**Integrating the Healthcare Enterprise**

# IHE Quality, Research, and Public Health Technical Framework Supplement

# Early Hearing Detection and Intervention (EHDI)

## Rev. 2.1 – Trial Implementation


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**Please verify you have the most recent version of this document.** See here for Trial Implementation and Final Text versions and here for Public Comment versions.

## Foreword

This is a supplement to the IHE Quality, Research and Public Health (QRPH) Technical Framework. Each supplement undergoes a process of public comment and trial implementation before being incorporated into the volumes of the Technical Frameworks.

This supplement is published on August 10, 2016 for trial implementation and may be available for testing at subsequent IHE Connectathons. The supplement may be amended based on the results of testing. Following successful testing it will be incorporated into the QRPH Technical Framework. Comments are invited and may be submitted at http://www.ihe.net/QRPH_Public_Comments.

This supplement describes changes to the existing technical framework documents.

"Boxed" instructions like the sample below indicate to the Volume Editor how to integrate the relevant section(s) into the relevant Technical Framework volume.

*Amend Section X.X by the following:*

Where the amendment adds text, make the added text **bold underline**. Where the amendment removes text, make the removed text **~~bold strikethrough~~**. When entire new sections are added, introduce with editor's instructions to "add new text" or similar, which for readability are not bolded or underlined.

General information about IHE can be found at www.ihe.net.

Information about the IHE Quality Research and Public Health domain can be found at http://www.ihe.net/IHE_Domains.

Information about the organization of IHE Technical Frameworks and Supplements and the process used to create them can be found at http://www.ihe.net/IHE_Process and http://www.ihe.net/Profiles.

The current version of the IHE QRPH Technical Framework can be found at http://www.ihe.net/Technical_Frameworks.

 

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## Introduction to this Supplement

This QRPH Trial Implementation Supplement contains the Early Hearing Detection and Intervention (EHDI) Profile. The EHDI Profile addresses information exchange needed in the development of a hearing plan of care for a newborn. It specifies the content for a Hearing Plan of Care (HPoC) document. It also specifies the message constraints for a hearing screening device to report a screening observation. The EHDI Profile is intended to augment the information exchange and interoperability also facilitated by the NANI, EHDI-WD, and QME-EH Profiles.

The HPoC document established a dynamic record that is added to as the child's hearing status, needs, and interventions change over time. This document provides state EHDI programs with an excellent vision of the data elements that need to be collected for a hearing plan of care.

## Open Issues and Questions

**Open Issue List:**

| Item Count | Issue Description | Status |
|---|---|---|
| 1 | Request new LOINC Codes for sections specific to HPoC | Initiated LOINC request process at completion of Public Comment. Trial implementations should use the specified temporary codes until LOINC releases permanent ones. |
| 2 | Feedback needs to be solicited during and after trial implementation to find out if it would be easier on implementers to NOT USE negationInd in the template representing the hearing screening test. | Review after initial Trial Implementation. |
| 3 | Feedback needs to be solicited during trial implementation to determine if any implementers find issues with implementing the Form Receiver without also implementing the Form Manager. | Review after initial Trial Implementation. |
| 4 | Entry templates should be added to the HPoC Section which permits encoding of goals and outcomes from interventions. | Future consideration. |
| 5 | Add an extension to CDA®[1] R2 which supports recording a language communication element (with all its parts) to the recordTarget/guardian, the participant/associatedEntity/associatedPerson, and the section/subject/relatedSubject/subject. | Future enhancement |
| 6 | Need to revisit the semantic difference between an observation act and a procedure act. This nuance may affect interoperability with the Quality Measure logic. | Revisit when QME-EH is updated. |

[1] CDA is the registered trademark of Health Level Seven International.

 

| Item Count | Issue Description | Status |
|---|---|---|
| 7 | The LOINC Code used on the Hearing Screening Organizer and the Hearing Screening Results Organizer both indicate they are "panels", but the type on the organizer templates is set to "CLUSTER". During Trial Implementation, it should be explored with implementers and LOINC to see if the assigned concepts are semantically accurate/specific enough. | Consider during Trial Implementation |
| 8 | Some Value Set have been populated with concepts that may or may not be needed. The Value Sets will continue to use temporary codes during the Trial Implementation period. If implementers use/need the concepts then permanent codes will be requested prior to completing the Trial Implementation period. | Open |
| 9 | Consider if the EHDI Profile should be modified to include an option for Content Creators and Form Receiver CDA Exporters to create the Hearing Plan of Care information is a document format that aligns with the latest working advanced for the use of the C-CDA Care Plan Document template.<br>This option would enable the EHDI Hearing Plan of Care Document to fit as a module with in a larger Care Plan for the child, which would qualitatively be better for care coordination. It also would increase implementer uptake, because any implementer of the C-CDA Care Plan Document could easily add a Hearing Plan of Care "container" into an overarching care plan. The C-CDA Care Plan Document is required when certifying to 170.315(b)(9) for Meaningful Use incentives. | Open |

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## Closed Issues

| Item Count | Issue Description | Status |
|---|---|---|
| 1 | How to formulate the 3 content profiles: Hearing Result Report, Hearing Screening Outcome Report, and Hearing Plan of Care, into the technical framework supplement? (These are the three documents needed to drive the document-based workflow in EHDI-WD.) | Closed – This profile will only specify the one content document (HPoC). EHDI-WD still requires the other two documents – and so specifying them still needs to be done – but it will not be in scope for this profile. |
| 2 | Do we need other documents for the Outcome Report and the Result Report, or not? | Closed. As of 11/26, we will focus only on the HPoC. |

 

| Item Count | Issue Description | Status |
|---|---|---|
| 3 | We need to make the code element of the Plan of Care section support a value set of relevant Plan of Care types.<br>Previous Template for EHCP is:<br>1.3.6.1.4.1.19376.1.7.3.1.1.15.4.1<br>Can we have a new Template ID for the HPoC Document work?<br>Yes. The root OID granted will be:<br>1.3.6.1.4.1.19376.1.7.3.1.1.26 | Document Level LOINC<br>34817-7 Otorhinolaryngology Evaluation and management note<br>Section Level LOINC<br>18776-5 Plan of Care<br><br>For now, the section level code will remain the more generic code of 18776-5. This needs to be addressed with LOINC as they resolve the Care Plan, Plan of Care coding issues.<br>The more specific code will be used in the Service Event to record that the Hearing Plan was Created.<br>For this year, the ServiceEvent will not record that the Hearing Screening Outcome assessed was done. This may be reconsidered in the future. Once HPoC is published, a CP will be logged against EHCP to deprecate it. |
| 4 | Should the process flow for 4.2.2.3-1 use a loop structure? | Yes – add a loop, but not blue – also fix 4.2.2 |
| 5 | Open questions about the use of C-CDA templates versus IHE templates. Design need is to be sure the template is international. | Discuss approach with QRPH on 3/7/2014.<br>Need to discuss impact on Content Creator<br>Content Consumer<br>Form Manager<br>Form Receiver Content Creator<br>Will create these options. |

 

| Item Count | Issue Description | Status |
|---|---|---|
| 6 | How do we specify the QRPH Result Message Communication integration profile so we have a Device Observation Consumer further constrained to receive hearing screening data from a Device Observation Reporter using a PCD-01 transaction to communicate a HL7®[2] Hearing Screening Result Message?<br><br>**Device Observation Reporter** – The Device Observation Reporter (DOR) receives data from PCDs, including those based on proprietary formats, and maps the received data to transactions providing consistent syntax and semantics.<br><br>**Device Observation Consumer –** The actor responsible for receiving PCD data from the Device Observation Reporter, the Device Observation Filter, or both. | Material is completed |
| 7 | Tasks to be completed for Vol2-4:<br>1. Add actor options (if needed)<br>2. Gather Value Sets for US Realm<br>3. Establish Concept Domain bindings for UV Realm<br>4. Finish PCD-01 Content Specification<br>5. Create Form Mapping 6.3.1.D1.4<br>6. Specify that NOK information from the message needs to be represented in the recordTarget.guardian header entry when the person is ward over the baby<br>7. Specify Participations for the Result Observation<br>8. Pull everything into the TS formatPull everything into the TS format | Completed. |
| 8 | Work with PCD Domain and IEEE to complete the process of registering the proposed Containment Tree terms and getting assigned codes.<br>Update the message sample document after codes have been assigned. | Done. |
| 9 | Work with PCD Domain to complete the coding of the ORU^R01 message to include the containment tree examples | Done |

[2] HL7 is the registered trademark of Health Level Seven International.

 

| Item Count | Issue Description | Status |
|---|---|---|
| 10 | A decision needs to be made about what organization information should be provided in Volume 4 as the organization to contact with questions and responsible for sustaining the Technical Supplement. See V4: 4.R1.1 Comment Submission. Currently using: (alippitt@himss.org) | New approach provided by Nichole. Use: iheusa@himss.org for the IHE USA Secretariat email address |
| 11 | Get new number for new transaction | QRPH-45 with name Communicate Hearing Screening Data |
| 12 | Checking with PCD Domain to confirm the needed MDC Concepts were added as documented in Volume 2. | It turns out that there is no need to reference the PCD-01 message structure due to the fact that this transaction uses a message structure balloted through HL7. The LOINC and SNOMED CT vocabulary is available and the structure fits the hearing screening data. |
| 13 | After the PCD Domain processes its CP to include the NK1 segment, create a CP to change the NK1 information in Volume 3 Chapter 7 to remove indication of it being an extension of the PCD-01 message. PCD wants to include the segment as optional "O", so the Hearing Screening Device Message would still have a further constraint to explain, since the usage here is "RE" | This profile no longer references PCD-01 |
| 14 | The IHE Technical Supplement template doesn't address how to specify the option of implementing Realm Specific versions of the templates. We have created a US_Realm Option for the actors, but this may not be the preferred mechanism. | This is a template issue. This issue needs to be looked at to suggest the resolution during Public Comment. |
| 15 | Revisions to create a new QRPH-45 transaction and additional research seem to show that no reference to PCD-01 is actually required. This profile was intended to use the ORU^R01 specification defined in the HL7 spec. The whole "walk about" in PCD-01 land was unnecessary. | Consulting with Lynn. |
| 16 | IHE TS Template Issue: The diagramming tools are too limited and difficult to use. The tooling issue leads to greater inconsistency in the various diagrams that are produced. This feedback should be provided regarding the template. | If diagrams are done in ppt, the ppt file needs to be stored with the document on the ftp site. |
| 17 | IHE TS Template Issue: There needs to be an informative section added for each Use Case, following the Process Flow, where the anticipated types of systems which might play each actor role in the Use Case can be described. | This will be called Deployment Models. QME-EH shows an example of how to do this. |
| 18 | Add SNOMED CT and LOINC OIDs where concepts are currently available. | Done. |
| 19 | The EHDI Profile was developed before the Form Processor was introduced. Since no implementers have expressed a need for the Form Processor, this additional complexity has not been introduced into the profile. | Closed. |

 

# General Introduction

# Appendix A - Actor Summary Definitions

| Actor | Definition |
|---|---|
| Form Receiver CDA Exporter | The Form Receiver CDA Exporter SHALL conform to the requirements specified for the Form Receiver in the ITI RFD Profile. Additionally, this actor SHALL create and export a CDA document that meets the requirements of a specified document template defined by the profile in which the actor appears. Profiles that use this actor SHALL include a mapping from the data elements of the form data to the data elements of the CDA document template used to create the exported CDA. |

# Appendix B - Transaction Summary Definitions

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| Transaction | Definition |
|---|---|
| [QRPH-45] Communicate Hearing Screening Data | This transaction is used to communicate hearing screening result information. |

# Glossary

| Glossary Term | Definition |
|---|---|
| Transclusion | An inclusion within a template design makes use of another template by "virtually" copying the included template definitions, also known as transclusion. In essence this means that template definitions are included by reference and shown as-is on demand, i.e., at time of displaying the template or using it for the creation of validation scripts. Inclusion is automatic and transparent to the user. |

 

# Volume 1 – Profiles

## X Early Hearing Detection and Intervention (EHDI) Profile

The EHDI Profile describes the content needed to create a hearing plan of care for a newborn. The EHDI Profile specifies a Hearing Plan of Care (HPoC) document that supports communication and care planning with providers who are a part of the newborn's care team. Information shared in the HPoC document helps to standardize care coordination for infants with suspected hearing loss. This information also provides interoperability between clinical EMR systems and EHDI systems for increased efficiency and better data quality.

The Hearing Plan of Care document is specified to include a plan of care section which includes care instructions and recommended interventions based on jurisdictional guidelines and care best practices, given the clinical condition of the newborn. It also includes the newborn hearing screening outcome and the screening results used to assess that outcome. It also includes other clinical information considered relevant in the detection and intervention process of developing a hearing plan of care for a newborn, such as risks relevant for hearing problems, procedures performed during the birth encounter, and other health problem concerns.

The EHDI Profile also specifies the message content for transmitting hearing screening observations from hearing screening devices to other systems that process the screening result information. The message content also can be used to automate population of hearing screening results in the HPoC document.

Finally, the EHDI Profile also specifies the data element mapping needed to populate a form designed to capture structured data for hearing screening results and risk indicators. The form is used to manually capture hearing screening results and risk indicators when those data are not available for automated population.

### X.1 Actors, Transactions, and Content Modules

This section defines the actors, transactions, and/or content modules in this profile. General definitions of actors are given in the Technical Frameworks General Introduction Appendix A at http://ihe.net/Technical_Frameworks/.

Figure X.1-1 shows the actors directly involved in the EHDI Profile and the relevant transactions between them. If needed for context, other actors that may be indirectly involved due to their participation in other related profiles are shown in dotted lines. Actors which have a mandatory grouping are shown in conjoined boxes.

The EHDI Profile defines how to exchange data required to populate a newborn's Hearing Plan of Care document.

First, content for the creation of the HPoC document is defined. Optionally, the system that creates the HPoC document may receive hearing screening result information via an HL7

 

Hearing Screening Message with the IHE Communicate Hearing Screening Data [QRPH-45] transaction.

Second, a form-based data collection method is defined using transactions from the ITI Retrieve Form for Data Capture (RFD) Profile. The optional RFD pre-population mechanism to supplement human data entry is constrained to use a standard CCD®[3] document. The CCD document may be used to pre-populate a form designed to capture hearing screening results and risk indication information.

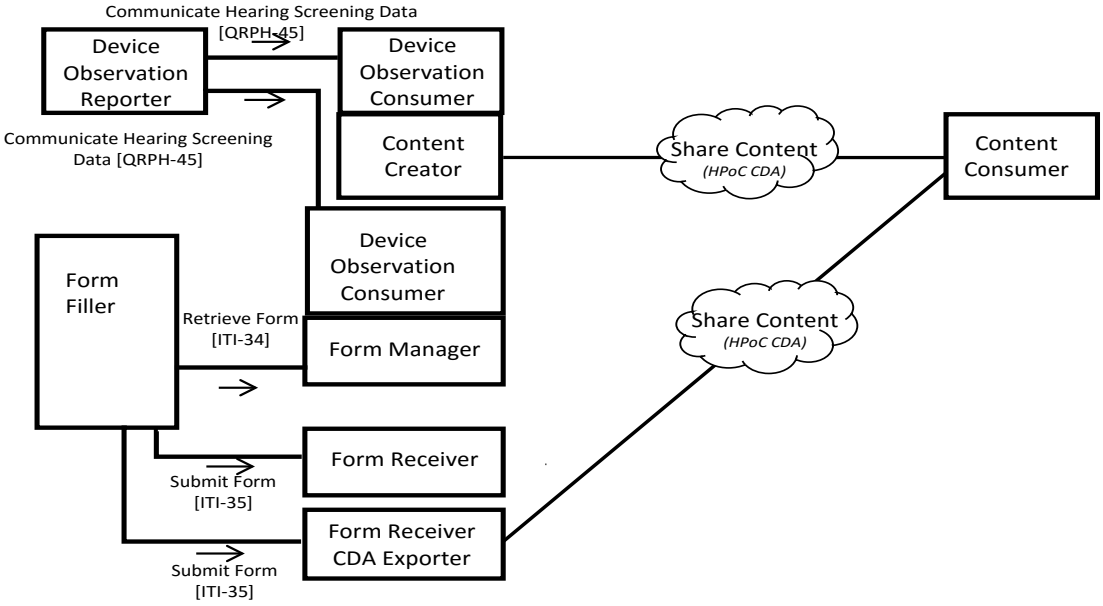


**Figure X.1-1: EHDI Actor Diagram**

Table X.1-1 lists the transactions used in the EHDI Profile. To claim support with this profile, an actor shall support all required transactions (labeled "R") and may support optional transactions (labeled "O").

[3] CCD is the registered trademark of Health Level Seven International.

 

**Table X.1-1: EHDI Profile - Actors and Transactions**

| Actors | Transactions | Optionality | TF Reference |
|---|---|---|---|
| Device Observation Reporter | Communicate Hearing Screening Data [QRPH-45] | R | QRPH TF-2: 3.45 |
| Device Observation Consumer | Communicate Hearing Screening Data [QRPH-45] | R | QRPH TF-2: 3.45 |
| Content Creator | None | | |
| Content Consumer | None | | |
| Form Filler | Retrieve Form [ITI-34] | R | ITI TF-2b: 3.34 |
| | Submit Form [ITI-35] | R | ITI TF-2b: 3.35 |
| Form Manager | Retrieve Form [ITI-34] | R | ITI TF-2b: 3.34 |
| Form Receiver | Submit Form [ITI-35] | R | ITI TF-2b: 3.35 |
| Form Receiver CDA Exporter | Submit Form [ITI-35] | R | ITI TF-2b: 3.35 |

Table X.1-2 lists the content module(s) defined in the EHDI Profile. To claim support with this profile, an actor shall support all required content modules (labeled "R") and may support optional content modules (labeled "O").

**Table X.1-2: EDHI Profile - Actors and Content Modules**

| Actors | Content Modules | Optionality | Reference |
|---|---|---|---|
| Device Observation Reporter | None | | |
| Device Observation Consumer | None | | |
| Content Creator | Hearing Plan of Care 1.3.6.1.4.1.19376.1.7.3.1.1.26.1.1 | R | QRPH TF-3: 6.3.1.D1 |
| Content Creator (with US Realm Option) | Hearing Plan of Care 1.3.6.1.4.1.19376.1.7.3.1.1.26.2.1 | R | QRPH TF-4: 6.3.1.D1 |
| Content Consumer | Hearing Plan of Care 1.3.6.1.4.1.19376.1.7.3.1.1.26.1.1 | R | QRPH TF-3: 6.3.1.D1 |
| Content Consumer (with US Realm Option) | Hearing Plan of Care 1.3.6.1.4.1.19376.1.7.3.1.1.26.2.1 | R | QRPH TF-4: 6.3.1.D1 |
| Form Filler (with CCD Prepop Option) | CCD 2.16.840.1.113883.10.20.22.1.2 | R | HL7 C-CDA R2.1 |
| Form Manager | CCD 2.16.840.1.113883.10.20.22.1.2 | R | HL7 C-CDA R2.1 |
| Form Receiver | None | Note 1 | |

 

| Actors | Content Modules | Optionality | Reference |
|---|---|---|---|
| Form Receiver CDA Exporter | Hearing Plan of Care 1.3.6.1.4.1.19376.1.7.3.1.1.26.1.1 | R (Note 1) | QRPH TF-3: 6.3.1.D1 |
| Form Receiver CDA Exporter (with US Realm Option) | Hearing Plan of Care 1.3.6.1.4.1.19376.1.7.3.1.1.26.2.1 | R (Note 1) | QRPH TF-4: 6.3.1.D1 |

Note 1: The format for form data submitted in the [ITI-35] transaction is not constrained by this profile. Systems implementing the Form Receiver or the Form Receiver CDA Exporter are responsible for working directly with implementers of the Form Manager to understand how form data will be formatted.

### X.1.1 Actor Descriptions and Actor Profile Requirements

Most requirements are documented throughout Volume 1 or in the Transactions specifications (Volume 2) or Content Modules (Volume 3, or, for US implementations, in Volume 4). This section documents any additional requirements on the profile's actors.

#### X.1.1.1 Content Creator

The Content Creator includes processing logic to populate the HPoC document. This involves aggregating multiple screening results into one outcome assessment for each ear. The processing method is jurisdictionally defined and is not constrained by this profile. Correct processing can be determined through human comparison of the given jurisdictional method and the system generated screening outcomes.

The Content Creator also includes the processing logic to generate planned interventions in the Plan of Care section of the HPoC document based on information documented in other sections of the HPoC document.

QRPH TF-1: Appendix D includes non-normative guidance about the processing logic used by Content Creators to populate the HPoC document.

QRPH TF-1: Appendix E includes non-normative guidance used by Content Creators to populate the HPoC document Header.

#### X.1.1.2 Content Consumer

No additional requirements.

#### X.1.1.3 Form Filler

The Form Filler SHALL support XHTML format of the Retrieve Form transaction. See ITI TF-2b: 3.34.4.2.3.1

The Form Filler MAY support the pre-population option using a CCD document with the Retrieve Form [ITI-34] transaction.

The Form Filler SHALL be able to request a form designed to collect hearing screening result and hearing risk information. In a scenario where multiple tests results are created for the newborn before discharge, there is no expectation that the Form Filler can request a particular

 

form by Form Instance ID. Each form request retrieves a new form of the type used to record a screening result.

### X.1.1.4 Form Manager

The Form Manger SHALL support XHTML for the Retrieve Form transaction. See ITI TF-2b: 3.34.4.2.3.1

The Form Manager SHALL accept pre-populated data in the form of a CCD, and return a form designed to collect hearing screening information. When a CCD document is not provided to pre-populate the form, the requested form is returned using just the data supplied in the Request Form message in [ITI-34]. (Note: The EHDI Profile does not reference a specific form; therefore, it is left to implementers to determine the needed form and associate data available in the pre-pop data with their established form.)

The Form Manager is responsible for linking data sets, reconciling differences, and using data to pre-populate the form.

QRPH TF-1: Appendix C includes a sample form that Form Managers can review to visual a possible form representation for the information collected to support creation of an HPoC document.

### X.1.1.5 Form Receiver

The Form Receiver SHALL process data from the form, thereby implementing accurate consumption of data represented in the form.

The Form Receiver processes screening results based on jurisdictional guidelines. Specification of those guides is outside the scope of this profile.

The format for form data submitted to the Form Receiver is not further constrained by this profile. Systems implementing the Form Receiver or the Form Receiver CDA Exporter are responsible for working directly with implementers of the Form Manager to understand how form data will be formatted.

### X.1.1.6 Form Receiver CDA Exporter

The Form Receiver CDA Exporter SHALL receive the populated form when it is submitted by the Form Filler.

The Form Receiver CDA Exporter SHALL be able to accumulate one or more hearing screening result forms for a single patient and combine the results according to a jurisdictionally defined method in order to formulate the outcome section of the HPoC. The method is not constrained by this profile.

When the Form Receiver CDA Exporter produces an HPoC, the results received up to that point in time for the patient SHALL be aggregated into the HPoC document based on mapping rules for the Form Receiver CDA Exporter specified in QRPH TF-3: 6.3.1.D.4 (Data Element Mappings for CDA Export).

 

Systems implementing the Form Receiver or the Form Receiver CDA Exporter are responsible for working directly with implementers of the Form Manager to understand how form data will be formatted

QRPH TF-1: Appendix D includes non-normative guidance about the processing logic used by Form Receiver CDA Exporter to populate the HPoC document.

QRPH TF-1: Appendix E includes non-normative guidance used by Form Receiver CDA Exporter to populate the HPoC document Header.

### X.1.1.7 Device Observation Reporter (DOR)

The format of the information coming from the hearing screening device is not specified in this profile. This profile does not specify how the device formats the result information or how the Device Observation Reporter translates input files provided by the device.

Note: For US Realm implementations see QRPH TF-4: 4.R1.2.1 for additional US Realm message constraint information.

### X.1.1.8 Device Observation Consumer (DOC)

The Device Observation Consumer SHALL be grouped with either the Content Creator or the Form Manager. This grouping enables the collected hearing screening results to be formulated into a Hearing Plan of Care document that shares the most conclusive screening result and the history of screening, and the other hearing plan of care information with the Content Consumer.

Note: For US Realm implementations see QRPH TF-4: 4.R1.2.1 for additional US Realm message constraint information.

## X.2 Actor Options

Options that may be selected for each actor in this profile, if any, are listed in the Table X.2-1. Dependencies between options when applicable are specified in notes.

**Table X.2-1: HPoC – Actors and Options**

| Actor | Option Name | Reference |
|---|---|---|
| Device Observation Reporter | None | |
| Device Observation Consumer | None | |
| Content Creator | Automated Result Capture | Section X.2.1 |
| | US Realm | Section X.2.2 |
| Content Consumer | US Realm | Section X.2.2 |
| Form Filler | CCD Pre-Pop | Section X.2.3 |
| Form Manager | Automated Result Capture | Section X.2.1 |
| Form Receiver | None | |

 

| Actor | Option Name | Reference |
|---|---|---|
| Form Receiver CDA Exporter | US Realm | Section X.2.2 |

### X.2.1 Automated Result Capture Option

The Automated Result Capture Option provides a more efficient and less error-prone method for capturing hearing screening results directly from the screening device. It eliminates manual entry of the screening result information.

A Content Creator that supports this option SHALL be grouped with the Device Observation Consumer defined in this profile.

A Form Manager that supports this option SHALL be grouped with a Device Observation Consumer from this profile and shall consume messages conforming to the HL7 Version 2.6 Implementation Guide: Early Hearing Detection and Intervention (EHDI) Messaging, Release 1.

Note: For US Realm implementations see Volume 4 for additional US Realm message constraint information.

### X.2.2 US Realm Option

The US Realm Option supports semantic data representation that uses code systems accepted as common standards in the United States which improves interoperability.

A Content Creator that supports this option SHALL create HPoC documents that conform to the US Realm template specifications. See QRPH TF-4:8 for US Realm specifics.

A Content Consumer that supports this option SHALL consume HPoC documents that conform to the US Realm template specifications.

A Form Receiver CDA Exporter that supports this option SHALL create HPoC documents that conform to the US Realm template specifications.

### X.2.3 CCD Pre-pop Option

The CCD Pre-pop Option automates the re-use of information available in a standard CCD document to efficiently populate fields of information required on a form designed to collect hearing screening information.

A Form Filler that supports this option SHALL supply a CCD document when initiating the Retrieve Form [ITI-34] transaction.

## X.3 Required Actor Groupings

An actor from this profile (Column 1) shall implement all of the required transactions and/or content modules in this profile ***in addition to*** all of the transactions required for the grouped actor (Column 2).

 

If this is a content profile, and actors from this profile are grouped with actors from a workflow or transport profile, the Content Bindings reference column references any specifications for mapping data from the content module into data elements from the workflow or transport transactions.

In some cases, required groupings are defined as at least one of an enumerated set of possible actors; this is designated by merging column one into a single cell spanning multiple potential grouped actors. Notes are used to highlight this situation.

Section X.5 describes some optional groupings that may be of interest for security considerations and Section X.6 describes some optional groupings in other related profiles.

**Table X.3-1: HPoC - Actor Groupings**

| EHDI Actor | EHDI Actor to be grouped with | Reference | Content Bindings Reference |
|---|---|---|---|
| Content Creator | None | -- | |
| Device Observation Reporter | None | -- | -- |
| Device Observation Consumer Note1 | Content Consumer | Section X.1.1.7 | -- |
| | Form Manager | Section X.1.1.4 | -- |
| Content Creator | None | -- | -- |
| Content Consumer | None | -- | -- |
| Form Filler | None | -- | -- |
| Form Manager | None | -- | -- |
| Form Receiver | None | -- | -- |
| Form Receiver/CDA Exporter | None | -- | -- |

Note 1: the Device Observation Consumer SHALL be grouped with either the Content Consumer or Form Manager.

## X.4 Overview

Early Hearing Detection and Intervention (EHDI) is a United States-based (US) public health program that directs hospitals to screen newborns for hearing loss prior to hospital discharge. However, the UV Realm specifications in QRPH TF-3 support base requirements for other realms. The EHDI Profile specifies information to be documented and communicated which assists in the detection and delivery of care for hearing loss in newborns. The Hearing Plan of Care (HPoC) document can be made available to all authorized care providers as jurisdictionally directed by the Public Health EHDI program. The HPoC provides best practice hearing guidance on next steps and actions that must be initiated for each newborn following discharge from the hospital nursery. It includes clinical content pertinent to EHDI care programs such as screening

 

results, risk indicators for hearing loss, interventions, and most importantly care plan instructions for management of the patient. The EHDI Profile establishes standards for how to compile and exchange information for an HPoC. It is envisioned that this HPoC document will record a child's hearing plan of care from birth going forward over the course of their life.

### X.4.1 Concepts

As an information artifact, a Hearing Plan of Care (HPoC) document is ultimately intended to compile several types of information relevant for a Hearing Plan of Care. It documents the child's active problems, procedures, screenings, and relevant risk indicators, and includes a plan of care related to hearing health, based on the medical history/evidence, and in keeping with best practices and jurisdictionally defined protocols. As the design evolves, it will also include diagnostic testing and other forms of intervention activities relevant for early hearing detection and intervention.

A hearing screening outcome is an overall interpretation of available hearing screening results gathered from one or more screening test. A hearing screening result is the actual measures reported from a screening device when a screening is performed. The measured result may include contextual information indicating how the measured result is interpreted, or it may include just the measured value produced by the device. A hearing screening outcome considers one or more screening result and assigns a value and possibly an interpretation, based on jurisdictionally defined practices.

### X.4.2 Use Cases

#### X.4.2.1 Use Case #1: Share Hearing Plan of Care (HPoC)

##### X.4.2.1.1 Use Case Description

A system implementing the Content Creator generates an HPoC document and shares it with a system implementing the Content Consumer. For example, sharing could use mechanisms from XDS.b, XDR, XDM, Direct, or some other means of transport.

This scenario might apply to an EMR system that produces and shares an HPoC document with a Public Health EHDI-IS, a Health Information Exchange (HIE), or another EMR for a Primary Care Clinician or Specialist.

##### X.4.2.1.2 Processing Steps

###### X.4.2.1.2.1 Pre-conditions

The Content Creator has access to all the hearing screening result data and other clinical and demographic data needed to populate and construct a Hearing Plan of Care document.

###### X.4.2.1.2.2 Main Flow

The Content Creator creates and shares the HPoC document.

 

The Content Consumer receives/retrieves the HPoC document and processes it.

#### X.4.2.1.2.3 Post-conditions

Information and care planning instructions prepared by the Content Creator are now available in the system implementing the Content Consumer.

### X.4.2.1.3 Process Flow

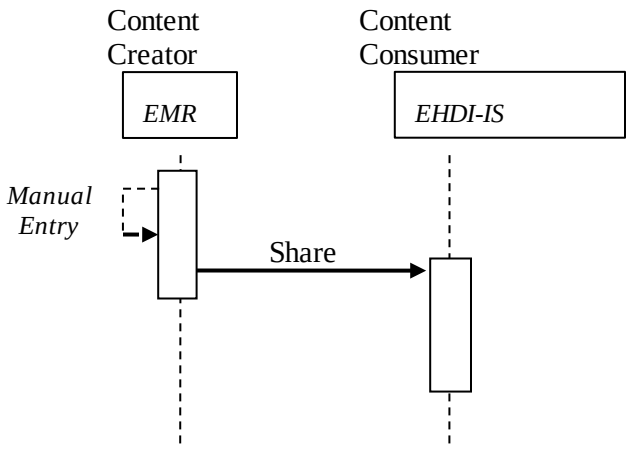


**Figure X.4.2.1.3-1: Process Flow Diagram**

## X.4.2.2 Use Case #2: Collect Screening Results Then Share HPoC

### X.4.2.2.1 Use Case Description

A screening device or system responsible for communicating screening results electronically provides the screening result to a system which consumes the results. The system which receives the results generates the HPoC document and shares it with a system implementing the Content Consumer. Sharing of the HPoC document could use mechanisms from XDS.b, XDR, XDM, Direct, or some other means of transport.

This scenario might apply to an EMR system or a Public Health EHDI-IS that can receive and process electronic results from screening devices then produce and share a HPoC document through a Health Information Exchange (HIE), or with another EMR system for a Primary Care Clinician or Specialist.

 

#### X.4.2.2.2 Processing Steps

##### X.4.2.2.2.1 Pre-conditions

A Device Observation Reporter (DOR) is available to populate a Hearing Screening Result Message and initiate a [QRPH-45] transaction to send that information to a Device Observation Consumer. The hearing screening device itself could act as the Device Observation Reporter. Alternatively, a system that receives device information, by a means not defined in this profile, could act as the Device Observation Reporter.

The system acting as the Content Creator also has the ability to act as a Device Observation Consumer.

##### X.4.2.2.2.2 Main Flow

Step 1. The Content Creator, acting as a Device Observation Consumer receives and processes the hearing screening result data from the Device Observation Reporter.

Optionally repeat Step 1. The communication between Device Observation Reporter and Device Observation Consumer happens each time the newborn is screened. A newborn may be screened multiple times to establish a conclusive result for the birth encounter.

Step 2. The Device Observation Consumer/Content Creator processes all the screening results and other data needed to populate and construct a Hearing Plan of Care.

Step 3. The Content Creator creates and shares the HPoC document.

Step 4. The Content Consumer receives/retrieves the HPoC document and processes it.

##### X.4.2.2.2.3 Post-conditions

Information and care planning instructions prepared by the Content Creator are now available in the system implementing the Content Consumer.

#### X.4.2.2.3 Process Flow

Device Observation Consumer

 

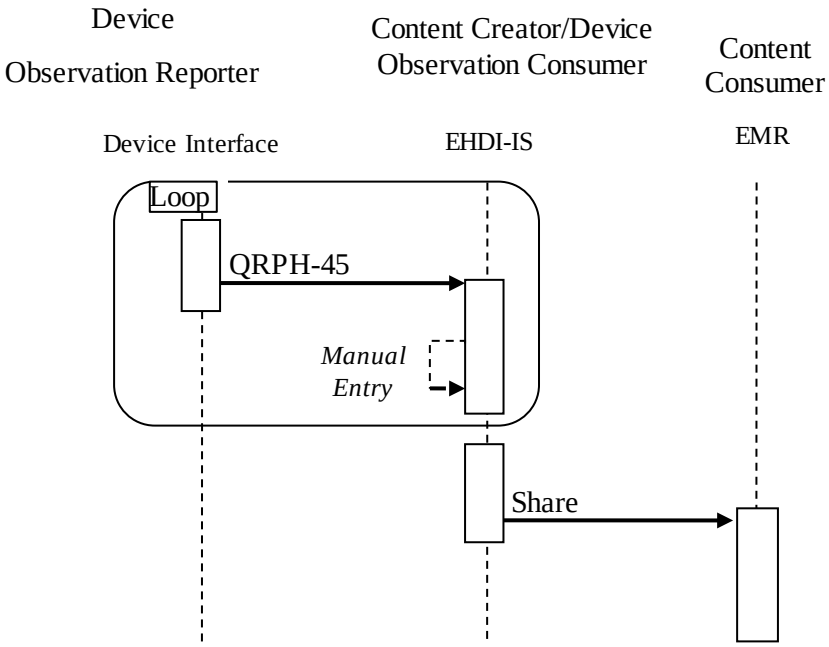


**Figure X.4.2.2.3-1: Process Flow Diagram**

### X.4.2.3 Use Case #3: RFD for Newborn and Hearing Screening Result Data Capture and HPoC Export

#### X.4.2.3.1 Use Case Description

A system implementing the Form Filler interacts with a system implementing the Form Manager. The Form Manager provides a form-based mechanism which allows users of the Form Filler system to enter the data needed to populate an HPoC document. To minimize data entry, the Form Filler may provide a CCD document which the Form Manager can use to pre-populate the form. A Form Receiver CDA Exporter, receives the fully populated form, creates the HPoC Document, and then shares it with a system implementing the Content Consumer.

The HPoC Document could be shared using XDS.b, XDR, XDM, Direct, or some other means of transport.

This scenario might apply to an EMR system that interoperates with an EHDI-IS that can accept manual entry of hearing screening results then produce and share a HPoC document through a Health Information Exchange (HIE), or with another EMR for a Primary Care Clinician or Specialist.

 

#### X.4.2.3.2 Processing Steps

##### X.4.2.3.2.1 Pre-conditions

The Form Filler creates a CCD document to supply data needed to populate the form used to gather Hearing Screening data elements. In this use case, the system implementing the Form Filler does not have the means to capture hearing screening information from the device, so this data is entered manually.

##### X.4.2.3.2.2 Main Flow

Step 1. The Form Filler requests a form designed to gather the data needed for an HPoC document. It includes a CCD to pre-populate the form with available data.

Step 2. The Form Manager processes the pre-populated CCD and returns the populated form.

Step 3. The Form Filler submits the form for processing. The Form Receiver CDA Exporter receives the form data and then processes it to create and share an HPoC document.

Step 4. The Content Consumer receives/retrieves the HPoC document and processes it.

##### X.4.2.3.2.3 Post-conditions

Information and care planning instructions are now available in the system implementing the Content Consumer.

