUNGUS	243470006	Rhodotorula pilimanae	Rhodotorula pilimanae (organism)
FUNGUS	86724009	Rhodotorula rubra	Rhodotorula rubra (organism)
BACTERIUM	30769009	Rickettsia akari	Rickettsia akari (organism)
BACTERIUM	32691002	Rickettsia conorii	Rickettsia conorii (organism)
BACTERIUM	28499009	Rickettsia prowazekii	Rickettsia prowazekii (organism)
BACTERIUM	18054009	Rickettsia rickettsii	Rickettsia rickettsii (organism)
BACTERIUM	62065006	Rickettsia spp.	Genus Rickettsia (organism)
BACTERIUM	114233001	Rickettsia tsutsugamushi	Orientia tsutsugamushi (organism)
BACTERIUM	79284001	Rickettsia typhi	Rickettsia typhi (organism)
BACTERIUM	103510000	Rochalimaea henselae	Bartonella henselae (organism)
BACTERIUM	103511001	Rochalimaea quintana	Bartonella quintana (organism)
BACTERIUM	103512008	Rochalimaea vinsonii	Bartonella vinsonii (organism)
BACTERIUM	131291008	Roseomonas species	Roseomonas species (organism)
VIRUS	417542000	Rotavirus	Genus Rotavirus (organism)
BACTERIUM	415355002	Rothia	Rothia species (organism)
BACTERIUM	35379007	Rothia dentocariosa	Rothia dentocariosa (organism)

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VIRUS	5210005	Rubella virus	Rubella virus (organism)
FUNGUS	27069008	Saccharomyces	Genus Saccharomyces (organism)
FUNGUS	58296003	Saccharomyces cerevisiae	Saccharomyces cerevisiae (organism)
VIRUS	58432001	Saint Louis encephalitis virus	Saint Louis encephalitis virus (organism)
BACTERIUM	80627004	Salmonella agona	Salmonella Agona (organism)
BACTERIUM	397502001	Salmonella arizonae	Salmonella enterica subsp. arizonae (organism)
BACTERIUM	110378009	Salmonella cholerae	Salmonella enterica (organism)
BACTERIUM	80232006	Salmonella Choleraesuis	Salmonella Choleraesuis (organism)
BACTERIUM	62136003	Salmonella dublin	Salmonella Dublin (organism)
BACTERIUM	73525009	Salmonella enteritidis	Salmonella Enteritidis (organism)
BACTERIUM	398426003	Salmonella group A	Salmonella group O:2 (organism)
BACTERIUM	398467008	Salmonella group B	Salmonella group O:4 (organism)
BACTERIUM	398593004	Salmonella group C1 and C4	Salmonella group O:7 (organism)
BACTERIUM	398364000	Salmonella group C2 and C3	Salmonella group O:8 (organism)
BACTERIUM	71865006	Salmonella heidelberg	Salmonella Heidelberg (organism)
BACTERIUM	82071007	Salmonella infantis	Salmonella Infantis (organism)
BACTERIUM	80268001	Salmonella montevideo	Salmonella Montevideo (organism)
BACTERIUM	56077000	Salmonella newport	Salmonella Newport (organism)
BACTERIUM	46667007	Salmonella oranienburg	Salmonella Oranienburg (organism)
BACTERIUM	79128009	Salmonella Paratyphi A	Salmonella Paratyphi A (organism)
BACTERIUM	85908006	Salmonella Paratyphi B	Salmonella Paratyphi B (organism)
BACTERIUM	32488009	Salmonella Paratyphi C	Salmonella Paratyphi C (organism)
BACTERIUM	2820001	Salmonella saintpaul	Salmonella Saintpaul (organism)
BACTERIUM	372342007	Salmonella spp.	Salmonella species (organism)
BACTERIUM	398488004	Salmonella subgroup 2 (Subgenus II)	Salmonella enterica subsp. salamae (organism)
BACTERIUM	398371005	Salmonella subgroup 4 (Subgenus IV)	Salmonella enterica subsp. houtenae (organism)
BACTERIUM	398393000	Salmonella subgroup 5 (Subgenus V)	Salmonella bongori (organism)

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Category	SNOMED CT Concept ID	Display Name	SNOMED CT Fully Specified Name
BACTERIUM	5595000	Salmonella typhi	Salmonella Typhi (organism)
BACTERIUM	50136005	Salmonella typhimurium	Salmonella Typhimurium (organism)
BACTERIUM	115408009	Salmonella, serogroup D	Salmonella, serogroup D (organism)
BACTERIUM	115409001	Salmonella, serogroup E	Salmonella, serogroup E (organism)
FUNGUS	243547001	Sarcinosporon inkin	Sarcinosporon inkin (organism)
PARASITE	34666003	Sarcocystis	Sarcocystis (organism)
PARASITE	67333007	Scabies	Sarcoptes scabiei (organism)
BACTERIUM	6754006	Selenomonas artemidis	Selenomonas artemidis (organism)
BACTERIUM	86435000	Selenomonas diana	Selenomonas diana (organism)
BACTERIUM	27333006	Selenomonas flueggei	Selenomonas flueggei (organism)
BACTERIUM	43571005	Selenomonas infelix	Selenomonas infelix (organism)
BACTERIUM	70096005	Selenomonas noxia	Selenomonas noxia (organism)
BACTERIUM	116415008	Selenomonas spp.	Selenomonas species (organism)
BACTERIUM	23595003	Selenomonas sputigena	Selenomonas sputigena (organism)
BACTERIUM	243385004	Serpulina jonesii	Serpulina jonesii (organism)
BACTERIUM	372348006	Serpulina spp.	Serpulina species (organism)
BACTERIUM	76656001	Serratia entomophila	Serratia entomophila (organism)
BACTERIUM	802004	Serratia ficaria	Serratia ficaria (organism)
BACTERIUM	112329006	Serratia fonticola	Serratia fonticola (organism)
BACTERIUM	115005002	Serratia grimesii	Serratia grimesii (organism)
BACTERIUM	23787004	Serratia liquefaciens	Serratia liquefaciens (organism)
BACTERIUM	33522002	Serratia marcescens	Serratia marcescens (organism)
BACTERIUM	115006001	Serratia marcescens biogroup 1	Serratia marcescens, Biogroup I (organism)
BACTERIUM	397075007	Serratia odorifera biogroup 1	Serratia odorifera biogroup 1 (organism)
BACTERIUM	397076008	Serratia odorifera biogroup 2	Serratia odorifera biogroup 2 (organism)
BACTERIUM	10413007	Serratia odorifera biogroup unspecified	Serratia odorifera (organism)
BACTERIUM	28955009	Serratia plymuthica	Serratia plymuthica (organism)
BACTERIUM	115004003	Serratia proteamaculans ssp. quinovora	Serratia proteamaculans subsp quinovora (organism)

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Category	SNOMED CT Concept ID	Display Name	SNOMED CT Fully Specified Name
BACTERIUM	116135003	Serratia proteamaculans ssp. unspec.	Serratia proteamaculans (organism)
BACTERIUM	116136002	Serratia proteamaculans subsp proteamaculans	Serratia proteamaculans subsp proteamaculans (organism)
BACTERIUM	55825002	Serratia rubidaea	Serratia rubidaea (organism)
BACTERIUM	116497004	Serratia spp.	Serratia species (organism)
BACTERIUM	113700003	Shewanella putrefaciens	Shewanella putrefaciens (organism)
BACTERIUM	115158009	Shewanella spp.	Genus Shewanella (organism)
BACTERIUM	43612004	Shigella Group A	Shigella dysenteriae (organism)
BACTERIUM	85729005	Shigella Group B	Shigella flexneri (organism)
BACTERIUM	55462008	Shigella Group C	Shigella boydii (organism)
BACTERIUM	4298009	Shigella Group D	Shigella sonnei (organism)
BACTERIUM	116498009	Shigella spp.	Shigella species (organism)
PRION	88520007	Slow Neuropathic Creutzfeldt	Creutzfeldt-Jakob agent (organism)
BACTERIUM	113749005	Sphingobacterium mizutae	Flavobacterium mizutaii (organism)
BACTERIUM	51595006	Sphingobacterium multivorum	Sphingobacterium multivorum (organism)
BACTERIUM	61675006	Sphingobacterium spiritivorum	Sphingobacterium spiritivorum (organism)
BACTERIUM	131357007	Sphingobacterium spp.	Sphingobacterium species (organism)
BACTERIUM	113954009	Sphingobacterium thalpophilum	Sphingobacterium thalpophilum (organism)
BACTERIUM	243347002	Sphingobacterium yabuuchiae	Sphingobacterium yabuuchiae (organism)
BACTERIUM	243350004	Sphingomonas paucimobilis	Sphingomonas paucimobilis (organism)
BACTERIUM	131235002	Sphingomonas spp.	Sphingomonas species (organism)
BACTERIUM	35164008	Spirillum minus	Spirillum minus (organism)
BACTERIUM	131356003	Spirillum spp.	Spirillum species (organism)
FUNGUS	243446007	Sporobolomyces salmonicolor	Sporobolomyces salmonicolor (organism)
FUNGUS	32662000	Sporothrix schenckii	Sporothrix schenckii (organism)
FUNGUS	63100009	Sporothrix spp.	Genus Sporothrix (organism)
BACTERIUM	72465001	Staphylococcus arlettae	Staphylococcus arlettae (organism)
BACTERIUM	3092008	Staphylococcus aureus	Staphylococcus aureus (organism)

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BACTERIUM	45654003	Staphylococcus auricularis	Staphylococcus auricularis (organism)
BACTERIUM	113962001	Staphylococcus capitis ssp. capitis	Staphylococcus capitis ss capitis (organism)
BACTERIUM	40347003	Staphylococcus capitis ssp. unspecified	Staphylococcus capitis (organism)
BACTERIUM	103492009	Staphylococcus capitis ssp. urealyticus	Staphylococcus capitis subspecies urealyticus (organism)
BACTERIUM	76969000	Staphylococcus caprae	Staphylococcus caprae (organism)
BACTERIUM	9784002	Staphylococcus carnosus	Staphylococcus carnosus (organism)
BACTERIUM	56629004	Staphylococcus chromogenes	Staphylococcus chromogenes (organism)
BACTERIUM	116197008	Staphylococcus coagulase negative	Staphylococcus, coagulase negative (organism)
BACTERIUM	127535004	Staphylococcus coagulase positive	Staphylococcus, coagulase positive (organism)
BACTERIUM	66872005	Staphylococcus cohnii	Staphylococcus cohnii (organism)
BACTERIUM	113963006	Staphylococcus cohnii ss cohnii	Staphylococcus cohnii ss cohnii (organism)
BACTERIUM	103493004	Staphylococcus cohnii ss. urealyticum	Staphylococcus cohnii ss. urealyticum (organism)
BACTERIUM	60875001	Staphylococcus epidermidis	Staphylococcus epidermidis (organism)
BACTERIUM	28217008	Staphylococcus equorum	Staphylococcus equorum (organism)
BACTERIUM	8056006	Staphylococcus gallinarum	Staphylococcus gallinarum (organism)
BACTERIUM	83452006	Staphylococcus haemolyticus	Staphylococcus haemolyticus (organism)
BACTERIUM	44827007	Staphylococcus hominis	Staphylococcus hominis (organism)
BACTERIUM	432505008	Staphylococcus hominis subspecies hominis	Staphylococcus hominis subspecies hominis (organism)
BACTERIUM	438202004	Staphylococcus hominis subspecies novobiosepticus	Staphylococcus hominis subspecies novobiosepticus (organism)
BACTERIUM	19683001	Staphylococcus hyicus	Staphylococcus hyicus (organism)