 

#### X.4.2.3.3 Process Flow

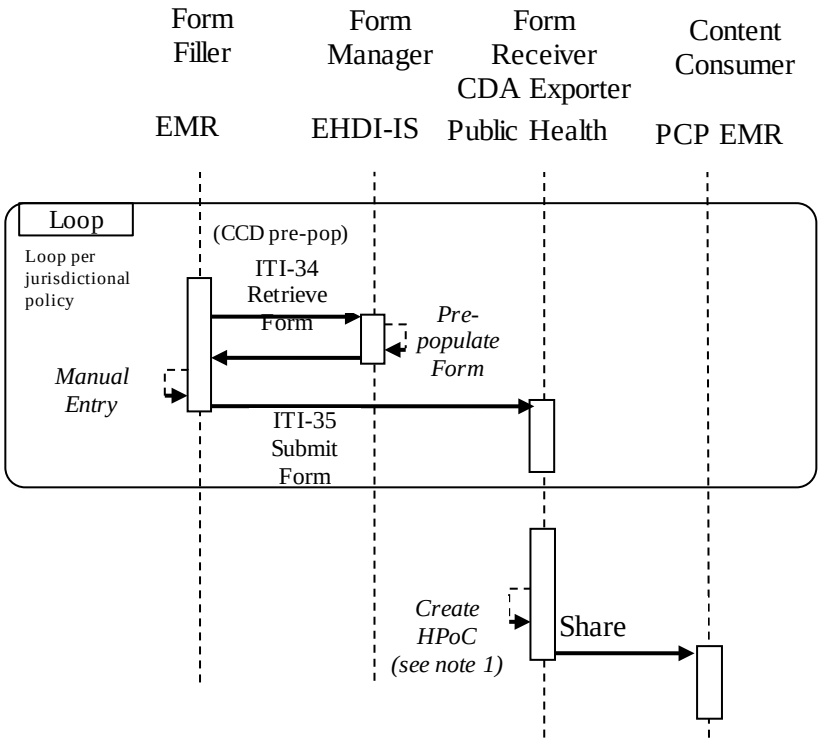


**Figure X.4.2.3.3-1: Process Flow Diagram**

Note 1: Specification of the discharge event trigger mechanism to initiate creation of the Hearing Plan of Care document is out of scope for the EHDI Profile. The profile shows the HPoC is created "at the point of Discharge". This could be triggered manually or in an automated fashion. Document-based workflows are one means of creating standard processes for such workflows. Consult the IHE QRPH EHDI-WD Profile for more information on a document based workflow which includes triggering the production of a Hearing Plan of Care when the discharge care summary document becomes available. Also note, an HPoC MAY be generated at more times than just the discharge from the birth encounter.

### X.4.2.4 Use Case #4: Automated Hearing Screening Result Data Capture and RFD for Newborn and HPoC Export

#### X.4.2.4.1 Use Case Description

A system implementing the Form Filler interacts with a system implementing the Form Manager. The Form Manager provides a form-based mechanism which allows users of the Form Filler system to enter the data needed to populate an HPoC document. To minimize data entry, the Form Filler may provide a CCD document which the Form Manager can use to pre-populate the form.

 

In this combination scenario, the Form Manager implements the Device Observation Consumer Option. This enables the Form Manager to automate the population of screening results gathered directly from the screening device. This minimizes the amount of information that needs to be manually populated by the Form Filler.

A Form Receiver CDA Exporter receives the fully populated form, creates the HPoC Document and then shares it with a system implementing the Content Consumer. The Form Receiver CDA Exporter includes the processing logic to needed to populate the document which involves aggregating multiple screening results into one outcome according to a jurisdictionally defined method. The method is not constrained by this profile.

This scenario might apply to an EMR system that interoperates with an EHDI-IS that can accept manual entry of hearing screening result. The EMR obtains the data from the EHDI-IS and then produces and shares an HPoC document through a Health Information Exchange (HIE), or with another EMR for a Primary Care Clinician or Specialist.

#### X.4.2.4.2 Processing Steps

##### X.4.2.4.2.1 Pre-conditions

A Device Observation Reporter is available to populate a Hearing Screening Result Message and initiate a [QRPH-45] transaction to send that information to a Form Manager implementing the Device Observation Consumer Option.

The Form Filler creates a CCD document to supply data needed to populate the form used to gather HPoC data elements.

##### X.4.2.4.2.2 Main Flow

The Form Manager has the ability to act as a Device Observation Consumer and receives and processes the hearing screening result data from the screening device. It processes the screening results and other data needed to populate and construct a Hearing Plan of Care.

The Form Filler requests a form designed to gather the data needed for an HPoC document. It includes a CCD to prepopulate the form with available data.

The Form Manager processes the pre-populated CCD and returns the populated form.

The Form Filler submits the form for processing. The Form Receiver CDA Exporter receives the form data, processes it to create and share an HPoC document.

The Content Consumer receives/retrieves the HPoC document and processes it.

##### X.4.2.4.2.3 Post-conditions

Information and care planning instructions are now available in the system implementing the Content Consumer.

 

690 **X.4.2.4.3 Process Flow**

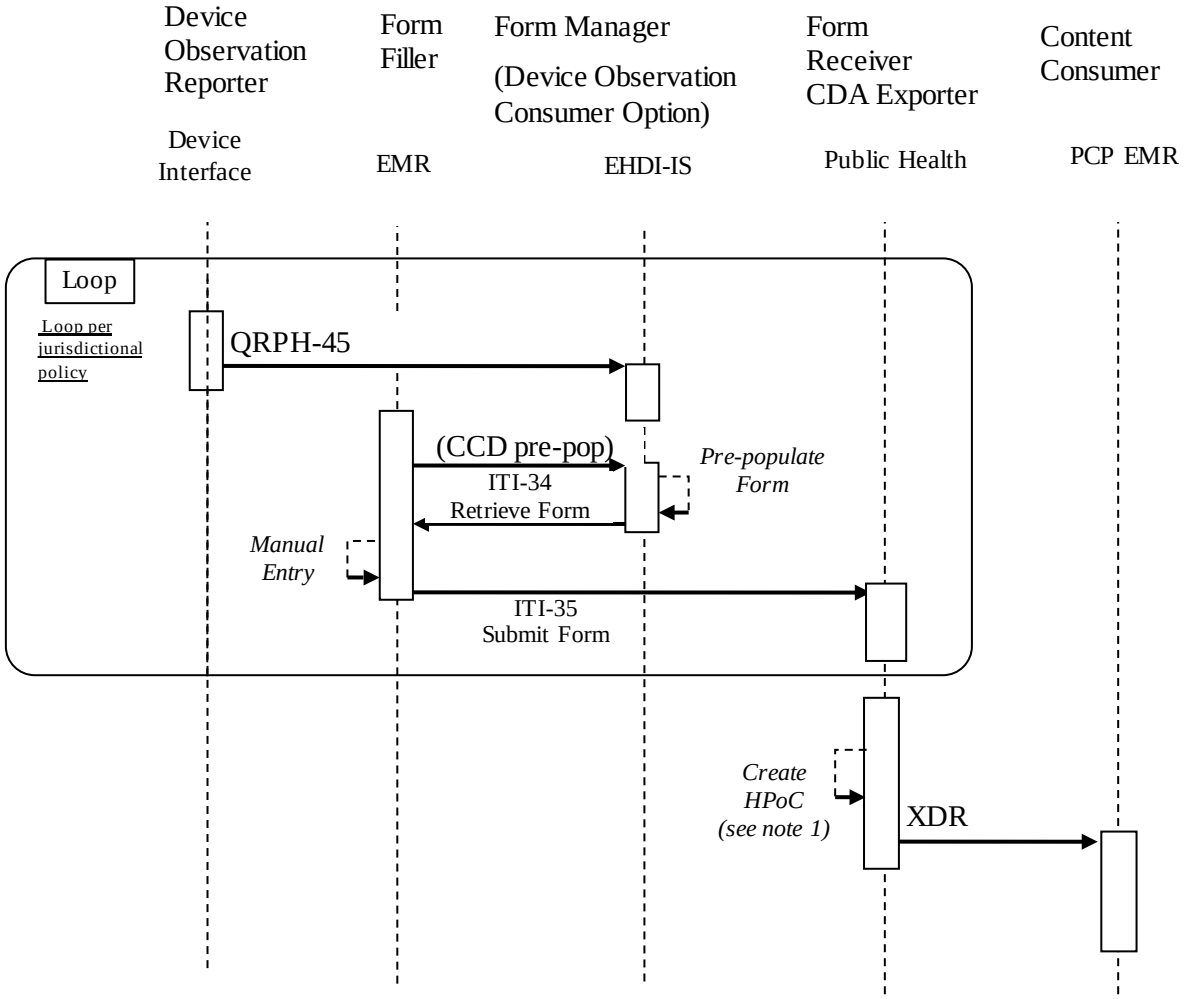


**Figure X.4.2.4.3-1: Process Flow Diagram**

Note 1: The trigger to initiate the Hearing Plan of Care document is out of scope for the EHDI Profile. The profile specifies it is created "at the point of Discharge". This could be triggered manually or in an automated fashion. Document-based
695 workflows are one means of creating standard processes for such workflows. Consult the IHE QRPH EHDI-WD Profile for more information on a document based workflow which includes triggering the production of a Hearing Plan of Care when the discharge care summary document becomes available.

## X.5 Security Considerations

700 EHDI includes clinical content related to the information subject. As such, it is anticipated that the transfers of Protected Health Information (PHI) SHOULD be processed using best practices. Systems implementing IHE transactions which transfer PHI SHOULD include capabilities described in the IHE ITI Audit Trail and Node Authentication (ATNA) Integration Profile. Other

 

private security mechanisms MAY be used to secure content within enterprise managed systems. Specifications for ATNA logging for RFD transactions are covered in QRPH CRD TF-2:5.

Actors responsible for creating persistent content, in the form of a saved form or CDA document, MAY include a digital signature using the ITI Digital Signature (DSG) Profile to assure that the form content submitted cannot be changed.

For security purposes, when sending information to Public Health, specifically to vital records Electronic Registration Systems, systems will also may need to know the identity of the user and the location to identify the of the data source. In this case, the ITI Cross-Enterprise User Assertion (XUA) and ATNA Profiles MAY be utilized to support this implementation.

## X.6 Cross Profile Considerations

The following informative narrative is offered as implementation guidance.

### X.6.1 ITI Document Sharing Profiles

The use of the IHE family of transactions for cross-enterprise document sharing is encouraged to support standards-based interoperability between systems acting as Content Creator and Content Consumer. The grouping of Content Creator and Content Consumer Actors with ITI actors from this family of profiles is defined in the PCC Technical Framework (PCC TF-2:3.1).

Document sharing profiles support infrastructure, security and privacy through the use of the Consistent Time (CT) and Audit Trail and Node Authentication (ATNA) Profiles. A Time Client in CT might be grouped with the Content Creator and the Content Consumer. A Secure Node and/or a Secure Application in ATNA might be grouped with the Content Creator and the Content Consumer.

Detailed description of these transactions can be found in the IHE IT Infrastructure Technical Framework.

### X.6.2 Sharing Value Set (SVS)

Actors in the EHDI Profile may support the ITI Sharing Value Set (SVS) Profile in order to use a common uniform managed vocabulary for dynamic management of form mapping rules.

 

# Appendices

 

# Appendix A – New Actors

The EHDI Profile does not define any new actors.

# Appendix B – New Transactions

| Transaction | Definition |
|---|---|
| [QRPH-45] Communicate Hearing Screening Data | This transaction is used to communicate hearing screening result information. |

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# Appendix C – Sample Form

A sample form is implemented using Excel and is included in the supporting materials for this technical supplement located at ftp://ftp.ihe.net/TF_Implementation_Material/QRPH/EHDI/.

 

# Appendix D – HPoC Content Creator Processing Logic Guidance

The following material is not normative. It does not define specific processing requirements for the Content Creator in the Early Hearing Detection and Intervention (EHDI) Profile. The information in this appendix is intended to help implementers understand the processing capabilities that may be implemented in an application supporting the EHDI Content Creator.

## D.1 Processing Logic for determining the hearing screening outcome

When a newborn's hearing is screened multiple times during the birth encounter, multiple hearing screening results are available for the baby. For quality assessment of the hearing screening process, all hearing screening and the associated results should be documented. The time of the hearing screening is a key factor in assessing the process quality and in determining the outcome that should be assigned for hearing screening during the encounter.

To automate outcome assessment, all hearing screening results should be captured and exchanged. The information captured needs to include the date/time when the screening was performed as well as the result. The information transmitted also needs to include associated visit information so the results associated with a specific encounter can be identified.

When a set of hearing screenings is provided (along with the needed date/time and visit information) then the hearing screening outcome for the visit can be computed according to a jurisdictionally defined algorithm. For example, the defined algorithm could be to use the results of the final hearing screening as the screening outcome. Alternatively, the algorithm could set the screening outcome to be "refer" if any of screening results indicated to refer. The algorithm could set the screening outcome to be "pass" if any of the screening results indicated a pass. The algorithm could limit the number of hearing screenings to the first two performed. Each jurisdiction may establish their own criteria for determining the outcome of the hearing screening. The Content Creator needs to include whatever processing may be required when multiple hearing screening results are reported.

## D.2 Processing Logic for populating a Plan of Care Section in the HPoC

A system supporting the EHDI Content Creator may populate the Plan of Care section of the HPoC with certain interventions based on jurisdictionally defined hearing care guidelines. Information documented in the HPoC may be used to determine which interventions to include in the Plan of Care section. Given a set of possible care planning actions, information about a baby's screening outcomes for left and right ear, reasons why screening was not performed, and other risk factors, an algorithm can be defined to determine which actions should be recommended in the plan of care.

For example, consider a scenario with the following set of care planning actions and see how a set of data elements can be used to determine the actions to be recommended in the plan of care.

 

**Set of Possible Care Planning Actions:**

| |
|---|
| Review Hearing Screening with Family |
| Conduct risk indicator assessment for late onset hearing loss |
| Provide parents with information about hearing, speech, and language milestones |
| Conduct additional screening if there is parental concern for speech and language development at any well- child visit |
| Refer for outpatient screening |
| Refer for audiology assessment |
| Refer to early intervention specialist |

| Left Outcome | Left Reason not screened | Right Outcome | Right Reason not screened | Risks | Plan of Care Recommended Action |
|---|---|---|---|---|---|
| pass | | pass | | None | Review Hearing Screening with Family<br>Conduct risk indicator assessment for late onset hearing loss<br>Provide parents with information about hearing, speech, and language milestones<br>Conduct additional screening if there is parental concern for speech and language development at any well- child visit |
| refer | | refer | | >=1 | Review Hearing Screening with Family<br>Provide parents with information about hearing, speech, and language milestones<br>Refer for audiology assessment |

 

# Appendix E – Header Element Mappings

Appendix E includes an analysis of the use cases to determine their relevance to the information included in the Hearing Plan of Care (HPoC) document header. This information helps to explain the meaning associated with the header elements of the CDA document implemented in the Early Hearing Detection and Intervention (EHDI) Profile as they relate to the data elements used in the profile environment.

## E.1 Header Participations – Hearing Plan of Care

| Participation | Description of how this role pertains to the EHDI environment |
|---|---|
| RecordTarget (R)<br>Guardian<br>providerOrganization | Baby<br>Birthplace is populated for the baby.<br>Mother (or other edge cases); multiple allowed, so Dad can go here too.<br>This will be the hospital where the baby is a patient when the screening was done. |
| Author (R) | There are cases where The current Healthcare Organization – Person, Organization, the parent Organization. May be the Hospital. The author will be the sending Hospital in the Organization. In some states, it is the Hospital's responsibility to make sure the child gets follow-up care….<br>Or more likely, the author would the state Public Health organization be the author of the plan.<br>System Author is the system that creates the HPoC<br>This question needs to be addressed for each implementation. |
| Custodian (R) | The state Public Health organization. In some states, it is the Hospital's responsibility to make sure the child gets follow-up care….<br>The custodian will be the same as the author. Or, this may be a "policy question" that needs to be negotiated for the implementation.<br>This could be an HIE.<br>This question needs to be addressed for each implementation. |
| Data Enterer | Maybe reserve this possibility for manual entry. May not be relevant. |
| Participant | NOK - Note that the CDA will support the baby's guardian to be expressed in the recordTarget.guardian element, so only relatives who are not wards over the child should be represented as NOK participants. |
| Informant | Not relevant at the document level. |
| Authenticator | The Authenticator role functions as specified in HL7 Digital Signature standard. |
| Legal Authenticator | The Legal Authenticator role functions as specified in the HL7 Digital Signature standard. |

 

| Participation | Description of how this role pertains to the EHDI environment |
|---|---|
| Information Recipient | The Information Recipient, as defined in the CDA R2 standard, represents a recipient who should receive a copy of the document. **NOTE:** The information recipient is an entity to whom a copy of a document is directed, at the time of document authorship. It is not the same as the cumulative set of persons to whom the document has subsequently been disclosed, over the life-time of the patient. Such a disclosure list would not be contained within the document and it outside the scope of CDA. A document can have multiple information recipients. This role can be encoded so as to distinguish a receiver to which the document is "primarily directed" from a receiver to which the document is "secondarily directed". This nuance suggests the possibility for some very granular use cases where a specific physician is the primary information recipient and Public Health was a secondary recipient, or where Public Health is a primary recipient and there is no physician included as a secondary recipient. Also note, as consumers begin to have access to systems that permit them to create and receive CDA documents, a parent could be included as an information recipient. Specification of these very detailed use cases is outside the scope of this profile. |

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## E.2 Header Act Relationships

| Participation | Describe how this context pertains to the profiled environment |
|---|---|
| ComponentOf.EncompassingEncounter | The current healthcare organization will be listed in the HealthcareFacility structure |
| DocumentationOf.ServiceEvent | The service event of the screening will be documented if it occurred and the service event of the creation of the Hearing Plan of Care will be documented. |
| InFulfillmentOf.Order | Out of Scope |
| Authorization.Consent | Out of Scope |
| RelatedDocument.ParentDocument | Out of Scope |

 

# Appendix F – Data Elements

Appendix F includes the brief definitions of data elements used in the Early Hearing Detection and Intervention (EHDI) Profile.

## F.1 Data Element Definitions for the Receiving System

The data element label is a unique identifier for the data element. It can be a code used to identify the data element in the domain where it is used, or it can be an ID that is assigned within this profile to uniquely identify the data element concept.

The data element name is a human readable name for the concept.

The data element definition describes the meaning of the concept and expresses the information it represents in the form of a question.

The answer data type is one of several data types defined for use with the HL7 CDA R2 standard. All the answers to the question representing the data element must be of the same data type.

The name of the answer value set is assigned in this specification. The name uniquely identifies the particular set of allowable answers for this data element.

The Answer Value Sets are documented in QRPH TF-4:8.7.

### F.1.1 Data Elements

| Data Element Label | Data Element Name | Data Element Definition (i.e., what question does it answer) | Answer Data Type | Name of the Answer Value Set |
|---|---|---|---|---|
| Results.LeftEar Outcome | | What was the outcome for the Left Ear? | CD | |
| Results.LeftEar Outcome effectiveTime | | When was the screening outcome for the Left Ear determined? | TS | |
| ReasonLeftEar not screened | | What was the reason for not performing any screening on the Left Ear? | CD | |
| Results.RightEar Outcome | | What was the outcome for the Right Ear? | CD | |
| Results.RightEar Outcome effectiveTime | | When was the screening outcome for the Right Ear determined? | CD | |
| Reason RightEar not screened | | What was the reason for not performing any screening on the Right Ear? | CD | |

 

| Data Element Label | Data Element Name | Data Element Definition (i.e., what question does it answer) | Answer Data Type | Name of the Answer Value Set |
|---|---|---|---|---|
| Results.OutcomeAuthor | | Who authored the outcomes | AssignedEntity | |
| Reason LeftEar not screened | | What was the reason for not performing this screening on the Left Ear? | CD | |
| Results.LeftEar method of Screen | | What method was used to screen the left ear? | CD | |
| Results.LeftEar effectiveTime for Screen | | What time did the screening of the left ear begin and end? Or begin and take as a duration? | TS_IVL | |
| Results.LeftEar Result | | What was the screening result for the left ear? | CD or value | |
| Results.LeftEar Reason No Result | | What was the reason for the screening procedure not producing a result? | CD | |
| Result.LeftEar Result Performer | | Who performed the Left Ear Screening? | Entity | |
| Result.LeftEar Result Author | | Who authored the Left Ear Screening Result? | May be an Entity or a Device | |
| Reason RightEar not screened | | What was the reason for not performing this screening on the Right Ear? | CD | |
| Results.RightEar method of Screen | | What method was used to screen the Right ear? | CD | |
| Results.RightEar effectiveTime for Screen | | What time did the screening of the Right ear begin and end? | TS_IVL | |
| Results.RightEar Result | | What was the screening result for the Right ear? | CD or value | |
| Results.RightEar Reason No Result | | What was the reason for the screening procedure not producing a result? | CD | |
| Result.RightEar Result Performer | | Who performed the Right Ear Screening? | Entity | |
| Result.RightEar Result Author | | Who authored the Right Ear Screening Result? | May be an Entity or Device | |
| RiskFactors. RiskIndicators | | Which of the identified Risk Indicators are present? | CD | |
| Risk Factors Author | | Who Authored the Risk Factors? | Entity | |

 

| Data Element Label | Data Element Name | Data Element Definition (i.e., what question does it answer) | Answer Data Type | Name of the Answer Value Set |
|---|---|---|---|---|
| HPoC Problems.Problem List | | What is the history of the Active and Inactive Concerns which are relevant for Hearing Care Planning? | | |
| Problems. Problem List | | What is the history of the Active and Inactive Concerns? | CD | |
| Problems Author | | Who Authored the Problem Section? | Entity | |
| HPoC Procedures. History of Procedures | | What is the history of procedures which are relevant for Hearing Care Planning? | CD | |
| Procedures. History of Procedures | | What is the history of procedures? | CD | |
| Procedures Author | | Who Authored the Procedures Section? | Entity | |
| Plan of Care. Instructions | | What instructions are provided? | CD | |
| Plan of Care. Interventions | | What interventions are recommended? | CD | |
| Plan of Care Section Author | | Who authored the Hearing Plan of Care Section | Entity or Device, maybe both? | |
| HPOC Document Author | | Who authored the Hearing Plan of Care Document | Entity or Device, maybe both? | |
| HPOC Document Custodian | | Who is the custodian of the Hearing Plan of Care Document | Jurisdictionally Defined | |

 

# Volume 2 – Transactions

 

# 3 IHE QRPH Transactions

This section defines each IHE transaction in detail, specifying the standard used, the information transferred, and the conditions under which the transaction is required or optional.

## 3.45 QRPH-45 Communicate Hearing Screening Data

This section specifies Transaction [QRPH-45] of the IHE Quality, Research and Public Health Framework, which is used to transmit Hearing Screening data between Device Observation Reporter and Device Observation Consumer Actors.

This transaction is similar to the Communicate PCD Data [PCD-01] transaction defined to communicate device data in the IHE Patient Care Devices Technical Framework PCD TF-2:3.1. Both the [QRPH-45] and the [PCD-01] transactions constrain a HL7 ORU message. However, the message semantics in a [QRPH-45] transaction are not based on the ISO/IEEE 11073-10101 nomenclature/terminology and the ISO/IEEE 11073-270 10201 domain information model. The message structure in a [QRPH-45] transaction is defined by the HL7 Version 2.6 Implementation Guide: Early Hearing Detection and Intervention (EHDI) Messaging, Release 1 standard. The concept semantics are represented using LOINC or SNOMED-CT concepts as specified in the HL7 Version 2.6 Implementation Guide.

Note that these actor names are linked to abstract functions rather than to physical devices; a Device Observation Reporter may be implemented in a freestanding system or it may be implemented in the Patient Care Device itself.

### 3.45.1 Scope

This transaction is used to communicate data from a Device Observation Reporter (DOR) to a Device Observation Consumer (DOC).

### 3.45.2 Use Case Roles

 

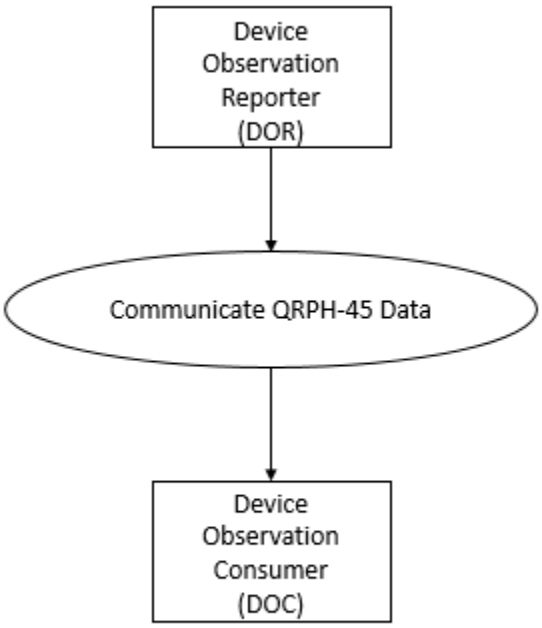


**Figure 3.45.2-1: Communicate Hearing Screening Data**

| | |
|---|---|
| **Actor:** | Device Observation Reporter (DOR) |
| **Role:** | Sends Hearing Screening Data to DOC |
| **Actor:** | Device Observation Consumer (DOC) |
| **Role:** | Receives Hearing Screening Data from DOR |

### 3.45.3 Referenced Standards

The [QRPH-45] transaction uses an information model and a nomenclature from the HL7 Version 2.6 Implementation Guide: Early Hearing Detection and Intervention (EHDI) Messaging, Release 1.

HL7 V2.6 Chapter 7 Observation Reporting defines the general HL7 syntax and coding requirements related to observation reporting. The ORU^R01 message type is used for the QRPH-45 transaction.

 

### 3.45.4 Interaction Diagram

The following interaction diagrams illustrate potential implementations.

The [QRPH-45] transaction is used to communicate Hearing Screening data from a Device Observation Reporter (DOR) to a Device Observation Consumer (DOC).

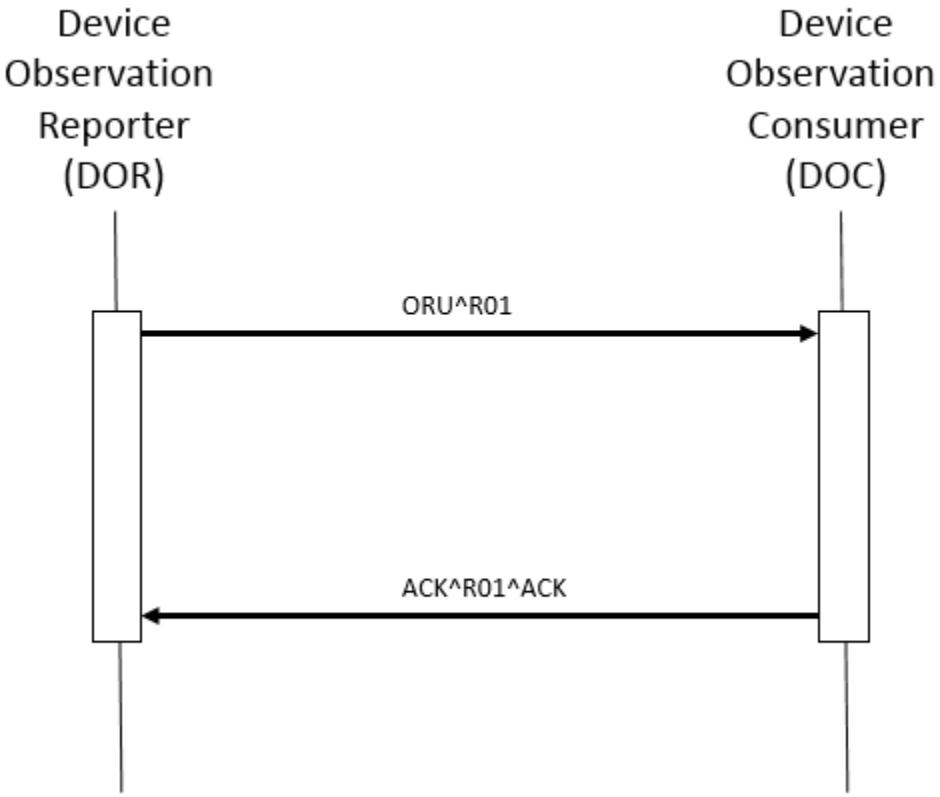


**Figure 3.45.4-1: Communicate Hearing Screening Data Interaction Diagram**

#### 3.45.4.1 Communicate Hearing Screening Data (ORU^R01) static

The [QRPH-45] transaction is used to communicate hearing screening results from a Device Observation Reporter to a Device Observation Consumer (DOC).

 

#### 3.45.4.1.1 Trigger Events

The ORU^R01^ORU_R01 message is an unsolicited update initiated by the Device Observation Reporter. The ORU^R01 can be sent with or without a preceding order, since it is common in a clinical setting for hearing screening data to be reported without a specific order having been transacted in the information system (that is, the reporting is the result of a "standing order" for screening newborn hearing).

The Device Observation Reporter may be implemented directly on a medical device. It also can be implemented on a gateway or intermediary device as an application which implements the Device Observation Reporter. The system acting as the Device Observation Reporter receives data from one or more patient care devices using either standards-based or proprietary protocols which are outside the current scope of the IHE QRPH or PCD Technical Framework.

In general, the Device Observation Reporter sends periodic reports at an interval of between several times per minute (high acuity) and a maximum interval of 24 hours (chronic, home health) with a typical interval of 1 minute. The minimum and maximum intervals are configured per implementation. The Device Observation Reporter may also send aperiodic reports for "event type" information. The Device Observation Reporter shall not do interpolation of data received from the device source.

#### 3.45.4.1.2 Message Semantics

Refer to the HL7® standard for the ORU message of HL7® 2.6 Chapter 7 and the general message semantics.

Examples of ORU^R01^ORU_R01 messages are included in the supplemental materials for this profile.

The Device Observation Reporter shall support the Message Semantics for the ORU^R01 message as specified in the HL7 Version 2.6 Implementation Guide: Early Hearing Detection and Intervention (EHDI) Messaging, Release 1. Table 3.45.4.1.1-1 contains the segment communication requirements of the message profile. The Device Observation Reporter shall not send the segments with a Usage of “X” in Table 3.45.4.1.1-1. The key segments for this transaction are in bold and include the MSH, PID, NK1, PV1, OBR and OBX segments. The data found in these segments are key to reporting newborn hearing screening results. Data found in the other segments may be important but are not essential to enable the Device Observation Consumer to interpret the message.

**Table 3.45.4.1.2-1: Segments in the Communicate Hearing Screening Data Message**

| Segment | Meaning | Usage | Card | HL7® chapter |
|---|---|---|---|---|
| **MSH** | **Message Header** | **R** | **[1..1]** | **2** |
| [{SFT}] | Software Segment | X | [0..0] | 2 |
| [UAC] | User Authentication Credential | X | [0..0] | |
| { | --- PATIENT_RESULT begin | | | |
| [ | --- PATIENT begin | | | |

 

| Segment | Meaning | Usage | Card | HL7® chapter |
|---|---|---|---|---|
| **PID** | **Patient Identification** | **R** | **[1..1]** | **3** |
| [PD1] | Additional Demographics | X | [0..0] | 3 |
| [{NTE}] | Notes and Comments | X | [0 0] | 2 |
| **[{NK1}]** | **Next of Kin/Associated Parties** | **RE** | **[0..*]** | **3** |
| **[** | **--- VISIT begin** | | | |
| **PV1** | **Patient Visit** | **R** | **[1..1]** | **3** |
| [PV2] | Patient Visit – Additional Info | X | [0..0] | 3 |
| ] | --- VISIT end | | | |
| ] | --- PATIENT end | | | |
| { | ---ORDER_OBSERVATION begin | | | |
| [ORC] | Order Common | X | [0..0] | 4 |
| **OBR** | **Observation Request** | **R** | **[1..3]** | **7** |
| [{NTE}] | Notes and Comments | X | [0..0] | 2 |
| [{ROL}] | Role for Observation | X | [0..0] | 15 |
| [{ | --- TIMING_QTY begin | | | |
| TQ1 | Timing/Quantity | X | [0..0] | 4 |
| [{TQ2}] | Timing/Quantity Order Sequence | X | [0..0] | 4 |
| }] | --- TIMING_QTY end | | | |
| [CTD] | Contact Data | X | [0..0] | 11 |
| [{ | --- OBSERVATION begin | | | |
| **OBX** | **Observation Result** | **RE** | **[1..*]** | **7** |
| [{NTE}] | Notes and comments | X | [0..0] | 2 |
| }] | --- OBSERVATION end | | | |
| [{FT1}] | Financial Transaction | X | [0..0] | 6 |
| [{CTI}] | Clinical Trial Identification | X | [0..0] | 7 |
| [{ | --- SPECIMEN begin | | | |
| SPM | Specimen | X | [0..0] | 7 |
| [{OBX}] | Observation related to Specimen | X | [0..0] | 7 |
| }] | --- SPECIMEN end | | | |
| } | --- ORDER_OBSERVATION end | | | |
| } | --- PATIENT_RESULT end | | | |
| [DSC] | Continuation Pointer | X | [0..0] | 2 |

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### 3.45.4.1.2.1 Implementer Guidance and Explanation

The message header (MSH) segment contains information describing how to parse and process the message. This includes identification of message delimiters, sender, receiver, message type, timestamp, etc.

 

The patient identification (PID) segment is used to communicate patient identifying information.

In the referenced standard, race (PID-10) and EthnicGroup (PID-22) are required but may be empty (RE). The UV Realm relaxes this requirement to make inclusion of this information optional.

- (PID-10) Race, usage relaxed to O.
- (PID-22) EthnicGroup, usage relaxed to O.

The Next of Kin segment is used to communicate information about the newborn's contacts.

The Patient Visit segment is used to communicate information on a visit-specific basis and permits results to be associated with the encompassing encounter to supply the visit context for the screening.

The observation request (OBR) segments are used to capture information about the hearing screening panel performed. One OBR is used to report the newborn hearing loss panel comments and risk factors. A second OBR is used for the newborn hearing screen panel of the right ear. A third OBR is used for the newborn hearing screen panel of the left ear.

The Observation Result (OBX) segments within the OBRs contain information regarding comments, risk factors, hearing screening results for the left ear or the right ear, screening technique (observation method), screening equipment identifier (brand, model, version, instance data, serial number (optional)), duration of screening, reason for screening not performed (if not performed). This includes identification of the specific type of observation, the observation itself, and when the observation was made, i.e., the date and time of the screening.

Refer to the HL7 Version 2.6 Implementation Guide: Early Hearing Detection and Intervention (EHDI) Messaging, Release 1 for the detailed specifications of the ORU^R01 message content in each segment.

#### 3.45.4.1.3 Expected Actions

The ORU^R01^ORU_R01 message is sent from the DOR to the DOC. Upon receipt, the DOC validates the message and responds with an acknowledgement as defined in Section 3.45.4.2.

The DOC will process the contents of the ORU according to the features and functions of its application. That functionality is not constrained by this transaction

### 3.45.4.2 Acknowledge Communicate Hearing Screening Data (ACK^R01^ACK)

Guaranteed delivery is required. The Device Observation Consumer SHALL generate and return an ACK message L always be returned to the Device Observation Reporter. All other acknowledgement methods are beyond the scope of this document. Refer to the HL7 Version 2.6 Implementation Guide: Early Hearing Detection and Intervention (EHDI) Messaging, Release 1, in Chapter 5.3, for MSA specifications and for value set bindings for ERR-3 (HL7 Error Code) and ERR-4 (Severity).

 

**Table 3.45.4.2-1: ACK^R01^ACK Abstract Message Syntax**

| Segment | Name | Usage | Cardinality | Comments/Descriptions |
|---|---|---|---|---|
| MSH | Message Header | R | [1..1] | This message header (MSH) segment contains information describing how to parse and process the message. This includes identification of message delimiters, sender, receiver, message type, timestamp, etc. |
| MSA | Message Acknowledgment | R | [1..1] | The Message Acknowledgment Segment (MSA) contains the information sent as acknowledgment to the result message received by the device or information system. |
| [{ERR}] | Error | CE | [0..*] | This segment is sent if there is an error identified in the message. If MSA-1 (Message Acknowledgment) is not valued as AA or CA. |

### 3.45.5 Security Considerations

There are no unusual security or privacy concerns associated with this transaction. There are no mandatory security controls but the implementer is encouraged to use the underlying security and privacy profiles from the ITI Domain that are appropriate to the transports such as the Audit Trail and Node Authentication (ATNA) Profile. The operational environment risk assessment, following ISO 80001, will determine the actual security and safety controls employed.

 

# Volume 3 – Content Modules

## 5 Namespaces and Vocabularies

*Add to Section 5.1.1 Code Systems*

| codeSystem | codeSystemName | Description |
|---|---|---|
| 2.16.840.1.113883.6.96 | SNOMED CT | Systemized Nomenclature for Medicine |
| 2.16.840.1.113883.6.1 | LOINC | Logical Observation Identifiers, Names and Codes |

*Add to Section 5.1.1 IHE Format Codes*

| Profile | Format Code | Media Type | Template ID |
|---|---|---|---|
| HPoC International Realm | urn:ihe:qrph:HPoCUV:2013 | Text/XML | 1.3.6.1.4.1.19376.1.7.3.1.1.26.1.1 |
| HPoC US Realm | urn:ihe:qrph:HPoCUS:2013 | Text/XML | 1.3.6.1.4.1.19376.1.7.3.1.1.26.2.1 |

 

# 6 Content Modules

## 6.3.1 CDA Document Content Modules

*Add to Section 6.3.1.D Document Content Modules*

### 6.3.1.D1 Hearing Plan of Care (HPoC) Document Content Module

#### 6.3.1.D1.1 Format Code

| Profile | Format Code | Media Type | Template ID |
|---|---|---|---|
| HPoC UV Realm | urn:ihe:qrph:HPoCUV:2014 | Text/XML | 1.3.6.1.4.1.19376.1.7.3.1.1.26.1.1 |

#### 6.3.1.D1.2 Parent Template

This document does not assert a parent template.

Design note: The HPoC template is an adaptation of the IHE Medical Document template (1.3.6.1.4.1.19376.1.5.3.1.1.1) defined by IHE PCC for use in the UV Realm.

The Medical Document template incorporates several header constraints established in the original (2008) Health Story Project (HL7 General Header Constraints templateId (2.16.840.1.113883.10.20.3)). (See PCC TF-2: 6.3.1.1.3 for additional background on the Medical Document template.) The Consolidated CDA (2012) joint project between IHE and HL7 has produced a newer, harmonized US Realm Header template which is an improvement of the prior Health Story General Header. This template design also is an adaptation of the newer HL7 Consolidated CDA R1.1 US Realm Header template. It has been generalized to address the IHE UV Realm requirements.

#### 6.3.1.D1.3 Referenced Standards

All standards which are reference in this document are listed below with their common abbreviation, full title, and link to the standard.

**Table 6.3.1.D1.3-1: HPoC - Referenced Standards**

| Abbreviation | Title | URL |
|---|---|---|
| CDA R2 | HL7 CDA Release 2.0 | https://www.hl7.org/implement/standards/product_brief.cfm?product_id=7 |
| C-CDA R2.1 | HL7 Consolidated CDA Release 1.1 | http://www.hl7.org/implement/standards/product_brief.cfm?product_id=258 |
| LOINC© | Logical Observation Identifiers, Names and Codes | https://loinc.org/ |

 

| Abbreviation | Title | URL |
|---|---|---|
| SNOMED | Systemized Nomenclature for Medicine | http://www.ihtsdo.org/snomed-ct/ |
| HL7 EHDI Message | HL7 Version 2.6 Implementation Guide: Early Hearing Detection and Intervention (EHDI) Messaging, Release 1 [ V26_IG_EHDI_R1_D2_2013JAN] | https://www.hl7.org/implement/standards/product_brief.cfm?product_id=344 |

### 6.3.1.D1.4 Data Element Requirement Mappings to CDA

This section identifies the mapping of data between referenced standards into the CDA implementation guide. Table 6.3.1.D1.4-1 provides a high-level mapping from key Form Data Elements to HPoC structures. Detailed data element mappings require realm-specific templates to be specified. See QRPH TF-4 for EHDI for available realm-specific detailed data element mappings.

**Table 6.3.1.D1.4-1: Data Element Mappings to HPoC Header Elements**

| Clinical Data Element | CDA pseudo xPath (Note 1) |
|---|---|
| Patient's name | recordTarget.patientRole.patient.name |
| Patient's mother or other responsible guardian | recordTarget.patientRole.patient.guardian.person.name |
| Author of Hearing Plan of Care document | author.assignedAuthor.person.name |
| Custodian of the Hearing Plan of Care document | custodian.assignedCustodian.custodianOrganization.name |
| Service event associated with assessing the hearing screening results and creating the Hearing Plan of Care | documentationOf.serviceEvent.code |
| Organization who performed the services of assessing the hearing screening results and creating the Hearing Plan of Care | documentationOf.serviceEvent.performer.assignedEntity.organization.name |
| The type of encounter after which this Hearing Plan of Care is created. | componentOf.encompassingEncounter.code |

Note 1: The pseudo xPath notation uses class names (represented in camel case) from the CDA RMIM diagram to aid implementers in navigating the CDA R2 schema for the document header. The syntax does not represent the exact xPath statement associated with the element.

**Table 6.3.1.D1.4-2: Data Element Mappings to HPoC Body Elements**

| Clinical Data Element | CDA pseudo xPath (Note 1) |
|---|---|
| The instructions included in the Hearing Plan of Care | HearingPlanOfCare.HPoCInstructions.text |
| The hearing screening outcome for the left ear | HearingScreening.HearingScreeningOrganizer. HearingScreeningOutcomeObservation-Left.value |
| If no hearing screening was performed on the left ear, the reason why. | HearingScreening.HearingScreeningOrganizer. HearingScreeningOutcomeObservation-Left.ReasonNotScreened.code |

 

| Clinical Data Element | CDA pseudo xPath (Note 1) |
|---|---|
| The hearing screening outcome for the right ear | HearingScreening.HearingScreeningOrganizer.<br>HearingScreeingOutcomeObservation-Right.value |
| If no hearing screening was performed on the right ear, the reason why. | HearingScreening.HearingScreeningOrganizer.<br>HearingScreeningOutcomeObservation-Right.ReasonNotScreened.code |
| An indicator if screening was not performed | HearingScreening.HearingScreeningOrganizer.<br>HearingScreeningResultsOrganizer.<br>HearingScreeningResult.negationInd |
| If no hearing screening was performed, the reason why. | HearingScreening.HearingScreeningOrganizer.<br>HearingScreeningResultsOrganizer.<br>HearingScreeningResult.ReasonNotScreened.code |
| The ear to which this information pertains. | HearingScreening.HearingScreeningOrganizer.<br>HearingScreeningResultsOrganizer.<br>HearingScreeningResult.targetSiteCode |
| If hearing screening was performed, the result produced. | HearingScreening.HearingScreeningOrganizer.<br>HearingScreeningResultsOrganizer.<br>HearingScreeningResult.value |
| If hearing screening was performed, the method used. | HearingScreening.HearingScreeningOrganizer.<br>HearingScreeningResultsOrganizer.<br>HearingScreeningResult.methodCode |
| A hearing risk that is present | RiskIndicatorsForHearingLoss.<br>RiskIndicatorforHearingLossObservation.value |
| A problem documented | HPoCProblems.HPoCProblemConcern.ProblemObservation.value |
| A procedure performed | HPoCProcedures.HPoCProcedureActivityProcedure.code |

Note 1: For data elements that are represented in the structured body of the CDA document, the pseudo xPath notation uses template names (represented in Pascal case) to aid implementers in navigating the CDA R2 structures which are used to encode the data in the document. The syntax does not represent the exact xPath statement associated with the element.

*Add to Section 6.3.1 Document Content Modules*

### 6.3.1.D1.5 HPoC Document Content Module Specification

| Template Name | HearingPlanOfCare Document (V2) |
|---|---|
| Template ID | 1.3.6.1.4.1.19376.1.7.3.1.1.26.1.1:2016-09-01 |
| Parent Template | This template does not inherit constraints from another template. |

 

| | |
|---|---|
| **General Description** | This document is the hearing plan of care for a newborn. It includes the hearing plan of care instructions and planned care activities. It includes the results of the hearing screening provided prior to discharge as well as information about hearing risk indicators which may be available. It includes the newborn's problems list, highlighting the concerns which are likely to be relevant for a hearing plan of care. It also includes treatment procedures performed on the newborn during the birth encounter, highlighting the procedures which are likely to be relevant for a hearing plan of care. |
| **Document Code** | "34817-7" Hearing Screening Evaluation and Management Note (CodeSystem: LOINC 2.16.840.1.113883.6.1) |

| Template Type | Template Title | Opt and Card | templateId |
|---|---|---|---|
| Document | Hearing Plan Of Care Document | | 1.3.6.1.4.1.19376.1.7.3.1.1.26.1.1:2016-09-01 |
| Header | Hearing Plan Of Care Header | [1..1] | n/a |
| | recordTarget | [1..1] | n/a |
| | author | [1..*] | n/a |
| | custodian | [1..1] | n/a |
| | documentationOf/serviceEvent | [1..1] | n/a |
| | componentOf/encompassingEncounter | [1..1] | n/a |
| Section | Hearing Plan of Care Section (V2) | [1..1] | 1.3.6.1.4.1.19376.1.7.3.1.1.26.1.3.1:2016-09-01 |
| Section | Hearing Screening Section (V2) | [1..1] | 1.3.6.1.4.1.19376.1.7.3.1.1.26.1.3.2:2016-09-01 |
| Section | Risk Indicators for Hearing Loss Section (V2) | [0..1] | 1.3.6.1.4.1.19376.1.7.3.1.1.26.1.3.3:2016-09-01 |
| Section | Problems Section (V2) | [0..1] | 1.3.6.1.4.1.19376.1.7.3.1.1.26.1.3.4:2016-09-01 |
| Section | Procedures Section (V2) | [0..1] | 1.3.6.1.4.1.19376.1.7.3.1.1.26.1.3.6:2016-09-01 |

### 6.3.1.D1.5.1 Hearing Plan of Care Document (V2)

990 `[ClinicalDocument: templateId 1.3.6.1.4.1.19376.1.7.3.1.1.26.1.1:2016-09-01(open)]`

**Template Design Relationships**

This template is a generalization of the IHE US Realm HPoC Document template. It references section templates which are generalized for the UV Realm and are adapted from section
995 templates defined by the IHE PCC where there are similar purposes. Entry templates which have been generalized from the US Realm designs so that their structure is consistent but no US Realm vocabularies are required.

 

**Template Purpose**

This document records information for the hearing plan of care for a newborn. It includes hearing plan of care instructions and planned care activities. It includes the results of the hearing screening provided prior to discharge as well as information about hearing risk indicators which may be available. It includes the newborn's problems list, highlighting the concerns which are likely to be relevant for a hearing plan of care. It also includes treatment procedures performed on the newborn during the birth encounter, highlighting the procedures which are likely to be relevant for a hearing plan of care.

1. **SHALL** contain exactly one [1..1] **realmCode**.
2. **SHALL** contain exactly one [1..1] **typeId**.
    a. This typeId **SHALL** contain exactly one [1..1] **@root**="2.16.840.1.113883.1.3".
    b. This typeId **SHALL** contain exactly one [1..1] **@extension**="POCD_HD000040".
3. **SHALL** contain exactly one [1..1] **templateId** such that it
    a. contains exactly one [1..1] **@root**="1.3.6.1.4.1.19376.1.7.3.1.1.26.1.1".
    b. **SHALL** contain exactly one [1..1] **@extension**="2016-09-01"
4. **SHALL** contain exactly one [1..1] **id** such that it
    a. is a globally unique identifier for the document.
5. **SHALL** contain exactly one [1..1] **code** such that it
    a. contains exactly one [1..1] **@code**="34817-7" Hearing Screening Evaluation and Management Note (CodeSystem: LOINC 2.16.840.1.113883.6.1) **STATIC**
6. **SHALL** contain exactly one [1..1] **title** such that it
    a. can either be a locally defined name or the display name corresponding to clinicalDocument/code.
7. **SHALL** contain exactly one [1..1] **effectiveTime**
8. **SHALL** contain exactly one [1..1] **confidentialityCode**, such that it
    a. is selected from ValueSet HL7 BasicConfidentialityKind 2.16.840.1.113883.1.11.16926 **CNE, STATIC** 2010-04-21.
9. **SHALL** contain exactly one [1..1] **languageCode**, such that it
    a. is selected from ValueSet Language 2.16.840.1.113883.1.11.11526 **CNE, DYNAMIC**.
10. **MAY** contain zero or one [0..1] **setId** such that
    a. **CONDITIONAL** if setId is present versionNumber **SHALL** be present.
11. **MAY** contain zero or one [0..1] **versionNumber** such that
12. **CONDITIONAL** if versionNumber is present setId **SHALL** be present. THE COMPONENT/STRUCTUREDBODY **SHALL** CONFORM TO THE SECTION CONSTRAINTS BELOW.
    a. **SHALL** contain exactly one [1..1] Hearing Plan of Care Section (V2) (templateId: 1.3.6.1.4.1.19376.1.7.3.1.1.26.1.3.1:2016-09-01).

 

b. **SHALL** contain exactly one [1..1] Hearing Screening Section (V2) (`templateId: 1.3.6.1.4.1.19376.1.7.3.1.1.26.1.3.2:2016-09-01`).
c. **MAY** contain zero or one [0..1] Risk Indicators for Hearing Loss (V2) (`templateId: 1.3.6.1.4.1.19376.1.7.3.1.1.26.1.3.3:2016-09-01`).
d. **SHOULD** contain zero or one [0..1] Problems Section (V2) (`templateId: 1.3.6.1.4.1.19376.1.7.3.1.1.26.1.3.4:2016-09-01`).
e. **SHOULD** contain zero or one [0..1] Procedure Section (V2) (`templateId: 1.3.6.1.4.1.19376.1.7.3.1.1.26.1.3.6:2016-09-01`).

Implementer Guidance:

The clinicalDocument.effectiveTime element should indicate that the Hearing Plan of Care was created after the time of the event designated to trigger its creation. In some cases policy that defines when the HPoC should be created may include a time-offset from the triggering event.

#### 6.3.1.D1.5.1.1 Plan of Care Conformance Constraints

#### 6.3.1.D1.5.1.2 Hearing Screening Section Conformance Constraints

#### 6.3.1.D1.5.1.3 Risk Indicators for Hearing Loss Section Conformance Constraints

#### 6.3.1.D1.5.1.4 Problems Section Conformance Constraints

#### 6.3.1.D1.5.1.5 Procedures Section Conformance Constraints

### 6.3.1.D1.6 HPoC Example

Example xml document is located at ftp://ftp.ihe.net/TF_Implementation_Material/QRPH/EHDI/

*Add to Section 6.3.2 Header Content Modules*

## 6.3.2 CDA Header Content Modules

### 6.3.2.H1 Hearing Plan of Care (HPoC) Header Content Modules

The header for the Hearing Plan of Care (HPoC) document shall support the following header constraints as noted in this section. Note that this content profile is realm agnostic. These header constraints are based on the C-CDA header constraints but all references to US Realm specific types have been removed.

### 6.3.2.H1.1 recordTarget

1. **SHALL** contain exactly one [1..1] **recordTarget**.
   a. Such recordTargets **SHALL** contain exactly one [1..1] **patientRole**.
      i. This patientRole **SHALL** contain at least one [1..*] **id**.

 

ii. This patientRole **SHALL** contain at least one [1..*] **addr**.
iii. This patientRole **SHALL** contain at least one [1..*] **telecom**.
iv. This patientRole **SHALL** contain exactly one [1..1] **patient**.
1. This patient **SHALL** contain exactly one [1..1] **name**.
2. This patient **SHALL** contain exactly one [1..1] **administrativeGenderCode**, which **MAY** be selected from ValueSet Administrative Gender (HL7 V3) 2.16.840.1.113883.1.11.1 **DYNAMIC**.
3. This patient **SHALL** contain exactly one [1..1] **birthTime**.
a. **SHALL** be precise to year.
b. **SHOULD** be precise to day.
4. This patient **MAY** contain zero or one [0..1] **sdtc:deceasedInd**, where the @value **SHALL** be true if the recordTarget has died.
5. This patient **MAY** contain zero or one [0..1] **sdtc:decceasedTime**, where the @value **SHALL** record the date and time when the recordTarget died.
6. This patient **MAY** contain zero or one [0..1] **sdtc:mulitpleBirthInd**, where the @value **SHALL** be true if the recordTarget was part of a multiple birth.
7. This patient **MAY** contain zero or one [0..1] **sdtc:mulitpleBirthOrderNumber**, where the @value **SHALL** be an integer that represents their birth order position.
8. This patient **SHOULD** contain one or more [1..*] **guardian**.
a. The guardian, if present, **SHOULD** contain zero or one [0..1] **code**, which **SHALL** be selected from ValueSet PersonalandLegalRelationshipRoleType 2.16.840.1.113883.11.20.12.1 **DYNAMIC**.
b. The guardian, if present, **SHOULD** contain zero or more [0..*] **addr**.
c. The guardian, if present, **MAY** contain zero or more [0..*] **telecom**.
d. The guardian, if present, **SHALL** contain exactly one [1..1] **guardianPerson**.
i. This guardianPerson **SHALL** contain at least one [1..*] **name**.
ii. This guardianPerson **MAY** contain zero or one [0..1] **birthplace**.
1. The birthplace, if present, **SHALL** contain exactly one [1..1] **place**.
1. This place **SHALL** contain exactly one [1..1] **addr**.

 

2. This addr **SHOULD** contain zero or one [0..1] **country**, which **SHALL** be selected from ValueSet CountryValueSet 2.16.840.1.113883.3.88.12.80.63 **DYNAMIC**.
3. This addr **MAY** contain zero or one [0..1] **postalCode**

9. This patient **MAY** contain zero or one [0..1] **birthplace**.
    a. The birthplace, if present, **SHALL** contain exactly one [1..1] **place**.
        i. This place **SHOULD** contain exactly one [1..1] **addr**.
        1. This addr **SHOULD** contain zero or one [0..1] **country**.
        2. This addr **MAY** contain zero or one [0..1] **postalCode**.
10. This patient **SHOULD** contain zero or more [0..*] **languageCommunication**.
    a. The languageCommunication, if present, **SHALL** contain exactly one [1..1] **languageCode**, which **SHALL** be selected from ValueSet Language 2.16.840.1.113883.1.11.11526 **DYNAMIC**.
    b. The languageCommunication, if present, **MAY** contain zero or one [0..1] **modeCode**, which **SHALL** be selected from ValueSet LanguageAbilityMode Value Set 2.16.840.1.113883.1.11.12249 **DYNAMIC**.
    c. The languageCommunication, if present, **SHOULD** contain zero or one [0..1] **proficiencyLevelCode**, which **SHALL** be selected from ValueSet LanguageAbilityProficiency 2.16.840.1.113883.1.11.12199 **DYNAMIC**.
    d. The languageCommunication, if present, **MAY** contain zero or one [0..1] **preferenceInd**.

### 6.3.2.H1.2 author

1. **SHALL** contain at least one [1..*] **author**.
    a. Such authors **SHALL** contain exactly one [1..1] **time**.
    b. Such authors **SHALL** contain exactly one [1..1] **assignedAuthor**.
        i. This assignedAuthor **SHALL** contain exactly one [1..1] **id** such that it
            1. **SHALL** contain exactly one [1..1] **@root**.
        ii. This assignedAuthor **SHOULD** contain zero or one [0..1] **code**.

 

iii. This assignedAuthor **SHALL** contain at least one [1..*] **addr**.
iv. This assignedAuthor **SHALL** contain at least one [1..*] **telecom**.
v. This assignedAuthor **SHOULD** contain zero or one [0..1] **assignedPerson**.
    1. The assignedPerson, if present, **SHALL** contain at least one [1..*] **name**.
vi. This assignedAuthor **SHOULD** contain zero or one [0..1] **assignedAuthoringDevice**.
    1. The assignedAuthoringDevice, if present, **SHALL** contain exactly one [1..1] **manufacturerModelName**.
    2. The assignedAuthoringDevice, if present, **SHALL** contain exactly one [1..1] **softwareName**.
vii. There **SHALL** be exactly one assignedAuthor/assignedPerson, or exactly one assignedAuthor/assignedAuthoringDevice, or exactly one of each.

### 6.3.2.H1.3 custodian

1. **SHALL** contain exactly one [1..1] **custodian**.
    a. This custodian **SHALL** contain exactly one [1..1] **assignedCustodian**.
        i. This assignedCustodian **SHALL** contain exactly one [1..1] **representedCustodianOrganization**.
            1. This representedCustodianOrganization **SHALL** contain at least one [1..*] **id**.
            2. This representedCustodianOrganization **SHALL** contain exactly one [1..1] **name**.
            3. This representedCustodianOrganization **SHALL** contain exactly one [1..1] **telecom**.
                a. This telecom **SHOULD** contain zero or one [0..1] **@use**
            4. This representedCustodianOrganization **SHALL** contain exactly one [1..1] **addr**.

### 6.3.2.H1.4 participant

No further constraints specified.

### 6.3.2.H1.5 informant

No further constraints specified.

### 6.3.2.H1.6 authenticator

No further constraints specified.

 

### 6.3.2.H1.7 legalAuthenticator

No further constraints specified.

### 6.3.2.H1.8 dataEnterer

No further constraints specified.

### 6.3.2.H1.9 informationRecipient

No further constraints.

### 6.3.2.H1.10 componentOf/EncompassingEncounter

1. **MAY** contain zero or one [0..1] **componentOf**.
    a. The componentOf, if present, **SHALL** contain exactly one [1..1] **encompassingEncounter**.
        i. This encompassingEncounter **SHALL** contain at least one [1..*] **id**.
        ii. This encompassingEncounter **SHOULD** contain at least one [1..*] **code**
            1. This code, if present, **SHALL** be selected from Concept Domain CD_HPoCEncounterType.
        iii. This encompassingEncounter **SHALL** contain exactly one [1..1] **effectiveTime**.
        iv. This encompassingEncounter **SHALL** contain exactly one [1..1] **location**.
            1. This location **SHALL** contain exactly one [1..1] **healthCareFacility**.
                a. This healthCareFacility **SHALL** contain exactly one [1..1] **serviceProviderOrganization**.
                b. This healthCareFacility **SHALL** contain exactly one [1..1] **location**.

Implementer Guidance:

The code element of the encompassingEncounter records the type of encounter. When constrained for use in a particular realm, the vocabulary binding in this template constrains the set of codes used to represent a birth encounter. An id element is used to encode the encounterID of the associated encounter.

### 6.3.2.H1.11 documentationOf/ServiceEvent

1. **MAY** contain zero or more [0..*] **documentationOf**.
    a. The documentationOf, if present, **SHALL** contain exactly one [1..1] **serviceEvent**.
        i. This serviceEvent **SHOULD** contain exactly one [1..1] **code**

 

1. The code, if present, **SHALL** contain exactly one [1..1] **@code**, which **SHOULD** be selected from Concept Domain CD_HPoCServiceEventType.

ii. This serviceEvent **SHALL** contain exactly one [1..1] **effectiveTime**.
   1. This effectiveTime **SHALL** contain exactly one [1..1] **low**.

iii. This serviceEvent **SHOULD** contain zero or more [0..*] **performer**.
   1. The performer, if present, **SHALL** contain exactly one [1..1] **@typeCode** (CodeSystem: HL7ParticipationType 2.16.840.1.113883.5.90 **STATIC**).
      a. The performer participant represents clinicians who actually and principally carry out the serviceEvent. In a transfer of care this represents the healthcare providers involved in the current or pertinent historical care of the patient. Preferably, the patient's key healthcare care team members would be listed, particularly their primary physician and any active consulting physicians, therapists, and counselors.
   2. The performer, if present, **MAY** contain zero or one [0..1] **functionCode**.
      a. The functionCode, if present, **SHOULD** contain zero or one [0..1] **@codeSystem**, which **SHOULD** be selected from CodeSystem participationFunction (2.16.840.1.113883.5.88) **STATIC**.
   3. The performer, if present, **SHALL** contain exactly one [1..1] **assignedEntity**.
      a. This assignedEntity **SHALL** contain at least one [1..*] **id**.
      b. This assignedEntity **SHOULD** contain zero or one [0..1] **code**.
         i. The code, if present, **SHALL** contain exactly one [1..1] **@code**, which **SHOULD** be selected from Concept Domain CD_ServiceEventPerformerType.

Implementer Guidance:

One of the documentationOf elements SHOULD record the service event of creating the Hearing Plan of Care.

Additionally, other documentationOf elements MAY record the derived screening outcome for each ear.

When the Hearing Plan of Care is developed by a system, Implementers will need to determine who should be listed as the performer of the service event associated with creation of the hearing plan of care. This may be someone who is responsible for reviewing the generated plan before it is completed. This implementation detail is out of scope for the EHDI Profile. Each time a baby is screened, a serviceEvent should be added the effectiveTime information should provide the actual start and stop date/time (to the minute) when the screening service was performed. The

 

timing information needs to be accurate enough to indicate the order in which the screening was performed.

### 6.3.2.H1.12 inFulfillmentOf/Order

### 6.3.2.H1.13 authentication/consent

### 6.3.2.H1.14 relatedDocument/ParentDocument

## 6.3.3 CDA Section Content Modules

*Add within Section 6.3.3 Section Content Modules*

### 6.3.3.S1 Hearing Plan of Care Section (V2)

`[Section: templateId 1.3.6.1.4.1.19376.1.7.3.1.1.26.1.3.1:2016-09-01(open)]`

**Template Design Relationships**

This template is an adaptation of the IHE Care Plan section template (1.3.6.1.4.1.19376.1.5.3.1.3.31).

This template also adapts and generalizes the design of the C-CDA R2.1 Plan of Care section template (2.16.840.1.113883.10.20.22.2.10) by narrowing the purpose to address only the hearing plan of care.

**Template Purpose**

The Hearing Plan of Care section contains data that defines pending orders, planned interventions (treatments (procedures)), scheduled appointments (visits (encounters)), planned testing services (observations), intended actions (act) for the patient or family members to perform, and instructions which are related to the hearing plan of care. It is limited to prospective, unfulfilled, or incomplete orders and requests only, which are indicated by the @moodCode of the entries within this section. All active, incomplete, or pending orders, appointments, referrals, procedures, services, or any other pending event of clinical significance to the current care of the patient should be listed unless constrained due to privacy issues. The plan may also contain information about ongoing care of the patient and clinical reminders. Clinical reminders are placed here to provide prompts for disease prevention and management, patient safety, and health-care quality improvements, including widely accepted performance measures. The plan may also indicate that patient education will be provided (act).

1. **SHALL** contain exactly one [1..1] **templateId** such that it
    a. **SHALL** contain exactly one [1..1] **@root**="1.3.6.1.4.1.19376.1.7.3.1.1.26.1.3.1".
    b. **SHALL** contain exactly one [1..1] **@extension**="2016-09-01"

 

2. **SHALL** contain exactly one [1..1] **code** such that it
    a. contain exactly one [1..1] **@code**="18776-5-HPOC" Plan of Care for Hearing (CodeSystem: LOINC 2.16.840.1.113883.6.1 **STATIC**).
3. **SHALL** contain exactly one [1..1] **title**.
4. **SHALL** contain exactly one [1..1] **text**.
5. **MAY** contain zero or more [0..*] **entry** such that each
    a. contain exactly one [1..1] HPoC Activity Act (templateId: 1.3.6.1.4.1.19376.1.7.3.1.1.26.1.4.2).
6. **MAY** contain zero or more [0..*] **entry** such that each
    a. contain exactly one [1..1] HPoC Activity Encounter (templateId: 1.3.6.1.4.1.19376.1.7.3.1.1.26.1.4.3).
7. **MAY** contain zero or more [0..*] **entry** such that each
    a. contain exactly one [1..1] HPOC Activity Observation (templateId: 1.3.6.1.4.1.19376.1.7.3.1.1.26.1.4.4).
8. **MAY** contain zero or more [0..*] **entry** such that each
    a. contain exactly one [1..1] HPoC Activity Procedure (templateId: 1.3.6.1.4.1.19376.1.7.3.1.1.26.1.4.5).
9. **MAY** contain zero or more [0..*] **entry** such that each
    a. contain exactly one [1..1] HPoC Activity Substance Administration (templateId: 1.3.6.1.4.1.19376.1.7.3.1.1.26.1.4.6).
10. **MAY** contain zero or more [0..*] **entry** such that each
    a. contain exactly one [1..1] HPoC Activity Non-Medicinal Supply (V2) (templateId: 1.3.6.1.4.1.19376.1.7.3.1.1.26.1.4.7:2016-09-01).
11. **MAY** contain zero or more [0..*] **entry** such that each
    a. contain exactly one [1..1] HPoC Instructions (templateId: 1.3.6.1.4.1.19376.1.7.3.1.1.26.1.4.1).

Implementer Guidance:

When no information exists to be exchanged in a defined section, the section element may be encoded with a nullFlavor of "NI". (See the CDA Examples Task Force wiki page for examples, General Patterns.)

### 6.3.3.S2 Hearing Screening Section (V2)

[Section: templateId 1.3.6.1.4.1.19376.1.7.3.1.1.26.1.3.2:2016-09-01(open)]

**Template Design Relationships**

This template adapts the IHE Results section template (1.3.6.1.4.1.19376.1.5.3.1.3.27). This template also adapts and generalizes the C-CDA R2.1 Results section template (2.16.840.1.113883.10.20.22.2.3.1) narrowing the purpose to address only hearing screening results and adding an outer organizer structure to record hearing screening outcome assessment which is derived from the individual screening results and other factors.

**Template Purpose**

 

The Hearing Screening section includes a screening outcome observation for each ear, which summarizes the screening results gathered for each ear. It also documents the individual screening result observations generated by the screening device each time the left ear is tested and each time the right ear is tested.

The methodologies for summarizing screening result observations into a single screening outcome observation are jurisdictionally defined and are not specified or constrained within this template.

1. **SHALL** contain exactly one [1..1] **templateId** such that it
    a. contain exactly one [1..1] **@root**="1.3.6.1.4.1.19376.1.7.3.1.1.26.1.3.2".
    b. **SHALL** contain exactly one [1..1] **@extension**="2016-09-01"
2. **SHALL** contain exactly one [1..1] **code** such that it
    a. contain exactly one [1..1] **@code**="30954-2-HPOC" Relevant diagnostic tests and/or laboratory data for Hearing Screening (CodeSystem: LOINC 2.16.840.1.113883.6.1 **STATIC**).
3. **SHALL** contain exactly one [1..1] **title**.
4. **SHALL** contain exactly one [1..1] **text**.
5. **SHALL** contain exactly one [1..1] **entry** such that it
    a. contain exactly one [1..1] Hearing Screening Organizer (templateId: 1.3.6.1.4.1.19376.1.7.3.1.1.26.1.4.8).

Implementer Guidance:

Methodologies for summarizing hearing screening result observations into a single hearing screening outcome for an ear are jurisdictionally defined. Systems implementing this profile as a Content Creator are required to process hearing screening results based upon a methodology which is outside the scope of the EHDI Profile.

When no information exists to be exchanged in a defined section, the section element may be encoded with a nullFlavor of "NI". (See the CDA Examples Task Force wiki page for examples, General Patterns.)

This nullFlavor encoding should be used when no information has been provided about Newborn Hearing Screening being performed or not performed for medical reasons before the newborn is discharged from the birth encounter. This profiles assumes the workflow at a birthing facility include sending information to positively assert that a baby who is not screened for medical reasons. This does not constitute a "no information" screening section and nullFlavor of "NI" does not apply.

### 6.3.3.S3 Risk Indicators for Hearing Loss (V2)

[Section: templateId 1.3.6.1.4.1.19376.1.7.3.1.1.26.1.3.3:2016-09-01(open)]

**Template Design Relationships**

 

The design is adapted and generalized from templates being developed for C-CDA R2.0 which are intended to track identified risks.

**Template Purpose**

The Risk Indicators for Hearing Loss section indicates if specific risks relevant to hearing loss are present. Use of null flavors, to encode information indicating that an assessment of the risk was not performed or to record that no information is currently available in the system, is out of scope for this template.

1. **SHALL** contain exactly one [1..1] **templateId** such that it
   a. contain exactly one [1..1] **@root**="1.3.6.1.4.1.19376.1.7.3.1.1.26.1.3.3".
2. **SHALL** contain exactly one [1..1] **@extension**="2016-09-01"**SHALL** contain exactly one [1..1] **code** (CONF:15433) such that it
   a. contain exactly one [1..1] **@code**=" 58232-0" Hearing Loss Risk Indicators (CodeSystem: LOINC 2.16.840.1.113883.6.1) **STATIC**.
3. **SHALL** contain exactly one [1..1] **title**.
4. **SHALL** contain exactly one [1..1] **text**.
5. **SHOULD** contain zero or more [0..*] **entry** such that each
   a. contain exactly one [1..1] Risk Indicator for Hearing Loss Observation (V2)(templateId: 1.3.6.1.4.1.19376.1.7.3.1.1.26.1.4.15:2016-09-01).

Implementer Guidance:

When no information exists to be exchanged in a defined section, the section element may be encoded with a nullFlavor of "NI". (See the CDA Examples Task Force wiki page for examples, General Patterns.)

### 6.3.3.S4 Problems Section (V2)

[Section: templateId 1.3.6.1.4.1.19376.1.7.3.1.1.26.1.3.4:2016-09-01(open)]

**Template Design Relationships**

This template is an adaptation of the IHE Active Problems section template (1.3.6.1.4.1.19376.1.5.3.1.3.6).

This template adapts the purpose of the UV Realm IHE Active Problem Section. It is altered to include historical problem concerns as well as active concerns in the problem list.

**Template Purpose**

This section lists and describes all clinical problems at the time the document is generated. Current (active) and historical (completed) concerns should be listed.

1. **MAY** contain zero or one [0..1] **templateId** such that it
   a. contain exactly one [1..1] **@root**="1.3.6.1.4.1.19376.1.5.3.1.3.6".
2. **SHALL** contain exactly one [1..1] **templateId** such that it

 

a. contain exactly one [1..1] **@root**="1.3.6.1.4.1.19376.1.7.3.1.1.26.1.3.4".
b. **SHALL** contain exactly one [1..1] **@extension**="2016-09-01"

3. **SHALL** contain exactly one [1..1] **code** such that it
   a. contain exactly one [1..1] **@code**="11450-4" Problem List (CodeSystem: LOINC 2.16.840.1.113883.6.1) **STATIC**.
4. **SHALL** contain exactly one [1..1] **title**.
5. **SHALL** contain exactly one [1..1] **text**.
6. **SHALL** contain at least one [1..*] **entry** such that each
   a. contain exactly one [1..1] **Problem Concern (V2)** (templateId: 1.3.6.1.4.1.19376.1.5.3.1.4.5.2:2016-09-01).

Implementer Guidance:

When no information exists to be exchanged in a defined section, the section element may be encoded with a nullFlavor of "NI". (See the CDA Examples Task Force wiki page for examples, General Patterns.)

### 6.3.3.S5 Intentionally blank

### 6.3.3.S6 Procedures Section (V2)

[Section: templateId 1.3.6.1.4.1.19376.1.7.3.1.1.26.1.3.6:2016-09-01(open)]

**Template Design Relationships**

This template is an adaptation of the IHE Coded List of Surgeries section template (1.3.6.1.4.1.19376.1.5.3.1.3.12). Machine readable entries associated with this template have been modified to align with structural representations for procedure entries established by C-CDA R2.1. This template also is an adaptation and generalization of the C-CDA R2.1 Procedures section template (2.16.840.1.113883.10.20.22.2.7.1). It does not utilize the Procedure Activity Observation as direct entry of the section and permits use of that template within the context of a Procedure Activity Procedure or Procedure Activity Act.

**Template Purpose**

This section defines all interventional, surgical, or therapeutic procedures or treatments pertinent to the patient historically at the time the document is generated. It does not include diagnostic procedures. Diagnostic and screening procedures are recorded in a Result Section. Procedures recorded in this section are encoded using one of two machine readable entry templates. A Procedure Activity Procedure entry is used to record procedures that alter the physical condition of a patient (Splenectomy). A Procedure Activity Act entry is for all other types of procedures (dressing change). If a procedure produces new information about a patient, that information is recorded using the Procedure Activity Observation template as an entry relationship to the procedure or act entry with which the observation is associated. The Activity Observation template is only used as a subordinate act to the procedure of act entries associated with this section.

 

1. **SHALL** contain exactly one [1..1] **templateId** such that it
   a. contain exactly one [1..1] **@root**="1.3.6.1.4.1.19376.1.7.3.1.1.26.1.3.6".
   b. **SHALL** contain exactly one [1..1] **@extension**="2016-09-01"
2. **SHALL** contain exactly one [1..1] **code** such that it
   a. contain exactly one [1..1] **@code**="47519-4" History of Procedures (CodeSystem: LOINC 2.16.840.1.113883.6.1 **STATIC**).
3. **SHALL** contain exactly one [1..1] **title**.
4. **SHALL** contain exactly one [1..1] **text**.
5. **MAY** contain zero or more [0..*] **entry** such that it
   a. contain exactly one [1..1] **Procedure Activity Procedure** (V2)(templateId: 1.3.6.1.4.1.19376.1.7.3.1.1.26.1.4.18:2016-09-01).

Implementer Guidance:

When no information exists to be exchanged in a defined section, the section element may be encoded with a nullFlavor of "NI". (See the CDA Examples Task Force wiki page for examples, General Patterns.)

### 6.3.3.S7 Intentionally blank

## 6.3.4 CDA Entry Content Modules

*Add to Section 6.3.4.E Entry Content Modules*

### 6.3.4.E1 HPoC Instructions

[Act type: templateId 1.3.6.1.4.1.19376.1.7.3.1.1.26.1.4.1(open)]

**Template Design Relationships**

This template is an adaptation of the IHE UV Realm Instructions template. A Concept Domain is added to express the type of instructions relevant to a hearing plan of care.

The design adapts and generalizes the C-CDA R2.1 Instructions template (2.16.840.1.113883.10.20.22.4.20).

**Template Purpose**

The Instructions template records instructions. The act/code defines the type of instruction. Awareness of the instructions by the patient or care giver can be represented with the generic participant and the participant/awarenessCode.

1. **SHALL** contain exactly one [1..1] **@classCode**="ACT" (CodeSystem: HL7ActClass 2.16.840.1.113883.5.6 **STATIC**).

 

2. **SHALL** contain exactly one [1..1] **@moodCode**="INT" (CodeSystem: ActMood 2.16.840.1.113883.5.1001 **STATIC**).
3. **SHALL** contain exactly one [1..1] **templateId** such that it
    a. contain exactly one [1..1] **@root**="1.3.6.1.4.1.19376.1.7.3.1.1.26.1.4.1".
4. **SHALL** contain exactly one [1..1] **code** such that it
    a. is selected from the Concept Domain CD_HPoCInstructions **CWE**.
5. **SHALL** contain exactly one [1..1] **text** such that
    a. contains exactly one [1..1] **reference** such that it
        i. contains exactly one [1..1] **@value** such that it
            1. begins with a '#' and points to its corresponding narrative (using the approach defined in CDA Release 2, Section 4.3.5.1).
6. **SHALL** contain exactly one [1..1] **statusCode** such that it
    a. contains exactly one [1..1] **@code**="completed" Completed (CodeSystem: ActStatus 2.16.840.1.113883.5.14 **STATIC**).
7. **SHALL** contain exactly one [1..1] **effectiveTime** such that it
    a. contain exactly one [1..1] **low**
    b. contain exactly one [1..1] **high**.