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Category	SNOMED CT Concept ID	Display Name	SNOMED CT Fully Specified Name
BACTERIUM	34605002	Staphylococcus intermedius	Staphylococcus intermedius (organism)
BACTERIUM	53227003	Staphylococcus kloosii	Staphylococcus kloosii (organism)
BACTERIUM	40253001	Staphylococcus lentus	Staphylococcus lentus (organism)
BACTERIUM	103494005	Staphylococcus lugdunensis	Staphylococcus lugdunensis (organism)
BACTERIUM	41103009	Staphylococcus saccharolyticus (anaer.)	Staphylococcus saccharolyticus (organism)
BACTERIUM	19743000	Staphylococcus saprophyticus	Staphylococcus saprophyticus (organism)
BACTERIUM	131360000	Staphylococcus schleiferi	Staphylococcus schleiferi (organism)
BACTERIUM	113974002	Staphylococcus schleiferi ss coagulans	Staphylococcus schleiferi ss coagulans (organism)
BACTERIUM	103496007	Staphylococcus schleiferi ss. schleiferi	Staphylococcus schleiferi ss. schleiferi (organism)
BACTERIUM	70806002	Staphylococcus sciuri	Staphylococcus sciuri (organism)
BACTERIUM	52122005	Staphylococcus simulans	Staphylococcus simulans (organism)
BACTERIUM	116499001	Staphylococcus spp.	Staphylococcus species (organism)
BACTERIUM	63550006	Staphylococcus warneri	Staphylococcus warneri (organism)
BACTERIUM	32737005	Staphylococcus xylosus	Staphylococcus xylosus (organism)
BACTERIUM	113697002	Stenotrophomonas maltophilia	Stenotrophomonas maltophilia (organism)
BACTERIUM	116400007	Stenotrophomonas spp.	Stenotrophomonas species (organism)
BACTERIUM	416544005	Stomatococcus mucilaginosus	Rothia mucilaginosa (organism)
BACTERIUM	90163001	Stomatococcus spp.	Genus Rothia (organism)
BACTERIUM	16372003	Streptobacillus moniliformis	Streptobacillus moniliformis (organism)
BACTERIUM	419405003	Streptobacillus spp.	Streptobacillus species (organism)
BACTERIUM	51182006	Streptococcus acidominimus	Streptococcus acidominimus (organism)
BACTERIUM	113713009	Streptococcus adjacens	Granulicatella adiacens (organism)
BACTERIUM	60631002	Streptococcus alpha hemolytic	Alpha-hemolytic streptococcus (organism)
BACTERIUM	44304009	Streptococcus anginosus	Streptococcus anginosus (organism)

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BACTERIUM	415597009	Streptococcus anginosus group	Streptococcus anginosus group (organism)
BACTERIUM	53490009	Streptococcus beta-hemolytic	Beta-hemolytic streptococcus (organism)
BACTERIUM	72646003	Streptococcus bovis	Streptococcus equinus (organism)
BACTERIUM	113980005	Streptococcus crista	Streptococcus cristatus (organism)
BACTERIUM	55547008	Streptococcus D	Streptococcus, group D (organism)
BACTERIUM	113714003	Streptococcus defectivus	Abiotrophia defectiva (organism)
BACTERIUM	40812000	Streptococcus dysgalactiae	Streptococcus dysgalactiae (organism)
BACTERIUM	113982002	Streptococcus dysgalactiae subspecies dysgalactiae	Streptococcus dysgalactiae subspecies dysgalactiae (organism)
BACTERIUM	128338004	Streptococcus dysgalactiae subspecies equisimilis	Streptococcus dysgalactiae subspecies equisimilis (organism)
BACTERIUM	12447002	Streptococcus equi	Streptococcus equi (organism)
BACTERIUM	113984001	Streptococcus equi subspecies equi	Streptococcus equi subspecies equi (organism)
BACTERIUM	33708000	Streptococcus equi subspecies zooepidemicus	Streptococcus equi subspecies zooepidemicus (organism)
BACTERIUM	72646003	Streptococcus equinus	Streptococcus equinus (organism)
BACTERIUM	22339002	Streptococcus gamma	Gamma-hemolytic streptococcus (organism)
BACTERIUM	113986004	Streptococcus gordonii	Streptococcus gordonii (organism)
BACTERIUM	80166006	Streptococcus group A	Streptococcus pyogenes (organism)
BACTERIUM	43492007	Streptococcus group B	Streptococcus agalactiae (organism)
BACTERIUM	89181007	Streptococcus group C	Streptococcus, group C (organism)
BACTERIUM	55547008	Streptococcus group D	Streptococcus, group D (organism)
BACTERIUM	37916002	Streptococcus group E	Streptococcus, group E (organism)
BACTERIUM	83503005	Streptococcus group F	Streptococcus, group F (organism)
BACTERIUM	75012005	Streptococcus group G	Streptococcus, group G (organism)
BACTERIUM	113943004	Streptococcus hansenii	Ruminococcus hansenii (organism)
BACTERIUM	79050007	Streptococcus iniae	Streptococcus iniae (organism)
BACTERIUM	62170002	Streptococcus intermedius	Streptococcus intermedius (organism)
BACTERIUM	57997003	Streptococcus mitis	Streptococcus mitis (organism)

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BACTERIUM	127539005	Streptococcus mitis group	Streptococcus mitis group (organism)
BACTERIUM	214001	Streptococcus mutans	Streptococcus mutans (organism)
BACTERIUM	19870004	Streptococcus oralis	Streptococcus oralis (organism)
BACTERIUM	113990002	Streptococcus parasanguis	Streptococcus parasanguinis (organism)
BACTERIUM	32134008	Streptococcus pleomorphus (anaerobic)	Streptococcus pleomorphus (organism)
BACTERIUM	9861002	Streptococcus pneumoniae	Streptococcus pneumoniae (organism)
BACTERIUM	39888004	Streptococcus salivarius	Streptococcus salivarius (organism)
BACTERIUM	84684000	Streptococcus salivarius subspecies salivarius	Streptococcus salivarius subspecies salivarius (organism)
BACTERIUM	113993000	Streptococcus sanguis	Streptococcus sanguinis (organism)
BACTERIUM	42985004	Streptococcus sanguis II	Streptococcus sanguis II (organism)
BACTERIUM	43777007	Streptococcus sobrinus	Streptococcus sobrinus (organism)
BACTERIUM	116501009	Streptococcus spp.	Streptococcus species (organism)
BACTERIUM	116501009	Streptococcus spp.	Streptococcus species (organism)
BACTERIUM	13250005	Streptococcus uberis	Streptococcus uberis (organism)
BACTERIUM	113998009	Streptococcus vestibularis	Streptococcus vestibularis (organism)
BACTERIUM	31703004	Streptococcus viridans spp.	Streptococcus, viridans group (organism)
PARASITE	10823008	Strongyloides	Strongyloides (organism)
PARASITE	28625000	Taenia	Taenia (organism)
VIRUS	69683003	Tanapox virus	Tanapox virus (organism)
BACTERIUM	1546007	Tatumella tyseos	Tatumella tyseos (organism)
BACTERIUM	131294000	Tatumella spp.	Tatumella species (organism)
VIRUS	32323003	Tick-borne encephalitis virus	Tick-borne encephalitis virus (organism)
BACTERIUM	75376009	Tissierella praeacuta	Tissierella praeacuta (organism)
BACTERIUM	131369004	Tissierella spp.	Tissierella species (organism)
VIRUS	129231002	Togaviridae	Togaviridae (organism)
FUNGUS	47931009	Torulopsis candida	Torulopsis candida (organism)
FUNGUS	40747000	Torulopsis glabrata	Torulopsis glabrata (organism)
PARASITE	39091000	Toxocara	Toxocara (organism)

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Category	SNOMED CT Concept ID	Display Name	SNOMED CT Fully Specified Name
PARASITE	61949005	Toxoplasma	Toxoplasma (organism)
BACTERIUM	243308004	Trabulsiella	Genus Trabulsiella (organism)
BACTERIUM	243309007	Trabulsiella guamensis	Trabulsiella guamensis (organism)
BACTERIUM	14562002	Treponema carateum	Treponema carateum (organism)
BACTERIUM	44106000	Treponema pallidum biotype endemicum	Treponema pallidum ss. endemicum (organism)
BACTERIUM	43454006	Treponema pallidum biotype pallidum	Treponema pallidum ss. pallidum (organism)
BACTERIUM	6246005	Treponema pallidum biotype pertenue	Treponema pallidum ss. pertenue (organism)
BACTERIUM	125047004	Treponema spp.	Treponema species (organism)
PARASITE	372360007	Trichinella	Trichinella species (organism)
PARASITE	3764006	Trichomonas	Trichomonas (organism)
FUNGUS	372362004	Trichophyton	Trichophyton species (organism)
FUNGUS	62289009	Trichosporon	Trichosporon (organism)
FUNGUS	243475001	Trichosporon asahii	Trichosporon asahii (organism)
FUNGUS	39268007	Trichosporon beigeli	Trichosporon beigeli (organism)
FUNGUS	243478004	Trichosporon mucoides	Trichosporon mucoides (organism)
FUNGUS	25783003	Trichosporon pullulans	Trichosporon pullulans (organism)
PARASITE	2572000	Trichuris	Trichuris (organism)
PARASITE	243659009	Trypanosoma brucei	Trypanosoma brucei (organism)
PARASITE	88274000	Trypanosoma cruzi	Trypanosoma cruzi (organism)
PARASITE	88274000	Trypanosoma cruzi	Trypanosoma cruzi (organism)
BACTERIUM	131371004	Ureaplasma spp	Ureaplasma species (organism)
BACTERIUM	12006007	Ureaplasma urealyticum	Ureaplasma urealyticum (organism)
VIRUS	13126002	Vaccinia virus	Vaccinia virus (organism)
VIRUS	19551004	Varicella-zoster	Human herpesvirus 3 (organism)
VIRUS	243568000	Variola virus	Variola virus (organism)
BACTERIUM	90435009	Veillonella parvula	Veillonella parvula (organism)
BACTERIUM	116420008	Veillonella spp	Veillonella species (organism)
VIRUS	62958000	Venezuelan equine encephalomyelitis virus	Venezuelan equine encephalomyelitis virus (organism)
BACTERIUM	45749000	Vibrio alginolyticus	Vibrio alginolyticus (organism)