### 6.3.4.E2 HPoC Activity Act

[Act type: templateId 1.3.6.1.4.1.19376.1.7.3.1.1.26.1.4.2(open)]

**Template Design Relationships**

The design is an adaption and generalization of the C-CDA R2.1 Plan of Care Activity Act template (2.16.840.1.113883.10.20.22.4.39). A Concept Domain is added to express the type of care activities relevant to a hearing plan of care.

**Template Purpose**

This is the generic template for the Plan of Care Activity.

1. **SHALL** contain exactly one [1..1] **@classCode**="ACT" (CodeSystem: HL7ActClass 2.16.840.1.113883.5.6 **STATIC**).
2. **SHALL** contain exactly one [1..1] **@moodCode**, such that it
    a. is selected from ValueSet Plan of Care moodCode (Act/Encounter/Procedure) 2.16.840.1.113883.11.20.9.23 **STATIC** 2011-09-30.
3. **MAY** contain zero or one [0..1] **templateId** such that it
    a. contain exactly one [1..1] **@root**="2.16.840.1.113883.10.20.22.4.39".
4. **SHALL** contain exactly one [1..1] **templateId** such that it
    a. contain exactly one [1..1] **@root**="1.3.6.1.4.1.19376.1.7.3.1.1.26.1.4.2".
5. **SHALL** contain at least one [1..*] **id**.
6. **SHALL** contain exactly one [1..1] **code**, such that it

 

a. is selected from Concept Domain CD_HPoCActivityAct **CWE**.

8. **SHALL** contain exactly one [1..1] **text** such that
   a. contains exactly one [1..1] **reference** such that it
      i. contains exactly one [1..1] **@value** such that it
         1. begins with a '#' and points to its corresponding narrative (using the approach defined in CDA Release 2, Section 4.3.5.1).
1. **SHALL** contain exactly one [1..1] **statusCode**.
2. **SHALL** contain exactly one [1..1] **effectiveTime** such that it
   a. contain exactly one [1..1] **low**
   b. contain exactly one [1..1] **high**.

### 6.3.4.E3 HPoC Activity Encounter

`[Encounter: templateId 1.3.6.1.4.1.19376.1.7.3.1.1.26.1.4.3(open)]`

**Template Design Relationships**

The design is an adaptation and generalization of the C-CDA R2.1 Plan of Care Activity Encounter template (2.16.840.1.113883.10.20.22.4.40). A Concept Domain is added to express the type of encounters relevant to a hearing plan of care.

**Template Purpose**

This is the template for the Plan of Care Activity Encounter.

1. **SHALL** contain exactly one [1..1] **@classCode**="ENC" (CodeSystem: `HL7ActClass 2.16.840.1.113883.5.6` **STATIC**).
2. **SHALL** contain exactly one [1..1] **@moodCode**, such that it
   a. is selected from ValueSet `Plan of Care moodCode (Act/Encounter/Procedure) 2.16.840.1.113883.11.20.9.23` **STATIC** 2011-09-30.
3. **MAY** contain zero or one [0..1] **templateId** such that it
   a. contain exactly one [1..1] **@root**="2.16.840.1.113883.10.20.22.4.40".
4. **SHALL** contain exactly one [1..1] **templateId** such that it
   a. contain exactly one [1..1] **@root**="1.3.6.1.4.1.19376.1.7.3.1.1.26.1.4.3".
5. **SHALL** contain at least one [1..*] **id**.
6. **SHALL** contain exactly one [1..1] **code**, such that it
   a. is selected from Concept Domain CD_HPoCActivityEncounter **CWE**.
7. **SHALL** contain exactly one [1..1] **text** such that
   a. contains exactly one [1..1] **reference** such that it
      i. contains exactly one [1..1] **@value** such that it
         1. begins with a '#' and points to its corresponding narrative (using the approach defined in CDA Release 2, Section 4.3.5.1).
3. **SHALL** contain exactly one [1..1] **statusCode**.

 

4. **SHALL** contain exactly one [1..1] **effectiveTime** such that it
    a. contain exactly one [1..1] **low**
    b. contain exactly one [1..1] **high**.

### 6.3.4.E4 HPoC Activity Observation

`[Observation: templateId 1.3.6.1.4.1.19376.1.7.3.1.1.26.1.4.4(open)]`

**Template Design Relationships**

The design is an adaptation and generalization on the C-CDA R2.1 Plan of Care Activity Observation template (2.16.840.1.113883.10.20.22.4.44). A Concept Domain is added to express the type of observations relevant to a hearing plan of care.

**Template Purpose**

This is the template for the Plan of Care Activity observation. An observation activity is used to record diagnostic tests and screenings which produce results.

1. **SHALL** contain exactly one [1..1] **@classCode**="OBS" (CodeSystem: `HL7ActClass 2.16.840.1.113883.5.6` **STATIC**).
2. **SHALL** contain exactly one [1..1] **@moodCode**, such that it
    a. is selected from ValueSet `Plan of Care moodCode (Observation) 2.16.840.1.113883.11.20.9.25` **STATIC** 2011-09-30.
3. **MAY** contain zero or one [0..1] **templateId** such that it
    a. contain exactly one [1..1] **@root**="2.16.840.1.113883.10.20.22.4.44".
4. **SHALL** contain exactly one [1..1] **templateId** such that it
    a. contain exactly one [1..1] **@root**="1.3.6.1.4.1.19376.1.7.3.1.1.26.1.4.4".
5. **SHALL** contain at least one [1..*] **id**.
8. **SHALL** contain exactly one [1..1] **code**, such that it
    a. is selected from Concept Domain CD_HPoCActivityObservation **CWE**.
9. **SHALL** contain exactly one [1..1] **text** such that
    a. contains exactly one [1..1] **reference** such that it
        i. contains exactly one [1..1] **@value** such that it
            1. begins with a '#' and points to its corresponding narrative (using the approach defined in CDA Release 2, Section 4.3.5.1).
5. **SHALL** contain exactly one [1..1] **statusCode**.
6. **SHALL** contain exactly one [1..1] **effectiveTime** such that it
    a. contain exactly one [1..1] **low**
    b. contain exactly one [1..1] **high**.

### 6.3.4.E5 HPoC Activity Procedure

`[Procedure: templateId 1.3.6.1.4.1.19376.1.7.3.1.1.26.1.4.5(open)]`

**Template Design Relationships**

 

The design is an adaptation and generalization of the C-CDA R2.1 Plan of Care Activity Procedure template (2.16.840.1.113883.10.20.22.4.41). A Concept Domain is added to express the type of procedures relevant to a hearing plan of care.

**Template Purpose**

This is the template for the Plan of Care Activity procedure. A procedure activity is used to record treatment or surgical procedures which produce health outcomes that change a patient's health status or condition.

1. **SHALL** contain exactly one [1..1] **@classCode**="PROC" (CodeSystem: HL7ActClass 2.16.840.1.113883.5.6 **STATIC**).
2. **SHALL** contain exactly one [1..1] **@moodCode**, such that is
    a. is selected from ValueSet Plan of Care moodCode (Act/Encounter/Procedure) 2.16.840.1.113883.11.20.9.23 **STATIC** 2011-09-30.
3. **MAY** contain zero or one [0..1] **templateId** such that it
    a. contain exactly one [1..1] **@root**="2.16.840.1.113883.10.20.22.4.41".
4. **SHALL** contain exactly one [1..1] **templateId** such that it
    a. contain exactly one [1..1] **@root**="1.3.6.1.4.1.19376.1.7.3.1.1.26.1.4.5".
5. **SHALL** contain at least one [1..*] **id**.
6. **SHALL** contain exactly one [1..1] **code**, such that it
    a. is selected from Concept Domain CD_HPoCActivityProcedure **CWE**.
7. **SHALL** contain exactly one [1..1] **text** such that
    a. contains exactly one [1..1] **reference** such that it
        i. contains exactly one [1..1] **@value** such that it
            1. begins with a '#' and points to its corresponding narrative (using the approach defined in CDA Release 2, Section 4.3.5.1).
7. **SHALL** contain exactly one [1..1] **statusCode**.
8. **SHALL** contain exactly one [1..1] **effectiveTime** such that it
    a. contain exactly one [1..1] **low**
    b. contain exactly one [1..1] **high**.

### 6.3.4.E6 HPoC Activity SubstanceAdministration

[SubstanceAdministration: templateId 1.3.6.1.4.1.19376.1.7.3.1.1.26.1.4.6(open)]

**Template Design Relationships**

The design is an adaptation and generalization of the C-CDA R2.1 Plan of Care Activity Substance Administration template. A Concept Domain is added to express the type of substance administrations relevant to a hearing plan of care.

 

**Template Purpose**

This is the template for the Plan of Care Activity for administering substances.

1. **SHALL** contain exactly one [1..1] **@classCode**="SBADM" (CodeSystem: HL7ActClass 2.16.840.1.113883.5.6 **STATIC**).
2. **SHALL** contain exactly one [1..1] **@moodCode**, which **SHALL** be selected from ValueSet Plan of Care moodCode (SubstanceAdministration/Supply) 2.16.840.1.113883.11.20.9.24 **STATIC** 2011-09-30.
3. **SHALL** contain exactly one [1..1] **templateId** such that it
    a. contain exactly one [1..1] **@root**="1.3.6.1.4.1.19376.1.7.3.1.1.26.1.4.6".
4. **SHALL** contain at least one [1..*] **id**.
5. **MAY** contain zero or one [0..1] **code** such that it
    a. is selected from Concept Domain CD_HPoCActivitySubstanceAdministrationType **CWE**.
6. **SHALL** contain exactly one [1..1] **text** such that
    a. contains exactly one [1..1] **reference** such that it
        i. contains exactly one [1..1] **@value** such that it
            1. begins with a '#' and points to its corresponding narrative (using the approach defined in CDA Release 2, Section 4.3.5.1).
7. **SHALL** contain exactly one [1..1] **statusCode**.
8. **SHALL** contain exactly one [1..1] **effectiveTime** such that it
    a. contain exactly one [1..1] **low**
    b. contain exactly one [1..1] **high**.
9. **SHOULD** contain zero or one [0..1] **effectiveTime** such that it
    a. contain exactly one [1..1] **@operator**="A"
    b. contain exactly one [1..1] @xsi:type=”PIVL_TS” or “EIVL_TS”.
10. **MAY** contain zero or one [0..1] **repeatNumber** such that it
    a. **CONDITIONAL** In "INT" (intent) mood, the repeatNumber defines the number of allowed administrations. For example, a repeatNumber of "3" means that the substance can be administered up to 3 times. In "EVN" (event) mood, the repeatNumber is the number of occurrences. For example, a repeatNumber of "3" in a substance administration in “EVN” means that the represented administration is the 3rd in a series.
11. **SHALL** contain exactly one [1..1] **consumable**
12. **SHOULD** include doseQuantity OR rateQuantity.

 

### 6.3.4.E7 HPoC Activity Non-Medicinal Supply (V2)

`[Supply: templateId 1.3.6.1.4.1.19376.1.7.3.1.1.26.1.4.7:2016-09-01(open)]`

**Template Design Relationships**

The design is an adaptation and generalization of the C-CDA R2.1 Plan of Care Activity Supply template. A Concept Domain is added to express the type of non-medicinal supplies that are relevant to a hearing plan of care.

**Template Purpose**

This is the template for the Plan of Care Activity for supplying non-medicinal medical Equipment.

1. **SHALL** contain exactly one [1..1] **@classCode**="SPLY" (CodeSystem: HL7ActClass 2.16.840.1.113883.5.6 **STATIC**).
2. **SHALL** contain exactly one [1..1] **@moodCode**, which **SHALL** be selected from ValueSet Plan of Care moodCode (SubstanceAdministration/Supply) 2.16.840.1.113883.11.20.9.24 **STATIC** 2011-09-30.
3. **SHALL** contain exactly one [1..1] **templateId** such that it
    a. contain exactly one [1..1] **@root**="1.3.6.1.4.1.19376.1.7.3.1.1.26.1.4.7".
    b. **SHALL** contain exactly one [1..1] **@extension**="2016-09-01"
4. **SHALL** contain at least one [1..*] **id**.
5. **MAY** contain exactly one [1..1] **code**, such that it
    a. is selected from Concept Domain CD_HPoCActivityNon-MedicinalSupplyType **CWE**.
6. **SHALL** contain exactly one [1..1] **text** such that
    a. contains exactly one [1..1] **reference** such that it
        i. contains exactly one [1..1] **@value** such that it
            1. begins with a '#' and points to its corresponding narrative (using the approach defined in CDA Release 2, Section 4.3.5.1).
7. **SHALL** contain exactly one [1..1] **statusCode**.
8. **SHOULD** contain zero or one [0..1] **effectiveTime** such that it
    a. **CONDITIONAL** if present, contain zero or one [0..1] high.
9. **SHOULD** contain zero or one [0..1] **quantity**.
10. **MAY** contain zero or one [0..1] **participant** such that it
    a. contain exactly one [1..1] **@typeCode**="PRD" Product (CodeSystem: HL7ParticipationType 2.16.840.1.113883.5.90 **STATIC**).
    b. contain exactly one [1..1] **Product Instance** (templateId:2.16.840.1.113883.10.20.22.4.37).

### 6.3.4.E8 Hearing Screening Organizer (V2)

`[Organizer: templateId 1.3.6.1.4.1.19376.1.7.3.1.1.26.1.4.8:2016-09-01(open)]`

**Template Design Relationships**

 

This design adapts and generalizes the C-CDA R2.1 Result Organizer template (2.16.840.1.113883.10.20.22.4.1). A Concept Domain is added to express the type of Organizer it is. The design is specific to the requirements for assessing the screening outcome for each ear, as assessed after performing zero or more hearing screening tests on each ear.

**Template Purpose**

This organizer records the outcome assessment of the hearing screening and the associated results used to determine the outcome assessment. It includes a component for the "screening outcome" for the left ear and a component "screening outcome" for the right ear. Each of the outcome observations carries an optional indication of the reason screening was not performed. The Hearing Screening Organizer also includes the set of result observations which were gathered. They are a third component and are organized in a Results Organizer.

**Implementer Guidance**

The effectiveTime of the organizer is an interval that spans the effectiveTimes of the contained result observations.

If screening results become available that were performed after the baby is discharged from the birth encounter, these results need to be represented in a separate organizer which would be related temporally with the encounter associated with the screening event.

The effectiveTime/low will match the time of the triggering event that indicated the start of the encounter where the screening information was being collected. The effectiveTime/high will match the time of the triggering event that indicated the end of the encounter where the screening information was being collected.

Note: If any Result Observation within the Result Organizer has a statusCode of 'active', the Result Organizer must also have as statusCode of 'active'.

1. **SHALL** contain exactly one [1..1] **@classCode=**"CLUSTER" (CodeSystem: HL7ActClass 2.16.840.1.113883.5.6) **STATIC**
2. **SHALL** contain exactly one [1..1] **@moodCode**="EVN" Event (CodeSystem: ActMood 2.16.840.1.113883.5.1001) **STATIC**.
3. **SHALL** contain exactly one [1..1] **templateId** such that it
    a. contain exactly one [1..1] **@root**="1.3.6.1.4.1.19376.1.7.3.1.1.26.1.4.8".
    b. **SHALL** contain exactly one [1..1] **@extension**="2016-09-01"
4. **SHALL** contain at least one [1..*] **id**.
5. **SHALL** contain exactly one [1..1] **code** such that it
    a. is selected from Concept Domain CD_HearingScreeningOrganizer **CWE**.
6. **SHALL** contain exactly one [1..1] **statusCode** such that it
    a. contain exactly one [1..1] **@code**, which is selected from ValueSet Result Status 2.16.840.1.113883.11.20.9.39 **STATIC**.
7. **SHALL** contain exactly one [1..1] **effectiveTime** such that it
    a. contain exactly one [1..1] **low**

 

b. contain exactly one [1..1] **high**.

8. **SHALL** contain exactly one [1..1] **component** such that it
   a. contain exactly one [1..1] Hearing Screening Outcome Observation – Left Ear (V2) templateId: 1.3.6.1.4.1.19376.1.7.3.1.1.26.1.4.9:2016-09-01).
9. **SHALL** contain exactly one [1..1] **component** such that it
   a. contain exactly one [1..1] Hearing Screening Outcome Observation – Right Ear (V2) templateId: 1.3.6.1.4.1.19376.1.7.3.1.1.26.1.4.11:2016-09-01).
10. **SHALL** contain exactly one [1..1] **component** such that it
    a. contain exactly one [1..1] Hearing Screening Results Organizer (V2) templateId: 1.3.6.1.4.1.19376.1.7.3.1.1.26.1.4.12:2016-09-01).

### 6.3.4.E9 Hearing Screening Outcome Observation – Left

[Observation: templateId 1.3.6.1.4.1.19376.1.7.3.1.1.26.1.4.9:2016-09-01(open)]

**Template Design Relationships**

This template is a generalization of the IHE US Realm Hearing Screening Outcome Observation - Left template. A Concept Domain is added to express value set binding for the code(s) to represent the type of observation within a realm-specific implementation. The design is specific to the requirements for assessing the screening outcome for the Left Ear, as assessed after performing zero or more hearing screening tests on the left ear.

**Template Design Note**

When the template design is not specific for a particular target site, then the targetSiteCode is used to add information about a particular target site (see HearingScreeningResult template). When the template, by design, is specific for a particular target site, then that information is pre-coordinated into the code that is used and the targetSiteCode is not used as that would be redundant and could cause confusion or inconsistency. This design principle is established in the HL7 TermInfo DSTU (2013).

**Template Purpose**

This observation records the assessment of the screening for the left ear. It uses a jurisdictionally defined algorithm for aggregating multiple screening results into a final assessment observation. When screening is not performed on an ear, the reason for not performing the screening is also recorded.

1. **SHALL** contain exactly one [1..1] **@classCode**="OBS" Observation (CodeSystem: HL7ActClass 2.16.840.1.113883.5.6) **STATIC**.
2. **SHALL** contain exactly one [1..1] **@moodCode**="EVN" Event (CodeSystem: ActMood 2.16.840.1.113883.5.1001) **STATIC**.
3. **MAY** contain zero or one [0..1] **@negationInd**.
4. **SHALL** contain exactly one [1..1] **templateId** such that it
   a. contain exactly one [1..1] **@root**="1.3.6.1.4.1.19376.1.7.3.1.1.26.1.4.9".

 

b. **SHALL** contain exactly one [1..1] **@extension**="2016-09-01"

5. **SHALL** contain at least one [1..*] **id**.
6. **SHALL** contain exactly one [1..1] **code** such that it
   a. is selected from Concept Domain CD_HearingScreeningOutcomeObservation-Left **CWE**.
7. **SHALL** contain exactly one [1..1] **text** such that
   a. contains exactly one [1..1] **reference** such that it
      i. contains exactly one [1..1] **@value** such that it
         1. begins with a '#' and points to its corresponding narrative (using the approach defined in CDA Release 2, Section 4.3.5.1).
8. **SHALL** contain exactly one [1..1] **statusCode** such that it
   a. contain exactly one [1..1] **@code**, which is selected from ValueSet Result Status 2.16.840.1.113883.11.20.9.39 **STATIC**.
9. **SHALL** contain exactly one [1..1] **effectiveTime**.
   a. Represents clinically effective time of the measurement, which may be when the measurement was performed (e.g., a BP measurement), or may be when sample was taken (and measured some time afterwards).
10. **SHALL** contain exactly one [1..1] **value**
    a. be declared as data type xsi:type = "CD"
    b. is selected from Concept Domain CD_HearingScreeningOutcomeObservationValues **CWE**.
11. **MAY** contain zero or one [0..1] **methodCode**.
    a. be selected from Concept Domain CD_HearingScreeningMethods **CNE, STATIC**.
12. **SHALL NOT** contain a [1..1] **targetSiteCode**.
13. **MAY** contain zero or one [0..1] **author**.
14. **MAY** contain zero or one [0..1] **entryRelationship**.
    a. **CONDITIONAL** The entryRelationship, if present, **SHALL** contain exactly one [1..1] **@typeCode**="RSON" Has Reason (CodeSystem: HL7ActRelationshipType 2.16.840.1.113883.5.1002 **STATIC**).
    b. **CONDITIONAL** The entryRelationship, if present, **SHALL** contain exactly one [1..1] **Reason Not Screened** (templateId: 1.3.6.1.4.1.19376.1.7.3.1.1.26.1.4.10).

### 6.3.4.E10 Reason Not Screened

[Act: templateId 1.3.6.1.4.1.19376.1.7.3.1.1.26.1.4.10(open)]

**Template Design Relationships**

This template is a generalization of the IHE US Realm Reason Not Screened template. A Concept Domain is added to express value set binding for the code(s) to represent the reasons for not performing hearing screening within a realm-specific implementation.

**Template Purpose**

This template documents the reason why hearing screening was not performed.

 

1. **SHALL** contain exactly one [1..1] **@classCode**="ACT" (CodeSystem: HL7ActClass 2.16.840.1.113883.5.6 **STATIC**).
2. **SHALL** contain exactly one [1..1] **@moodCode**="EVN" (CodeSystem: ActMood 2.16.840.1.113883.5.1001) **STATIC**.
3. **SHALL** contain exactly one [1..1] **templateId** such that it
    a. contain exactly one [1..1] **@root**="1.3.6.1.4.1.19376.1.7.3.1.1.26.1.4.10".
4. **SHALL** contain exactly one [1..1] **code**, such that is
    a. is selected from Concept Domain CD_ReasonNotScreened **CWE**.
5. **SHALL** contain exactly one [1..1] **text** such that
    a. contains exactly one [1..1] **reference** such that it
        i. contains exactly one [1..1] **@value** such that it
            1. begins with a '#' and points to its corresponding narrative (using the approach defined in CDA Release 2, Section 4.3.5.1).

### 6.3.4.E11 Hearing Screening Outcome Observation – Right (V2)

[Observation: templateId 1.3.6.1.4.1.19376.1.7.3.1.1.26.1.4.11:2016-09-01(open)]

**Template Design Relationships**

This template is a generalization of the IHE US Realm Hearing Screening Outcome Observation - Right template. A Concept Domain is added to express value set binding for the code(s) to represent the type of observation within a realm-specific implementation. The design is specific to the requirements for assessing the screening outcome for the Right Ear, as assessed after performing zero or more hearing screening tests on the right ear.

**Template Design Note**

When the template design is not specific for a particular target site, then the targetSiteCode is used to add information about a particular target site (see HearingScreeningResult template). When the template, by design, is specific for a particular target site, then that information is pre-coordinated into the code that is used and the targetSiteCode is not used as that would be redundant and could cause confusion or inconsistency. This design principle is established in the HL7 TermInfo DSTU (2013).

**Template Purpose**

This observation records the assessment of the screening for the right ear. It uses a jurisdictionally defined algorithm for aggregating multiple screening results into a final assessment observation. When screening is not performed on an ear, the reason for not performing the screening is also recorded.

1. **SHALL** contain exactly one [1..1] **@classCode**="OBS" Observation (CodeSystem: HL7ActClass 2.16.840.1.113883.5.6) **STATIC**.
2. **SHALL** contain exactly one [1..1] **@moodCode**="EVN" Event (CodeSystem: ActMood 2.16.840.1.113883.5.1001) **STATIC**.

 

3. **MAY** contain zero or one [0..1] **@negationInd**.
4. **SHALL** contain exactly one [1..1] **templateId** such that it
    a. contain exactly one [1..1] **@root**="1.3.6.1.4.1.19376.1.7.3.1.1.26.1.4.11".
    b. **SHALL** contain exactly one [1..1] **@extension**="2016-09-01"
5. **SHALL** contain at least one [1..*] **id**.
6. **SHALL** contain exactly one [1..1] **code** such that it
    a. is selected from Concept Domain CD_HearingScreeningOutcomeObservation-Right **CWE**.
7. **SHALL** contain exactly one [1..1] **text** such that
    a. contains exactly one [1..1] **reference** such that it
        i. contains exactly one [1..1] **@value** such that it
            1. begins with a '#' and points to its corresponding narrative (using the approach defined in CDA Release 2, Section 4.3.5.1).
8. **SHALL** contain exactly one [1..1] **statusCode** such that it
    a. be selected from ValueSet `Result Status 2.16.840.1.113883.11.20.9.39` **CNE, STATIC**.
9. **SHALL** contain exactly one [1..1] **effectiveTime**.
    a. Represents clinically effective time of the measurement, which may be when the measurement was performed (e.g., a BP measurement), or may be when sample was taken (and measured some time afterwards).
10. **SHALL** contain exactly one [1..1] **value**
    a. be declared as data type xsi:type = "CD"
    b. is selected from Concept Domain CD_HearingScreeningOutcomeObservationValues **CWE**.
11. **MAY** contain zero or one [0..1] **methodCode**.
    a. be selected from Concept Domain CD_HearingScreeningMethods **CNE, STATIC**.
12. **SHALL NOT** contain a [1..1] **targetSiteCode**.
13. **MAY** contain zero or one [0..1] **author**.
14. **MAY** contain zero or one [0..1] **entryRelationship**.
    a. **CONDITIONAL** The entryRelationship, if present, **SHALL** contain exactly one [1..1] **@typeCode**="RSON" Has Reason (CodeSystem: `HL7ActRelationshipType 2.16.840.1.113883.5.1002`) **STATIC**.
    b. **CONDITIONAL** The entryRelationship, if present, **SHALL** contain exactly one [1..1] **Reason Not Screened** (`templateId:` 1.3.6.1.4.1.19376.1.7.3.1.1.26.1.4.10).

### 6.3.4.E12 Hearing Screening Results Organizer (V2)

`[Organizer: templateId 1.3.6.1.4.1.19376.1.7.3.1.1.26.1.4.12:2016-09-01(open)]`

#### Template Design Relationships

The design is an adaptation and generalization of the C-CDA R2.1 Result Organizer (V3) (2.16.840.1.113883.10.20.22.4.1:2015-08-01). A Concept Domain is added to express value set

 

binding for the code(s) to represent the type of hearing screening results organizer within a realm-specific implementation.

**Template Purpose**

This organizer records the hearing screening results used to determine the outcome assessments.

**Implementer Guidance**

The effectiveTime of the organizer is an interval that spans the effectiveTimes of the contained result observations.

1. **SHALL** contain exactly one [1..1] **@classCode=**"CLUSTER" (CodeSystem: HL7ActClass 2.16.840.1.113883.5.6) **STATIC**.
2. **SHALL** contain exactly one [1..1] **@moodCode**="EVN" Event (CodeSystem: ActMood 2.16.840.1.113883.5.1001) **STATIC**.
3. **SHALL** contain exactly one [1..1] **templateId** such that it
    a. contain exactly one [1..1] **@root**="1.3.6.1.4.1.19376.1.7.3.1.1.26.1.4.12".
    b. **SHALL** contain exactly one [1..1] **@extension**="2016-09-01"
4. **SHALL** contain at least one [1..*] **id**.
5. **SHALL** contain exactly one [1..1] **code** such that it
    a. is selected from Concept Domain CD_HearingScreeningResultsOrganizer **CWE**.
6. **SHALL** contain exactly one [1..1] **statusCode** such that it
    a. be selected from ValueSet Result Status 2.16.840.1.113883.11.20.9.39 **CNE, STATIC**.
7. **SHALL** contain zero or more [0..*] **component** such that it
    a. contain exactly one [1..1] Hearing Screening Result Observation (V2) templateId: 1.3.6.1.4.1.19376.1.7.3.1.1.26.1.4.13:2016-09-01).

### 6.3.4.E13 Hearing Screening Result Observation (V2)

[Observation: templateId 1.3.6.1.4.1.19376.1.7.3.1.1.26.1.4.13:2016-09-01(open)]

**Template Design Relationships**

This template is an adaptation of the IHE Result Observation template (1.3.6.1.4.1.19376.1.5.3.1.3.27). The design also is an adaptation and generalization of the C-CDA R2.1 Result Observation template (2.16.840.1.113883.10.20.22.4.2). A Concept Domain is added to express value set binding for the code(s) to represent the types of hearing screening results within a realm-specific implementation.

Hearing screening devices return a value which results from interpreting their internal readings to produce a result from the device. In the future, if raw values will be returned from the device, then an interpretation code element would be needed and the associated reference ranges could be defined. For now, the value returned from the test is sufficient for both capturing the measure result and interpreting the result.

 

In this template, the negationInd attribute of the observation act SHALL function as defined for Observation.ActionNegationInd in the HL7 V3 Core Principles. This negation behavior affects the action of the act and is further constrained by other elements of the act class which are the elements of the act class which are not considered related to the document's context.

**Template Design Note**

When the template design is not specific for a particular target site, then the targetSiteCode is used to add information about a particular target site (see HearingScreeningResult template). When the template, by design, is specific for a particular target site, then that information is pre-coordinated into the code that is used and the targetSiteCode is not used as that would be redundant and could cause confusion or inconsistency. This design principle is established in the HL7 TermInfo DSTU (2013).

**Template Purpose**

This observation records the result of screening an ear. When the screening device returns an invalid reading, the reason for this invalid result may be recorded if it is known or determinable.

1. **SHALL** contain exactly one [1..1] **@classCode**="OBS" Observation (CodeSystem: HL7ActClass 2.16.840.1.113883.5.6) **STATIC**.
2. **SHALL** contain exactly one [1..1] **@moodCode**="EVN" Event (CodeSystem: ActMood 2.16.840.1.113883.5.1001) **STATIC**.
3. **SHALL** contain exactly one [1..1] **templateId** such that it
    a. contain exactly one [1..1] **@root**="1.3.6.1.4.1.19376.1.7.3.1.1.26.1.4.13".
    b. **SHALL** contain exactly one [1..1] **@extension**="2016-09-01"
4. **SHALL** contain at least one [1..*] **id**.
5. **SHALL** contain exactly one [1..1] **code** such that it
    a. is selected from Concept Domain CD_HearingScreeningTest **CWE**.
6. **SHALL** contain exactly one [1..1] **text** such that
    a. contains exactly one [1..1] **reference** such that it
        i. contains exactly one [1..1] **@value** such that it
            1. begins with a '#' and points to its corresponding narrative (using the approach defined in CDA Release 2, Section 4.3.5.1).
7. **SHALL** contain exactly one [1..1] **statusCode** such that it
    a. be selected from ValueSet Result Status 2.16.840.1.113883.11.20.9.39 **CNE, STATIC**.
8. **SHALL** contain exactly one [1..1] **effectiveTime**.
    a. Represents clinically effective time of the measurement, which may be when the measurement was performed (e.g., a BP measurement), or may be when sample was taken (and measured some time afterwards).
9. **SHALL** contain exactly one [1..1] **value**, such that it
    a. be declared as data type xsi:type = "CD"

 

b. be selected from Concept Domain CD_HearingScreeningTestResultValues **CNE, STATIC**.

10. **CONDITIONAL: SHALL NOT** contain a value when negationInd="true".
11. **SHALL** contain zero or one [0..1] **methodCode**, such that it
    a. be selected from Concept Domain CD_HearingScreeningMethods **CNE, STATIC**.
12. **CONDITIONAL: SHALL NOT** contain a methodCode when negationInd="true".
13. **SHALL** contain exactly one [1..1] **targetSiteCode**, such that it
    a. be selected from Concept Domain CD_HearingScreeningTargetSites **CNE, STATIC**.
14. **MAY** contain zero or one [0..1] **author**.
15. **MAY** contain zero or one [0..1] **performer**.
16. **CONDITIONAL: SHALL** contain exactly one [1..1] **entryRelationship** when negationInd="true", such that it
    a. **SHALL** contain exactly one [1..1] **@typeCode**="RSON" Has Reason (CodeSystem: HL7ActRelationshipType 2.16.840.1.113883.5.1002 **STATIC**).
    b. **SHALL** contain exactly one [1..1] **Reason Not Screened** (templateId: 1.3.6.1.4.1.19376.1.7.3.1.1.26.1.4.14).
17. **CONDITIONAL: SHALL NOT** contain an entryRelationship with @typeCode="RSON" when negationInd="false".

### 6.3.4.E14 Intentionally Blank

### 6.3.4.E15 Risk Indicator for Hearing Loss Observation (V2)

[Observation: templateId 1.3.6.1.4.1.19376.1.7.3.1.1.26.1.4.15:2016-09-01(open)]

**Template Design Relationships**

This template is an adaptation and generalization of the IHE US Realm Risk Indicator for Hearing Loss Observation template. A Concept Domain is added to express value set binding within a realm-specific implementation for the code(s) to represent the types of reasons for no assessable result to be returned when a baby is screened.

**Template Purpose**

This template records a set of hearing related risks which may be assessed. Each clinical statement indicates if a particular risk is present or not. Risks that are not assessed do not have to be included. (Use of nullFlavors to express exceptional cases for the risk not being assessed will be considered in a future version.)

1. **SHALL** contain exactly one [1..1] **@classCode**="OBS" (CodeSystem: HL7ActClass 2.16.840.1.113883.5.6 **STATIC**).
2. **SHALL** contain exactly one [1..1] **@moodCode**="EVN" (CodeSystem: ActMood 2.16.840.1.113883.5.1001 **STATIC**).
3. **SHALL** contain exactly one [1..1] **templateId** such that it

 

a. contain exactly one [1..1] **@root**="1.3.6.1.4.1.19376.1.7.3.1.1.26.1.4.15".
b. **SHALL** contain exactly one [1..1] **@extension**="2016-09-01"

4. **SHALL** contain at least one [1..*] **id**.
5. **SHALL** contain exactly one [1..1] **code** such that it
   a. is selected from Concept Domain CD_RiskFactor **CNE**.
6. **SHALL** contain exactly one [1..1] **text** such that
   a. contain exactly one [1..1] **reference** such that it
      i. contains exactly one [1..1] **@value** such that it
         1. begins with a '#' and points to its corresponding narrative (using the approach defined in CDA Release 2, Section 4.3.5.1).
7. **SHALL** contain exactly one [1..1] **statusCode** such that it
   a. contain exactly one [1..1] **@code**="completed" Completed (CodeSystem: ActStatus 2.16.840.1.113883.5.14 **STATIC**).
8. **SHOULD** contain zero or one [0..1] **effectiveTime**.
9. **SHALL** contain exactly one [1..1] **value,** such that it:
   a. be defined as data type @xsi:type="CD"
   b. be selected from Concept Domain CD_RiskFactorsForHearing **CWE**.

### 6.3.4.E16 Problem Concern (V2)

[Act: templateId 1.3.6.1.4.1.19376.1.7.3.1.1.26.1.4.16:2016-09-01(open)]

**Template Design Relationships**

This template is a transclusion of the IHE UV Realm Problem Concern Act template (1.3.6.1.4.1.19376.1.5.3.1.4.5.2).

**Template Purpose**

The problem concern template is a "tracker" which allows one or more problem observations to be grouped together and tracked over time as being associated with this particular concern.

1. **SHALL** contain exactly one [1..1] **@classCode**="ACT" Act (CodeSystem: HL7ActClass 2.16.840.1.113883.5.6 **STATIC**).
2. **SHALL** contain exactly one [1..1] **@moodCode**="EVN" Event (CodeSystem: ActMood 2.16.840.1.113883.5.1001 **STATIC**).
3. **SHALL** contain exactly one [1..1] **templateId** such that it
   a. contain exactly one [1..1] **@root**="1.3.6.1.4.1.19376.1.5.3.1.4.5.2".
4. **SHALL** contain exactly one [1..1] **templateId** such that it
   a. contain exactly one [1..1] **@root**="11.3.6.1.4.1.19376.1.7.3.1.1.26.1.4.16".
   b. **SHALL** contain exactly one [1..1] **@extension**="2016-09-01"

 

### 6.3.4.E17 Intentionally blank

### 6.3.4.E18 Procedure Activity Procedure (V2)

`[Procedure: templateId 1.3.6.1.4.1.19376.1.7.3.1.1.26.1.4.18:2016-09-01(open)]`

**Template Design Relationships**

This template is a transclusion of the IHE UV Realm Procedure Entry template (1.3.6.1.4.1.19376.1.5.3.1.4.19).

**Template Purpose**

This clinical statement represents procedures whose immediate and primary outcome (post-condition) is the alteration of the physical condition of the patient. Examples of these procedures are an appendectomy, hip replacement and a creation of a gastrostomy.

1. **SHALL** contain exactly one [1..1] **@classCode**="PROC" Procedure (CodeSystem: HL7ActClass 2.16.840.1.113883.5.6) **STATIC**.
2. **SHALL** contain exactly one [1..1] **@moodCode**, which **SHALL** be selected from ValueSet MoodCodeEvnInt 2.16.840.1.113883.11.20.9.18 **STATIC** 2011-04-03.
3. **SHALL** contain exactly one [1..1] **templateId** such that it
   a. contain exactly one [1..1] **@root**="1.3.6.1.4.1.19376.1.5.3.1.4.19".
4. **SHALL** contain exactly one [1..1] **templateId** such that it
   a. contain exactly one [1..1] **@root**="1.3.6.1.4.1.19376.1.7.3.1.1.26.1.4.18".
   b. **SHALL** contain exactly one [1..1] **@extension**="2016-09-01"

### 6.3.4.E19 Intentionally blank

### 6.3.4.E20 Intentionally blank

### 6.3.4.E21 Intentionally blank

## 6.4 Section not applicable

This heading is not currently used in a CDA document.

*Add to Section 6.5 Value Sets*

 

## 6.5 EHDI Default Value Set Binding for UV Concept Domains

| UV Concept Domain | Default Vocabulary Binding or Single Code Binding | Value Set OID |
|---|---|---|
| **Header** | | |
| CD_HPoCEncounterType. | VS_HPoCEncounterType | 1.3.6.1.4.1.19376.1.7.3.1.1.26.2.5.1 |
| CD_HPoCServiceEventType | VS_HPoCServiceEventType | 1.3.6.1.4.1.19376.1.7.3.1.1.26.2.5.2 |
| **Plan of Care Section** | | |
| CD_HPoCInstructions | VS_HPoCInstructions | 1.3.6.1.4.1.19376.1.7.3.1.1.26.2.5.3 |
| CD_HPoCActivityAct | VS_HPoCActivityAct | 1.3.6.1.4.1.19376.1.7.3.1.1.26.2.5.4 |
| CD_HPoCActivityEncounter | VS_HPoCActivityEncounter | 1.3.6.1.4.1.19376.1.7.3.1.1.26.2.5.5 |
| CD_HPoCActivityObservation | VS_HPoCActivityObservation | 1.3.6.1.4.1.19376.1.7.3.1.1.26.2.5.6 |
| CD_HPoCActivityProcedure | VS_HPoCActivityProcedure | 1.3.6.1.4.1.19376.1.7.3.1.1.26.2.5.7 |
| CD_HPoCActivitySubstanceAdministration | VS_HPoCActivitySubstanceAdministration | 1.3.6.1.4.1.19376.1.7.3.1.1.26.2.5.8 |
| CD_HPoCActivityNon-MedicinalSupply | VS_HPoCActivtyNon-MedicinalSupply | 1.3.6.1.4.1.19376.1.7.3.1.1.26.2.5.9 |
| CD_HPoCActivitySubstanceAdministrationType | No set of concepts has consensus support for identifying different types of substances that are administered. Since this is not yet defined, any data element with a binding to this concept domain must be indicated as optional. | |
| CD_HPoCActivityNon-MedicinalSupplyType | No set of concepts has consensus support for identifying different types of things that are supplied. Since this is not yet defined, any data element with a binding to this concept domain must be indicated as optional. | |
| **Hearing Screening Section** | | |
| CD_HearingScreeningOrganizer | VS_NewbornHearingScreeningOutcomeResultsOrganizer | single code 1.3.6.1.4.1.19376.1.7.3.1.1.26.2.5.20 |
| CD_HearingScreeningOutcomeObservation-Left | VS_HearingScreeningOutcomeObservation - Left Ear | single code 1.3.6.1.4.1.19376.1.7.3.1.1.26.2.5.21 |
| CD_HearingScreeningOutcomeObservation-Right | VS_HearingScreeningOutcomeObservation - Right Ear | single code 1.3.6.1.4.1.19376.1.7.3.1.1.26.2.5.22 |
| CD_HearingScreeningOutcomeObservationValues | VS_HearingScreeningOutcomeObservationValues | 1.3.6.1.4.1.19376.1.7.3.1.1.26.2.5.10 |
| CD_ReasonNotScreened | VS_ReasonNotScreened | 1.3.6.1.4.1.19376.1.7.3.1.1.26.2.5.11 |
| CD_HearingScreeningResultsOrganizer | VS_HearingScreeningResultsOrganizer | single code 1.3.6.1.4.1.19376.1.7.3.1.1.26.2.5.23 |
| CD_HearingScreeningTest | VS_NeonatalHearingScreeningTest | single code 1.3.6.1.4.1.19376.1.7.3.1.1.26.2.5.24 |

 

| UV Concept Domain | Default Vocabulary Binding or Single Code Binding | Value Set OID |
|---|---|---|
| CD_HearingScreeningTargetSites | VS_HearingScreeningTargetSites | 1.3.6.1.4.1.19376.1.7.3.1.1.26.2.5.12 |
| CD_HearingScreeningMethods | VS_HearingScreeningMethods | 1.3.6.1.4.1.19376.1.7.3.1.1.26.2.5.13 |
| CD_HearingScreeningTestResultValues | VS_HearingScreeningTestResultValues | 1.3.6.1.4.1.19376.1.7.3.1.1.26.2.5.14 |
| **Risk Indicators for Hearing Loss** | | |
| CD_RiskFactor | VS_Risk Factor | single code 1.3.6.1.4.1.19376.1.7.3.1.1.26.2.5.15 |
| CD_RiskFactorsForHearing | VS_RiskFactorsForHearing | 1.3.6.1.4.1.19376.1.7.3.1.1.26.2.5.16 |
| **Problems Section** | | |
| This section does not use a Concept Domain | VS_HPoCProblemObservations | 1.3.6.1.4.1.19376.1.7.3.1.1.26.2.5.17 |
| **Procedures Section** | | |
| CD_HPoCActivitySubstanceAdministrationType | No set of concepts has consensus support for identifying different types of substances that are administered. Since this is not yet defined, any data element with a binding to this concept domain must be indicated as optional. | |
| CD_HPoCActivityNon-MedicinalSupply | No set of concepts has consensus support for identifying different types of things that are supplied. Since this is not yet defined, any data element with a binding to this concept domain must be indicated as optional. | |

 

# Appendices

None

 

## Volume 3 Namespace Additions

*Add the following terms to the IHE Namespace:*

None

 

# Volume 4 – National Extensions

*Add appropriate country section*

## 4 National Extensions

## 4.R1 National Extensions for US Realm

### 4.R1.1 Comment Submission

This national extension document was authored under the sponsorship and supervision of HIMSS and RSNA, who welcome comments on this document and the IHE USA initiative. Comments should be directed to:

IHE USA, Secretariat

Email: iheusa@himss.org

### 4.R1.2 Early Hearing Detection and Intervention (EHDI)

#### 4.R1.2.1 Hearing Screening Message – US Realm Specifications

In the referenced HL7 Version 2.6 Implementation Guide: Early Hearing Detection and Intervention (EHDI) Results, Release 1 standard, race (PID-10) and EthnicGroup (PID-22) are required but may be empty (RE). The UV Realm specification relaxed this requirement. The US Realm does not relax this requirement.

- (PID-10) Race, usage is RE
- (PID-22) EthnicGroup, usage is RE

#### 4.R1.2.2 Hearing Plan of Care – US Realm Specifications

The convention for numbering sections in QRPH TF-4 is to duplicate the exact Technical Framework numbering as used in the Universal portion of the profile. In essence, this section provides replacement sections for the spots where the realm specific material replaces the UV Realm material.

 

# 6 Design Overview

2120 The table below provides a summarized view of all the templates used in the HPoC Document and the associated cardinalities. This summarization is provided to give implementers a view of the full "templated CDA" structure of the HPoC. It is non-normative. The normative specification for each content module is provided in Section 8 below.

| Template Type | Template Title | Opt and Card | templateId |
|---|---|---|---|
| Document | HearingPlanOfCare | | 1.3.6.1.4.1.19376.1.7.3.1.1.26.2.1 |
| Header | HearingPlanOfCareHeader | [1..1] | 1.3.6.1.4.1.19376.1.7.3.1.1.26.2.2.1 |
| | recordTarget | [1..1] | n/a |
| | author | [1..*] | n/a |
| | custodian | [1..1] | n/a |
| | documentationOf/serviceEvent | [1..1] | |
| | componentOf/encompassingEncounter | [1..1] | |
| Section | Hearing Plan of Care | [1..1] | 1.3.6.1.4.1.19376.1.7.3.1.1.26.2.3.1 |
| Entry | HPoC Instructions | [0..*] | 1.3.6.1.4.1.19376.1.7.3.1.1.26.2.4.1 |
| Entry | HPoC Activity Act | [0..*] | 1.3.6.1.4.1.19376.1.7.3.1.1.26.2.4.2 |
| Entry | HPoC Activity Encounter | [0..*] | 1.3.6.1.4.1.19376.1.7.3.1.1.26.2.4.3 |
| Entry | HPoC Activity Observation | [0..*] | 1.3.6.1.4.1.19376.1.7.3.1.1.26.2.4.4 |
| Entry | HPoC Activity Procedure | [0..*] | 1.3.6.1.4.1.19376.1.7.3.1.1.26.2.4.5 |
| Entry | HPoC Activity SubstanceAdministration | [0..*] | 1.3.6.1.4.1.19376.1.7.3.1.1.26.2.4.6 |
| Entry | HPoC Activity Non-Medicinal Supply | [0..*] | 1.3.6.1.4.1.19376.1.7.3.1.1.26.2.4.7 |
| Section | Hearing Screening | [1..1] | 1.3.6.1.4.1.19376.1.7.3.1.1.26.2.3.2 |
| Entry | Hearing Screening Organizer | [1..1] | 1.3.6.1.4.1.19376.1.7.3.1.1.26.2.4.8 |
| Entry | Hearing Screening Outcome Observation–Left Ear | [1..1] | 1.3.6.1.4.1.19376.1.7.3.1.1.26.2.4.9 |
| Sub-Entry | Reason Not Screened | [0..1] | 1.3.6.1.4.1.19376.1.7.3.1.1.26.2.4.10 |
| Entry | Hearing Screening Outcome Observation–Right Ear | [1..1] | 1.3.6.1.4.1.19376.1.7.3.1.1.26.2.4.11 |

 

| Template Type | Template Title | Opt and Card | templateId |
|---|---|---|---|
| Sub-Entry | Reason Not Screened | [0..1] | 1.3.6.1.4.1.19376.1.7.3.1.1.26.2.4.10 |
| Entry | Hearing Screening Results Organizer | [0..*] | 1.3.6.1.4.1.19376.1.7.3.1.1.26.2.4.12 |
| Entry | Hearing Screening Result Observation | [1..*] | 1.3.6.1.4.1.19376.1.7.3.1.1.26.2.4.13 |
| Sub-Entry | Reason Not Screened | [0..1] | 1.3.6.1.4.1.19376.1.7.3.1.1.26.2.4.14 |
| | Comment Activity | | 2.16.840.1.113883.10.20.22.4.64 |
| Section | Risk Indicators for Hearing Loss | [0..1] | 1.3.6.1.4.1.19376.1.7.3.1.1.26.2.3.3 |
| Entry | Risk Indicator for Hearing Loss Observation | [0..*] | 1.3.6.1.4.1.19376.1.7.3.1.1.26.2.4.15 |
| Section | Problems | [0..1] | 1.3.6.1.4.1.19376.1.7.3.1.1.26.2.3.4 |
| Entry | Problem Concern | [0..*] | 1.3.6.1.4.1.19376.1.7.3.1.1.26.2.4.16 |
| Sub-section | HPoC Problems | [0..1] | 1.3.6.1.4.1.19376.1.7.3.1.1.26.2.3.5 |
| Entry | HPoC Problem Concern | [0..*] | 1.3.6.1.4.1.19376.1.7.3.1.1.26.2.4.17 |
| Section | Procedures | [0..1] | 1.3.6.1.4.1.19376.1.7.3.1.1.26.2.3.6 |
| Entry | Procedure Activity Procedure | [0..*] | 1.3.6.1.4.1.19376.1.7.3.1.1.26.2.4.18 |
| Entry | Procedure Activity Act | [0..*] | 1.3.6.1.4.1.19376.1.7.3.1.1.26.2.4.19 |
| Sub-Section | HPoC Procedures | [0..1] | 1.3.6.1.4.1.19376.1.7.3.1.1.26.2.3.7 |
| Entry | HPoC Procedure Activity Procedure | [0..*] | 1.3.6.1.4.1.19376.1.7.3.1.1.26.2.4.20 |
| Entry | HPoC Procedure Activity Act | [0..*] | 1.3.6.1.4.1.19376.1.7.3.1.1.26.2.4.21 |

2125

 

# 7 Intentionally Blank

 

# 8 US Realm

Section 8 contains US Realm template definition for the EHDI Profile.

The template definitions contained in the EHDI Profile have been manually generated. Conformance statements may be included when material has been copied from other machine generated template definitions. In the context of the EHDI Profile all conformance statement identifiers, indicated as CONF:xxxx or as CONF: with a specific id number to follow, are invalid and should be ignored.

QRPH TF-4: Appendix G includes additional implementer guidance specific to some of the information represented in the EHDI US Realm templates.

## 8.4 Document Templates

### 6.3.1.D1.1 HPoC Document Format Code

| Profile | Format Code | Media Type | Template ID |
|---|---|---|---|
| HPoC US Realm | urn:ihe:qrph:HPoCUS:2014 | Text/XML | 1.3.6.1.4.1.19376.1.7.3.1.1.26.2.1 |

### 6.3.1.D1.5 Hearing Plan Of Care Document (V2)

`[ClinicalDocument: templateId 1.3.6.1.4.1.19376.1.7.3.1.1.26.2.1:2016-09-01(open)]`

| | |
|---|---|
| **Template Name** | HearingPlanOfCare Document (V2) |
| **Template ID** | 1.3.6.1.4.1.19376.1.7.3.1.1.26.2.1:2016-09-01 |
| **Parent Template** | This template does not inherit constraints from another template. |
| **General Description** | This document is the US Realm version of the hearing plan of care for a newborn. It includes the hearing plan of care instructions and planned care activities. It includes the results of the hearing screening provided prior to discharge as well as information about hearing risk indicators which may be available. It includes the newborn's problems list, highlighting the concerns which are likely to be relevant for a hearing plan of care. It also includes treatment procedures performed on the newborn during the birth encounter, highlighting the procedures which are likely to be relevant for a hearing plan of care. |
| **Document Code** | "34817-7" Hearing Screening Evaluation and Management Note (CodeSystem: LOINC 2.16.840.1.113883.6.1) |

| Template Type | Template Title | Opt and Card | templateId |
|---|---|---|---|
| Document | Hearing Plan Of Care Document (V2) | | 1.3.6.1.4.1.19376.1.7.3.1.1.26.2.1:2016-09-01 |

 

| Template Type | Template Title | Opt and Card | templateId |
|---|---|---|---|
| Header | Hearing Plan Of Care Header (V2) | [1..1] | 1.3.6.1.4.1.19376.1.7.3.1.1.26.2.2.1:2016-09-01 |
| | recordTarget | [1..1] | n/a |
| | author | [1..*] | n/a |
| | custodian | [1..1] | n/a |
| | documentationOf/serviceEvent | [1..1] | n/a |
| | componentOf/encompassingEncounter | [1..1] | n/a |
| Section | Hearing Plan of Care Section (V2) | [1..1] | 1.3.6.1.4.1.19376.1.7.3.1.1.26.2.3.1:2016-09-01 |
| Section | Hearing Screening Section (V2) | [1..1] | 1.3.6.1.4.1.19376.1.7.3.1.1.26.2.3.2:2016-09-01 |
| Section | Risk Indicators for Hearing Loss Section (V2) | [0..1] | 1.3.6.1.4.1.19376.1.7.3.1.1.26.2.3.3:2016-09-01 |
| Section | Problems Section (V2) | [0..1] | 1.3.6.1.4.1.19376.1.7.3.1.1.26.2.3.4:2016-09-01 |
| Section | HPoC Problems Sub-Section (V2) | [0..1] | 1.3.6.1.4.1.19376.1.7.3.1.1.26.2.3.5:2016-09-01 |
| Section | Procedures Section (V2) | [0..1] | 1.3.6.1.4.1.19376.1.7.3.1.1.26.2.3.6:2016-09-01 |
| Section | HPoC Procedures Sub-Section (V2) | [0..1] | 1.3.6.1.4.1.19376.1.7.3.1.1.26.2.3.6:2016-09-01 |

### Template Design Relationships

This template is an adaptation of the IHE UV Realm HPoC Document template. It references section templates which have been adapted for the US Realm. These adapted section templates include entry templates which have been adapted for the US Realm. Machine readable entries associated with US Realm templates have been modified to use vocabulary constraints established for the Hearing Plan of Care in the US Realm.

### Template Purpose

This document records information for the hearing plan of care for a newborn. It includes hearing plan of care instructions and planned care activities. It includes the results of the hearing screening provided prior to discharge as well as information about hearing risk indicators which may be available. It includes the newborn's problems list, highlighting the concerns which are likely to be relevant for a hearing plan of care. It also includes treatment procedures performed on the newborn during the birth encounter, highlighting the procedures which are likely to be relevant for a hearing plan of care.

1. **SHALL** contain exactly one [1..1] **realmCode**="US".

 

2. **SHALL** contain exactly one [1..1] **typeId**.
    a. This typeId **SHALL** contain exactly one [1..1] **@root**="2.16.840.1.113883.1.3".
    b. This typeId **SHALL** contain exactly one [1..1] **@extension**="POCD_HD000040".
3. **SHALL** contain exactly one [1..1] **templateId** such that it
    a. contains exactly one [1..1] **@root**="1.3.6.1.4.1.19376.1.7.3.1.1.26.2.1".
    b. **SHALL** contain exactly one [1..1] **@extension**="2016-09-01"
4. **SHALL** contain exactly one [1..1] **templateId** such that it
    a. contains exactly one [1..1] **@root**="1.3.6.1.4.1.19376.1.7.3.1.1.26.2.2.1".
    b. **SHALL** contain exactly one [1..1] **@extension**="2016-09-01"
5. **SHALL** contain exactly one [1..1] **id** such that it
    a. is a globally unique identifier for the document.
6. **SHALL** contain exactly one [1..1] **code** such that it
    a. contains exactly one [1..1] **@code**="34817-7" Hearing Screening Evaluation and Management Note (CodeSystem: LOINC 2.16.840.1.113883.6.1) **STATIC**
7. **SHALL** contain exactly one [1..1] **title** such that it
    a. can either be a locally defined name or the display name corresponding to clinicalDocument/code.
8. **SHALL** contain exactly one [1..1] **effectiveTime** such that it
    a. is conformant US Realm Date and Time (DTM.US.FIELDED) (2.16.840.1.113883.10.20.22.5.4).
9. **SHALL** contain exactly one [1..1] **confidentialityCode**, such that it
    a. is selected from ValueSet HL7 BasicConfidentialityKind 2.16.840.1.113883.1.11.16926 **CNE, STATIC** 2010-04-21.
10. **SHALL** contain exactly one [1..1] **languageCode**, such that it
    a. is selected from ValueSet Language 2.16.840.1.113883.1.11.11526 **CNE, DYNAMIC**.
11. **MAY** contain zero or one [0..1] **setId** such that
    a. **CONDITIONAL** if setId is present versionNumber **SHALL** be present.
12. **MAY** contain zero or one [0..1] **versionNumber** such that
    a. **CONDITIONAL** if versionNumber is present setId **SHALL** be present.

Implementer Guidance:

The clinicalDocument.effectiveTime element should indicate that the Hearing Plan of Care was created after the time of the event designated to trigger its creation. In some cases, policy that defines when the HPoC should be created may include a time-offset from the triggering event.

 

### 6.3.2.H1 Hearing Plan Of Care Header (V2)

`[ClinicalDocument: templateId 1.3.6.1.4.1.19376.1.7.3.1.1.26.2.2.1:2016-09-01(open)]`

**Template Design Relationships**

This template is an adaptation of the header template adopted by IHE for use in the UV Realm. Machine readable entries associated with US Realm templates have been modified to use vocabulary constraints established for the Hearing Plan of Care in the US Realm.

This template design has been adapted based on the design for the HL7 Consolidated CDA R1.1 US Realm Header template.

**Template Purpose**

This template constrains only the recordTarget, author, custodian, documentationOf/serviceEvent and componentOf/encompassingEncounter elements of the header. It adds constraints for the recordTarget.guardian role and the author (when it is a system). It also adds vocabulary constraints for the serviceEvent to encode the service of creating a hearing plan of care and encompassingEncounter to encode the type of encounter.

### 6.3.2.H1.1 RecordTarget

1. **SHALL** contain exactly one [1..1] **recordTarget**.
    a. Such recordTargets **SHALL** contain exactly one [1..1] **patientRole**.
        i. This patientRole **SHALL** contain at least one [1..*] **id**.
        ii. This patientRole **SHALL** contain at least one [1..*] **addr**.
            1. The content of addr **SHALL** be a conformant US Realm Address (AD.US.FIELDED) (2.16.840.1.113883.10.20.22.5.2).
        iii. This patientRole **SHALL** contain at least one [1..*] **telecom**.
            1. Such telecoms **SHOULD** contain zero or one [0..1] **@use**, which **SHALL** be selected from ValueSet `Telecom Use (US Realm Header) 2.16.840.1.113883.11.20.9.20` **DYNAMIC**.
        iv. This patientRole **SHALL** contain exactly one [1..1] **patient**.
            1. This patient **SHALL** contain exactly one [1..1] **name**.
                a. The content of name **SHALL** be a conformant US Realm Patient Name (PTN.US.FIELDED) (2.16.840.1.113883.10.20.22.5.1).
            2. This patient **SHALL** contain exactly one [1..1] **administrativeGenderCode**, which **SHALL** be selected from ValueSet `Administrative Gender (HL7 V3) 2.16.840.1.113883.1.11.1` **DYNAMIC**.
            3. This patient **SHALL** contain exactly one [1..1] **birthTime**.
                a. **SHALL** be precise to year.
                b. **SHALL** be precise to day.

 

4. This patient **MAY** contain zero or one [0..1] **sdtc:deceasedInd**, where the @value **SHALL** be true if the recordTarget has died.
5. This patient **MAY** contain zero or one [0..1] **sdtc:decceasedTime**, where the @value **SHALL** record the date and time when the recordTarget died.
6. This patient **MAY** contain zero or one [0..1] **sdtc:mulitpleBirthInd**, where the @value **SHALL** be true if the recordTarget was part of a multiple birth.
7. This patient **MAY** contain zero or one [0..1] **sdtc:mulitpleBirthOrderNumber**, where the @value **SHALL** be an integer that represents their birth order position.
8. This patient **MAY** contain zero or one [0..1] **religiousAffiliationCode**, which **SHALL** be selected from ValueSet `Religious Affiliation Value Set 2.16.840.1.113883.1.11.19185` **DYNAMIC**.
9. This patient **MAY** contain zero or one [0..1] **raceCode**, which **SHALL** be selected from ValueSet `Race Value Set 2.16.840.1.113883.1.11.14914` **DYNAMIC**. Where the ethnicGroupCode holds the person's primary race.
10. This patient **MAY** contain zero or many [0..*] sdtc:**raceCode**, which **SHALL** be selected from ValueSet `Race Value Set 2.16.840.1.113883.1.11.14914` **DYNAMIC**. Where the ethnicGroupCode holds the person's additional races.
11. This patient **MAY** contain zero or one [0..1] **ethnicGroupCode**, which **SHALL** be selected from ValueSet `EthnicityGroup 2.16.840.1.114222.4.11.837` **DYNAMIC**. Where the ethnicGroupCode holds the person's primary ethnic groups.
12. This patient **MAY** contain zero or many [0..*] sdtc:**ethnicGroupCode**, which **SHALL** be selected from ValueSet `EthnicityGroup 2.16.840.1.114222.4.11.837` **DYNAMIC**. Where the sdtc:ethnicGroupCode holds information about additional ethnic groups.
13. This patient **SHOULD** contain one or more [1..*] **guardian**.
    a. The guardian, if present, **SHOULD** contain zero or one [0..1] **code**, which **SHALL** be selected from ValueSet `PersonalandLegalRelationshipRoleType 2.16.840.1.113883.11.20.12.1` **DYNAMIC**.
    b. The guardian, if present, **SHOULD** contain zero or more [0..*] **addr**.
        i. The content of addr **SHALL** be a conformant US Realm Address (AD.US.FIELDED) (2.16.840.1.113883.10.20.22.5.2).
    c. The guardian, if present, **MAY** contain zero or more [0..*] **telecom**.

 

i. The telecom, if present, **SHOULD** contain zero or one [0..1] **@use**, which **SHALL** be selected from ValueSet `Telecom Use (US Realm Header) 2.16.840.1.113883.11.20.9.20` **DYNAMIC**.

d. The guardian, if present, **SHALL** contain exactly one [1..1] **guardianPerson**.

i. This guardianPerson **SHALL** contain at least one [1..*] **name**.

1. The content of name **SHALL** be a conformant US Realm Person Name (PN.US.FIELDED) (2.16.840.1.113883.10.20.22.5.1.1).

ii. This guardianPerson **MAY** contain zero or one [0..1] **birthplace**.

1. The birthplace, if present, **SHALL** contain exactly one [1..1] **place**.

1. This place **SHALL** contain exactly one [1..1] **addr**.

2. This addr **SHOULD** contain zero or one [0..1] **country**, which **SHALL** be selected from ValueSet `CountryValueSet 2.16.840.1.113883.3.88.12.80.63` **DYNAMIC**.

3. This addr **MAY** contain zero or one [0..1] **postalCode**, which **SHALL** be selected from ValueSet `PostalCodeValueSet 2.16.840.1.113883.3.88.12.80.2` **DYNAMIC**.

4. If country is US, this addr **SHALL** contain exactly one [1..1] state, which **SHALL** be selected from ValueSet 2.16.840.1.113883.3.88.12.80.1 StateValueSet **DYNAMIC**.

14. This patient **MAY** contain zero or one [0..1] **birthplace**.

a. The birthplace, if present, **SHALL** contain exactly one [1..1] **place**.

i. This place **SHALL** contain exactly one [1..1] **addr**.

1. This addr **SHOULD** contain zero or one [0..1] **country**, which **SHALL** be selected from

 

ValueSet `CountryValueSet 2.16.840.1.113883.3.88.12.80.63` **DYNAMIC**.

2. This addr **MAY** contain zero or one [0..1] **postalCode**, which **SHALL** be selected from ValueSet `PostalCodeValueSet 2.16.840.1.113883.3.88.12.80.2` **DYNAMIC**.
3. If country is US, this addr **SHALL** contain exactly one [1..1] state, which **SHALL** be selected from ValueSet 2.16.840.1.113883.3.88.12.80.1 StateValueSet **DYNAMIC**.

15. This patient **SHOULD** contain zero or more [0..*] **languageCommunication**.
    a. The languageCommunication, if present, **SHALL** contain exactly one [1..1] **languageCode**, which **SHALL** be selected from ValueSet `Language 2.16.840.1.113883.1.11.11526` **DYNAMIC**.
    b. The languageCommunication, if present, **MAY** contain zero or one [0..1] **modeCode**, which **SHALL** be selected from ValueSet `LanguageAbilityMode Value Set 2.16.840.1.113883.1.11.12249` **DYNAMIC**.
    c. The languageCommunication, if present, **SHOULD** contain zero or one [0..1] **proficiencyLevelCode**, which **SHALL** be selected from ValueSet `LanguageAbilityProficiency 2.16.840.1.113883.1.11.12199` **DYNAMIC**.
    d. The languageCommunication, if present, **MAY** contain zero or one [0..1] **preferenceInd**.

### 6.3.2.H1.2 author

1. **SHALL** contain at least one [1..*] **author**.
    a. Such authors **SHALL** contain exactly one [1..1] **time**.
        i. The content **SHALL** be a conformant US Realm Date and Time (DTM.US.FIELDED) (2.16.840.1.113883.10.20.22.5.4).
    b. Such authors **SHALL** contain exactly one [1..1] **assignedAuthor**.
        i. This assignedAuthor **SHALL** contain exactly one [1..1] **id** such that it
            1. **SHALL** contain exactly one [1..1] **@root**.
                a. If this assignedAuthor is an assignedPerson the assignedAuthor id **SHALL** contain exactly one [1..1] @root="2.16.840.1.113883.4.6" National Provider Identifier.
        ii. This assignedAuthor **SHOULD** contain zero or one [0..1] **code**.
            1. The code, if present, **SHALL** contain exactly one [1..1] **@code**, which **SHOULD** be selected from ValueSet `Healthcare`

 

Provider Taxonomy (HIPAA) 2.16.840.1.114222.4.11.1066 **DYNAMIC**.

iii. This assignedAuthor **SHALL** contain at least one [1..*] **addr**.
    1. The content **SHALL** be a conformant US Realm Address (AD.US.FIELDED) (2.16.840.1.113883.10.20.22.5.2).

iv. This assignedAuthor **SHALL** contain at least one [1..*] **telecom**.
    1. Such telecoms **SHOULD** contain zero or one [0..1] **@use**, which **SHALL** be selected from ValueSet Telecom Use (US Realm Header) 2.16.840.1.113883.11.20.9.20 **DYNAMIC**.

v. This assignedAuthor **SHOULD** contain zero or one [0..1] **assignedPerson**.
    1. The assignedPerson, if present, **SHALL** contain at least one [1..*] **name**.
        a. The content **SHALL** be a conformant US Realm Person Name (PN.US.FIELDED) (2.16.840.1.113883.10.20.22.5.1.1).

vi. This assignedAuthor **SHOULD** contain zero or one [0..1] **assignedAuthoringDevice**.
    1. The assignedAuthoringDevice, if present, **SHALL** contain exactly one [1..1] **manufacturerModelName**.
    2. The assignedAuthoringDevice, if present, **SHALL** contain exactly one [1..1] **softwareName**.

vii. There **SHALL** be exactly one assignedAuthor/assignedPerson or exactly one assignedAuthor/assignedAuthoringDevice, or exactly one of each.

Note: Correct representation of maiden name uses the following patterns:

```
<name use="L">
  <given>Mary</given>
  <family qualifier="SP">Jones</family>
</name>
<name use="SRCH">
  <given>Mary</given>
  <family qualifier="BR">Smith</family>
</name>
```

 

The use attribute of the name element is not always provided, but is included in this example. The value "L" indicates "Legal Name" and the value "SRCH" indicates this is a name use for searching.

The qualifier attribute can optionally be used with the name part sub-elements of name. In this example it is used with the family element. The value "SP" indicates "Spouse's family name" and the value "BR" indicates name given at birth.

### 6.3.2.H1.3 custodian

1. **SHALL** contain exactly one [1..1] **custodian**.
    a. This custodian **SHALL** contain exactly one [1..1] **assignedCustodian**.
        i. This assignedCustodian **SHALL** contain exactly one [1..1] **representedCustodianOrganization**.
            1. This representedCustodianOrganization **SHALL** contain at least one [1..*] **id**.
                a. Such ids **SHOULD** contain zero or one [0..1] **@root**="2.16.840.1.113883.4.6" National Provider Identifier.
            2. This representedCustodianOrganization **SHALL** contain exactly one [1..1] **name**.
            3. This representedCustodianOrganization **SHALL** contain exactly one [1..1] **telecom**.
                a. This telecom **SHOULD** contain zero or one [0..1] **@use**, which **SHALL** be selected from ValueSet Telecom Use (US Realm Header) 2.16.840.1.113883.11.20.9.20 **DYNAMIC**.
            4. This representedCustodianOrganization **SHALL** contain exactly one [1..1] **addr**.
                a. The content of addr **SHALL** be a conformant US Realm Address (AD.US.FIELDED) (2.16.840.1.113883.10.20.22.5.2).

### 6.3.2.H1.10 ComponentOf/EncompassingEncounter

1. **MAY** contain zero or one [0..1] **componentOf**.
    a. The componentOf, if present, **SHALL** contain exactly one [1..1] **encompassingEncounter**.
        i. This encompassingEncounter **SHALL** contain at least one [1..*] **id**.
        ii. This encompassingEncounter **SHOULD** contain at least one [1..*] **code**.
            1. The code, if present, **SHALL** be selected from Value Set VS_HPoCEncounterType (1.3.6.1.4.1.19376.1.7.3.1.1.26.2.5.1) **STATIC**.

 

iii. This encompassingEncounter **SHALL** contain exactly one [1..1] **effectiveTime**.
iv. This encompassingEncounter **SHALL** contain exactly one [1..1] **location**.
1. This location **SHALL** contain exactly one [1..1] **healthCareFacility**.
a. This healthCareFacility **SHALL** contain exactly one [1..1] **serviceProviderOrganization**.
b. This healthCareFacility **SHALL** contain exactly one [1..1] **location**.

Implementer Guidance:

The code element of the encompassingEncounter records the type of encounter. The vocabulary binding in this template constrains the set of codes used to represent a birth encounter. This value set may be created from concepts in the ICD code system for the US Realm template.

### 6.3.2.H1.11 DocumentationOf/ServiceEvent

1. **MAY** contain zero or more [0..*] **documentationOf**.
a. The documentationOf, if present, **SHALL** contain exactly one [1..1] **serviceEvent**.
i. This serviceEvent **SHOULD** contain exactly one [1..1] **code**.
1. This code **SHALL** be selected from Value Set `VS_HPoCServiceEvents (1.3.6.1.4.1.19376.1.7.3.1.1.26.2.5.2)` **STATIC**.
ii. This serviceEvent **SHALL** contain exactly one [1..1] **effectiveTime**.
1. This effectiveTime **SHALL** contain exactly one [1..1] **low**.
iii. This serviceEvent **SHOULD** contain zero or more [0..*] **performer**.
1. The performer, if present, **SHALL** contain exactly one [1..1] **@typeCode** (CodeSystem: `HL7ParticipationType 2.16.840.1.113883.5.90` **STATIC**).
a. The performer participant represents clinicians who actually and principally carry out the serviceEvent. In a transfer of care this represents the healthcare providers involved in the current or pertinent historical care of the patient. Preferably, the patient's key healthcare care team members would be listed, particularly their primary physician and any active consulting physicians, therapists, and counselors.
2. The performer, if present, **MAY** contain zero or one [0..1] **functionCode**.
a. The functionCode, if present, **SHOULD** contain zero or one [0..1] **@codeSystem**, which **SHOULD** be selected

 

from CodeSystem `participationFunction (2.16.840.1.113883.5.88)` **STATIC**.

3. The performer, if present, **SHALL** contain exactly one [1..1] **assignedEntity**.
    a. This assignedEntity **SHALL** contain at least one [1..*] **id**.
        i. Such ids **SHOULD** contain zero or one [0..1] **@root**="2.16.840.1.113883.4.6" National Provider Identifier.
    b. This assignedEntity **SHOULD** contain zero or one [0..1] **code**.
        i. The code, if present, **SHALL** contain exactly one [1..1] **@code**, which **SHOULD** be selected from CodeSystem `NUCCProviderTaxonomy (2.16.840.1.113883.6.101)` **STATIC**.

Implementer Guidance:

One of the documentationOf elements should record the service event of creating the Hearing Plan of Care.

Additionally, other documentationOf elements optionally can record the derived screening outcome for each ear.

When the Hearing Plan of Care is developed by a system, Implementers will need to determine who should be listed as the performer of the service event associated with creation of the hearing plan of care. This may be someone who is responsible for reviewing the generated plan before it is completed. This header template implementation detail is out of scope for the EHDI Profile.

### 8.4.1 Document Template Structured Body

1. The component/structuredBody **SHALL** conform to the section constraints below.
    a. **SHALL** contain exactly one [1..1] Hearing Plan of Care Section (V2)(`templateId: 1.3.6.1.4.1.19376.1.7.3.1.1.26.2.3.1:2016-09-01`).
    b. **SHALL** contain exactly one [1..1] Hearing Screening Section (V2) (`templateId: 1.3.6.1.4.1.19376.1.7.3.1.1.26.2.3.2`:2016-09-01).
    c. **MAY** contain zero or one [0..1] Risk Indicators for Hearing Loss (V2)(`templateId: 1.3.6.1.4.1.19376.1.7.3.1.1.26.2.3.3:2015-09-01`).
    d. **SHOULD** contain zero or one [0..1] Problems Section (V2)(`templateId: 1.3.6.1.4.1.19376.1.7.3.1.1.26.2.3.4:2016-09-01`).
    e. **SHOULD** contain zero or one [0..1] Procedure Section (V2) (`templateId: 1.3.6.1.4.1.19376.1.7.3.1.1.26.2.3.6`:2016-09-01).

 

## 8.5 Section Templates

### 6.3.3.S1 Hearing Plan of Care – Section (V2)

`[Section: templateId 1.3.6.1.4.1.19376.1.7.3.1.1.26.2.3.1:2016-09-01(open)]`

**Template Design Relationships**

This template is an adaptation of the IHE Universal Hearing Plan of Care section template. Machine readable entries associated with this template have been modified to use US Realm vocabulary constraints established for this purpose.

This template adapts the design of the C-CDA R2.1 Plan of Care section template (2.16.840.1.113883.10.20.22.2.10) by narrowing the purpose to address only the hearing plan of care.

**Template Purpose**

The Hearing Plan of Care section contains data that defines pending orders, planned interventions (treatments (procedures)), scheduled appointments (visits (encounters)), planned testing services (observations), intended actions (act) for the patient or family members to perform, and instructions which are related to the hearing plan of care. It is limited to prospective, unfulfilled, or incomplete orders and requests only, which are indicated by the @moodCode of the entries within this section. All active, incomplete, or pending orders, appointments, referrals, procedures, services, or any other pending event of clinical significance to the current care of the patient should be listed unless constrained due to privacy issues. The plan may also contain information about ongoing care of the patient and clinical reminders. Clinical reminders are placed here to provide prompts for disease prevention and management, patient safety, and health-care quality improvements, including widely accepted performance measures. The plan may also indicate that patient education will be provided (act).

1. **MAY** contain zero or one [0..1] **templateId** such that it
    a. **SHALL** contain exactly one [1..1] **@root**="2.16.840.1.113883.10.20.22.2.10".
2. **SHALL** contain exactly one [1..1] **templateId** such that it
    a. **SHALL** contain exactly one [1..1] **@root**="1.3.6.1.4.1.19376.1.7.3.1.1.26.2.3.1".
    b. **SHALL** contain exactly one [1..1] **@extension**="2016-09-01"
3. **SHALL** contain exactly one [1..1] **code** such that it
    a. contain exactly one [1..1] **@code**="18776-5" Plan of Care for Hearing (CodeSystem: LOINC 2.16.840.1.113883.6.1 **STATIC**).
4. **SHALL** contain exactly one [1..1] **title**.
5. **SHALL** contain exactly one [1..1] **text**.
6. **MAY** contain zero or more [0..*] **entry** such that each
    a. contain exactly one [1..1] HPoC Activity Act (templateId: 1.3.6.1.4.1.19376.1.7.3.1.1.26.2.4.2).
7. **MAY** contain zero or more [0..*] **entry** such that each

 

a. contain exactly one [1..1] HPoC Activity Encounter (`templateId: 1.3.6.1.4.1.19376.1.7.3.1.1.26.2.4.3`).