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BACTERIUM	62987004	Vibrio cholerae 01	Vibrio cholerae, O1 (organism)
BACTERIUM	398506000	Vibrio cholerae non 01	Vibrio cholerae, non-O1 (organism)
BACTERIUM	75953000	Vibrio cholerae unspecified	Vibrio cholerae (organism)
BACTERIUM	36764009	Vibrio cincinnatiensis	Vibrio cincinnatiensis (organism)
BACTERIUM	387799003	Vibrio damsela	Photobacterium damsela subsp damsela (organism)
BACTERIUM	43199008	Vibrio fluvialis	Vibrio fluvialis (organism)
BACTERIUM	6387008	Vibrio furnissii	Vibrio furnissii (organism)
BACTERIUM	84003007	Vibrio harveyi	Vibrio harveyi (organism)
BACTERIUM	7064002	Vibrio hollisae	Vibrio hollisae (organism)
BACTERIUM	28382009	Vibrio metschnikovii	Vibrio metschnikovii (organism)
BACTERIUM	11776003	Vibrio mimicus	Vibrio mimicus (organism)
BACTERIUM	11736008	Vibrio parahaemolyticus	Vibrio parahaemolyticus (organism)
BACTERIUM	131373001	Vibrio spp	Vibrio species (organism)
BACTERIUM	55905000	Vibrio vulnificus	Vibrio vulnificus (organism)
BACTERIUM	114109001	Virgibacillus pantothenticus	Virgibacillus pantothenticus (organism)
BACTERIUM	131374007	Weeksella spp	Weeksella species (organism)
BACTERIUM	83326004	Weeksella virosa	Weeksella virosa (organism)
BACTERIUM	113718000	Weeksella zoohelcum	Bergeyella zoohelcum (organism)
VIRUS	57311007	West Nile virus	West Nile virus (organism)
VIRUS	11428003	Western equine encephalomyelitis virus	Western equine encephalomyelitis virus (organism)
BACTERIUM	131375008	Wolinella spp.	Wolinella species (organism)
BACTERIUM	32360004	Wolinella succinogenes	Wolinella succinogenes (organism)
BACTERIUM	131376009	Xanthomonas spp	Xanthomonas species (organism)
BACTERIUM	115023005	Xenorhabdus luminescens	Photorhabdus luminescens (organism)
BACTERIUM	57111002	Xenorhabdus nematophilus	Xenorhabdus nematophilus (organism)
BACTERIUM	116422000	Xenorhabdus spp	Xenorhabdus species (organism)
FUNGUS	62093005	Yeast species	Yeast (organism)
VIRUS	26630006	Yellow fever virus	Yellow fever virus (organism)
BACTERIUM	91246002	Yersinia aldovae	Yersinia aldovae (organism)

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BACTERIUM	103434007	Yersinia bercovieri	Yersinia bercovieri (organism)
BACTERIUM	65255000	Yersinia enterocolitica	Yersinia enterocolitica (organism)
BACTERIUM	85159008	Yersinia frederiksenii	Yersinia frederiksenii (organism)
BACTERIUM	10334001	Yersinia intermedia	Yersinia intermedia (organism)
BACTERIUM	91042006	Yersinia kristensenii	Yersinia kristensenii (organism)
BACTERIUM	103435008	Yersinia mollaretii	Yersinia mollaretii (organism)
BACTERIUM	54365000	Yersinia pestis	Yersinia pestis (organism)
BACTERIUM	90530002	Yersinia pseudotuberculosis	Yersinia pseudotuberculosis (organism)
BACTERIUM	87145000	Yersinia rohdei	Yersinia rohdei (organism)
BACTERIUM	64125009	Yersinia ruckeri	Yersinia ruckeri (organism)
BACTERIUM	131295004	Yersinia spp.	Yersinia species (organism)
BACTERIUM	131296003	Yokenella (Koserella) spp.	Yokenella species (organism)
BACTERIUM	89477001	Yokenella regensburgei (Koserella trabulsii)	Yokenella regensburgei (organism)

Procedure Category Codes

The NHSN procedure-category codes represent a specific collection of ICD-9-CM codes, and the categorization is enhanced each year as ICD-9 releases new codes. Therefore, the CDA document uses the NHSN vocabulary to record procedure category. ICD-9-CM codes are shown in the third column of this table for the developer's information only.

This is a **DYNAMIC** data set. See [0 In addition](#), in preparing this release, all of the HAI constraints were recorded in a Templates Database that also houses the templates for "HL7 Implementation Guide for CDA Release 2, CDA for Public Health Case Reports, Based on HL7 CDA Release 2.0" balloted in May 2009. The conformance statements in this release are generated directly from the database and use a new format, which consolidates explanatory text for each template. The conformance-statement format is consistent with that used for PHCR.

In addition, the conditional conformance statements in the header section were updated with specialization templates for single-person and population-summary reports.

Change Notification Process for information on how to access NHSN's up-to-date list of ICD-9-CM codes mapped to NHSN procedure categories.

Table 64: Procedure Category Value Set

Value Set: NHSNProcedureCategoryCode 2.16.840.1.113883.13.17 Code System: cdcNHSN 2.16.840.1.113883.6.277
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NHSN Code	Meaning	ICD-9-CM Codes (Informative)
2105-5	Abdominal aortic aneurysm repair	38.34, 38.44, 38.64
2126-1	Limb amputation	84.00-84.19, 84.91
2108-9	Appendix surgery	47.01, 47.09, 47.2, 47.91, 47.92, 47.99
2102-2	AV shunt for dialysis	39.27, 39.53
2109-7	Bile duct, liver or pancreatic surgery	50.0, 50.12, 50.14, 50.21-50.23, 50.25, 50.26, 50.29, 50.3, 50.4, 50.61, 50.69, 51.31-51.37, 51.39, 51.41-51.43, 51.49, 51.51, 51.59, 51.61-51.63, 51.69, 51.71, 51.72, 51.79, 51.81-51.83, 51.89, 51.91-51.95, 51.99, 52.09, 52.12, 52.22, 52.3, 52.4, 52.51-52.53, 52.59-52.6, 52.7, 52.92, 52.95, 52.96, 52.99
2110-5	Breast surgery	85.12, 85.20-85.23, 85.31-85.36, 85.41-85.48, 85.50, 85.53, 85.54, 85.6, 85.70-85.76, 85.79, 85.93-85.96
2111-3	Cardiac Surgery	35.00-35.04, 35.10-35.14, 35.20-35.28, 35.31-35.35, 35.39, 35.42, 35.50, 35.51, 35.53, 35.54, 35.60-35.63, 35.70-35.73, 35.81-35.84, 35.91-35.95, 35.98-35.99, 37.10, 37.11, 37.24, 37.25, 37.31-37.33, 37.35, 37.36, 37.41, 37.49, 37.60*
2112-1	Coronary artery bypass graft with both chest and donor site incisions	36.10-36.14, 36.19
2113-9	Coronary artery bypass graft with chest incision only	36.15-36.17, 36.2
2114-7	Carotid endarterectomy	38.12
2119-6	Gallbladder surgery	51.03, 51.04, 51.13, 51.21-51.24
2116-2	Colon surgery	17.31-17.36, 17.39, 45.03, 45.26, 45.41, 45.49, 45.52, 45.71-45.76, 45.79, 45.81-45.83, 45.92-45.95, 46.03, 46.04, 46.10, 46.11, 46.13, 46.14, 46.43, 46.52, 46.75, 46.76, 46.94
2117-0	Craniotomy	01.12, 01.14, 01.21-01.25, 01.28, 01.31, 01.32, 01.39, 01.41, 01.42, 01.51-01.53, 01.59, 02.11-02.14, 02.91-02.93, 07.51-07.54, 07.59, 07.61-07.65, 07.68, 07.69, 07.71, 07.72, 07.79, 38.01, 38.11, 38.31, 38.41, 38.51, 38.61, 38.81, 39.28
2115-4	Cesarean section	74.0, 74.1, 74.2, 74.4, 74.91, 74.99
2137-8	Spinal fusion	81.00-81.08, 81.62-81.64
2129-5	Open reduction of fracture	79.21, 79.22, 79.25, 79.26, 79.31, 79.32, 79.35, 79.36, 79.51, 79.52, 79.55, 79.56
2120-4	Gastric surgery	43.0, 43.42, 43.49-43.5, 43.6, 43.7, 43.81, 43.89, 43.91, 43.99, 44.15, 44.21, 44.29, 44.31, 44.38-44.42, 44.49-44.5, 44.61-44.65, 44.68-44.69, 44.95-44.98

Value Set: NHSNProcedureCategoryCode 2.16.840.1.113883.13.17 Code System: cdcNHSN 2.16.840.1.113883.6.277		
NHSN Code	Meaning	ICD-9-CM Codes (Informative)
2106-3	Herniorrhaphy	17.11-17.13, 17.21-17.24, 53.00-53.05, 53.10-53.17, 53.21, 53.29, 53.31, 53.39, 53.41-54.43, 53.49, 53.51, 53.59, 53.61, 53.69
2101-4	Hip Replacement	00.70-00.73, 00.85-00.87, 81.51-81.53
2121-2	Heart transplant	37.51-37.55
2107-1	Abdominal hysterectomy	68.31, 68.39, 68.41, 68.49, 68.61, 68.69
2124-6	Knee Replacement	00.80-00.84, 81.54, 81.55
2123-8	Kidney transplant	55.61, 55.69
2125-3	Laminectomy	03.01-03.02, 03.09, 80.50-80.51, 80.59, 84.60-84.69
2127-9	Liver transplant	50.51, 50.59
2128-7	Neck surgery	30.1, 30.21-30.22, 30.29-30.3, 30.4, 31.45, 40.40-40.42
2122-0	Kidney surgery	55.01-55.02, 55.11-55.12, 55.24, 55.31-55.32, 55.34-55.35, 55.39-55.4, 55.51-55.52, 55.54, 55.91
2104-8	Other operations	
2130-3	Ovarian surgery	65.01, 65.09, 65.12-65.13, 65.21-65.25, 65.29, 65.31, 65.39, 65.41, 65.49, 65.51-65.54, 65.61-65.64, 65.71-65.76, 65.79, 65.81, 65.89, 65.92-65.95, 65.99
2131-1	Pacemaker surgery	00.50-00.54, 17.51, 17.52, 37.70-37.77, 37.79-37.83, 37.85-37.87, 37.89, 37.94-37.99
2133-7	Prostate surgery	60.12, 60.3, 60.4, 60.5, 60.61-60.62, 60.69
2132-9	Periph vasc bypass surg	39.29
2134-5	Rectal surgery	48.25, 48.35, 48.40, 48.42, 48.43, 48.49-48.52, 48.59, 48.61-48.65, 48.69, 48.74
2135-2	Refusion of spine	81.30-81.39
2136-0	Small bowel surgery	45.01, 45.02, 45.15, 45.31-45.34, 45.51, 45.61-45.63, 45.91, 46.01, 46.02, 46.20-46.24, 46.31, 46.39, 46.41, 46.51, 46.71-46.74, 46.93
2138-6	Spleen surgery	41.2, 41.33, 41.41-41.43, 41.5, 41.93, 41.95, 41.99
2139-4	Thoracic surgery	32.09-32.1, 32.20, 32.21-32.23, 32.25, 32.26, 32.29, 32.3, 32.30, 32.39-32.41, 32.49, 32.5, 32.50, 32.59, 32.6, 32.9, 33.0, 33.1, 33.20-33.26, 32.29, 32.30, 32.39, 32.4, 32.41, 32.49, 32.5, 32.50, 32.59, 32.6, 32.9, 33.0, 33.1, 33.20, 33.28, 33.31-33.34, 33.39, 33.41-33.43, 33.48, 33.49, 33.98, 33.99, 34.01-34.03, 34.06, 34.1, 34.20, 34.26, 34.3, 34.4, 34.51, 34.52, 34.59, 34.6, 34.81-34.84, 34.89, 34.93, 34.99, 53.71, 53.72, 53.75, 53.80-53.84

Value Set: NHSNProcedureCategoryCode 2.16.840.1.113883.13.17		
Code System: cdcNHSN 2.16.840.1.113883.6.277		
NHSN Code	Meaning	ICD-9-CM Codes (Informative)
2140-2	Thyroid and/or parathyroid surgery	06.02, 06.09, 06.12, 06.2, 06.31, 06.39, 06.4, 06.50-06.52, 06.6, 06.7, 06.81, 06.89, 06.91-06.95, 06.98, 06.99
2141-0	Vaginal hysterectomy	68.51, 68.59, 68.7-68.71, 68.79
2142-8	Ventricular shunt	02.2, 02.31-02.35, 02.39, 02.42, 02.43, 54.95
2118-8	Exploratory abdominal surgery	53.7, 54.0, 54.11, 54.12, 54.19, 54.3, 54.4, 54.51, 54.59, 54.61-54.64, 54.71-54.75, 54.92, 54.93
2103-0	Not an NHSN operation	

NHSN Criterion of Diagnosis Value Set

This is a **DYNAMIC** value set. See [0 In addition](#), in preparing this release, all of the HAI constraints were recorded in a Templates Database that also houses the templates for “HL7 Implementation Guide for CDA Release 2, CDA for Public Health Case Reports, Based on HL7 CDA Release 2.0” balloted in May 2009. The conformance statements in this release are generated directly from the database and use a new format, which consolidates explanatory text for each template. The conformance-statement format is consistent with that used for PHCR.

In addition, the conditional conformance statements in the header section were updated with specialization templates for single-person and population-summary reports.

Change Notification Process to obtain any changes made since issuance of this implementation guide.

Table 65: Criterion of Diagnosis Value Set

Value Set: NHSNCriterionOfDiagnosisCode 2.16.840.1.114222.4.11.3195 Code System: SNOMED CT 2.16.840.1.113883.6.96 or cdcNHSN 2.16.840.1.113883.6.277		
Code	Code System	Meaning
Lab results		
2403-4	cdcNHSN	1 positive culture with $\geq 10^3$ CFU/ml and $< 10^5$ CFU/ml with no more than 2 species of microorganisms
1942-2	cdcNHSN	>15 colonies cultured from IV cannula tip using semiquantitative culture method
1923-3	cdcNHSN	$\geq 5\%$ BAL cells w/ bacteria
1929-9	cdcNHSN	≥ 2 positive cultures with $\geq 10^2$ col/ml of same uropathogen from nonvoided specimen
1931-5	cdcNHSN	≥ 2 positive urine cultures with $\geq 10^5$ col/cc with no more than 2 organisms
1930-7	cdcNHSN	1 positive culture with $\leq 10^5$ col/ml of a single uropathogen in patient being treated with an effective antimicrobial agent for UTI
1927-3	cdcNHSN	1 positive culture with $\geq 10^5$ col/cc with no more than 2 organisms
1938-0	cdcNHSN	4-fold rise in <i>L. pneumophila</i> antibody titer
1935-6	cdcNHSN	4-fold rise in paired sera for pathogen
1902-6	cdcNHSN	Blood culture not done or no organisms detected in blood
1944-8	cdcNHSN	Common skin contaminant from ≥ 2 blood cultures (see NHSN protocol for definition of skin contaminant)
1901-8	cdcNHSN	Not cultured
1937-2	cdcNHSN	<i>L. pneumophila</i> serogroup 1 antigens in urine
1939-8	cdcNHSN	Matching positive blood & sputum cultures w/ <i>Candida</i> spp

Value Set: NHSNCriterionOfDiagnosisCode 2.16.840.1.114222.4.11.3195
 Code System: SNOMED CT 2.16.840.1.113883.6.96
 or cdcNHSN 2.16.840.1.113883.6.277

Code	Code System	Meaning
1941-4	cdcNHSN	Other positive laboratory tests
1955-4	cdcNHSN	Positive blood culture
1952-1	cdcNHSN	Positive culture
1953-9	cdcNHSN	Positive culture of pathogen
1954-7	cdcNHSN	Positive culture of skin contaminant
1948-9	cdcNHSN	Positive culture of virus or Chlamydia
1936-4	cdcNHSN	Positive culture or micro-IF of Legionella spp
1934-9	cdcNHSN	Positive detection of viral antigen or antibody
1928-1	cdcNHSN	Positive dipstick for leukocyte esterase or nitrate
1945-5	cdcNHSN	Positive Gram stain of unspun urine
1943-0	cdcNHSN	Positive Gram stain when culture is negative or not done
1950-5	cdcNHSN	Positive micro-IF test for Chlamydia
1949-7	cdcNHSN	Positive PCR for Chlamydia or Mycoplasma
1946-3	cdcNHSN	Positive pleural fluid culture
1947-1	cdcNHSN	Positive quantitative culture from LRT specimen
1924-0	cdcNHSN	Radiographic evidence of infection
1951-3	cdcNHSN	Recognized pathogen from one or more blood cultures
Non-lab criteria		
128477000	SNOMED CT	Abscess
1957-0	cdcNHSN	Acute onset of diarrhea (liquid stools for > 12 hours)
419284004	SNOMED-CT	Altered mental status (in ≥70 y.o.)
1023001	SNOMED CT	Apnea
1959-6	cdcNHSN	Apnea, tachycardia, nasal flaring with retraction of chest wall or grunting
48867003	SNOMED CT	Bradycardia
1908-3	cdcNHSN	Bradycardia or tachycardia
301863008	SNOMED CT	Cavitation
43724002	SNOMED CT	Chills
95436008	SNOMED CT	Consolidation
49727002	SNOMED CT	Cough
102830001	SNOMED CT	Costovertebral angle tenderness or pain
49650001	SNOMED CT	Dysuria
386661006	SNOMED CT	Fever
162116003	SNOMED CT	Frequency of urination
1940-6	cdcNHSN	Fungi or Pneumocystis carinii from LRT specimen
304214002	SNOMED CT	Heat
66857006	SNOMED CT	Hemoptysis

Value Set: NHSNCriterionOfDiagnosisCode 2.16.840.1.114222.4.11.3195
 Code System: SNOMED CT 2.16.840.1.113883.6.96
 or cdcNHSN 2.16.840.1.113883.6.277

Code	Code System	Meaning
1956-2	cdcNHSN	Histopathologic exam w/ abscess formation, positive quantitative culture of lung parenchyma, or positive quantitative culture of lung parenchyma, or lung parenchyma invasion by fungal hyphae
45007003	SNOMED CT	Hypotension
386689009	SNOMED CT	Hypothermia
1961-2	cdcNHSN	Incision deliberately opened by surgeon
214264003	cdcNHSN	Lethargy
1923-2	cdcNHSN	Leukopenia or leukocytosis
1920-8	cdcNHSN	Localized swelling
422587007	SNOMED CT	Nausea
1903-4	cdcNHSN	New onset/change in sputum
1907-5	cdcNHSN	New onset/change in sputum, increased secretions or increased suctioning
1904-2	cdcNHSN	New onset/worsening cough, dyspnea, tachypnea
1925-7	cdcNHSN	New or progressive and persistent infiltrate
1905-9	cdcNHSN	Other evidence of infection found on direct exam, during surgery, or by diagnostic tests
1906-7	cdcNHSN	Other signs & symptoms
1960-4	cdcNHSN	Pain or tenderness
1909-1	cdcNHSN	Persistent microscopic or gross blood in stools
1963-8	cdcNHSN	Physician diagnosis of this event type
1962-0	cdcNHSN	Physician institutes appropriate antimicrobial therapy
2237002	SNOMED CT	Pleuritic chest pain
1926-5	cdcNHSN	Pneumatocoles (in ≤ 1 y.o.)
255320000	SNOMED CT	Purulent drainage or material
4800001	SNOMED CT	Pyuria
1921-6	cdcNHSN	Rales or bronchial breath sounds
386713009	SNOMED CT	Redness
162053006	SNOMED CT	Suprapubic tenderness
85623003	SNOMED CT	Temperature instability
75088002	SNOMED CT	Urgency
422400008	SNOMED CT	Vomiting
1922-4	cdcNHSN	Wheezing, rales or rhonchi
1958-8	cdcNHSN	Worsening gas exchange
225553008	SNOMED CT	Wound spontaneously dehisces

NHSN Infection Condition Value Set

Table 66: Infection Condition Value Set

Value Set: NHSNInfectionConditionCode 2.16.840.1.114222.4.11.3196 Code System: SNOMED CT 2.16.840.1.113883.6.96 or cdcNHSN 2.16.840.1.113883.6.277		
Code	Code System	Meaning
1623-8	cdcNHSN	Arterial or venous infection
2402-6	cdcNHSN	Asymptomatic Bacteremic UTI (ABUTI)
1601-4	cdcNHSN	Breast abscess or mastitis
1671-7	cdcNHSN	Bronchitis, tracheitis
1672-5	cdcNHSN	Burn
1603-0	cdcNHSN	Clinical sepsis
9826008	SNOMED CT	Conjunctivitis
102830001	SNOMED CT	Costovertebral angle tenderness
1673-3	cdcNHSN	Decubitus ulcer
1604-8	cdcNHSN	Deep incisional primary SSI
1605-5	cdcNHSN	Deep incisional secondary SSI
302935008	SNOMED CT	Disc space
1674-1	cdcNHSN	Disseminated infection
1607-1	cdcNHSN	Ear or mastoid infection (otitis externa, otitis media, otitis interna, mastoiditis)
233850007	SNOMED CT	Endocarditis
78623009	SNOMED CT	Endometritis
300927001	SNOMED CT	Episiotomy
1608-9	cdcNHSN	Eye infection, other than conjunctivitis
162116003	SNOMED CT	Frequency of urination
25374005	SNOMED CT	Gastroenteritis
1609-7	cdcNHSN	Gastrointestinal tract infection (esophagus, stomach, small and large bowel, and rectum) excluding gastroenteritis and appendicitis
128241005	SNOMED CT	Hepatitis
1675-8	cdcNHSN	Infant pustulosis
12463005	SNOMED CT	Infectious gastroenteritis
312157006	SNOMED CT	Infectious mediastinitis
233850007	SNOMED CT	Infective endocarditis
1610-5	cdcNHSN	Intraabdominal infection, not specified elsewhere including gallbladder, bile ducts, liver (excluding viral hepatitis), spleen, pancreas, peritoneum, subphrenic or subdiaphragmatic space, or other intraabdominal tissue or area not specified elsewhere
1611-3	cdcNHSN	Intracranial infection (brain abscess, subdural or

Value Set: NHSNInfectionConditionCode 2.16.840.1.114222.4.11.3196
 Code System: SNOMED CT 2.16.840.1.113883.6.96
 or cdcNHSN 2.16.840.1.113883.6.277