8. **MAY** contain zero or more [0..*] **entry** such that each
   a. contain exactly one [1..1] HPOC Activity Observation (`templateId: 1.3.6.1.4.1.19376.1.7.3.1.1.26.2.4.4`).
9. **MAY** contain zero or more [0..*] **entry** such that each
   a. contain exactly one [1..1] HPoC Activity Procedure (`templateId: 1.3.6.1.4.1.19376.1.7.3.1.1.26.2.4.5`).
10. **MAY** contain zero or more [0..*] **entry** such that each
    a. contain exactly one [1..1] HPoC Activity SubstanceAdministration (V2)(`templateId: 1.3.6.1.4.1.19376.1.7.3.1.1.26.2.4.6:2016-09-01`).
11. **MAY** contain zero or more [0..*] **entry** such that each
    a. contain exactly one [1..1] HPoC Activity Non-Medicinal Supply (V2) (`templateId: 1.3.6.1.4.1.19376.1.7.3.1.1.26.2.4.7:2016-09-01`).
12. **MAY** contain zero or more [0..*] **entry** such that each
    a. contain exactly one [1..1] HPoC Instructions (`templateId: 1.3.6.1.4.1.19376.1.7.3.1.1.26.2.4.1`).

Implementer Guidance:

When no information exists to be exchanged in a defined section, the section element may be encoded with a nullFlavor of "NI". (See the CDA Examples Task Force wiki page for examples, General Patterns. http://wiki.hl7.org/index.php?title=CDA_Example_Task_Force )

### 6.3.3.S2 Hearing Screening – Section (V2)

`[Section: templateId 1.3.6.1.4.1.19376.1.7.3.1.1.26.2.3.2:2016-09-01(open)]`

**Template Design Relationships**

This template adapts the IHE UV Realm Hearing Screening section template. Machine readable entries associated with this template have been modified to use US Realm vocabulary constraints established for this purpose.

This template adapts the C-CDA R2.1 Results section template (2.16.840.1.113883.10.20.22.2.3.1) narrowing the purpose to address only hearing screening results. A more complex organizer structure is used to record hearing screening results.

**Template Purpose**

The Hearing Screening section includes a screening outcome observation for each ear, which summarizes the screening results gathered for each ear. It also documents the individual screening result observations generated by the screening device each time an ear is tested.

The methodologies for summarizing screening result observations into a single screening outcome observation are jurisdictionally defined and are not specified or constrained within this template.

1. **SHALL** contain exactly one [1..1] **templateId** such that it

 

a. contain exactly one [1..1] **@root**="1.3.6.1.4.1.19376.1.7.3.1.1.26.2.3.2".

2. **SHALL** contain exactly one [1..1] **code** such that it
   a. contain exactly one [1..1] **@code**="30954-2-HPOC" Relevant diagnostic tests and/or laboratory data for Hearing Screening (CodeSystem: LOINC 2.16.840.1.113883.6.1 **STATIC**).
3. **SHALL** contain exactly one [1..1] **title**.
4. **SHALL** contain exactly one [1..1] **text**.
5. **SHALL** contain exactly one [1..1] **entry** such that it
   a. contain exactly one [1..1] Hearing Screening Organizer (V2)(templateId: 1.3.6.1.4.1.19376.1.7.3.1.1.26.2.4.8:2016-09-01).

Implementer Guidance:

Methodologies for summarizing hearing screening result observations into a single hearing screening outcome for an ear are jurisdictionally defined. Systems implementing this profile as a Content Creator are required to process hearing screening results based upon a methodology which is outside the scope of this profile.

When no information exists to be exchanged in a defined section, the section element may be encoded with a nullFlavor of "NI". (See the CDA Examples Task Force wiki page for examples, General Patterns.)

This nullFlavor encoding should be used when no information has been provided about Newborn Hearing Screening being performed or not performed for medical reasons before the newborn is discharged from the birth encounter. This profiles assumes the workflow at a birthing facility include sending information to positively assert that a baby who is not screened for medical reasons. This does not constitute a "no information" screening section and nullFlavor of "NI" does not apply.

### 6.3.3.S3 Risk Indicators for Hearing Loss – Section (V2)

[Section: templateId 1.3.6.1.4.1.19376.1.7.3.1.1.26.2.3.3:2016-09-01(open)]

**Template Design Relationships**

This template is an adaptation of the IHE UV Realm Risk Indicators for Hearing Loss section template. Machine readable entries associated with this template have been modified to use US Realm vocabulary constraints established for this purpose.

The design is adapted from templates being developed for C-CDA R2.0 which are intended to track identified risks.

**Template Purpose**

The Risk Indicators for Hearing Loss section indicates if specific risks relevant to hearing loss are present or not. Use of null flavors, to encode information indicating that an assessment of the risk was not performed or to record that no information is currently available in the system, is out of scope for this template. (Alternate representations using a nullFlavor section or an alternate entry patterns for nullFlavor expressions will be considered for a future version.)

 

1. **SHALL** contain exactly one [1..1] **templateId** such that it
   a. contain exactly one [1..1] **@root**="1.3.6.1.4.1.19376.1.7.3.1.1.26.2.3.3".
   b. **SHALL** contain exactly one [1..1] **@extension**="2016-09-01"
2. **SHALL** contain exactly one [1..1] **code** (CONF:15433) such that it
   a. contain exactly one [1..1] **@code**="58232-0"Hearing Loss Risk Indicators (CodeSystem: LOINC 2.16.840.1.113883.6.1) **STATIC**.
3. **SHALL** contain exactly one [1..1] **title**.
4. **SHALL** contain exactly one [1..1] **text**.
5. **SHOULD** contain zero or more [0..*] **entry** such that each
   a. contain exactly one [1..1] Risk Indicator for Hearing Loss Observation (V2)(templateId: 1.3.6.1.4.1.19376.1.7.3.1.1.26.2.4.15:2016-09-01).

Implementer Guidance:

When no information exists to be exchanged in a defined section, the section element may be encoded with a nullFlavor of "NI". (See the CDA Examples Task Force wiki page for examples, General Patterns.)

### 6.3.3.S4 Problems – Section (V2)

[Section: templateId 1.3.6.1.4.1.19376.1.7.3.1.1.26.2.3.4:2016-09-01(open)]

**Template Design Relationships**

This template is an adaptation of the IHE UV Realm Problems section template. Machine readable entries associated with this template have been modified to use US Realm vocabulary constraints established for this purpose.

This template adapts the design of the C-CDA R2.1 Problem section template (2.16.840.1.113883.10.20.22.2.5.1) the same entries are used, but an additional optional sub-section is added which can be used to indicate concerns which may be relevant for hearing screening.

**Template Purpose**

This section lists and describes all clinical problems at the time the document is generated. At a minimum, all current and historical problems should be listed.

1. **MAY** contain zero or one [0..1] **templateId** such that it
   a. contain exactly one [1..1] **@root**="2.16.840.1.113883.10.20.22.2.5.1".
   b. **SHALL** contain exactly one [1..1] **@extension**="2015-08-01"
2. **SHALL** contain exactly one [1..1] **templateId** such that it
   a. contain exactly one [1..1] **@root**="1.3.6.1.4.1.19376.1.7.3.1.1.26.2.3.4".
   b. **SHALL** contain exactly one [1..1] **@extension**="2016-09-01"
3. **SHALL** contain exactly one [1..1] **code** such that it
   a. contain exactly one [1..1] **@code**="11450-4" Problem List (CodeSystem: LOINC 2.16.840.1.113883.6.1) **STATIC**.
4. **SHALL** contain exactly one [1..1] **title**.

 

5. **SHALL** contain exactly one [1..1] **text**.
6. **SHALL** contain at least one [1..*] **entry** such that each
    a. contain exactly one [1..1] **Problem Concern** (templateId: 1.3.6.1.4.1.19376.1.7.3.1.1.26.2.4.16).
7. **MAY** contain zero or one [0..1] **component** such that it
    a. contain exactly one [1..1] **HPoC Problems – Sub-Section (V2)** (templateId: 1.3.6.1.4.1.19376.1.7.3.1.1.26.2.3.5:2016-09-01).

Implementer Guidance:

When no information exists to be exchanged in a defined section, the section element may be encoded with a nullFlavor of "NI". (See the CDA Examples Task Force wiki page for examples, General Patterns.)

### 6.3.3.S5 HPoC Problems – Sub-Section (V2)

[Section: templateId 1.3.6.1.4.1.19376.1.7.3.1.1.26.2.3.5:2016-09-01(open)]

**Template Design Relationships**

This template is an adaptation of the IHE US Realm Problems section template. The section.code element is constrained to a LOINC code that is a specialization of concept established for the Problem List in the LOINC ontology. The entry components use a more tightly constrained. They are limited to only those concerns including a problem observation that comes from a set of problems defined to be relevant to hearing screening. The entry is only an id pointer to concerns within the problem list which match the defined inclusion criteria.

**Template Purpose**

This sub-section gathers information within the Problem section for certain clinical problems which are identified as relevant to hearing care planning. Current and historical problems are identified as "pertinent" through the use of a value set established to identify problem observations considered relevant for hearing care planning. Concerns from the Problem section which include a problem observation that matches one of the concepts in the established value set are gathered within this specialized sub-section in order to be readily available for more efficient review or processing when the hearing plan of care is accessed.

1. **SHALL** contain exactly one [1..1] **templateId** such that it
    a. contain exactly one [1..1] **@root**="1.3.6.1.4.1.19376.1.7.3.1.1.26.2.3.5".
    b. **SHALL** contain exactly one [1..1] **@extension**="2016-09-01"
2. **SHALL** contain exactly one [1..1] **code** such that it
    a. contain exactly one [1..1] **@code**="11450-4-HPOC" HPOC Problem List (CodeSystem: LOINC 2.16.840.1.113883.6.1) **STATIC**.
3. **SHALL** contain exactly one [1..1] **title**.
4. **SHALL** contain exactly one [1..1] **text**.
5. **SHALL** contain at least one [1..*] **entry** such that they

 

a. contain exactly one [1..1] **HPoC Problem Concern (V2)** (templateId: 1.3.6.1.4.1.19376.1.7.3.1.1.26.2.4.17:2016-09-01).

Implementer Guidance:

When no information exists to be exchanged in a defined section, the section element may be encoded with a nullFlavor of "NI". (See the CDA Examples Task Force wiki page for examples, General Patterns.)

An HPoC Problem Concern does not repeat the full content of a Problem Concern. It "points to" a Problem Concern in the parent section using the associated id of the Problem Concern listed there.

### 6.3.3.S6 Procedures – Section (V2)

[Section: templateId 1.3.6.1.4.1.19376.1.7.3.1.1.26.2.3.6:2016-09-01(open)]

**Template Design Relationships**

This template is an adaptation of the IHE Universal Procedures section template. Machine readable entries associated with this template have been modified to use US Realm vocabulary constraints established for this purpose.

This template is an adaption of the C-CDA R2.1 Procedures section template (2.16.840.1.113883.10.20.22.2.7.1). It does not utilize the Procedure Activity Observation as direct entry of the section and permits use of that template within the context of a Procedure Activity Procedure or Procedure Activity Act.

**Template Purpose**

This section defines all interventional, surgical, or therapeutic procedures or treatments pertinent to the patient historically at the time the document is generated. It does not include diagnostic procedures. Diagnostic and screening procedures are recorded in a Result Section. Procedures recorded in this section are encoded using one of two machine readable entry templates. A Procedure Activity Procedure entry is used to record procedures that alter the physical condition of a patient (Splenectomy). A Procedure Activity Act entry is for all other types of procedures (dressing change). If a procedure produces new information about a patient, that information is recorded using the Procedure Activity Observation template as an entry relationship to the procedure or act entry with which the observation is associated. The Activity Observation template is only used as a subordinate act to the procedure of act entries associated with this section.

1. **SHALL** contain exactly one [1..1] **templateId** such that it
   a. contain exactly one [1..1] **@root**="1.3.6.1.4.1.19376.1.7.3.1.1.26.2.3.6".
   b. **SHALL** contain exactly one [1..1] **@extension**="2016-09-01"
2. **SHALL** contain exactly one [1..1] **code** such that it
   a. contain exactly one [1..1] **@code**="47519-4" History of Procedures (CodeSystem: LOINC 2.16.840.1.113883.6.1 **STATIC**).
3. **SHALL** contain exactly one [1..1] **title**.

 

4. **SHALL** contain exactly one [1..1] **text**.
5. **MAY** contain zero or more [0..*] **entry** such that it
    a. contain exactly one [1..1] **Procedure Activity Procedure (V2)** (templateId: 1.3.6.1.4.1.19376.1.7.3.1.1.26.2.4.18:2016-09-01).
6. **MAY** contain zero or more [0..*] **entry** such that it
    a. contain exactly one [1..1] **Procedure Activity Act** (V2)(templateId: 1.3.6.1.4.1.19376.1.7.3.1.1.26.2.4.19:2016-09-01).
7. **MAY** contain zero or one [0..1] **component** such that it
    a. contain exactly one [1..1] **HPoC Relevant Procedures – Sub-Section (V2)**(templateId: 1.3.6.1.4.1.19376.1.7.3.1.1.26.2.3.7:2016-09-01).

Implementer Guidance:

When no information exists to be exchanged in a defined section, the section element may be encoded with a nullFlavor of "NI". (See the CDA Examples Task Force wiki page for examples, General Patterns.)

### 6.3.3.S7 HPoC Relevant Procedures – Sub-Section (V2)

[Section: templateId 1.3.6.1.4.1.19376.1.7.3.1.1.26.2.3.7:2016-09-01(open)]

**Template Design Relationships**

This template is an adaptation of the IHE US Procedures section template. The entry components use a more tightly constrained design. They are limited to only those treatment procedures or treatment acts that come from a value set defined to indicate the type of procedures or acts that are relevant to hearing screening. The entry is only an id pointer to the procedures or acts, from the list of procedures, which match the defined inclusion criteria.

**Template Purpose**

This sub-section gathers information within the Procedures section for certain clinical procedures which are identified as relevant to hearing care planning. Procedures are identified as "pertinent" through the use of a value set established to identify procedure acts and other more general acts considered relevant for hearing care planning. Procedures and acts from the Procedure section which match one of the concepts in the established value sets (one for procedures, another for other acts) are gathered within this specialized sub-section in order to be readily available for more efficient review or processing when the hearing plan of care is accessed.

1. **SHALL** contain exactly one [1..1] **templateId** such that it
    a. contain exactly one [1..1] **@root**="1.3.6.1.4.1.19376.1.7.3.1.1.26.2.3.7".
    b. **SHALL** contain exactly one [1..1] **@extension**="2016-09-01"
2. **SHALL** contain exactly one [1..1] **code** (CONF:15425) such that it
    a. contain exactly one [1..1] **@code**="47519-4-HPOC" HPOC History of Procedures (CodeSystem: LOINC 2.16.840.1.113883.6.1 **STATIC**).
3. **SHALL** contain exactly one [1..1] **title**.
4. **SHALL** contain exactly one [1..1] **text**.
5. **MAY** contain zero or more [0..*] **entry** such that each

 

a. contain exactly one [1..1] HPoC Procedure Activity Procedure (`templateId: 1.3.6.1.4.1.19376.1.7.3.1.1.26.2.4.20`).

6. **MAY** contain zero or more [0..*] **`entry`** such that each
   a. contain exactly one [1..1] HPoC Procedure Activity Act (`templateId: 1.3.6.1.4.1.19376.1.7.3.1.1.26.2.4.21`).

Implementer Guidance:

When no information exists to be exchanged in a defined section, the section element may be encoded with a nullFlavor of "NI". (See the CDA Examples Task Force wiki page for examples, General Patterns.)

An HPoC Procedure Activity Procedure or Procedure Activity Act does not repeat the full content of the entry. It "points to" the entry in the parent section using the associated id of the entry listed there.

## 8.6 Entry Templates

### 6.3.4.E1 HPoC Instructions

`[Act type: templateId 1.3.6.1.4.1.19376.1.7.3.1.1.26.2.4.1(open)]`

**Template Design Relationships**

This template is an adaptation of the IHE UV Realm Instructions template. Machine readable entries associated with this template use US Realm vocabulary constraints established for this purpose.

The design is based on the C-CDA R2.1 Instructions template (2.16.840.1.113883.10.20.22.4.20). A different value set is used to express the type of instructions relevant to a hearing plan of care.

**Template Purpose**

The Instructions template records instructions. The act/code defines the type of instruction. Awareness of the instructions by the patient or care giver can be represented with the generic participant and the participant/awarenessCode.

1. **SHALL** contain exactly one [1..1] **`@classCode`**="ACT" (CodeSystem: `HL7ActClass 2.16.840.1.113883.5.6` **STATIC**).
2. **SHALL** contain exactly one [1..1] **`@moodCode`**="INT" (CodeSystem: `ActMood 2.16.840.1.113883.5.1001` **STATIC**).
3. **SHALL** contain exactly one [1..1] **`templateId`** such that it
   a. contain exactly one [1..1] **`@root`**="1.3.6.1.4.1.19376.1.7.3.1.1.26.2.4.1".
4. **SHALL** contain exactly one [1..1] **`code`** such that it
   a. is selected from ValueSet `VS_HPoCPatientInstructions (1.3.6.1.4.1.19376.1.7.3.1.1.26.2.5.3)` **CWE, DYNAMIC**.
5. **SHALL** contain exactly one [1..1] **`text`** such that
   a. contains exactly one [1..1] **`reference`** such that it

 

i. contains exactly one [1..1] **@value** such that it
1. begins with a '#' and points to its corresponding narrative (using the approach defined in CDA Release 2, Section 4.3.5.1).

6. **SHALL** contain exactly one [1..1] **statusCode** such that it
   a. contains exactly one [1..1] **@code**="completed" Completed (CodeSystem: ActStatus 2.16.840.1.113883.5.14 **STATIC**).
7. **SHALL** contain exactly one [1..1] **effectiveTime** such that it
   a. contain exactly one [1..1] **low**
   b. contain exactly one [1..1] **high**.

### 6.3.4.E2 HPoC Activity Act

[Act type: templateId 1.3.6.1.4.1.19376.1.7.3.1.1.26.2.4.2(open)]

**Template Design Relationships**

This template is a specialization of the IHE UV Realm HPoC Activity Act template. Machine readable entries associated with this template use US Realm vocabulary constraints established for this purpose.

The design is a specialization of the C-CDA R2.1 Plan of Care Activity Act template (2.16.840.1.113883.10.20.22.4.39). A value set is added to express the type of care activities relevant to a hearing plan of care.

**Template Purpose**

This is the generic template for the Plan of Care Activity. This template is used to record actions the patient or patient's family should perform and education that should be received.

1. **SHALL** contain exactly one [1..1] **@classCode**="ACT" (CodeSystem: HL7ActClass 2.16.840.1.113883.5.6 **STATIC**).
2. **SHALL** contain exactly one [1..1] **@moodCode**, such that it
   a. is selected from ValueSet Plan of Care moodCode (Act/Encounter/Procedure) 2.16.840.1.113883.11.20.9.23 **STATIC** 2011-09-30.
3. **MAY** contain zero or one [0..1] **templateId** such that it
   a. contain exactly one [1..1] **@root**="2.16.840.1.113883.10.20.22.4.39".
4. **SHALL** contain exactly one [1..1] **templateId** such that it
   a. contain exactly one [1..1] **@root**="1.3.6.1.4.1.19376.1.7.3.1.1.26.2.4.2".
5. **SHALL** contain at least one [1..*] **id**.
6. **SHALL** contain exactly one [1..1] **code**, such that it
   a. is selected from VS_HPoCActivityAct 1.3.6.1.4.1.19376.1.7.3.1.1.26.2.5.4 **CWE, DYNAMIC**.
8. **SHALL** contain exactly one [1..1] **text** such that

 

a. contains exactly one [1..1] **reference** such that it
   i. contains exactly one [1..1] **@value** such that it
      1. begins with a '#' and points to its corresponding narrative (using the approach defined in CDA Release 2, Section 4.3.5.1).

9. **SHALL** contain exactly one [1..1] **statusCode**.
10. **SHALL** contain exactly one [1..1] **effectiveTime** such that it
    a. contain exactly one [1..1] **low**
    b. contain exactly one [1..1] **high**.

### 6.3.4.E3 HPoC Activity Encounter

`[Encounter: templateId 1.3.6.1.4.1.19376.1.7.3.1.1.26.2.4.3(open)]`

**Template Design Relationships**

This template is a specialization of the IHE UV Realm HPoC Activity Encounter template. Machine readable entries associated with this template use US Realm vocabulary constraints established for this purpose.

The design is based on the C-CDA R2.1 Plan of Care Activity Encounter template (2.16.840.1.113883.10.20.22.4.40). A value set is added to express the type of encounter activities relevant to a hearing plan of care.

**Template Purpose**

This is the template for the Plan of Care Activity Encounter. This template is used to record scheduled appointments with a specific care provider.

1. **SHALL** contain exactly one [1..1] **@classCode**="ENC" (CodeSystem: `HL7ActClass 2.16.840.1.113883.5.6` **STATIC**).
2. **SHALL** contain exactly one [1..1] **@moodCode**, such that it
   a. is selected from ValueSet `Plan of Care moodCode (Act/Encounter/Procedure) 2.16.840.1.113883.11.20.9.23` **STATIC** 2011-09-30.
3. **MAY** contain zero or one [0..1] **templateId** such that it
   a. contain exactly one [1..1] **@root**="2.16.840.1.113883.10.20.22.4.40".
4. **SHALL** contain exactly one [1..1] **templateId** such that it
   a. contain exactly one [1..1] **@root**="1.3.6.1.4.1.19376.1.7.3.1.1.26.2.4.3".
5. **SHALL** contain at least one [1..*] **id**.
6. **SHALL** contain exactly one [1..1] **code**, such that it
   a. is selected from VS_HPoCActivityEncounter `1.3.6.1.4.1.19376.1.7.3.1.1.26.2.5.5` **CWE, DYNAMIC.**
7. **SHALL** contain exactly one [1..1] **text** such that
   a. contains exactly one [1..1] **reference** such that it

 

i. contains exactly one [1..1] **@value** such that it
1. begins with a '#' and points to its corresponding narrative (using the approach defined in CDA Release 2, Section 4.3.5.1).

11. **SHALL** contain exactly one [1..1] **statusCode**.
12. **SHALL** contain exactly one [1..1] **effectiveTime** such that it
    a. contain exactly one [1..1] **low**
    b. contain exactly one [1..1] **high**.

### 6.3.4.E4 HPoC Activity Observation

`[Observation: templateId 1.3.6.1.4.1.19376.1.7.3.1.1.26.2.4.4(open)]`

**Template Design Relationships**

This template is a specialization of the IHE UV Realm HPoC Activity Observation template. Machine readable entries associated with this template use US Realm vocabulary constraints established for this purpose.

The design is based on the C-CDA R2.1 Plan of Care Activity Observation template (2.16.840.1.113883.10.20.22.4.44). A value set is added to express the type of observation activities relevant to a hearing plan of care.

**Template Purpose**

This is the template for the Plan of Care Activity observation. This template is used to record diagnostic tests and screenings which produce results.

1. **SHALL** contain exactly one [1..1] **@classCode**="OBS" (CodeSystem: `HL7ActClass 2.16.840.1.113883.5.6` **STATIC**).
2. **SHALL** contain exactly one [1..1] **@moodCode**, such that it
    a. is selected from ValueSet `Plan of Care moodCode (Observation) 2.16.840.1.113883.11.20.9.25` **STATIC** 2011-09-30.
3. **MAY** contain zero or one [0..1] **templateId** such that it
    a. contain exactly one [1..1] **@root**="2.16.840.1.113883.10.20.22.4.44".
4. **SHALL** contain exactly one [1..1] **templateId** such that it
    a. contain exactly one [1..1] **@root**="1.3.6.1.4.1.19376.1.7.3.1.1.26.2.4.4".
5. **SHALL** contain at least one [1..*] **id**.
6. **SHALL** contain exactly one [1..1] **code**, such that it
    a. is selected from VS_HPoCActivityObservation `1.3.6.1.4.1.19376.1.7.3.1.1.26.2.5.6` **CNE, DYNAMIC**.
7. **SHALL** contain exactly one [1..1] **text** such that
    a. contains exactly one [1..1] **reference** such that it
        i. contains exactly one [1..1] **@value** such that it

 

1. begins with a '#' and points to its corresponding narrative (using the approach defined in CDA Release 2, Section 4.3.5.1).

8. **SHALL** contain exactly one [1..1] **statusCode**.
9. **SHALL** contain exactly one [1..1] **effectiveTime** such that it
   a. contain exactly one [1..1] **low**
   b. contain exactly one [1..1] **high**.

### 6.3.4.E5 HPoC Activity Procedure

`[Procedure: templateId 1.3.6.1.4.1.19376.1.7.3.1.1.26.2.4.5(open)]`

**Template Design Relationships**

This template is a specialization of the IHE UV Realm HPoC Activity Procedure template. Machine readable entries associated with this template use US Realm vocabulary constraints established for this purpose.

The design is a specialization of the C-CDA R2.1 Plan of Care Activity Procedure template (2.16.840.1.113883.10.20.22.4.41). A value set is added to express the type of procedure activities relevant to a hearing plan of care.

**Template Purpose**

This is the template for the Plan of Care Activity procedure. This template is used to record treatment or surgical procedures which produce health outcomes that change a patient's health status or condition.

1. **SHALL** contain exactly one [1..1] **@classCode**="PROC" (CodeSystem: `HL7ActClass 2.16.840.1.113883.5.6` **STATIC**).
2. **SHALL** contain exactly one [1..1] **@moodCode**, such that is
   a. is selected from ValueSet `Plan of Care moodCode (Act/Encounter/Procedure) 2.16.840.1.113883.11.20.9.23` **STATIC** 2011-09-30.
3. **MAY** contain zero or one [0..1] **templateId** such that it
   a. contain exactly one [1..1] **@root**="2.16.840.1.113883.10.20.22.4.41".
4. **SHALL** contain exactly one [1..1] **templateId** such that it
   a. contain exactly one [1..1] **@root**="1.3.6.1.4.1.19376.1.7.3.1.1.26.2.4.5".
5. **SHALL** contain at least one [1..*] **id**.
6. **SHALL** contain exactly one [1..1] **code**, such that it
   a. is selected from VS_HPoCActivityProcedure `1.3.6.1.4.1.19376.1.7.3.1.1.26.2.5.7` **DYNAMIC**.
7. **SHALL** contain exactly one [1..1] **text** such that
   a. contains exactly one [1..1] **reference** such that it
      i. contains exactly one [1..1] **@value** such that it

 

1. begins with a '#' and points to its corresponding narrative (using the approach defined in CDA Release 2, Section 4.3.5.1).

8. **SHALL** contain exactly one [1..1] **statusCode**.
9. **SHALL** contain exactly one [1..1] **effectiveTime** such that it
    c. contain exactly one [1..1] **low**
    d. contain exactly one [1..1] **high**.

### 6.3.4.E6 HPoC Activity SubstanceAdministration (V2)

`[SubstanceAdministration: templateId 1.3.6.1.4.1.19376.1.7.3.1.1.26.2.4.6:2016-09-01(open)]`

**Template Design Relationships**

This template is a specialization of the IHE UV Realm HPoC Activity Substance Administration template. Machine readable entries associated with this template use US Realm vocabulary constraints established for this purpose.

The design is based on the C-CDA R2.1 Plan of Care Activity Substance Administration template. A value set is added to express the type of substance administration activities relevant to a hearing plan of care. The consumable participation is also added to represent the material or drug administered.

**Template Purpose**

This is the template for the Plan of Care Activity for administering substances.

1. **SHALL** contain exactly one [1..1] **@classCode**="SBADM" (CodeSystem: `HL7ActClass 2.16.840.1.113883.5.6` **STATIC**).
2. **SHALL** contain exactly one [1..1] **@moodCode**, which **SHALL** be selected from ValueSet `Plan of Care moodCode (SubstanceAdministration/Supply) 2.16.840.1.113883.11.20.9.24` **STATIC** 2011-09-30.
3. **SHALL** contain exactly one [1..1] **templateId** such that it
    a. contain exactly one [1..1] **@root**="1.3.6.1.4.1.19376.1.7.3.1.1.26.2.4.6".
    b. **SHALL** contain exactly one [1..1] **@extension**="2016-09-01"
4. **SHALL** contain at least one [1..*] **id**.
5. **SHALL** contain exactly one [1..1] **text** such that
    a. contains exactly one [1..1] **reference** such that it
        i. contains exactly one [1..1] **@value** such that it
            1. begins with a '#' and points to its corresponding narrative (using the approach defined in CDA Release 2, Section 4.3.5.1).
6. **SHALL** contain exactly one [1..1] **statusCode**.
7. **SHALL** contain exactly one [1..1] **effectiveTime** such that it
    a. contain exactly one [1..1] **low**

 

b. contain exactly one [1..1] **high**.

8. **SHOULD** contain zero or one [0..1] **effectiveTime** such that it
   a. contain exactly one [1..1] **@operator**="A"
   b. contain exactly one [1..1] @xsi:type=”PIVL_TS” or “EIVL_TS”.
9. **MAY** contain zero or one [0..1] **repeatNumber** such that it
   a. **CONDITIONAL** In "INT" (intent) mood, the repeatNumber defines the number of allowed administrations. For example, a repeatNumber of "3" means that the substance can be administered up to 3 times. In "EVN" (event) mood, the repeatNumber is the number of occurrences. For example, a repeatNumber of "3" in a substance administration in “EVN” means that the represented administration is the 3rd in a series.
10. **MAY** contain zero or one [0..1] **routeCode**, such that it
    a. is selected from ValueSet `Medication Route FDA Value Set 2.16.840.1.113883.3.88.12.3221.8.7` **DYNAMIC**.
11. **MAY** contain zero or one [0..1] **approachSiteCode**, such that it
    a. Is selected from ValueSet `Body Site Value Set 2.16.840.1.113883.3.88.12.3221.8.9` **CNE, DYNAMIC**.
12. **SHOULD** contain zero or one [0..1] **doseQuantity**
    a. **CONDITIONAL** The doseQuantity, if present, **SHALL** contain zero or one [0..1] **@unit**, selected from ValueSet `UnitsOfMeasureCaseSensitive 2.16.840.1.113883.1.11.12839` **CWE, DYNAMIC**.
    b. Pre-coordinated consumable: If the consumable code is a pre-coordinated unit dose (e.g., "metoprolol 25mg tablet") then doseQuantity is a unitless number that indicates the number of products given per administration (e.g., "2", meaning 2 x "metoprolol 25mg tablet").
    c. Not pre-coordinated consumable: If the consumable code is not pre-coordinated (e.g., is simply "metoprolol"), then doseQuantity must represent a physical quantity with @unit, e.g., "25" and "mg", specifying the amount of product given per administration.
13. **MAY** contain zero or one [0..1] **rateQuantity**.
    a. **CONDITIONAL** The rateQuantity, if present, **SHALL** contain exactly one [1..1] **@unit**, selected from ValueSet `UnitsOfMeasureCaseSensitive 2.16.840.1.113883.1.11.12839` **CWE, DYNAMIC**.
14. **MAY** contain zero or one [0..1] **maxDoseQuantity**.
15. **MAY** contain zero or one [0..1] **administrationUnitCode**, such that it
    a. be selected from ValueSet `Medication Product Form Value Set 2.16.840.1.113883.3.88.12.3221.8.11` **CWE, DYNAMIC**.
16. **SHALL** contain exactly one [1..1] **consumable** such that it
    a. contain exactly one [1..1] **Medication Information** `(V2)(templateId:2.16.840.1.113883.10.20.22.4.23:2014-06-09)`.
17. **MAY** contain zero or one [0..1] **performer**.
18. **MAY** contain zero or more [0..*] **participant** such that it

 

a. contain exactly one [1..1] **@typeCode**="CSM" (CodeSystem: HL7ParticipationType 2.16.840.1.113883.5.90) **STATIC**.
b. contain exactly one [1..1] **Drug Vehicle** (templateId:2.16.840.1.113883.10.20.22.4.24).

19. **MAY** contain zero or more [0..*] **entryRelationship** such that it
    a. contain exactly one [1..1] **@typeCode**="RSON" (CodeSystem: HL7ActRelationshipType 2.16.840.1.113883.5.1002) **STATIC**.
    b. contain exactly one [1..1] **Indication**(V2)(templateId:2.16.840.1.113883.10.20.22.4.19:2014-06-09).
20. **MAY** contain zero or one [0..1] **entryRelationship** such that it
    a. contain exactly one [1..1] **@typeCode**="SUBJ" (CodeSystem: HL7ActRelationshipType 2.16.840.1.113883.5.1002 **STATIC**).
    b. contain exactly one [1..1] **@inversionInd**="true".
    c. contain exactly one [1..1] **Instruction** (V2)(templateId:2.16.840.1.113883.10.20.22.4.20:2014-06-09).
21. **MAY** contain zero or one [0..1] **entryRelationship** such that it
    a. contain exactly one [1..1] **@typeCode**="REFR" (CodeSystem: HL7ActRelationshipType 2.16.840.1.113883.5.1002) **STATIC**.
    b. contain exactly one [1..1] **Medication Supply Order** (V2)(templateId:2.16.840.1.113883.10.20.22.4.17:2014-06-09).
22. **MAY** contain zero or more [0..*] **entryRelationship** such that each
    a. contain exactly one [1..1] **@typeCode**="REFR" (CodeSystem: HL7ActRelationshipType 2.16.840.1.113883.5.1002) **STATIC**.
    b. contain exactly one [1..1] **Medication Dispense (V2)** (templateId:2.16.840.1.113883.10.20.22.4.18:2014-06-09).
23. **MAY** contain zero or one [0..1] **entryRelationship** such that it
    a. contain exactly one [1..1] **@typeCode**="CAUS" (CodeSystem: HL7ActRelationshipType 2.16.840.1.113883.5.1002) **STATIC**.
    b. contain exactly one [1..1] **Reaction Observation** (V2)(templateId:2.16.840.1.113883.10.20.22.4.9:2014-06-09).
24. **MAY** contain zero or more [0..*] **precondition** such that it
    a. contain exactly one [1..1] **@typeCode**="PRCN" (CodeSystem: HL7ActRelationshipType 2.16.840.1.113883.5.1002) **STATIC**.
    b. contain exactly one [1..1] **Precondition for Substance Administration** (V2)(templateId:2.16.840.1.113883.10.20.22.4.25:2014-06-09).
25. **SHOULD** include doseQuantity OR rateQuantity.

 

### 6.3.4.E7 HPoC Activity Non-medicinal Supply (V2)

[Supply: templateId 1.3.6.1.4.1.19376.1.7.3.1.1.26.2.4.7:2016-09-01(open)]

**Template Design Relationships**

This template is a specialization of the IHE UV Realm HPoC Activity Non-medicinal Supply template. Machine readable entries associated with this template use US Realm vocabulary constraints established for this purpose.

The design is based on the C-CDA R2.1 Plan of Care Activity Non-medicinal Supply template. A value set is added to express the type of non-medicinal supply activities relevant to a hearing plan of care. The participant participation is added to represent the device or equipment being supplied.

**Template Purpose**

This is the template for the Plan of Care Activity for supplying non-medicinal medical Equipment.

1. **SHALL** contain exactly one [1..1] **@classCode**="SPLY" (CodeSystem: HL7ActClass 2.16.840.1.113883.5.6 **STATIC**).
2. **SHALL** contain exactly one [1..1] **@moodCode**, which **SHALL** be selected from ValueSet Plan of Care moodCode (SubstanceAdministration/Supply) 2.16.840.1.113883.11.20.9.24 **STATIC** 2011-09-30.
3. **SHALL** contain exactly one [1..1] **templateId** such that it
    a. contain exactly one [1..1] **@root**="1.3.6.1.4.1.19376.1.7.3.1.1.26.2.4.7".
    b. **SHALL** contain exactly one [1..1] **@extension**="2016-09-01"
4. **SHALL** contain at least one [1..*] **id**.
5. **SHALL** contain exactly one [1..1] **text** such that
    a. contains exactly one [1..1] **reference** such that it
        i. contains exactly one [1..1] **@value** such that it
            1. begins with a '#' and points to its corresponding narrative (using the approach defined in CDA Release 2, Section 4.3.5.1).
6. **SHALL** contain exactly one [1..1] **statusCode**.
7. **SHOULD** contain zero or one [0..1] **effectiveTime** such that it
    a. **CONDITIONAL** if present, contain zero or one [0..1] high.
8. **SHOULD** contain zero or one [0..1] **quantity**.
9. **MAY** contain zero or one [0..1] **participant** such that it
    a. contain exactly one [1..1] **@typeCode**="PRD" Product (CodeSystem: HL7ParticipationType 2.16.840.1.113883.5.90 **STATIC**).
    b. contain exactly one [1..1] **Product Instance** (templateId:2.16.840.1.113883.10.20.22.4.37).

 

### 6.3.4.E8 Hearing Screening Organizer (V2)

`[Organizer: templateId 1.3.6.1.4.1.19376.1.7.3.1.1.26.2.4.8:2016-09-01(open)]`

**Template Design Relationships**

This template further constrains of the IHE US Realm Hearing Screening Organizer section template. Machine readable entries associated with this template use US Realm vocabulary constraints established for this purpose.

The design is builds upon on the C-CDA R2.1 Result Organizer template.