Code	Code System	Meaning
		epidural infection, encephalitis)
1612-1	cdcNHSN	Joint or bursa infection
1613-9	cdcNHSN	Laboratory-confirmed bloodstream infection
312157006	SNOMED CT	Mediastinitis
1615-4	cdcNHSN	Meningitis or ventriculitis
1602-2	cdcNHSN	Myocarditis or pericarditis
2707005	SNOMED CT	Necrotizing enterocolitis
1676-6	cdcNHSN	Newborn circumcision
239095007	SNOMED CT	Omphalitis
1616-2	cdcNHSN	Oral cavity infection (mouth, tongue, or gums)
60168000	SNOMED CT	Osteomyelitis
1614-7	cdcNHSN	Other infections of the lower respiratory tract, other than pneumonia
1617-0	cdcNHSN	Other infections of the male or female reproductive tract (epididymis, testes, prostate, vagina, ovaries, uterus, or other deep pelvic tissues, excluding endometritis or vaginal cuff infections)
1618-8	cdcNHSN	Other infections of the urinary tract (kidney, ureter, bladder, urethra, or tissue surrounding the retroperitoneal or perinephric space)
1626-1	cdcNHSN	PNU1
1631-1	cdcNHSN	PNU2
1632-9	cdcNHSN	PNU3
36971009	SNOMED CT	Sinusitis
19824006	SNOMED CT	Skin
1677-4	cdcNHSN	Soft tissue, muscle, lymph node, or salivary gland
1619-6	cdcNHSN	Spinal abscess without meningitis
1620-4	cdcNHSN	Superficial incisional primary SSI
1621-2	cdcNHSN	Superficial incisional secondary SSI
1625-3	cdcNHSN	Symptomatic UTI (SUTI)
1622-0	cdcNHSN	Upper respiratory tract infection, pharyngitis, laryngitis, epiglottitis
1624-6	cdcNHSN	Vaginal cuff infection
1606-3	cdcNHSN	Vertebral disc space infection

NHSN Healthcare Service Location Codes

The subheadings in the table below are informative, intended to assist the implementer in navigating the table.

Table 67: Healthcare Service Location Value Set

Value Set: NHSNHealthcareServiceLocationCode 2.16.840.1.113883.13.19 Code System: HL7 HealthcareServiceLocation 2.16.840.1.113883.6.259 or *NHSN Local Coding System 2.16.840.1.113883.6.277				
		Summary Data Form Type		
Code	Meaning	DA-ICU	DA-NICU	DA-SCA
INPATIENT LOCATIONS				
Critical Care Units				
1026-4	Burn Critical Care	X		
1028-0	Medical Cardiac Critical Care	X		
1027-2	Medical Critical Care	X		
1029-8	Medical/Surgical Critical Care	X		
1035-5	Neurologic Critical Care	X		
1031-4	Neurosurgical Critical Care	X		
1034-8	Prenatal Critical Care	X		
1033-0	Respiratory Critical Care	X		
1032-2	Surgical Cardiothoracic Critical Care	X		
1030-6	Surgical Critical Care	X		
1025-6	Trauma Critical Care	X		
Neonatal Units				
1038-9	Inpatient Well Baby Nursery (Level I)	X		
1039-7	Neonatal Critical Care(Level II/III)		X	
1040-5	Neonatal Critical Care (Level III)		X	
1041-3	Step down Neonatal ICU (Level II)	X		
Pediatric Critical Care				
1042-1	Pediatric Burn Critical Care	X		
1043-9	Pediatric Cardiothoracic Critical Care	X		
1044-7	Pediatric Medical Critical Care	X		
1045-4	Pediatric Medical/Surgical Critical Care	X		
1046-2	Pediatric Neurosurgical Critical Care	X		
1047-0	Pediatric Respiratory Critical Care	X		
1048-8	Pediatric Surgical Critical Care	X		
1049-6	Pediatric Trauma Critical Care	X		

Value Set: NHSNHealthcareServiceLocationCode 2.16.840.1.113883.13.19
 Code System: HL7 HealthcareServiceLocation 2.16.840.1.113883.6.259

		Summary Data Form Type		
Code	Meaning	DA-ICU	DA-NICU	DA-SCA
Specialty Care Areas (SCA)				
1022-3	Bone Marrow Transplant SCA			X
1088-4	Hematology/Oncology SCA			X
1198-1	Inpatient Acute Dialysis SCA			X
1090-0	Long-Term Acute Care (LTAC)			X
1023-1	Pediatric Bone Marrow Transplant SCA			X
1091-8	Pediatric Dialysis SCA			X
1089-2	Pediatric Hematology/Oncology SCA			X
1093-4	Pediatric Solid Organ Transplant SCA			X
1092-6	Solid Organ Transplant SCA			X
Inpatient Adult Wards				
1205-4	Inpatient Antenatal Ward	X		
1051-2	Inpatient Behavioral Health/Psych Ward	X		
1052-0	Inpatient Burn Ward	X		
1053-8	Inpatient Ear/Nose/Throat Ward	X		
1054-6	Inpatient Gastrointestinal Ward	X		
1055-3	Inpatient Genitourinary Ward	X		
1056-1	Inpatient Gerontology Ward	X		
1057-9	Inpatient Gynecology Ward	X		
1171-8	Inpatient Jail Unit	X		
1172-6	Inpatient School Infirmary	X		
1058-7	Labor and Delivery Ward	X		
1059-5	Labor, Delivery, Recovery, Postpartum Suite (LDRP)	X		
1060-3	Inpatient Medical Ward	X		
1061-1	Inpatient Medical/Surgical Ward	X		
1062-9	Inpatient Neurology Ward	X		
1063-7	Inpatient Neurosurgical Ward	X		
1064-5	Inpatient Ophthalmology Ward	X		
1065-2	Inpatient Orthopedic Ward	X		
1066-0	Inpatient Orthopedic Trauma Ward	X		
1067-8	Inpatient Plastic Surgery Ward	X		
1068-6	Inpatient Postpartum Ward	X		
1069-4	Inpatient Pulmonary Ward	X		
1070-2	Inpatient Rehabilitation Ward	X		
1071-0	Acute Stroke Ward	X		

Value Set: NHSNHealthcareServiceLocationCode 2.16.840.1.113883.13.19 Code System: HL7 HealthcareServiceLocation 2.16.840.1.113883.6.259				
		Summary Data Form Type		
Code	Meaning	DA-ICU	DA-NICU	DA-SCA
1072-8	Inpatient Surgical Ward	X		
1073-6	Inpatient Vascular Surgery Ward	X		
Pediatric Wards				
1075-1	Inpatient Adolescent Behavioral Health Ward	X		
1076-9	Inpatient Medical Pediatric Ward	X		
1077-7	Inpatient Pediatric Behavioral Health Ward	X		
1078-5	Inpatient Pediatric Burn Ward	X		
1079-3	Inpatient Pediatric Ear, Nose, Throat Ward	X		
1080-1	Inpatient Pediatric Genitourinary Ward	X		
1081-9	Inpatient Pediatric Med/Surg Ward	X		
1082-7	Inpatient Pediatric Neurology Ward	X		
1083-5	Inpatient Pediatric Neurosurgical Ward	X		
1084-3	Inpatient Pediatric Orthopedic Ward	X		
1085-0	Inpatient Pediatric Rehabilitation Ward	X		
1086-8	Inpatient Pediatric Surgical Ward	X		
Step Down Units				
1099-1	Adult Step Down Unit (post-critical care)	X		
1100-7	Pediatric Step Down Unit (post-critical care)	X		
Operating Rooms				
1005-8	Cardiac Catheterization Room/Suite	X		
1095-9	Cesarean Section Room/Suite	X		
1203-9	Interventional Radiology			
1096-7	Inpatient Operating Room/Suite	X		
1097-5	Post-Anesthesia Care Unit/Recovery Room	X		
Antimicrobial Use and Resistance (AUR) Documentation and MDRO/CDAD Only				
1050-4	All Inpatient Areas (not ICU or SCA) combined			
1107-2	All Outpatient Areas			
Miscellaneous Areas				
1021-5	All Inpatient Beds combined	X		
1206-2	Float*			
1009-0	Pulmonary Function Testing			
1190-8	Soiled Utility Area			
1020-7	Sleep Studies (for in- and outpatients)	X		
1178-3	Transport Service			

Value Set: NHSNHealthcareServiceLocationCode 2.16.840.1.113883.13.19 Code System: HL7 HealthcareServiceLocation 2.16.840.1.113883.6.259				
		Summary Data Form Type		
Code	Meaning	DA-ICU	DA-NICU	DA-SCA
Long-term Care				
1165-0	Inpatient Hospice	X		
1103-1	Long-Term Care Alzheimer's Unit	X		
1104-9	Long-Term Care Behavioral Health/Psych Unit	X		
1105-6	Long-Term Care Rehabilitation Unit	X		
1102-3	Long-Term Care Unit	X		
1164-3	Ventilator Dependent Unit	X		
OUTPATIENT LOCATIONS				
Acute Care				
1162-7	24-Hour Observation Area	X		
1166-8	Ambulatory Surgery Center	X		
1174-2	Mobile Emergency Services/EMS	X		
1108-0	Emergency Department	X		
1167-6	Outpatient Pediatric Surgery Center	X		
1168-4	Outpatient Plastic Surgery Center	X		
1169-2	Outpatient Surgery Recovery Room/Post-Anesthesia Care Unit	X		
1109-8	Pediatric Emergency Department	X		
1160-1	Urgent Care Center	X		
Clinic (Nonacute) Settings				
1110-6	Allergy Clinic	X		
1145-2	Behavioral Health Clinic	X		
1147-8	Blood Collection Center	X		
1112-2	Cardiac Rehabilitation Center	X		
1113-0	Cardiology Clinic	X		
1148-6	Continence Clinic	X		
1115-5	Dermatology Clinic	X		
1116-3	Diabetes/Endocrinology Clinic	X		
1207-0	Donor Apheresis Center	X		
1126-2	Ear, Nose, Throat Clinic	X		
1007-4	Endoscopy Suite	X		
1117-1	Family Medicine Clinic	X		
1122-1	Genetics Clinic	X		
1121-3	Gynecology Clinic	X		
1161-9	Holistic Medicine Center	X		
1017-3	Hyperbaric Oxygen Center	X		

Value Set: NHSNHealthcareServiceLocationCode 2.16.840.1.113883.13.19
Code System: HL7 HealthcareServiceLocation 2.16.840.1.113883.6.259

		Summary Data Form Type		
Code	Meaning	DA-ICU	DA-NICU	DA-SCA
1018-1	Infusion Center	X		
1176-7	Mobile Blood Collection center	X		
1175-9	Mobile MRI/CT	X		
1123-9	Neurology Clinic	X		
1151-0	Occupational Health Clinic	X		
1152-8	Occupational Therapy Clinic	X		
1124-7	Ophthalmology Clinic	X		
1125-4	Orthopedic Clinic	X		
1149-4	Ostomy Clinic	X		
1150-2	Outpatient Dental Clinic	X		
1118-9	Outpatient Gastrointestinal (GI) Clinic	X		
1200-5	Outpatient Hematology/Oncology Clinic	X		
1153-6	Outpatient Hemodialysis Clinic			
1154-4	Outpatient HIV Clinic	X		
1120-5	Outpatient Medical Clinic	X		
1155-1	Outpatient Rehabilitation Clinic	X		
1127-0	Pain Clinic	X		
1146-0	Pediatric Behavioral Health Clinic	X		
1129-6	Pediatric Cardiology Center	X		
1128-8	Pediatric Clinic	X		
1130-4	Pediatric Dental Clinic	X		
1131-2	Pediatric Dermatology Clinic	X		
1132-0	Pediatric Diabetes/Endocrinology Clinic	X		
1119-7	Pediatric Gastrointestinal Clinic	X		
1136-1	Pediatric Hematology/Oncology Clinic	X		
1137-9	Pediatric Nephrology Clinic	X		
1133-8	Pediatric Orthopedic Clinic	X		
1138-7	Pediatric Rheumatology Clinic	X		
1134-6	Pediatric Scoliosis Clinic	X		
1202-1	Physical Therapy Clinic	X		
1141-1	Physician's Office	X		
1140-3	Podiatry Clinic	X		
1156-9	Prenatal Clinic	X		
1157-7	Pulmonary Clinic	X		
1008-2	Radiology (includes Nuclear Medicine)	X		
1142-9	Rheumatology Clinic	X		
1170-0	School or Prison Infirmary	X		