**Template Purpose**

This organizer records the outcome assessment of the hearing screening and the associated results used to determine the outcome assessment. It includes a component for the "screening outcome" for the left ear and a component "screening outcome" for the right ear. Each of the outcome observations carries an optional indication of the reason screening was not performed. The Hearing Screening Organizer also includes the set of result observations which were gathered. They are a third component and are organized in a Results Organizer.

**Implementer Guidance**

The effectiveTime of the organizer is an interval that spans the effectiveTimes of the contained result observations.

If screening results become available that were performed after the baby is discharged from the birth encounter, these results need to be represented in a separate organizer which would be related temporally with the encounter associated with the screening event.

The effectiveTime/low will match the time of the triggering event that indicated the start of the encounter where the screening information was being collected. The effectiveTime/high will match the time of the triggering event that indicated the end of the encounter where the screening information was being collected.

Note: If any Result Observation within the Result Organizer has a statusCode of 'active', the Result Organizer must also have as statusCode of 'active'.

1. **SHALL** contain exactly one [1..1] **@classCode=** ="CLUSTER" (CodeSystem: `HL7ActClass 2.16.840.1.113883.5.6`) **STATIC**
2. **SHALL** contain exactly one [1..1] **@moodCode**="EVN" Event (CodeSystem: `ActMood 2.16.840.1.113883.5.1001`) **STATIC**.
3. **SHALL** contain exactly one [1..1] **templateId** such that it
    a. contain exactly one [1..1] **@root**="1.3.6.1.4.1.19376.1.7.3.1.1.26.2.4.8".
    b. **SHALL** contain exactly one [1..1] **@extension**="2016-09-01"
4. **SHALL** contain at least one [1..*] **id**.
5. **SHALL** contain exactly one [1..1] **code** such that it
    a. contain exactly one [1..1] **@code**=" 54111-0" Newborn Hearing Loss Panel (CodeSystem: `LOINC 2.16.840.1.113883.6.1`) **STATIC**.

 

6. **SHALL** contain exactly one [1..1] **statusCode** such that it
    a. contain exactly one [1..1] **@code**, which is selected from ValueSet `Result Status 2.16.840.1.113883.11.20.9.39` **STATIC**.
7. **SHALL** contain exactly one [1..1] **effectiveTime** such that it
    a. contain exactly one [1..1] **low**
    b. contain exactly one [1..1] **high**.
8. **SHALL** contain exactly one [1..1] **component** such that it
    a. contain exactly one [1..1] Hearing Screening Outcome Observation – Left Ear (v2) `templateId: 1.3.6.1.4.1.19376.1.7.3.1.1.26.2.4.9:2016-09-01)`.
9. **SHALL** contain exactly one [1..1] **component** such that it
    a. contain exactly one [1..1] Hearing Screening Outcome Observation – Right Ear (V2) `templateId: 1.3.6.1.4.1.19376.1.7.3.1.1.26.2.4.11:2016-09-01)`.
10. **SHALL** contain exactly one [1..1] **component** such that it
    a. contain exactly one [1..1] Hearing Screening Results Organizer (V2) `templateId: 1.3.6.1.4.1.19376.1.7.3.1.1.26.2.4.12:2016-09-01)`.

### 6.3.4.E9 Hearing Screening Outcome Observation-Left (V2)

`[Observation: templateId 1.3.6.1.4.1.19376.1.7.3.1.1.26.2.4.9:2016-09-01(open)]`

**Template Design Relationships**

This template is a further constraint of the IHE UV Realm Hearing Screening Outcome Observation - Left template. Machine readable entries associated with this template use US Realm vocabulary constraints established for this purpose.

**Template Purpose**

This observation records the assessment of the screening for the left ear. It uses a jurisdictionally defined algorithm for aggregating multiple screening results into a final assessment observation. When screening is not performed on an ear, the reason for not performing the screening is also recorded.

1. **SHALL** contain exactly one [1..1] **@classCode**="OBS" Observation (CodeSystem: `HL7ActClass 2.16.840.1.113883.5.6)` **STATIC**.
2. **SHALL** contain exactly one [1..1] **@moodCode**="EVN" Event (CodeSystem: `ActMood 2.16.840.1.113883.5.1001)` **STATIC**.
3. **MAY** contain zero or one [0..1] **@negationInd**.
4. **SHALL** contain exactly one [1..1] **templateId** such that it
    a. contain exactly one [1..1] **@root**="1.3.6.1.4.1.19376.1.7.3.1.1.26.2.4.9".
    b. **SHALL** contain exactly one [1..1] **@extension**="2016-09-01"
5. **SHALL** contain at least one [1..*] **id**.
6. **SHALL** contain exactly one [1..1] **code** such that it

 

a. contain exactly one [1..1] **@code**="73741-1" Newborn Hearing screen panel of Ear - left (CodeSystem: LOINC 2.16.840.1.113883.6.1) **STATIC**.

7. **SHALL** contain exactly one [1..1] **text** such that
   a. contains exactly one [1..1] **reference** such that it
      i. contains exactly one [1..1] **@value** such that it
         1. begins with a '#' and points to its corresponding narrative (using the approach defined in CDA Release 2, Section 4.3.5.1).
8. **SHALL** contain exactly one [1..1] **statusCode** such that it
   a. contain exactly one [1..1] **@code**, which is selected from ValueSet Result Status 2.16.840.1.113883.11.20.9.39 **STATIC**.
9. **SHALL** contain exactly one [1..1] **effectiveTime**.
   a. Represents clinically effective time of the measurement, which may be when the measurement was performed (e.g., a BP measurement), or may be when sample was taken (and measured some time afterwards).
10. **SHALL** contain exactly one [1..1] **value**, such that it
    a. be declared as data type xsi:type = "CD"
    b. be selected from Value Set VS_HearingScreeningOutcomeObservationValues 1.3.6.1.4.1.19376.1.7.3.1.1.26.2.5.10 **CNE, STATIC**.
11. **MAY** contain zero or one [0..1] **methodCode**.
    a. be selected from Value Set VS_HearingScreeningMethods 1.3.6.1.4.1.19376.1.7.3.1.1.26.2.5.13 **CNE, STATIC**.
12. **MAY** contain zero or one [0..1] **targetSiteCode**.
    a. be selected from Value Set VS_HearingScreeningTargetSites 1.3.6.1.4.1.19376.1.7.3.1.1.26.2.5.12 **CNE, STATIC**.
13. **MAY** contain zero or one [0..1] **author**.
14. **MAY** contain zero or one [0..1] **entryRelationship**.
    a. **CONDITIONAL** The entryRelationship, if present, **SHALL** contain exactly one [1..1] **@typeCode**="RSON" Has Reason (CodeSystem: HL7ActRelationshipType 2.16.840.1.113883.5.1002 **STATIC**).
    b. **CONDITIONAL** The entryRelationship, if present, **SHALL** contain exactly one [1..1] **Reason Not Screened** (templateId: 1.3.6.1.4.1.19376.1.7.3.1.1.26.2.4.10).

### 6.3.4.E10 Reason Not Screened

[Act: templateId 1.3.6.1.4.1.19376.1.7.3.1.1.26.2.4.10(open)]

**Template Design Relationships**

This template is a further constraint of the IHE UV Realm Reason Not Screened template. Machine readable entries associated with this template use US Realm vocabulary constraints established for this purpose.

 

**Template Purpose**

This template documents the reason why hearing screening was not performed.

1. **SHALL** contain exactly one [1..1] **@classCode**="ACT" (CodeSystem: HL7ActClass 2.16.840.1.113883.5.6 **STATIC**).
2. **SHALL** contain exactly one [1..1] **@moodCode**="EVN" (CodeSystem: ActMood 2.16.840.1.113883.5.1001) **STATIC**.
3. **SHALL** contain exactly one [1..1] **templateId** such that it
    a. contain exactly one [1..1] **@root**="1.3.6.1.4.1.19376.1.7.3.1.1.26.2.4.10".
4. **SHALL** contain exactly one [1..1] **code**, such that is
    a. be selected from Value Set VS_ReasonNotScreened 1.3.6.1.4.1.19376.1.7.3.1.1.26.2.5.11 **CNE, STATIC**.
5. **SHALL** contain exactly one [1..1] **text** such that
    a. contains exactly one [1..1] **reference** such that it
        i. contains exactly one [1..1] **@value** such that it
            1. begins with a '#' and points to its corresponding narrative (using the approach defined in CDA Release 2, Section 4.3.5.1).

### 6.3.4.E11 Hearing Screening Outcome Observation-Right (V2)

`[Observation: templateId 1.3.6.1.4.1.19376.1.7.3.1.1.26.2.4.11:2016-09-01(open)]`

**Template Design Relationships**

This template is a further constraint of the IHE US Realm Hearing Screening Outcome Observation - Right template. Machine readable entries associated with this template use US Realm vocabulary constraints established for this purpose.

**Template Purpose**

This observation records the assessment of the screening for the right ear. It uses a jurisdictionally defined algorithm for aggregating multiple screening results into a final assessment observation. When screening is not performed on an ear, the reason for not performing the screening is also recorded.

1. **SHALL** contain exactly one [1..1] **@classCode**="OBS" Observation (CodeSystem: HL7ActClass 2.16.840.1.113883.5.6) **STATIC**.
2. **SHALL** contain exactly one [1..1] **@moodCode**="EVN" Event (CodeSystem: ActMood 2.16.840.1.113883.5.1001) **STATIC**.
3. **MAY** contain zero or one [0..1] **@negationInd**.
4. **SHALL** contain exactly one [1..1] **templateId** such that it
    a. contain exactly one [1..1] **@root**="1.3.6.1.4.1.19376.1.7.3.1.1.26.2.4.11".

 

b. **SHALL** contain exactly one [1..1] **@extension**="2016-09-01"

5. **SHALL** contain at least one [1..*] **id**.
6. **SHALL** contain exactly one [1..1] **code** such that it
   a. contain exactly one [1..1] **@code**=" 73744-5" Newborn Hearing screen panel of Ear - right (CodeSystem: LOINC 2.16.840.1.113883.6.1) **STATIC**.
7. **SHALL** contain exactly one [1..1] **text** such that
   a. contains exactly one [1..1] **reference** such that it
      i. contains exactly one [1..1] **@value** such that it
         1. begins with a '#' and points to its corresponding narrative (using the approach defined in CDA Release 2, Section 4.3.5.1).
8. **SHALL** contain exactly one [1..1] **statusCode** such that it
   a. be selected from ValueSet Result Status 2.16.840.1.113883.11.20.9.39 **CNE, STATIC**.
9. **SHALL** contain exactly one [1..1] **effectiveTime**.
   a. Represents clinically effective time of the measurement, which may be when the measurement was performed (e.g., a BP measurement), or may be when sample was taken (and measured some time afterwards).
10. **SHALL** contain exactly one [1..1] **value**, such that it
    a. be declared as data type xsi:type = "CD"
    b. be selected from Value Set VS_HearingScreeningOutcomeObservationValues 1.3.6.1.4.1.19376.1.7.3.1.1.26.2.5.10 **CNE, STATIC**.
11. **MAY** contain zero or one [0..1] **methodCode**.
    a. be selected from Value Set VS_HearingScreeningMethods 1.3.6.1.4.1.19376.1.7.3.1.1.26.2.5.13 **CNE, STATIC**.
12. **MAY** contain zero or one [0..1] **targetSiteCode**.
    a. be selected from Value Set VS_HearingScreeningTargetSites 1.3.6.1.4.1.19376.1.7.3.1.1.26.2.5.12 **CNE, STATIC**.
13. **MAY** contain zero or one [0..1] **author**.
14. **MAY** contain zero or one [0..1] **entryRelationship**.
    a. **CONDITIONAL** The entryRelationship, if present, **SHALL** contain exactly one [1..1] **@typeCode**="RSON" Has Reason (CodeSystem: HL7ActRelationshipType 2.16.840.1.113883.5.1002) **STATIC**.
    b. **CONDITIONAL** The entryRelationship, if present, **SHALL** contain exactly one [1..1] **Reason Not Screened** (templateId: 1.3.6.1.4.1.19376.1.7.3.1.1.26.2.4.10).

 

### 6.3.4.E12 Hearing Screening Results Organizer (V2)

`[Organizer: templateId 1.3.6.1.4.1.19376.1.7.3.1.1.26.2.4.12:2016-09-01(open)]`

**Template Design Relationships**

This template is a further constraint of the IHE UV Realm Hearing Screening Results Organizer template. Machine readable entries associated with this template use US Realm vocabulary constraints established for this purpose.

The design is a further constraint of the C-CDA Result Organizer (2.16.840.1.113883.10.20.22.4.1).

**Template Purpose**

This organizer records the hearing screening results used to determine the outcome assessments.

**Implementer Guidance**

The effectiveTime of the organizer is an interval that spans the effectiveTimes of the contained result observations.

1. **SHALL** contain exactly one [1..1] **@classCode=** ="CLUSTER" (CodeSystem: `HL7ActClass 2.16.840.1.113883.5.6`) **STATIC.**
2. **SHALL** contain exactly one [1..1] **@moodCode**="EVN" Event (CodeSystem: `ActMood 2.16.840.1.113883.5.1001`) **STATIC.**
3. **MAY** contain zero or one [0..1] **templateId** such that it
    a. contain exactly one [1..1] **@root**="2.16.840.1.113883.10.20.22.4.1".
    b. **SHALL** contain exactly one [1..1] **@extension**="2015-08-01"
4. **SHALL** contain exactly one [1..1] **templateId** such that it
    a. contain exactly one [1..1] **@root**="1.3.6.1.4.1.19376.1.7.3.1.1.26.2.4.12".
    b. **SHALL** contain exactly one [1..1] **@extension**="2016-09-01"
5. **SHALL** contain at least one [1..*] **id**.
6. **SHALL** contain exactly one [1..1] **code** such that it
    a. contain exactly one [1..1] **@code**=" `417491009`" Neonatal Hearing Test (Procedure) (CodeSystem: `SNOMED CT` 2.16.840.1.113883.6.96) **STATIC**.
7. **SHALL** contain exactly one [1..1] **statusCode** such that it
    a. be selected from ValueSet `Result Status 2.16.840.1.113883.11.20.9.39` **CNE, STATIC**.
8. **SHALL** contain zero or more [0..*] **component** such that it
    a. contain exactly one [1..1] Result Observation `templateId: 1.3.6.1.4.1.19376.1.7.3.1.1.26.2.4.13)`.

 

### 6.3.4.E13 Hearing Screening Result Observation (V2)

[Observation: templateId 1.3.6.1.4.1.19376.1.7.3.1.1.26.2.4.13:2016-09-01(open)]

**Template Design Relationships**

This template is a further constraint of the IHE UV Realm Hearing Screening Result Observation template. Machine readable entries associated with this template use US Realm vocabulary constraints established for this purpose.

The design is an adaptation of the C-CDA Result Observation template (2.16.840.1.113883.10.20.22.4.2). Hearing screening devices return a value which results from interpreting their internal readings to produce a result from the device. In the future, if raw values will be returned from the device, then an interpretation code element would be needed and the associated reference ranges could be defined. For now, the value returned from the test is sufficient for both capturing the measure result and interpreting the result.

**Template Purpose**

This observation records the result of screening an ear. When the screening device returns an invalid reading, the reason for this invalid result may be recorded if it is known or determinable.

In this template the negationInd attribute of the observation act SHALL function as defined for Observation.ActionNegationInd in the HL7 V3 Core Principles. This negation behavior affects the action of the act and is further constrained by other elements of the act class which are the elements of the act class which are not considered related to the document's context. For example: elements like id and statusCode are not affected by the negation which the Observation.ActionNegationInd mechanism is used.

1. **SHALL** contain exactly one [1..1] **@classCode**="OBS" Observation (CodeSystem: HL7ActClass 2.16.840.1.113883.5.6) **STATIC**.
2. **SHALL** contain exactly one [1..1] **@moodCode**="EVN" Event (CodeSystem: ActMood 2.16.840.1.113883.5.1001) **STATIC**.
3. **CONDITIONAL: WHEN THE HEARING SCREENING WAS NOT PERFORMED: SHALL** contain exactly one [1..1] **@negationInd**="true" Event (CodeSystem: ActMood 2.16.840.1.113883.5.1001) **STATIC**.
4. **MAY** contain zero or one [0..1] **templateId** such that it
    a. contain exactly one [1..1] **@root**="2.16.840.1.113883.10.20.22.4.2".
    b. **SHALL** contain exactly one [1..1] **@extension**="2015-08-01"
5. **SHALL** contain exactly one [1..1] **templateId** such that it
    a. contain exactly one [1..1] **@root**="1.3.6.1.4.1.19376.1.7.3.1.1.26.2.4.13".
    b. **SHALL** contain exactly one [1..1] **@extension**="2016-09-01"
6. **SHALL** contain at least one [1..*] **id**.
7. **SHALL** contain exactly one [1..1] **code** such that it

 

a. contain exactly one [1..1] **@code**="417491009" Neonatal Hearing Test (Procedure) (CodeSystem: SNOMED CT 2.16.840.1.113883.6.96) **STATIC**.

8. **SHALL** contain exactly one [1..1] **text** such that
   a. contains exactly one [1..1] **reference** such that it
      i. contains exactly one [1..1] **@value** such that it
         1. begins with a '#' and points to its corresponding narrative (using the approach defined in CDA Release 2, Section 4.3.5.1).
9. **SHALL** contain exactly one [1..1] **statusCode** such that it
   a. be selected from ValueSet Result Status 2.16.840.1.113883.11.20.9.39 **CNE, STATIC**.
10. **SHALL** contain exactly one [1..1] **effectiveTime**.
    a. Represents clinically effective time of the measurement, which may be when the measurement was performed (e.g., a BP measurement), or may be when sample was taken (and measured some time afterwards).
11. **SHALL** contain exactly one [1..1] **value**, such that it
    a. be declared as data type xsi:type = "CD"
    b. be selected from Value Set VS_HearingScreeningTestResultValues 1.3.6.1.4.1.19376.1.7.3.1.1.26.2.5.14 **CNE, STATIC**.
12. **CONDITIONAL: SHALL NOT** contain a value when negationInd="true".
13. **SHALL** contain zero or one [0..1] **methodCode**.
    a. be selected from Value Set VS_HearingScreeningMethods 1.3.6.1.4.1.19376.1.7.3.1.1.26.2.5.13 **CNE, STATIC**.
14. **CONDITIONAL: SHALL NOT** contain a methodCode when negationInd="true".
15. **SHALL** contain zero or one [0..1] **targetSiteCode**.
    a. be selected from Value Set VS_HearingScreeningTargetSites 1.3.6.1.4.1.19376.1.7.3.1.1.26.2.5.12 **CNE, STATIC**.
16. **CONDITIONAL: SHALL NOT** contain a methodCode when negationInd="true".
17. **MAY** contain zero or one [0..1] **author**.
18. **SHOULD** contain zero or one [0..1] **performer**.
19. **CONDITIONAL: SHALL** contain exactly one [1..1] **entryRelationship** when negationInd="true", such that it
    a. **SHALL** contain exactly one [1..1] **@typeCode**="RSON" Has Reason (CodeSystem: HL7ActRelationshipType 2.16.840.1.113883.5.1002 **STATIC**).
    b. The entryRelationship, if present, **SHALL** contain exactly one [1..1] **Reason Not Screened** (templateId: 1.3.6.1.4.1.19376.1.7.3.1.1.26.2.4.10).
20. **CONDITIONAL: SHALL NOT** contain an entryRelationship with @typeCode="RSON" when negationInd="false".
21. **MAY** contain zero or one [0..1] **entryRelationship**.

 

c. **CONDITIONAL** The entryRelationship, if present, **SHALL** contain exactly one [1..1] **@typeCode**="REFR" Refers to (CodeSystem: HL7ActRelationshipType 2.16.840.1.113883.5.1002) **STATIC**.
d. **CONDITIONAL** The entryRelationship, if present, **SHALL** contain exactly one [1..1] **Comment Activity** (templateId: 2.16.840.1.113883.10.20.22.4.64).

### 6.3.4.E14 Comment Activity

[act: templateId 2.16.840.1.113883.10.20.22.4.64 (open)]

**Template Design Relationships**

This template is a transclusion of the HL7 Comment Activity template (2.16.840.1.113883.10.20.22.4.64).

**Template Purpose**

Comments are free text data that cannot otherwise be recorded using data elements already defined by this specification. They SHALL NOT be used to record information that can be recorded elsewhere. For example, a free text description of the severity of an allergic reaction would not be recorded in a comment.

1. **SHALL** contain exactly one [1..1] **@classCode**="ACT" Act (CodeSystem: HL7ActClass 2.16.840.1.113883.5.6 **STATIC**) (CONF:9425).
2. **SHALL** contain exactly one [1..1] **@moodCode**="EVN" Event (CodeSystem: ActMood 2.16.840.1.113883.5.1001 **STATIC**) (CONF:9426).
3. **SHALL** contain exactly one [1..1] **templateId** (CONF:9427) such that it
    a. **SHALL** contain exactly one [1..1] **@root**="2.16.840.1.113883.10.20.22.4.64" (CONF:10491).

### 6.3.4.E15 Risk Indicator for Hearing Loss Observation (V2)

[Observation: templateId 1.3.6.1.4.1.19376.1.7.3.1.1.26.2.4.15:2016-09-01(open)]

**Template Design Relationships**

This template is a further constraint of the IHE UV Realm Risk Indicator for Hearing Loss Observation template. Machine readable entries associated with this template use US Realm vocabulary constraints established for this purpose.

**Template Purpose**

This template records a set of hearing related risks which may be assessed. Each clinical statement indicates if a particular risk is present or not. Risks that are not assessed do not have to be included. (Use of nullFlavors to express exceptional cases for the risk not being asses will be considered in a future version.)

 

1. **SHALL** contain exactly one [1..1] **@classCode**="OBS" (CodeSystem: HL7ActClass 2.16.840.1.113883.5.6 **STATIC**).
2. **SHALL** contain exactly one [1..1] **@moodCode**="EVN" (CodeSystem: ActMood 2.16.840.1.113883.5.1001 **STATIC**).
3. **SHALL** contain exactly one [1..1] **templateId** such that it
    a. contain exactly one [1..1] **@root**="1.3.6.1.4.1.19376.1.7.3.1.1.26.1.4.15".
    b. **SHALL** contain exactly one [1..1] **@extension**="2016-09-01"
4. **SHALL** contain exactly one [1..1] **templateId** such that it
    a. contain exactly one [1..1] **@root**="1.3.6.1.4.1.19376.1.7.3.1.1.26.2.4.15".
    b. **SHALL** contain exactly one [1..1] **@extension**="2016-09-01"
5. **SHALL** contain at least one [1..*] **id**.
6. **SHALL** contain exactly one [1..1] **code** such that it
    a. contain exactly one [1..1] **@code**=" 80943009" Risk Factor (CodeSystem: SNOMED CT 2.16.840.1.113883.6.96).
7. **SHALL** contain exactly one [1..1] **text** such that
    a. contain exactly one [1..1] **reference** such that it
        i. contains exactly one [1..1] **@value** such that it
            1. begins with a '#' and points to its corresponding narrative (using the approach defined in CDA Release 2, Section 4.3.5.1).
8. **SHALL** contain exactly one [1..1] **statusCode** such that it
    a. contain exactly one [1..1] **@code**="completed" Completed (CodeSystem: ActStatus 2.16.840.1.113883.5.14 **STATIC**).
9. **SHOULD** contain zero or one [0..1] **effectiveTime**.
10. **SHALL** contain exactly one [1..1] **value** such that it:
    a. be defined as data type @xsi:type="CD"
    b. be selected from ValueSet VS_RiskFactorsForHearing 1.3.6.1.4.1.19376.1.7.3.1.1.26.2.5.16 **CWE, DYNAMIC.**
11. **MAY** contain zero or one [0..1] **entryRelationship**.
    a. **CONDITIONAL** The entryRelationship, if present, **SHALL** contain exactly one [1..1] **@typeCode**="REFR" Refers to (CodeSystem: HL7ActRelationshipType 2.16.840.1.113883.5.1002) **STATIC.**
    b. **CONDITIONAL** The entryRelationship, if present, **SHALL** contain exactly one [1..1] **Comment Activity** (templateId: 2.16.840.1.113883.10.20.22.4.64).

### 6.3.4.E16 Problem Concern

[Act: templateId 1.3.6.1.4.1.19376.1.7.3.1.1.26.2.4.16(open)]

**Template Design Relationships**

This template is an adaptation of the IHE UV Realm Problem Concern template. Machine readable entries associated with this template use US Realm vocabulary constraints established for this purpose.

 

This template is a design copy of the C-CDA R2.1 Problem Concern template (2.16.840.1.113883.10.20.22.4.3). This design for the Problem Concern directly references the HL7 C-CDA R2.1 Problem Observation template (transclusion). This design ensures that all structural and vocabulary constrains for expressing problem observations in the US Realm will be consistent.

**Template Purpose**

The problem concern template is a "tracker" which allows one or more problem observations to be grouped together and tracked over time as being associated with this particular concern.

1. **SHALL** contain exactly one [1..1] **@classCode**="ACT" Act (CodeSystem: HL7ActClass 2.16.840.1.113883.5.6 **STATIC**).
2. **SHALL** contain exactly one [1..1] **@moodCode**="EVN" Event (CodeSystem: ActMood 2.16.840.1.113883.5.1001 **STATIC**).
3. **MAY** contain zero or one [0..1] **templateId** such that it
   a. contain exactly one [1..1] **@root**="1.3.6.1.4.1.19376.1.7.3.1.1.26.1.4.16".
   b. **SHALL** contain exactly one [1..1] **@extension**="2016-09-01"
4. **MAY** contain zero or one [0..1] **templateId** such that it
   a. contain exactly one [1..1] **@root**="2.16.840.1.113883.10.20.22.4.3".
5. **SHALL** contain exactly one [1..1] **templateId** such that it
   a. contain exactly one [1..1] **@root**="1.3.6.1.4.1.19376.1.7.3.1.1.26.2.4.16".
6. **SHALL** contain at least one [1..*] **id**.
7. **SHALL** contain exactly one [1..1] **code** such that it
   a. contain exactly one [1..1] **@code**="CONC" Concern (CodeSystem: HL7ActClass 2.16.840.1.113883.5.6 **STATIC**).
8. **SHALL** contain exactly one [1..1] **text** such that
   a. contain exactly one [1..1] **reference** such that it
      i. contain exactly one [1..1] **@value** such that it
         1. begin with a '#' and points to its corresponding narrative (using the approach defined in CDA Release 2, Section 4.3.5.1).
9. **SHALL** contain exactly one [1..1] **statusCode**, such that it
   a. be selected from ValueSet ProblemAct statusCode 2.16.840.1.113883.11.20.9.19 **CNE, STATIC** 2011-09-09.

   The effectiveTime element records the starting and ending times during which the concern was active on the Problem List.
10. **SHALL** contain exactly one [1..1] **effectiveTime**.
    a. This effectiveTime **SHALL** contain exactly one [1..1] **low**.
    b. This effectiveTime **SHOULD** contain zero or one [0..1] **high**.
11. **SHALL** contain at least one [1..*] **entryRelationship** such that each

 

a. contain exactly one [1..1] **@typeCode**="SUBJ" Has subject (CodeSystem: HL7ActRelationshipType 2.16.840.1.113883.5.1002 **STATIC**).
b. contain exactly one [1..1] **Problem Observation** (V3)(templateId:2.16.840.1.113883.10.20.22.4.4:2015-08-01).

### 6.3.4.E17 HPoC Problem Concern (V2)

[Act: templateId 1.3.6.1.4.1.19376.1.7.3.1.1.26.2.4.17:2016-09-01(open)]

**Template Design Relationships**

This template is an adaptation of the IHE US Realm Problem Concern template. The entry uses a more tightly constrained design. Entries are limited to only those procedures defined to be relevant to hearing screening. The entry is only an id pointer to concerns within the procedure list which match the defined inclusion criteria.

**Template Purpose**

The problem concern template is a "tracker" which allows one or more problem observations to be grouped together and tracked over time as being associated with this particular concern. The HPOC Problem Concern template further includes constraints which identify the concerns being tracked which include a Problem Observation that is relevant for Hearing Screening.

1. **CONDITIONAL** For each Problem Concern entry in the Problems Section where at least one **Problem Observation (V3)** (templateId:2.16.840.1.113883.10.20.22.4.4:2015-08-01) has a **value** element with an **@code** that is present in Value Set VS_HPoCProblemObservations 1.3.6.1.4.1.19376.1.7.3.1.1.26.2.5.17:
2. **SHALL** contain exactly one [1..1] **@classCode**="ACT" Act (CodeSystem: HL7ActClass 2.16.840.1.113883.5.6 **STATIC**).
3. **SHALL** contain exactly one [1..1] **@moodCode**="EVN" Event (CodeSystem: ActMood 2.16.840.1.113883.5.1001 **STATIC**).
4. **SHALL** contain exactly one [1..1] **templateId** such that it
   a. contain exactly one [1..1] **@root**="2.16.840.1.113883.10.20.22.4.3".
   b. **SHALL** contain exactly one [1..1] **@extension**="2016-09-01"
5. **SHALL** contain exactly one [1..1] **id** such that it
   a. references the id of the associated Problem Concern Entry where the conditional conformance statement for the value element of the Problem Concern entry is true.

### 6.3.4.E18 Procedure Activity Procedure (V2)

[Procedure: templateId 1.3.6.1.4.1.19376.1.7.3.1.1.26.2.4.18:2016-09-01(open)]

**Template Design Relationships**

 

This template is a further constraint of the IHE UV Realm Procedure Activity Procedure template. Machine readable entries associated with this template use US Realm vocabulary constraints established for this purpose.

This template is an adaptation of the Procedure Activity Procedure template.It references, by transclusion, other C-CDA R2.1 templates used within Procedure Activity Procedure template including: Indication, Instruction, Medication Activity, Product Instance, and Service Delivery Location. It also supports an optional procedure activity observation template which can be used to document new information about the patient that is discovered during the course of providing care or performing a treatment.

**Template Purpose**

This clinical statement represents procedures whose immediate and primary outcome (post-condition) is the alteration of the physical condition of the patient. Examples of these procedures are an appendectomy, hip replacement and a creation of a gastrostomy.

1. **SHALL** contain exactly one [1..1] **@classCode**="PROC" Procedure (CodeSystem: HL7ActClass 2.16.840.1.113883.5.6) **STATIC**.
2. **SHALL** contain exactly one [1..1] **@moodCode**, which **SHALL** be selected from ValueSet MoodCodeEvnInt 2.16.840.1.113883.11.20.9.18 **STATIC** 2011-04-03.
3. **SHALL** contain exactly one [1..1] **templateId** such that it
    a. contain exactly one [1..1] **@root**="2.16.840.1.113883.10.20.22.4.14".
    b. **SHALL** contain exactly one [1..1] **@extension**="2016-09-01"
4. **SHALL** contain at least one [1..*] **id**.
5. **SHALL** contain exactly one [1..1] **code** such that it
    a. contain zero or one [0..1] **originalText**.
        i. **CONDITIONAL** The originalText, if present, **SHALL** contain exactly one [1..1] **reference** such that it
            1. contains exactly one [1..1] **@value** such that it
                a. begin with a '#' and point to its corresponding narrative (using the approach defined in CDA Release 2, Section 4.3.5.1).
    b. be selected from LOINC (codeSystem 2.16.840.1.113883.6.1) or SNOMED CT (CodeSystem: 2.16.840.1.113883.6.96), and or CPT-4 (CodeSystem: 2.16.840.1.113883.6.12) or ICD10 PCS (CodeSystem: 2.16.840.1.113883.6.4).
6. **SHALL** contain exactly one [1..1] **text** such that
    a. contains exactly one [1..1] **reference** such that it
        i. contains exactly one [1..1] **@value** such that it
            1. begins with a '#' and points to its corresponding narrative (using the approach defined in CDA Release 2, Section 4.3.5.1).

 

7. **SHALL** contain exactly one [1..1] **statusCode**, such that it
    a. be selected from ValueSet `ProcedureAct statusCode 2.16.840.1.113883.11.20.9.22` **CNE, DYNAMIC**.
8. **SHOULD** contain zero or one [0..1] **effectiveTime**.
9. **MAY** contain zero or one [0..1] **priorityCode**, such that it
    a. be selected from ValueSet `Act Priority Value Set 2.16.840.1.113883.1.11.16866` **CNE, DYNAMIC**.
10. **MAY** contain zero or one [0..1] **methodCode** such that it
    a. does not conflict with the method inherent in Procedure / code.
11. **SHOULD** contain zero or more [0..*] **targetSiteCode** such that each
    a. **CONDITIONAL** if present, contain exactly one [1..1] **@code** such that it
        i. be selected from ValueSet `Body Site Value Set 2.16.840.1.113883.3.88.12.3221.8.9` **CNE, DYNAMIC**.
12. **MAY** contain zero or more [0..*] **specimen** such that each
    a. **CONDITIONAL** if present, **SHALL** contain exactly one [1..1] **specimenRole** such that it
        i. contain zero or more [0..*] **id** such that each
            1. the Procedure/specimen/specimenRole/id **REFERENCES** a Result Organizer/specimen/specimenRole/id to indicate it is referring to the same specimen.
    b. Note: This specimen is for representing specimens obtained from a procedure which may also undergo a testing observation in order to be assessed.
13. **SHOULD** contain zero or more [0..*] **performer** such that each
    a. **CONDITIONAL** if present **SHALL** contain exactly one [1..1] **assignedEntity** such that it
        i. contain at least one [1..*] **id**.
        ii. contain exactly one [1..1] **addr**.
        iii. contain exactly one [1..1] **telecom**.
        iv. contain zero or one [0..1] **representedOrganization** such that it
            1. **CONDITIONAL** if present, **SHOULD** contain zero or more [0..*] **id**
            2. **CONDITIONAL** if present, **MAY** contain zero or more [0..*] **name**
            3. **CONDITIONAL** if present, **SHALL** contain exactly one [1..1] **telecom**
            4. **CONDITIONAL** if present, **SHALL** contain exactly one [1..1] **addr**
14. **MAY** contain zero or more [0..*] **participant** such that each
    a. contain exactly one [1..1] **@typeCode**="DEV" Device (CodeSystem: `HL7ActRelationshipType 2.16.840.1.113883.5.1002` **STATIC**).
    b. contain exactly one [1..1] **Product Instance** (`templateId:2.16.840.1.113883.10.20.22.4.37`).
15. **MAY** contain zero or more [0..*] **participant** such that each

 

a. contain exactly one [1..1] **@typeCode**="LOC" Location (CodeSystem: HL7ParticipationType 2.16.840.1.113883.5.90 **STATIC**).
b. contain exactly one [1..1] **Service Delivery Location** (templateId:2.16.840.1.113883.10.20.22.4.32).

16. **MAY** contain zero or more [0..*] **entryRelationship** such that each
    a. contain exactly one [1..1] **@typeCode**="COMP" Has Component (CodeSystem: HL7ActRelationshipType 2.16.840.1.113883.5.1002 **STATIC**).
    b. contain exactly one [1..1] **@inversionInd**="true".
    c. contain exactly one [1..1] **encounter** such that it
        i. This encounter **SHALL** contain exactly one [1..1] **@classCode**="ENC" Encounter (CodeSystem: HL7ActClass 2.16.840.1.113883.5.6 **STATIC**).
        ii. This encounter **SHALL** contain exactly one [1..1] **@moodCode**="EVN" Event (CodeSystem: ActMood 2.16.840.1.113883.5.1001 **STATIC**).
        iii. This encounter **SHALL** contain exactly one [1..1] **id**.
            1. Set the encounter ID to the ID of an encounter in another section to signify they are the same encounter.
17. **MAY** contain zero or one [0..1] **entryRelationship** such that it
    a. contain exactly one [1..1] **@typeCode**="SUBJ" Has Subject (CodeSystem: HL7ActRelationshipType 2.16.840.1.113883.5.1002 **STATIC**).
    b. contain exactly one [1..1] **@inversionInd**="true" true.
    c. contain exactly one [1..1] **Instructions** (V2)(templateId:2.16.840.1.113883.10.20.22.4.20:2014-06-09).
18. **MAY** contain zero or more [0..*] **entryRelationship** such that it
    a. contain exactly one [1..1] **@typeCode**="RSON" Has Reason (CodeSystem: HL7ActRelationshipType 2.16.840.1.113883.5.1002 **STATIC**).
    b. contain exactly one [1..1] **Indication (V2)** (templateId:2.16.840.1.113883.10.20.22.4.19:2014-06-09).
19. **MAY** contain zero or more [0..*] **entryRelationship** such that it
    a. contain exactly one [1..1] **@typeCode**="COMP" Has Component (CodeSystem: HL7ActRelationshipType 2.16.840.1.113883.5.1002 **STATIC**).
    b. contain exactly one [1..1] **Medication Activity**(V2)(templateId:2.16.840.1.113883.10.20.22.4.16:2014-06-09).
20. **MAY** contain zero or more [0..*] **entryRelationship** such that it
    a. contain exactly one [1..1] **@typeCode**="COMP" Has Component (CodeSystem: HL7ActRelationshipType 2.16.840.1.113883.5.1002 **STATIC**).
    b. contain exactly one [1..1] **Procedure Activity Observation** (V2)(templateId: 2.16.840.1.113883.10.20.22.4.13:2014-06-09).

 

### 6.3.4.E19 Procedure Activity Act (V2)

[Act: templateId 1.3.6.1.4.1.19376.1.7.3.1.1.26.2.4.19:2016-09-01(open)]

**Template Design Relationships**

This template is a further constraint of the IHE UV Realm Procedure Activity Act template. Machine readable entries associated with this template use US Realm vocabulary constraints established for this purpose.