Value Set: NHSNHealthcareServiceLocationCode 2.16.840.1.113883.13.19
 Code System: HL7 HealthcareServiceLocation 2.16.840.1.113883.6.259

		Summary Data Form Type		
Code	Meaning	DA-ICU	DA-NICU	DA-SCA
1019-9	Specimen Collection Area (Healthcare)	X		
1158-5	Speech Therapy Clinic	X		
1143-7	Surgical Services Clinic	X		
1139-5	Well Baby Clinic	X		
1144-5	Wound Center	X		
1159-3	Wound Ostomy Continence Clinic	X		
Community Locations				
1195-7	Blood Collection (Blood Drive Campaign)			
1192-4	Home Care	X		
1194-0	Home-based Hospice	X		
1204-7	Location outside facility			
1196-5	Specimen Collection Area (Community)			
NON-PATIENT-CARE LOCATIONS				
1184-1	Administrative Areas			
1106-4	Assisted Living Area	X		
1185-8	Blood Bank			
1186-6	Central Sterile Supply			
1187-4	Central Trash Area			
1011-6	Clinical Chemistry			
1188-2	Facility Grounds			
1010-8	General Laboratory			
1012-4	Hematology			
1013-2	Histology/Surgical Pathology			
1182-5	Housekeeping/Environmental Services			
1183-3	Laundry Room			
1014-0	Microbiology			
1189-0	Morgue/Autopsy Room			
1179-1	Pharmacy			
1181-7	Physical Plant Operations Center			
1180-9	Public Area in Facility			
1015-7	Serology Lab			
1016-5	Virology Lab			

NHSN Occupation Codes

This is a **DYNAMIC** value set. See [0 In addition](#), in preparing this release, all of the HAI constraints were recorded in a Templates Database that also houses the templates for “HL7 Implementation Guide for CDA Release 2, CDA for Public Health Case Reports, Based on HL7 CDA Release 2.0” balloted in May 2009. The conformance statements in this release are generated directly from the database and use a new format, which consolidates explanatory text for each template. The conformance-statement format is consistent with that used for PHCR.

In addition, the conditional conformance statements in the header section were updated with specialization templates for single-person and population-summary reports.

Change Notification Process to obtain any changes made since issuance of this IG.

Table 68: Occupation Value Set

Value Set: NHSNOccupationCode 2.16.840.1.114222.4.11.887 Code System: Standard Occupational Classification (SOC) 2.16.840.1.113883.6.243 or cdcNHSN 2.16.840.1.113883.6.277 or NUCCProviderCodes 2.16.840.1.113883.6.101 or UMLS 2.16.840.1.113883.6.86		
Code	Code System	Print Name
3747A0650X	NUCC Provider Codes	Attendant/orderly
2205-3	cdcNHSN	Clerical/administrative
367500000X	NUCC Provider Codes	Nurse Anesthetist
367A00000X	NUCC Provider Codes	Nurse Midwife
332B00000X	NUCC Provider Codes	Central Supply
21-1000	Occupation (SOC 2000)	Counselor/Social Worker
133V00000X	NUCC Provider Codes	Dietician
126800000X	NUCC Provider Codes	Dental Assistant/Tech
124Q00000X	NUCC Provider Codes	Dental Hygienist
261QD0000X	NUCC Provider Codes	Other Dental Worker
122300000X	NUCC Provider Codes	Dentist
C0038493	UMLS	Dental Student
146L00000X	NUCC Provider Codes	EMT/Paramedic
2206-1	cdcNHSN	Fellow
35-0000	Occupation (SOC 2000)	Food Service
2207-9	cdcNHSN	Hemodialysis Technician
37-2012	Occupation (SOC 2000)	Housekeeper
163WI0600X	NUCC Provider Codes	Infection Control Professional
163WI0500X	NUCC Provider Codes	IVT Team Staff
51-6010	Occupation (SOC 2000)	Laundry Staff
164W00000X	NUCC Provider Codes	Licensed Practical Nurse
29-2012	Occupation (SOC 2000)	Medical Laboratory Technician
37-0000	Occupation (SOC 2000)	Maintenance/Engineering

Value Set: NHSNOccupationCode 2.16.840.1.114222.4.11.887 Code System: Standard Occupational Classification (SOC) 2.16.840.1.113883.6.243 or cdcNHSN 2.16.840.1.113883.6.277 or NUCCProviderCodes 2.16.840.1.113883.6.101 or UMLS 2.16.840.1.113883.6.86		
Code	Code System	Print Name
2208-7	cdcNHSN	Morgue Technician
C1441641	UMLS	Medical Student
246QM0706X	NUCC Provider Codes	Medical Technologist
376K00000X	NUCC Provider Codes	Nursing Assistant
363L00000X	NUCC Provider Codes	Nurse Practitioner
29-9000	Occupation (SOC 2000)	Other Ancillary Staff
207PE0004X	NUCC Provider Codes	Other First Responder
163WX0106X	NUCC Provider Codes	Occupational Health Professional
29-1069	Occupation (SOC 2000)	Other Medical Staff
C0029063	UMLS	OR/Surgery Technician
31-9099	Occupation (SOC 2000)	Other
29-1129	Occupation (SOC 2000)	Other Technician/Therapist
363A00000X	NUCC Provider Codes	Physician Assistant
2209-5	cdcNHSN	Patient Care Technician
183500000X	NUCC Provider Codes	Pharmacist
246RP1900X	NUCC Provider Codes	Phlebotomist/IV Team
364SC1501X	NUCC Provider Codes	Public Health Worker
29-1060	Occupation (SOC 2000)	Physician
261QP2000X	NUCC Provider Codes	Physical Therapist
167G00000X	NUCC Provider Codes	Psychiatric Technician
261QR1100X	NUCC Provider Codes	Researcher
247100000X	NUCC Provider Codes	Radiologic Technologist
2210-3	cdcNHSN	Intern/Resident
163W00000X	NUCC Provider Codes	Registered Nurse
227800000X	NUCC Provider Codes	Respiratory Therapist/Tech
227900000X	NUCC Provider Codes	Other Student
2211-1	cdcNHSN	Transport/Messenger/Porter
C1549078	UMLS	Volunteer

Specimen Type Codes

Table 69: Specimen Type Value Set

Value Set: NSHNSpecimenTypeCode 2.16.840.1.114222.4.11.3249 Code System: SNOMED CT 2.16.840.1.113883.6.96		
SNOMED CT Concept ID	SNOMED CT Fully Specified Name	NHSN Description
258541006	Cardiovascular sample (specimen)	Cardiovascular (NOS)
309479002	Artery sample (specimen)	Artery sample
119297000	Blood specimen (specimen)	Blood specimen
258452003	Chylous fluid sample (specimen)	Chylous fluid sample
127462005	Specimen from heart (specimen)	Specimen from heart
258437005	Vegetation from heart valve (specimen)	Vegetation from heart valve
258589002	Lymph node sample (specimen)	Lymph node sample
168145009	Lymph sample (specimen)	Lymph sample
433308004	Specimen from spleen (specimen)	Specimen from spleen
309480004	Vein sample (specimen)	Vein sample
430244006	Specimen from pericardium (specimen)	Specimen from pericardium
122571007	Pericardial fluid specimen (specimen)	Pericardial fluid specimen
258591005	White blood cell sample (specimen)	White blood cell sample
399436000	Specimen from central nervous system (specimen)	Central nervous system specimen (NOS)
119398007	Specimen from brain (specimen)	Specimen from brain
258450006	Cerebrospinal fluid sample (specimen)	Cerebrospinal fluid specimen
430157009	Specimen from meninges (specimen)	Specimen from meninges
430236006	Specimen from nerve (specimen)	Specimen from nerve
430221008	Specimen from spinal cord (specimen)	Specimen from spinal cord
363311008	Specimen from digestive system (specimen)	Digestive system specimen (NOS)
119341000	Bile specimen (specimen)	Bile specimen
309493009	Bile duct biopsy sample (specimen)	Bile duct biopsy sample
309491006	Biliary tract tissue sample (specimen)	Biliary tract tissue sample
168136008	Colostomy fluid sample (specimen)	Colostomy fluid sample
309209004	Esophageal biopsy sample (specimen)	Esophageal biopsy sample
309210009	Esophageal brushings sample (specimen)	Esophageal brushings sample
399460001	Specimen from extrahepatic bile duct (specimen)	Specimen from extrahepatic bile duct

Value Set: NSHNSpecimenTypeCode 2.16.840.1.114222.4.11.3249

Code System: SNOMED CT 2.16.840.1.113883.6.96

SNOMED CT Concept ID	SNOMED CT Fully Specified Name	NHSN Description
110926003	Gallbladder cytologic material (specimen)	Gallbladder cytologic material
309199003	Gastrointestinal fluid sample (specimen)	Gastrointestinal fluid sample
127465007	Specimen from gastrointestinal tract (specimen)	Specimen from gastrointestinal tract
438336007	Hemorrhoid tissue specimen (specimen)	Hemorrhoid tissue specimen
258462005	Ileostomy fluid sample (specimen)	Ileostomy fluid sample
119381007	Specimen from large intestine (specimen)	Specimen from large intestine
119383005	Specimen from liver (specimen)	Specimen from liver
119340004	Meconium specimen (specimen)	Meconium specimen
302794003	Nasogastric aspirate (specimen)	Nasogastric aspirate
127469001	Specimen from pancreas (specimen)	Specimen from pancreas
119343002	Pancreatic fluid specimen (specimen)	Pancreatic fluid specimen
168139001	Peritoneal fluid sample (specimen)	Peritoneal fluid sample
430250001	Specimen from peritoneum (specimen)	Specimen from peritoneum
433323009	Specimen from retroperitoneum (specimen)	Specimen from retroperitoneum
258528007	Rectal swab (specimen)	Rectal swab
258429002	Rectal scrape sample (specimen)	Rectal scrape sample
119342007	Saliva specimen (specimen)	Saliva specimen
399747006	Specimen from salivary gland (specimen)	Specimen from salivary gland
119380008	Specimen from small intestine (specimen)	Specimen from small intestine
119379005	Specimen from stomach (specimen)	Specimen from stomach
119339001	Stool specimen (specimen)	Stool specimen
309048008	Endocrine sample (specimen)	Endocrine specimen (NOS)
309141004	Adrenal gland specimen (specimen)	Adrenal gland specimen
309149002	Parathyroid sample (specimen)	Parathyroid sample
309154006	Pituitary sample	Pituitary sample
396897003	Specimen from thymus gland obtained by transcervical thymectomy (specimen)	Specimen from thymus gland obtained by transcervical thymectomy
399680007	Specimen from thyroid (specimen)	Specimen from thyroid
309145008	Thyroid fluid sample (specimen)	Thyroid fluid sample
430220009	Specimen from head and neck	Head and neck structure specimen

Value Set: NSHNSpecimenTypeCode 2.16.840.1.114222.4.11.3249

Code System: SNOMED CT 2.16.840.1.113883.6.96

SNOMED CT Concept ID	SNOMED CT Fully Specified Name	NHSN Description
	structure (specimen)	(NOS)
258485006	Corneal scraping sample (specimen)	Corneal scraping sample
258498002	Conjunctival swab (specimen)	Conjunctival swab
309165001	Ear sample (specimen)	Ear sample
258466008	Middle ear fluid sample (specimen)	Middle ear fluid sample
309128003	Eye fluid sample (specimen)	Eye fluid sample
433324003	Specimen from eye region (specimen)	Specimen from eye region
258465007	Lacrimal fluid sample (specimen)	Lacrimal fluid sample
430133009	Specimen from lip (specimen)	Specimen from lip
309188000	Mouth biopsy sample (specimen)	Mouth biopsy sample
110903005	Nasal cytologic material (specimen)	Nasal cytologic material
439895009	Tissue specimen from nose obtained by excision (specimen)	Tissue specimen from nose obtained by excision
309185002	Oral cavity sample (specimen)	Oral cavity sample
418932006	Oral swab (specimen)	Oral swab
258475005	Sinus washings	Sinus washings
119389009	Specimen from throat (specimen)	Specimen from throat
430249001	Specimen from tongue (specimen)	Specimen from tongue
309192007	Tonsillectomy sample (specimen)	Tonsillectomy sample
432986001	Specimen from tooth obtained by biopsy (specimen)	Specimen from tooth obtained by biopsy
258570002	Genitourinary sample (specimen)	Genitourinary sample (NOS)
258508008	Genital swab (specimen)	Genital swab
127473003	Specimen from kidney (specimen)	Specimen from kidney
122575003	Urinary specimen (specimen)	Urinary specimen
110958008	Urinary tract cytologic material (specimen)	Urinary tract cytologic material
258525005	Perineal swab (specimen)	Perineal swab
258472008	Renal pelvis fluid sample (specimen)	Renal pelvis fluid sample
258576008	Suprapubic aspirate sample (specimen)	Suprapubic aspirate sample
258530009	Urethral swab (specimen)	Urethral swab
440135000	Specimen from ureter obtained by brush biopsy (specimen)	Specimen from ureter obtained by brush biopsy
309104000	Musculoskeletal sample (specimen)	Musculoskeletal specimen (NOS)
258414004	Adipose tissue sample (specimen)	Adipose tissue sample
430268003	Specimen from bone (specimen)	Specimen from bone
119359002	Bone marrow specimen (specimen)	Bone marrow specimen
309101008	Cartilage sample (specimen)	Cartilage sample

Value Set: NSHNSpecimenTypeCode 2.16.840.1.114222.4.11.3249		
Code System: SNOMED CT 2.16.840.1.113883.6.96		
SNOMED CT Concept ID	SNOMED CT Fully Specified Name	NHSN Description
309117002	Fascia sample (specimen)	Fascia sample
432657002	Ganglion cyst specimen (specimen)	Ganglion cyst specimen
309125000	Joint sample (specimen)	Joint sample
309115005	Ligament biopsy sample (specimen)	Ligament biopsy sample
309507001	Muscle biopsy sample (specimen)	Muscle biopsy sample
119332005	Synovial fluid sample (specimen)	Synovial fluid sample
119373006	Amniotic fluid specimen (specimen)	Amniotic fluid specimen
127456000	Specimen from breast (specimen)	Specimen from breast
309055005	Breast fluid sample (specimen)	Breast fluid sample
110894008	Mammary cytologic material (specimen)	Mammary cytologic material
110949001	Cervix cytologic material (specimen)	Cervix cytologic material
122699006	Specimen from lesion of uterine cervix obtained by cone biopsy (specimen)	Specimen from lesion of uterine cervix obtained by cone biopsy
110961009	Chorion cytologic material (specimen)	Chorion cytologic material
110955006	Endometrium cytologic material (specimen)	Endometrium cytologic material
110957003	Fallopian tube cytologic material (specimen)	Fallopian tube cytologic material
110968003	Fetal cytologic material (specimen)	Fetal cytologic material
122578001	Female genital fluid specimen (specimen)	Female genital fluid specimen
116213003	Ovary cytologic material (specimen)v	Ovary cytologic material
122712006	Specimen from ovary obtained by hysterectomy with salpingo-oophorectomy (specimen)	Specimen from ovary obtained by hysterectomy with salpingo-oophorectomy
110959000	Placenta cytologic material (specimen)	Placenta cytologic material
258436001	Umbilical cord tissue sample (specimen)	Umbilical cord tissue sample
110947004	Vagina cytologic material (specimen)	Vagina cytologic material
258481002	Vaginal washout fluid sample (specimen)	Vaginal washout fluid sample
122692002	Specimen from vagina obtained by excisional biopsy of lesion (specimen)	Specimen from vagina obtained by excisional biopsy of lesion
110945007	Vulva cytologic material (specimen)	Vulva cytologic material
309070006	Vulval skin biopsy sample (specimen)	Vulval skin biopsy sample
127456000	Specimen from breast (specimen)	Specimen from breast
309055005	Breast fluid sample (specimen)	Breast fluid sample

Value Set: NSHNSpecimenTypeCode 2.16.840.1.114222.4.11.3249

Code System: SNOMED CT 2.16.840.1.113883.6.96

SNOMED CT Concept ID	SNOMED CT Fully Specified Name	NHSN Description
110941003	Epididymis cytologic material (specimen)	Epididymis cytologic material
110931001	Penis cytologic material (specimen)	Penis cytologic material
309071005	Penis skin biopsy sample (specimen)	Penis skin biopsy sample
258513007	Prepuce swab (specimen)	Prepuce swab
110933003	Prostate cytologic material (specimen)	Prostate cytologic material
258470000	Prostatic fluid sample (specimen)	Prostatic fluid sample
119347001	Seminal fluid specimen (specimen)	Seminal fluid specimen
110937002	Seminal vesicle cytologic material (specimen)	Seminal vesicle cytologic material
430386002	Spermatozoa cytologic material (specimen)	Spermatozoa cytologic material
122730004	Specimen from testis obtained by transcrotal open biopsy (specimen)	Specimen from testis obtained by transcrotal open biopsy
110935005	Testis cytologic material (specimen)	Testis cytologic material
110939004	Vas deferens cytologic material (specimen)	Vas deferens cytologic material
258603007	Respiratory sample (specimen)	Respiratory specimen (NOS)
410580001	Respiratory fluid specimen (specimen)	Respiratory fluid specimen
258604001	Upper respiratory sample (specimen)	Upper respiratory sample
258606004	Lower respiratory sample (specimen)	Lower respiratory sample
119391001	Specimen from bronchus (specimen)	Specimen from bronchus
258607008	Bronchoalveolar lavage fluid sample (specimen)	Bronchoalveolar lavage fluid sample
127458004	Specimen from lung (specimen)	Specimen from lung
433326001	Specimen from mediastinum (specimen)	Specimen from mediastinum
258411007	Nasopharyngeal aspirate (specimen)	Nasopharyngeal aspirate
258467004	Nasopharyngeal washings (specimen)	Nasopharyngeal washings
258412000	Oropharyngeal aspirate (specimen)	Oropharyngeal aspirate
258469001	Pharyngeal washings (specimen)	Pharyngeal washings
418564007	Pleural fluid specimen (specimen)	Pleural fluid specimen
127459007	Specimen from pleura (specimen)	Specimen from pleura
404643001	Sputum smear specimen (specimen)	Sputum smear specimen
397457001	Specimen from thoracic mesothelium (specimen)	Specimen from thoracic mesothelium
309169007	Tracheal biopsy sample (specimen)	Tracheal biopsy sample
258480001	Transtracheal aspirate sample	Transtracheal aspirate sample

Value Set: NSHNSpecimenTypeCode 2.16.840.1.114222.4.11.3249 Code System: SNOMED CT 2.16.840.1.113883.6.96		
SNOMED CT Concept ID	SNOMED CT Fully Specified Name	NHSN Description
	(specimen)	
258548000	Dermatological sample (specimen)	Dermatologic specimen (NOS)
119367005	Specimen from burn injury (specimen)	Specimen from burn injury
110893002	Cutaneous cytologic material (specimen)	Cutaneous cytologic material
119326000	Hair specimen (specimen)	Hair specimen
119327009	Nail specimen (specimen)	Nail specimen
438343001	Swab of pilonidal sinus (specimen)	Swab of pilonidal sinus
258432004	Sebum sample (specimen)	Sebum sample
119325001	Skin specimen (specimen)	Skin specimen
309068002	Skin lesion sample (specimen)	Skin lesion sample
309074002	Soft tissue biopsy sample (specimen)	Soft tissue biopsy sample
110896005	Subcutaneous cytologic material (specimen)	Subcutaneous cytologic material
122569007	Sweat specimen (specimen)	Sweat specimen
258482009	Vesicle fluid sample (specimen)	Vesicle fluid sample
430304001	Specimen from unspecified body site (specimen)	Unspecified Body Site Specimen

APPENDIX K — HITSP AND CCD CONSTRAINTS

HITSP Constraints

The NHSN DSTU asserts conformance to the Immunization entry (templateId 1.3.6.1.4.1.19376.1.5.3.1.4.12). The reason for not asserting conformance to the entire module is that the use case for NHSN is somewhat different than for HITSP. The difference is NHSN records the reasons for declining an immunization with the offer to immunize (also a substanceAdministration), rather than with the immunization itself.

The following table and constraints are copied, for the implementer's convenience, from HITSP C/83.

Table 70: HITSP Table 2.2.2.12.5-3 Medication Information Constraints

Constraint
C83-(226) A CDA Document SHALL declare conformance to the Immunization module by including a <templateID> element with the root attribute set to the value 2.16.840.1.113883.3.88.11.83.14
C83-(227) Immunization data elements SHALL declare conformance to the IHE Immunization entry by including a <templateID> element with the root attribute set to the value 1.3.6.1.4.1.19376.1.5.3.1.4.12
C83-(228) 3.88.11.83 Immunizations SHALL be coded using CVX as specified in HITSP/C80 Section 2.2.1.3.4.1 Vaccines Administered. The code SHALL appear in the code attribute of the <code> or <translation> element
C83-(229) The reason for refusal SHALL be reported as specified in HITSP/C80 Section 2.2.1.3.4.2 No Immunization Reason

CCD Constraints

HAI reuses several templates from CCD. The following conformance statements are copied, for the implementer's convenience, from CCD. Any discrepancy between this and the original is inadvertent and in all cases, the CCD source takes precedence.

3.15 CCD Encounter Section Template (conf. 453-457)

The template identifier for the encounters section is 2.16.840.1.113883.10.20.1.3.

CONF-453: **CCD SHOULD** contain exactly one and **SHALL NOT** contain more than one Encounters section (templateId 2.16.840.1.113883.10.20.1.3). The Encounters section **SHALL** contain a narrative block, and **SHOULD** contain clinical statements. Clinical statements **SHOULD** include one or more encounter activities (templateId 2.16.840.1.113883.10.20.1.21).

CONF-454: The encounters section **SHALL** contain **Section / code**.

CONF-455: The value for "**Section / code**" **SHALL** be "46240-8" "History of encounters" 2.16.840.1.113883.6.1 LOINC **STATIC**.

CONF-456: The encounters section **SHALL** contain **Section / title**.

CONF-457: **Section / title** **SHOULD** be valued with a case-insensitive language-insensitive text string containing “encounters”.

(See also **CCD Encounter Activity Template** and **CCD Encounter Location Template** below.)

3.15.2.1 CCD Encounter Activity Template (conf. 458-470)

The template identifier for an encounter activity is 2.16.840.1.113883.10.20.1.21.

CONF-458: An encounter activity (templateId 2.16.840.1.113883.10.20.1.21) **SHALL** be represented with **Encounter**.

CONF-459: The value for “**Encounter / @classCode**” in an encounter activity **SHALL** be “ENC” 2.16.840.1.113883.5.6 ActClass **STATIC**.

CONF-460: The value for “**Encounter / @moodCode**” in an encounter activity **SHALL** be “EVN” 2.16.840.1.113883.5.1001 ActMood **STATIC**.

CONF-461: An encounter activity **SHALL** contain at least one **Encounter / id**.

CONF-462: An encounter activity **SHOULD** contain exactly one **Encounter / code**.

CONF-463: The value for “**Encounter / code**” in an encounter activity **SHOULD** be selected from ValueSet 2.16.840.1.113883.1.11.13955 EncounterCode 2.16.840.1.113883.5.4 ActCode **DYNAMIC**.

CONF-464: An encounter activity **MAY** contain exactly one **Encounter / effectiveTime**, to indicate date, time, and/or duration of an encounter.

CONF-465: An encounter activity **MAY** contain one or more **Encounter / entryRelationship**, whose value for “**entryRelationship / @typeCode**” **SHALL** be “RSON” “Has reason” 2.16.840.1.113883.5.1002 ActRelationshipType **STATIC**, where the target of the relationship represents the indication for the activity.

CONF-466: An encounter activity **MAY** contain one or more **Encounter / performer**, used to define the practioners involved in an encounter.

CONF-467: **Encounter / performer** **MAY** contain exactly one **Encounter / performer / assignedEntity / code**, to define the role of the practioner.

CONF-468: An encounter activity **MAY** contain one or more patient instructions (templateId 2.16.840.1.113883.10.20.1.49).

CONF-469: The value for “**Encounter / entryRelationship / @typeCode**” in an encounter activity **MAY** be “SUBJ” “Subject” 2.16.840.1.113883.5.1002 ActRelationshipType **STATIC** to reference an age observation (templateId 2.16.840.1.113883.10.20.1.38).⁴

CONF-470: An encounter activity **SHALL** contain one or more sources of information, as defined in section **5.2 Source**.

⁴ Note that entryRelationship / inversionInd can be used to distinguish relationship source vs. target.

3.15.2.2 CCD Encounter Location Template (conf. 471-479)

The template identifier for a location participation is 2.16.840.1.113883.10.20.1.45.

CONF-471: An encounter activity **MAY** contain one or more location participations.

CONF-472: A location participation (templateId 2.16.840.1.113883.10.20.1.45) **SHALL** be represented with the **participant** participation.

CONF-473: The value for “**participant / @typeCode**” in a location participation **SHALL** be “LOC” 2.16.840.1.113883.5.90 ParticipationType **STATIC**.

CONF-474: A location participation **SHALL** contain exactly one **participant / participantRole**.

CONF-475: The value for “**participant / participantRole / @classCode**” in a location participation **SHALL** be “SDLOC” “Service delivery location” 2.16.840.1.113883.5.110 RoleClass **STATIC**.

CONF-476: **Participant / participantRole** in a location participation **MAY** contain exactly one **participant / participantRole / code**.

CONF-477: The value for “**participant / participantRole / code**” in a location participation **SHOULD** be selected from ValueSet 2.16.840.1.113883.1.11.17660 ServiceDeliveryLocationRoleType 2.16.840.1.113883.5.111 RoleCode **DYNAMIC**.

CONF-478: **Participant / participantRole** in a location participation **MAY** contain exactly one **participant / participantRole / playingEntity**.

CONF-479: The value for “**participant / participantRole / playingEntity / @classCode**” in a location participation **SHALL** be “PLC” “Place” 2.16.840.1.113883.5.41 EntityClass **STATIC**.

3.9.2.1.1 CCD Medication Activity Template (conf. 304-315)

CONF-304: A medication activity (templateId 2.16.840.1.113883.10.20.1.24) **SHALL** be represented with **SubstanceAdministration**.

CONF-305: The value for “**SubstanceAdministration / @moodCode**” in a medication activity **SHALL** be “EVN” or “INT” 2.16.840.1.113883.5.1001 ActMood **STATIC**.

CONF-306: A medication activity **SHALL** contain at least one **SubstanceAdministration / id**.

CONF-307: A medication activity **SHOULD** contain exactly one **SubstanceAdministration / statusCode**.

CONF-308: A medication activity **SHOULD** contain one or more **SubstanceAdministration / effectiveTime** elements, used to indicate the actual or intended start and stop date of a medication, and the frequency of administration. (See section **5.4.1 Dates and Times** for additional details about time representation).

CONF-309: A medication activity **SHOULD** contain exactly one **SubstanceAdministration / routeCode**.

- CONF-310:** The value for “**SubstanceAdministration / routeCode**” in a medication activity **SHOULD** be selected from the HL7 RouteOfAdministration (2.16.840.1.113883.5.112) code system.
- CONF-311:** A medication activity **SHOULD** contain exactly one **SubstanceAdministration / doseQuantity** or **SubstanceAdministration / rateQuantity**.
- CONF-312:** A medication activity **MAY** contain exactly one **SubstanceAdministration / maxDoseQuantity**, which represents a maximum dose limit.
- CONF-313:** A medication activity **MAY** contain one or more **SubstanceAdministration / performer**, to indicate the person administering a substance.
- CONF-314:** A medication activity **MAY** have one or more associated consents, represented in the CCD Header as **ClinicalDocument / authorization / consent**.
- CONF-315:** A medication activity **SHALL** contain one or more sources of information, as defined in section 5.2 Source.

3.8.2.4.1.1 CCD Reaction Observation Template (conf. 282-286)

- CONF-282:** A reaction observation (templateId 2.16.840.1.113883.10.20.1.54) **SHALL** be represented with **Observation**.
- CONF-283:** The value for “**Observation / @classCode**” in a reaction observation **SHALL** be “OBS” 2.16.840.1.113883.5.6 ActClass **STATIC**.
- CONF-284:** The value for “**Observation / @moodCode**” in a reaction observation **SHALL** be “EVN” 2.16.840.1.113883.5.1001 ActMood **STATIC**.
- CONF-285:** A reaction observation **SHALL** include exactly one **Observation / statusCode**.
- CONF-286:** The value for “**Observation / statusCode**” in a reaction observation **SHALL** be “completed” 2.16.840.1.113883.5.14 ActStatus **STATIC**.

3.9.2.4 CCD Representation of a Product Template (conf. 354-370)

The template identifier for a product is 2.16.840.1.113883.10.20.1.53.

The template identifier for a product instance is 2.16.840.1.113883.10.20.1.52.

- CONF-354:** A medication activity **SHALL** contain exactly one **SubstanceAdministration / consumable**, the target of which is a product template.
- CONF-355:** A supply activity **MAY** contain exactly one **Supply / product**, the target of which is a product template.
- CONF-356:** A product (templateId 2.16.840.1.113883.10.20.1.53) **SHALL** be represented with the **ManufacturedProduct** class.
- CONF-357:** A **ManufacturedProduct** in a product template **SHALL** contain exactly one **manufacturedProduct / manufacturedMaterial**.

CONF-358: A **manufacturedMaterial** in a product template **SHALL** contain exactly one **manufacturedMaterial / code**.

CONF-359: The value for “**manufacturedMaterial / code**” in a product template **SHOULD** be selected from the RxNorm (2.16.840.1.113883.6.88) code system for medications, and from the CDC Vaccine Code (2.16.840.1.113883.6.59) code system for immunizations⁵, or **MAY** be selected from ValueSet 2.16.840.1.113883.1.11.20.8 MedicationTypeCode **STATIC** 20061017.

CONF-360: The value for “**manufacturedMaterial / code**” in a product template **MAY** contain a precoordinated product strength, product form, or product concentration (e.g. “metoprolol 25mg tablet”, “amoxicillin 400mg/5mL suspension”).

CONF-361: If **manufacturedMaterial / code** contains a precoordinated unit dose (e.g. “metoprolol 25mg tablet”), then **SubstanceAdministration / doseQuantity** **SHALL** be a unitless number that indicates the number of products given per administration.

CONF-362: If **manufacturedMaterial / code** does not contain a precoordinated unit dose (e.g. “metoprolol product”), then **SubstanceAdministration / doseQuantity** **SHALL** be a physical quantity that indicates the amount of product given per administration.

CONF-363: A **manufacturedMaterial** in a product template **SHALL** contain exactly one **Material / code / originalText**, which represents the generic name of the product.

CONF-364: A **manufacturedMaterial** in a product template **MAY** contain exactly one **Material / name**, which represents the brand name of the product.

ASTM CCR defines an optional product size element which can be used to describe the physical characteristics of a product. CDA R2 has no corresponding field, but can uniquely identify a given manufacturer’s product, thereby enabling a complete lookup of any detail related to the product.

CONF-365: A **ManufacturedProduct** in a product template **MAY** contain exactly one **manufacturedProduct / manufacturerOrganization**, which represents the manufacturer of the **Material**.

CONF-366: A **ManufacturedProduct** in a product template **MAY** contain one or more **manufacturedProduct / id**, which uniquely represent a particular kind of product.

CONF-367: If **ManufacturedProduct** in a product template contains **manufacturedProduct / id**, then **ManufacturedProduct** **SHOULD** also contain **manufacturedProduct / manufacturerOrganization**.

⁵A table of CDC Vaccine Codes can be found at
http://www.cdc.gov/nip/registry/st_terr/tech/stds/hl7-cvx.htm.

- CONF-368:** A medication activity **MAY** contain one or more product instance templates (templateId 2.16.840.1.113883.10.20.1.52) (see section **3.14.2.2 Procedure related products**), to identify a particular product instance.
- CONF-369:** A supply activity **MAY** contain one or more product instance templates (templateId 2.16.840.1.113883.10.20.1.52) (see section **3.14.2.2 Procedure related products**), to identify a particular product instance.
- CONF-370:** Supply / participant / participantRole / id **SHOULD** be set to equal a [Act | Observation | Procedure] / participant / participantRole / id (see section **3.14.2.2 Procedure related products**) to indicate that the Supply and the Procedure are referring to the same product instance.