This template is an adaptation of the C-CDA Procedure Activity Procedure template). It references, by transclusion, other C-CDA R2.1 templates used within Procedure Activity Procedure template including: Indication, Instruction, Medication Activity, and Service Delivery Location. It also supports an optional procedure activity observation template which can be used to new information about the patient that is discovered during the course of providing care or performing a treatment.

**Template Purpose**

This clinical statement represents acts of care which cannot be categorized as a "procedure" but whose immediate and primary outcome (post-condition) is the alteration of the physical condition of the patient. Examples of these acts of care are a dressing change, teaching or feeding a patient or providing comfort measures.

1. **SHALL** contain exactly one [1..1] **@classCode**="ACT" Act (CodeSystem: HL7ActClass 2.16.840.1.113883.5.6 **STATIC**).
2. **SHALL** contain exactly one [1..1] **@moodCode**, which **SHALL** be selected from ValueSet MoodCodeEvnInt 2.16.840.1.113883.11.20.9.18 **STATIC** 2011-04-03.
3. **SHALL** contain exactly one [1..1] **templateId** such that it
    a. contain exactly one [1..1] **@root**="2.16.840.1.113883.10.20.22.4.14".
    b. **SHALL** contain exactly one [1..1] **@extension**="2016-09-01"
4. **SHALL** contain at least one [1..*] **id**.
5. **SHALL** contain exactly one [1..1] **code** such that it
    a. contain zero or one [0..1] **originalText**.
        i. **CONDITIONAL** The originalText, if present, **SHALL** contain exactly one [1..1] **reference** such that it
            1. contain exactly one [1..1] **@value** such that it
                a. begin with a '#' and point to its corresponding narrative (using the approach defined in CDA Release 2, Section 4.3.5.1).
    b. be selected from LOINC (CodeSystem: 2.16.840.1.113883.6.1) or SNOMED CT (CodeSystem: 2.16.840.1.113883.6.96).
6. **SHALL** contain exactly one [1..1] **text** such that
    a. contains exactly one [1..1] **reference** such that it
        i. contains exactly one [1..1] **@value** such that it

 

1. begins with a '#' and points to its corresponding narrative (using the approach defined in CDA Release 2, Section 4.3.5.1).

7. **SHALL** contain exactly one [1..1] **statusCode**, such that it
   a. be selected from ValueSet `ProcedureAct statusCode 2.16.840.1.113883.11.20.9.22` **CNE, DYNAMIC**.
8. **SHOULD** contain zero or one [0..1] **effectiveTime**.
9. **MAY** contain zero or one [0..1] **priorityCode**, such that it
   a. be selected from ValueSet `Act Priority Value Set 2.16.840.1.113883.1.11.16866` **CNE, DYNAMIC**.
10. **SHOULD** contain zero or more [0..*] **performer** such that each
    a. **CONDITIONAL** if present **SHALL** contain exactly one [1..1] **assignedEntity** such that it
       i. contain at least one [1..*] **id**.
       ii. contain exactly one [1..1] **addr**.
       iii. contain exactly one [1..1] **telecom**.
       iv. contain zero or one [0..1] **representedOrganization** such that it
           1. **CONDITIONAL** if present, **SHOULD** contain zero or more [0..*] **id**
           2. **CONDITIONAL** if present, **MAY** contain zero or more [0..*] **name**
           3. **CONDITIONAL** if present, **SHALL** contain exactly one [1..1] **telecom**
           4. **CONDITIONAL** if present, **SHALL** contain exactly one [1..1] **addr**
11. **MAY** contain zero or more [0..*] **participant** such that each
    a. contain exactly one [1..1] **@typeCode**="LOC" Location (CodeSystem: `HL7ParticipationType 2.16.840.1.113883.5.90`) **STATIC**.
    b. contain exactly one [1..1] **Service Delivery Location** (`templateId:2.16.840.1.113883.10.20.22.4.32`).
12. **MAY** contain zero or more [0..*] **entryRelationship** such that each
    a. contain exactly one [1..1] **@typeCode**="COMP" Has Component (CodeSystem: `HL7ActRelationshipType 2.16.840.1.113883.5.1002` **STATIC**).
    b. contain exactly one [1..1] **@inversionInd**="true".
    c. contain exactly one [1..1] **encounter** such that it
       i. This encounter **SHALL** contain exactly one [1..1] **@classCode**="ENC" Encounter (CodeSystem: `HL7ActClass 2.16.840.1.113883.5.6` **STATIC**).
       ii. This encounter **SHALL** contain exactly one [1..1] **@moodCode**="EVN" Event (CodeSystem: `ActMood 2.16.840.1.113883.5.1001` **STATIC**).
       iii. This encounter **SHALL** contain exactly one [1..1] **id**.
           1. Set the encounter ID to the ID of an encounter in another section to signify they are the same encounter.
13. **MAY** contain zero or one [0..1] **entryRelationship** such that it

 

a. contain exactly one [1..1] **@typeCode**="SUBJ" Has Subject (CodeSystem: HL7ActRelationshipType 2.16.840.1.113883.5.1002 **STATIC**).
b. contain exactly one [1..1] **@inversionInd**="true" true.
c. contain exactly one [1..1] **Instructions** (V2)(templateId:2.16.840.1.113883.10.20.22.4.20:2014-06-09).

14. **MAY** contain zero or more [0..*] **entryRelationship** such that it
    a. contain exactly one [1..1] **@typeCode**="RSON" Has Reason (CodeSystem: HL7ActRelationshipType 2.16.840.1.113883.5.1002 **STATIC**).
    b. contain exactly one [1..1] **Indication (V2)** (templateId:2.16.840.1.113883.10.20.22.4.19:2014-06-09).
15. **MAY** contain zero or more [0..*] **entryRelationship** such that it
    a. contain exactly one [1..1] **@typeCode**="COMP" Has Component (CodeSystem: HL7ActRelationshipType 2.16.840.1.113883.5.1002 **STATIC**).
    b. contain exactly one [1..1] **Medication Activity**(V2)(templateId:2.16.840.1.113883.10.20.22.4.16:2014-06-09).
16. **MAY** contain zero or more [0..*] **entryRelationship** such that it
    a. contain exactly one [1..1] **@typeCode**="COMP" Has Component (CodeSystem: HL7ActRelationshipType 2.16.840.1.113883.5.1002 **STATIC**).
    b. contain exactly one [1..1] **Procedure Activity Observation** (V2)(templateId: 2.16.840.1.113883.10.20.22.4.13:2014-06-09).

### 6.3.4.E20 HPoC Procedure Activity Procedure (V2)

[Procedure: templateId 1.3.6.1.4.1.19376.1.7.3.1.1.26.2.4.20:2016-09-01(open)]

**Template Design Relationships**

This template is an adaptation of the IHE US Realm Procedure Activity Procedure template. Machine readable entries associated with this template use US Realm vocabulary constraints established for this purpose. This entry uses a more tightly constrained design. It is limited to only those procedures that match to a set of procedures defined, in a value set, to be relevant to hearing screening. The entry contains an id pointer to procedures within the procedure list which match the defined inclusion criteria

**Template Purpose**

The HPOC Procedure Activity Procedure template identifies the procedures within the procedure section that are relevant for Hearing Screening.

1. **CONDITIONAL** For each Procedure Activity Procedure entry(templateId: 1.3.6.1.4.1.19376.1.7.3.1.1.26.2.4.18) in the Procedure Section where the **code** element has an **@code** that is present in Value Set VS_HPoCProcedureActivityProcedure 1.3.6.1.4.1.19376.1.7.3.1.1.26.2.5.19:

 

2. **SHALL** contain exactly one [1..1] **@classCode**="PROC" Procedure (CodeSystem: HL7ActClass 2.16.840.1.113883.5.6 **STATIC**).
3. **SHALL** contain exactly one [1..1] **@moodCode**, which **SHALL** be selected from ValueSet MoodCodeEvnInt 2.16.840.1.113883.11.20.9.18 **STATIC** 2011-04-03.
4. **SHALL** contain exactly one [1..1] **templateId** such that it
    a. **SHALL** contain exactly one [1..1] **@root**="1.3.6.1.4.1.19376.1.7.3.1.1.26.2.4.20".
    b. **SHALL** contain exactly one [1..1] **@extension**="2016-09-01"
5. **SHALL** contain exactly one [1..1] **id** such that it
    a. references the id of the associated Procedure Activity Procedure where the conditional conformance statement for the code element of the Procedure Activity Procedure entry is true.

### 6.3.4.E21 HPoC Procedure Activity Act (V2)

[Act: templateId 1.3.6.1.4.1.19376.1.7.3.1.1.26.2.4.21:2016-09-01(open)]

**Template Design Relationships**

This template is an adaptation of the IHE US Realm Procedure Activity Act template. Machine readable entries associated with this template use US Realm vocabulary constraints established for this purpose. This entry uses a more tightly constrained design. It is limited to only those treatment acts that match to a set of acts defined, in a value set, to be relevant to hearing screening. The entry contains an id pointer to acts within the procedure list which match the defined inclusion criteria

**Template Purpose**

The HPOC Procedure Activity Act template identifies the acts within the procedure section that are relevant for Hearing Screening.

1. **CONDITIONAL** For each Procedure Activity Act entry(templateId: 1.3.6.1.4.1.19376.1.7.3.1.1.26.2.4.18) in the Procedure Section where the **code** element has an **@code** that is present in Value Set VS_HPoCProcedureActivityAct 1.3.6.1.4.1.19376.1.7.3.1.1.26.2.5.18:
2. **SHALL** contain exactly one [1..1] **@classCode**="ACT" Act (CodeSystem: HL7ActClass 2.16.840.1.113883.5.6 **STATIC**).
3. **SHALL** contain exactly one [1..1] **@moodCode**, which **SHALL** be selected from ValueSet MoodCodeEvnInt 2.16.840.1.113883.11.20.9.18 **STATIC** 2011-04-03.
4. **SHALL** contain exactly one [1..1] **templateId** such that it
    a. **SHALL** contain exactly one [1..1] **@root**="1.3.6.1.4.1.19376.1.7.3.1.1.26.2.4.21".
    b. **SHALL** contain exactly one [1..1] **@extension**="2016-09-01"
5. **SHALL** contain exactly one [1..1] **id** such that it

 

a. references the id of the associated Procedure Activity Act where the conditional conformance statement for the code element of the Procedure Activity Act entry is true.

## 8.7 Value Set Definitions

The sections that follow define value sets used in the templates used by templates defined in QRPH TF-4 for the Early Hearing Detection and Intervention (EHDI) Profile.

### 6.5.1 VS_HPoCEncounterType 1.3.6.1.4.1.19376.1.7.3.1.1.26.2.5.1

This value set contains a list of coded encounter types used when a Hearing Plan of Care is created or updated. These are the same concepts as those used in the VS_HPoCActivityEncounters

| Code | Display Name | Code System Name | Code System OID |
|---|---|---|---|
| 185175005 | Seen in primary care center (finding) | SNOMED-CT | 2.16.840.1.113883.6.96 |
| 307778003 | Seen in primary care establishment (finding) | SNOMED-CT | 2.16.840.1.113883.6.96 |
| 276492007 | Seen by member of Primary Health Care Team (finding) | SNOMED-CT | 2.16.840.1.113883.6.96 |
| 703978000 | Referral to primary care service (procedure) | SNOMED-CT | 2.16.840.1.113883.6.96 |
| 276490004 | Refer to member of Primary Health Care Team (procedure) | SNOMED-CT | 2.16.840.1.113883.6.96 |
| 308456006 | Referral to audiologist (procedure) | SNOMED-CT | 2.16.840.1.113883.6.96 |
| 306247008 | Referral to pediatric audiologist (procedure) | SNOMED-CT | 2.16.840.1.113883.6.96 |
| IHE-TSC-7.3.1.1.2.5.1.004 | Referral to Geneticist | SNOMED-CT | 2.16.840.1.113883.6.96 |
| 308469005 | Referral to geneticist (procedure) | SNOMED-CT | 2.16.840.1.113883.6.96 |
| 306279004 | Referral to clinical geneticist (procedure) | SNOMED-CT | 2.16.840.1.113883.6.96 |
| IHE-TSC-7.3.1.1.2.5.1.005 | Referral to Early Intervention Specialist | SNOMED-CT | 2.16.840.1.113883.6.96 |
| 308452008 | Referral to speech and language therapist (procedure) | SNOMED-CT | 2.16.840.1.113883.6.96 |
| 306173009 | Referral to speech and language therapy service (procedure) | SNOMED-CT | 2.16.840.1.113883.6.96 |

 

| Code | Display Name | Code System Name | Code System OID |
|---|---|---|---|
| 309622001 | Child referral- speech therapy (procedure) | SNOMED-CT | 2.16.840.1.113883.6.96 |
| 306174003 | Referral to community-based speech and language therapy service (procedure) | SNOMED-CT | 2.16.840.1.113883.6.96 |
| 306175002 | Referral to hospital-based speech and language therapy service (procedure) | SNOMED-CT | 2.16.840.1.113883.6.96 |
| 306360000 | Referral to community-based speech and language therapist (procedure) | SNOMED-CT | 2.16.840.1.113883.6.96 |
| 306361001 | Referral to hospital-based speech and language therapist (procedure) | SNOMED-CT | 2.16.840.1.113883.6.96 |
| 308480005 | Referral to ear, nose and throat surgeon (procedure) | SNOMED-CT | 2.16.840.1.113883.6.96 |
| 183544005 | Referral to ear, nose and throat service (procedure) | SNOMED-CT | 2.16.840.1.113883.6.96 |
| 183452005 | Emergency hospital admission (procedure) | SNOMED-CT | 2.16.840.1.113883.6.96 |
| 32485007 | Hospital admission (procedure) | SNOMED-CT | 2.16.840.1.113883.6.96 |
| 8715000 | Hospital admission, elective (procedure) | SNOMED-CT | 2.16.840.1.113883.6.96 |

### 6.5.2 VS_HPoCServiceEvent 1.3.6.1.4.1.19376.1.7.3.1.1.26.2.5.2

This value set holds a list of coded service acts for a hearing plan of care. A plan can be created, updated (where a plan is modified), or reconciled (where a plan is transformed to include content from other plans).

| Code | Display Name | Code System Name | Code System OID |
|---|---|---|---|
| IHE-TSC-7.3.1.1.2.5.2.001 | HPoC Created | SNOMED-CT | 2.16.840.1.113883.6.96 |
| IHE-TSC-7.3.1.1.2.5.2.002 | HPoC Appended | SNOMED-CT | 2.16.840.1.113883.6.96 |
| IHE-TSC-7.3.1.1.2.5.2.003 | HPoC Transformed | SNOMED-CT | 2.16.840.1.113883.6.96 |

 

### 6.5.3 VS_HPoCInstructions 1.3.6.1.4.1.19376.1.7.3.1.1.26.2.5.3

This value set holds a list of coded instruction types for use in a Hearing Plan of Care.

| Code | Display Name | Code System Name | Code System OID |
|---|---|---|---|
| IHE-TSC-7.3.1.1.2.5.3.001 | Conduct additional hearing screening if there is parental concern for speech and language development | SNOMED-CT | 2.16.840.1.113883.6.96 |
| IHE-TSC-7.3.1.1.2.5.3.002 | Aggressively treat the middle ear disease if it is detected. | SNOMED-CT | 2.16.840.1.113883.6.96 |
| IHE-TSC-7.3.1.1.2.5.3.003 | Refer to specialist if vision screening indicates to refer | SNOMED-CT | 2.16.840.1.113883.6.96 |
| IHE-TSC-7.3.1.1.2.5.3.004 | Refer to specialist if ongoing developmental screening indicates to refer | SNOMED-CT | 2.16.840.1.113883.6.96 |

### 6.5.4 VS_HPoCActivityAct 1.3.6.1.4.1.19376.1.7.3.1.1.26.2.5.4

This value set holds a list of coded concepts representing plan of care acts (activities that are not observations or procedures) used in a Hearing Plan of Care. For example, these are actions that a patient or caregiver can perform.

| Code | Display Name | Code System Name | Code System OID |
|---|---|---|---|
| IHE-TSC-7.3.1.1.2.5.4.001 | Participate in parental support group | SNOMED-CT | 2.16.840.1.113883.6.96 |
| IHE-TSC-7.3.1.1.2.5.4.002 | Attend education for parents on newborn developmental issues. | SNOMED-CT | 2.16.840.1.113883.6.96 |
| IHE-TSC-7.3.1.1.2.5.4.003 | Implement home safety improvements | SNOMED-CT | 2.16.840.1.113883.6.96 |
| IHE-TSC-7.3.1.1.2.5.5.003 | Conduct developmental surveillance to identify any parental concerns | SNOMED-CT | 2.16.840.1.113883.6.96 |

### 6.5.5 VS_HPoCActivityEncounter 1.3.6.1.4.1.19376.1.7.3.1.1.26.2.5.5

This value set holds a list of coded concepts representing plan of care encounters used in a Hearing Plan of Care.

 

| Code | Display Name | Code System Name | Code System OID |
|---|---|---|---|
| IHE-TSC-7.3.1.1.2.5.5.001 | Visit with Primary Care Physician | SNOMED-CT | 2.16.840.1.113883.6.96 |
| IHE-TSC-7.3.1.1.2.5.5.002 | Follow-up with Primary Care Provider | SNOMED-CT | 2.16.840.1.113883.6.96 |
| IHE-TSC-7.3.1.1.2.5.5.003 | Referral to audiologist | SNOMED-CT | 2.16.840.1.113883.6.96 |
| IHE-TSC-7.3.1.1.2.5.5.004 | Referral to Geneticist | SNOMED-CT | 2.16.840.1.113883.6.96 |
| IHE-TSC-7.3.1.1.2.5.5.005 | Referral to Early Intervention Specialist | SNOMED-CT | 2.16.840.1.113883.6.96 |
| IHE-TSC-7.3.1.1.2.5.5.006 | Referral to Ear Nose and Throat Specialist | SNOMED-CT | 2.16.840.1.113883.6.96 |

### 6.5.6 VS_HPoCActivityObservation 1.3.6.1.4.1.19376.1.7.3.1.1.26.2.5.6

3905 This value set holds a list of coded concepts representing plan of observation (diagnostic test) activities used in a Hearing Plan of Care.

| Code | Display Name | Code System Name | Code System OID |
|---|---|---|---|
| 91573000 | Tympanometry testing (procedure) | SNOMED-CT | 2.16.840.1.113883.6.96 |
| 277404009 | High frequency tympanometry (procedure) | SNOMED-CT | 2.16.840.1.113883.6.96 |
| 252623004 | Oto-acoustic emission test (procedure) | SNOMED-CT | 2.16.840.1.113883.6.96 |
| 446077009 | Automated otoacoustic emission test (procedure) | SNOMED-CT | 2.16.840.1.113883.6.96 |
| 252626007 | Distortion product oto-acoustic emission measurement (procedure) | SNOMED-CT | 2.16.840.1.113883.6.96 |
| 252624005 | Evoked oto-acoustic emission measurement (procedure) | SNOMED-CT | 2.16.840.1.113883.6.96 |
| 252959008 | Programmable oto-acoustic emissions (procedure) | SNOMED-CT | 2.16.840.1.113883.6.96 |
| 252625006 | Spontaneous oto-acoustic emission measurement (procedure) | SNOMED-CT | 2.16.840.1.113883.6.96 |
| 413083006 | Automated auditory brainstem response test (procedure) | SNOMED-CT | 2.16.840.1.113883.6.96 |

 

| Code | Display Name | Code System Name | Code System OID |
|---|---|---|---|
| 252617009 | Auditory brainstem response screening test (procedure) | SNOMED-CT | 2.16.840.1.113883.6.96 |
| 252618004 | Auditory brainstem response threshold test (procedure) | SNOMED-CT | 2.16.840.1.113883.6.96 |
| 278319009 | Electrically evoked auditory brainstem response audiometry (procedure) | SNOMED-CT | 2.16.840.1.113883.6.96 |
| IHE-TSC-7.3.1.1.2.5.6.004 | Acoustic Immitance Test | SNOMED-CT | 2.16.840.1.113883.6.96 |
| IHE-TSC-7.3.1.1.2.5.6.005 | Auditory Brainstem Response with sedation | SNOMED-CT | 2.16.840.1.113883.6.96 |
| 281010000 | Child development checks (procedure) | SNOMED-CT | 2.16.840.1.113883.6.96 |
| 405824009 | Genetic test (procedure) | SNOMED-CT | 2.16.840.1.113883.6.96 |
| 405825005 | Molecular genetic test (procedure) | SNOMED-CT | 2.16.840.1.113883.6.96 |
| 79841006 | Genetic counseling (procedure) | SNOMED-CT | 2.16.840.1.113883.6.96 |
| 702597001 | Genetic counseling for heritable disorder with patient at risk (procedure) | SNOMED-CT | 2.16.840.1.113883.6.96 |
| IHE-TSC-7.3.1.1.2.5.6.008 | Speech and Language Assessment | SNOMED-CT | 2.16.840.1.113883.6.96 |
| 273697004 | Phonological assessment of child speech (assessment scale) | SNOMED-CT | 2.16.840.1.113883.6.96 |
| 273473000 | Fundamental speech skills test (assessment scale) | SNOMED-CT | 2.16.840.1.113883.6.96 |
| 273870009 | Test of language competence (assessment scale | SNOMED-CT | 2.16.840.1.113883.6.96 |
| 113091000 | Magnetic resonance imaging (procedure) | SNOMED-CT | 2.16.840.1.113883.6.96 |

### 6.5.7 VS_HPoCActivityProcedure 1.3.6.1.4.1.19376.1.7.3.1.1.26.2.5.7

3910 This value set holds a list of coded concepts representing plan of care procedures (activities to treat a condition and alter the patient's health status) included in a Hearing Plan of Care.

 

| Code | Display Name | Code System Name | Code System OID |
|---|---|---|---|
| 359612003 | Implantation of cochlear prosthetic device (procedure) | SNOMED-CT | 2.16.840.1.113883.6.96 |
| 44218004 | Implantation of cochlear electrode (procedure) | SNOMED-CT | 2.16.840.1.113883.6.96 |
| 359608009 | Implantation of cochlear prosthetic device, electrode and receiver (procedure) | SNOMED-CT | 2.16.840.1.113883.6.96 |
| 50676004 | Implantation of cochlear prosthetic device, multiple channels (procedure) | SNOMED-CT | 2.16.840.1.113883.6.96 |
| 43815004 | Implantation of cochlear prosthetic device, single channel (procedure) | SNOMED-CT | 2.16.840.1.113883.6.96 |
| 172732009 | Implantation of intracochlear prosthesis (procedure) | SNOMED-CT | 2.16.840.1.113883.6.96 |
| IHE-TSC-7.3.1.1.2.5.7.002 | Reconstruction to resolve atresia | SNOMED-CT | 2.16.840.1.113883.6.96 |
| 84088001 | Correction of atresia of external meatus of ear (procedure) | SNOMED-CT | 2.16.840.1.113883.6.96 |
| IHE-TSC-7.3.1.1.2.5.7.003 | Treatment for otitis media | SNOMED-CT | 2.16.840.1.113883.6.96 |
| IHE-TSC-7.3.1.1.2.5.7.004 | Cleft Lip/Palate Repair | SNOMED-CT | 2.16.840.1.113883.6.96 |
| 234647001 | Repair of cleft lip (procedure) | SNOMED-CT | 2.16.840.1.113883.6.96 |
| 89432003 | Lemesurier operation, cleft lip repair (procedure) | SNOMED-CT | 2.16.840.1.113883.6.96 |
| 248929000 | Pharyngorrhaphy for cleft palate (procedure) | SNOMED-CT | 2.16.840.1.113883.6.96 |
| 315313007 | Primary repair of cleft lip (procedure) | SNOMED-CT | 2.16.840.1.113883.6.96 |
| 234650003 | Repair of bilateral cleft lip (procedure) | SNOMED-CT | 2.16.840.1.113883.6.96 |
| 8616005 | Rhinocheiloplasty repair for cleft lip (procedure) | SNOMED-CT | 2.16.840.1.113883.6.96 |
| 57217008 | Thompson operation, cleft lip repair (procedure) | SNOMED-CT | 2.16.840.1.113883.6.96 |
| 234890003 | Repair of cleft palate (procedure) | SNOMED-CT | 2.16.840.1.113883.6.96 |

 

| Code | Display Name | Code System Name | Code System OID |
|---|---|---|---|
| 450350009 | Primary repair of cleft palate (procedure) | SNOMED-CT | 2.16.840.1.113883.6.96 |
| 12826007 | Dorrance operation, push-back operation for cleft palate (procedure) | SNOMED-CT | 2.16.840.1.113883.6.96 |
| 234891004 | Repair of cleft of hard palate (procedure) | SNOMED-CT | 2.16.840.1.113883.6.96 |
| 234892006 | Repair of cleft of soft palate (procedure) | SNOMED-CT | 2.16.840.1.113883.6.96 |
| 12132004 | Langenbeck operation, cleft palate repair (procedure) | SNOMED-CT | 2.16.840.1.113883.6.96 |
| 68792000 | Wardill operation, cleft palate repair (procedure) | SNOMED-CT | 2.16.840.1.113883.6.96 |
| IHE-TSC-7.3.1.1.2.5.7.005 | Myringotomy and PE tube placement | SNOMED-CT | 2.16.840.1.113883.6.96 |
| 284532000 | Myringotomy and insertion of tympanic ventilation tube (procedure) | SNOMED-CT | 2.16.840.1.113883.6.96 |
| 172679002 | Myringotomy and insertion of T tube (procedure) | SNOMED-CT | 2.16.840.1.113883.6.96 |
| 275001008 | Myringotomy and insertion of long-term ventilation tube (procedure) | SNOMED-CT | 2.16.840.1.113883.6.96 |
| 172676009 | Myringotomy and insertion of short-term tympanic ventilation tube (procedure) | SNOMED-CT | 2.16.840.1.113883.6.96 |

### 6.5.8 VS_HPoCActivitySubstanceAdministration 1.3.6.1.4.1.19376.1.7.3.1.1.26.2.5.8

This value set holds a list of coded concepts representing plan of care substance administration act used in a Hearing Plan of Care.

| Code | Display Name | Code System Name | Code System OID |
|---|---|---|---|
| IHE-TSC-7.3.1.1.2.5.8.001 | Thyroid Supplement | SNOMED-CT | 2.16.840.1.113883.6.96 |
| 375575006 | Thyroid 32mg (product) | SNOMED-CT | 2.16.840.1.113883.6.96 |
| 375576007 | Thyroid 65mg (product) | SNOMED-CT | 2.16.840.1.113883.6.96 |

 

| Code | Display Name | Code System Name | Code System OID |
|---|---|---|---|
| 87582004 | Dessicated animal thyroid preparation (product) | SNOMED-CT | 2.16.840.1.113883.6.96 |
| 376197009 | Thyroid 120mg tablet (product) | SNOMED-CT | 2.16.840.1.113883.6.96 |
| 375577003 | Thyroid 130mg (product) | SNOMED-CT | 2.16.840.1.113883.6.96 |
| 376198004 | Thyroid 180mg tablet (product) | SNOMED-CT | 2.16.840.1.113883.6.96 |
| 375876000 | Thyroid 60mg tablet (product) | SNOMED-CT | 2.16.840.1.113883.6.96 |
| 226314006 | Vitamin supplementation (product) | SNOMED-CT | 2.16.840.1.113883.6.96 |
| 226317004 | Fat soluble vitamin supplementation (product) | SNOMED-CT | 2.16.840.1.113883.6.96 |
| 226315007 | Water soluble vitamin supplementation (product) | SNOMED-CT | 2.16.840.1.113883.6.96 |
| 27658006 | Amoxicillin (product) | SNOMED-CT | 2.16.840.1.113883.6.96 |
| 350162003 | Oral form amoxycillin (product) - 23 children with different dosage | SNOMED-CT | 2.16.840.1.113883.6.96 |
| 350163008 | Parenteral form amoxycillin (product) - 4 children | SNOMED-CT | 2.16.840.1.113883.6.96 |
| 255631004 | Antibiotic (product) | SNOMED-CT | 2.16.840.1.113883.6.96 |

### 6.5.9 VS_HPoCActivityNon-MedicinalSupply 1.3.6.1.4.1.19376.1.7.3.1.1.26.2.5.9

This value set holds a list of coded concepts representing plan of care non-medicinal supply act used in a Hearing Plan of Care. This would cover supply of implantable devices and other medical devices used for patient care.

| Code | Display Name | Code System Name | Code System OID |
|---|---|---|---|
| 6012004 | Hearing aid, device (physical object) | SNOMED-CT | 2.16.840.1.113883.6.96 |
| 705321004 | Air-conduction hearing aid (physical object) - 8 children | SNOMED-CT | 2.16.840.1.113883.6.96 |
| 705322006 | Bone-conduction hearing aid (physical object) - 3 children | SNOMED-CT | 2.16.840.1.113883.6.96 |
| IHE-TSC-7.3.1.1.2.5.9.002 | Assistive Listening Device | SNOMED-CT | 2.16.840.1.113883.6.96 |
| IHE-TSC- | FM system | SNOMED-CT | 2.16.840.1.113883.6.96 |

 

| Code | Display Name | Code System Name | Code System OID |
|---|---|---|---|
| 7.3.1.1.2.5.9.003 | | | |
| 43252007 | Cochlear prosthesis, device (physical object) | SNOMED-CT | 2.16.840.1.113883.6.96 |
| 360104003 | Extracochlear prosthesis (physical object) | SNOMED-CT | 2.16.840.1.113883.6.96 |
| 360103009 | Intracochlear prosthesis (physical object) | SNOMED-CT | 2.16.840.1.113883.6.96 |

3925

### 6.5.10 VS_HearingScreeningOutcomeObservationValues 1.3.6.1.4.1.19376.1.7.3.1.1.26.2.5.10

This value set holds a list of coded concepts representing the possible outcome values for a hearing screening panel.

3930

| Code | Display Name | Code System Name | Code System OID |
|---|---|---|---|
| 164059009 | Pass | SNOMED-CT | 2.16.840.1.113883.6.96 |
| 183924009 | Refer | SNOMED-CT | 2.16.840.1.113883.6.96 |
| 262008008 | Not Performed | SNOMED-CT | 2.16.840.1.113883.6.96 |

### 6.5.11 VS_ReasonNotScreened 1.3.6.1.4.1.19376.1.7.3.1.1.26.2.5.11

This value set holds a list of coded concepts representing the possible reasons for not performing hearing screening.

3935

| Code | Display Name | Code System Name | Code System |
|---|---|---|---|
| 410534003 | Not performed, medical exclusion - not indicated | SNOMED-CT | 2.16.840.1.113883.6.96 |
| 183949008 | Assessment examination refused (situation) | SNOMED-CT | 2.16.840.1.113883.6.96 |
| 183945002 | Procedure refused - religion (situation) | SNOMED-CT | 2.16.840.1.113883.6.96 |
| 183948000 | Refused procedure - parent's wish (situation) | SNOMED-CT | 2.16.840.1.113883.6.96 |
| 397709008 | Patient died (finding) | SNOMED-CT | 2.16.840.1.113883.6.96 |

 

### 6.5.12 VS_HearingScreeningTargetSites 1.3.6.1.4.1.19376.1.7.3.1.1.26.2.5.12

This value set holds a list of coded concepts representing the possible body sites involved in hearing screening.

| Code | Display Name | Code System Name | Code System OID |
|---|---|---|---|
| 89644007 | Left Ear | SNOMED-CT | 2.16.840.1.113883.6.96 |
| 25577004 | Right Ear | SNOMED-CT | 2.16.840.1.113883.6.96 |

### 6.5.13 VS_HearingScreeningMethods 1.3.6.1.4.1.19376.1.7.3.1.1.26.2.5.13

This value set holds a list of coded concepts representing the possible methods for performing hearing screening.

| Code | Display Name | Code System Name | Code System OID |
|---|---|---|---|
| LA10387-1 | Automated auditory brainstem response (AABR) | LOINC | 2.16.840.1.113883.6.1 |
| LA10388-9 | Auditory brain stem response (ABR) | LOINC | 2.16.840.1.113883.6.1 |
| LA10389-7 | Otoacoustic emissions (OAE) | LOINC | 2.16.840.1.113883.6.1 |
| LA10390-5 | Distortion product otoacoustic emissions (DPOAE) | LOINC | 2.16.840.1.113883.6.1 |
| LA10391-3 | Transient otoacoustic emissions (TOAE) | LOINC | 2.16.840.1.113883.6.1 |
| LA12406-7 | Methodology unknown | LOINC | 2.16.840.1.113883.6.1 |

### 6.5.14 VS_HearingScreeningTestResultValues 1.3.6.1.4.1.19376.1.7.3.1.1.26.2.5.14

This value set holds a list of coded concepts representing the possible result values produced by a device when performing hearing screening. If a test was not performed by the device, it does not send back a value. The code for "attempted, but unsuccessful-technical fail" indicates that the test was performed, but the value measured by the device could not be determined to be a clear pass or fail (refer).

| Code | Display Name | Code System Name | Code System OID |
|---|---|---|---|
| 164059009 | Pass | SNOMED CT | 2.16.840.1.113883.6.96 |
| 183924009 | Refer | SNOMED CT | 2.16.840.1.113883.6.96 |

 

| Code | Display Name | Code System Name | Code System OID |
|---|---|---|---|
| 103709008 | Attempted, but unsuccessful - technical fail | SNOMED CT | 2.16.840.1.113883.6.96 |

Note 1: This value set is designed to be used with a template which uses negationInd to express that an observation was not performed. Thus, this concept is removed from the value set to avoid the possibility of double negation.

### 6.5.15 VS_RiskFactor 1.3.6.1.4.1.19376.1.7.3.1.1.26.2.5.15

This value set that holds a list of coded concepts representing concepts indicating that information is a risk factor.

| Code | Display Name | Code System Name | Code System OID |
|---|---|---|---|
| 80943009 | Risk Factor | SNOMED-CT | 2.16.840.1.113883.6.96 |

### 6.5.16 VS_RiskFactorsForHearing 1.3.6.1.4.1.19376.1.7.3.1.1.26.2.5.16

This value set holds a list of coded concepts representing the risk factors considered during hearing screening.

| Code | Display Name | Code System Name | Code System OID |
|---|---|---|---|
| 439750006 | Family Hx of Hearing loss | SNOMED-CT | 2.16.840.1.113883.6.96 |
| 441899004 | History of therapy with ototoxic medication (situation) | SNOMED-CT | 2.16.840.1.113883.6.96 |
| 276687002 | Conjugated hyperbilirubinemia in infancy (disorder) | SNOMED-CT | 2.16.840.1.113883.6.96 |
| 281610001 | Neonatal Hyperbilirubinemia (disorder) | SNOMED-CT | 2.16.840.1.113883.6.96 |
| 281612009 | Neonatal conjugated hyperbilirubinemia (disorder) | SNOMED-CT | 2.16.840.1.113883.6.96 |
| 281611002 | Neonatal unconjugated hyperbilirubinemia (disorder) | SNOMED-CT | 2.16.840.1.113883.6.96 |
| 206331005 | Infections specific to perinatal period (disorder) | SNOMED-CT | 2.16.840.1.113883.6.96 |
| 206005002 | Fetus or neonate affected by maternal infection (disorder) | SNOMED-CT | 2.16.840.1.113883.6.96 |

 

| Code | Display Name | Code System Name | Code System OID |
|---|---|---|---|
| 80690008 | Degenerative disease of the central nervous system (disorder) | SNOMED-CT | 2.16.840.1.113883.6.96 |
| 178280004 | Postnatal infection (disorder) | SNOMED-CT | 2.16.840.1.113883.6.96 |
| 312972009 | Neonatal extracranial head trauma (disorder) | SNOMED-CT | 2.16.840.1.113883.6.96 |
| 161653008 | History of - chemotherapy (situation) | SNOMED-CT | 2.16.840.1.113883.6.96 |
| LA137-2 | None | LOINC | 2.16.840.1.113883.6.1 |
| LA12667-4 | Caregiver concern about hearing | LOINC | 2.16.840.1.113883.6.1 |
| LA12669-0 | ICU stay > 5 days | LOINC | 2.16.840.1.113883.6.1 |
| LA12670-8 | ECMO | LOINC | 2.16.840.1.113883.6.1 |
| LA12671-6 | Assisted ventilation | LOINC | 2.16.840.1.113883.6.1 |
| LA12673-2 | Exchange transfusion for Hyperbilirubinemia | LOINC | 2.16.840.1.113883.6.1 |
| LA12674-0 | In utero infection(s) | LOINC | 2.16.840.1.113883.6.1 |
| LA12675-7 | Craniofacial anomalies | LOINC | 2.16.840.1.113883.6.1 |
| LA12681-5 | Physical findings of syndromes that include hearing loss | LOINC | 2.16.840.1.113883.6.1 |
| LA12676-5 | Syndromes associated with hearing loss | LOINC | 2.16.840.1.113883.6.1 |
| LA12677-3 | Neurodegenerative disorders | LOINC | 2.16.840.1.113883.6.1 |
| LA12678-1 | Postnatal infections | LOINC | 2.16.840.1.113883.6.1 |

### 6.5.17 VS_HPoCProblemObservations 1.3.6.1.4.1.19376.1.7.3.1.1.26.2.5.17

This value set holds a list of coded concepts representing the problems considered relevant for hearing care planning. The values below need to include a qualifier that indicates the test produced a “fail”, so the total concept is a “failed xyz Test”. (Note: this value set is not complete. It is representative of some of the concepts that would be defined for this value set. Before completion of Trial Implementation, the value set will be finalized and entered in a value set repository, then referenced in the EHDI Profile by URL)

 

| Code | Display Name | Code System Name | Code System OID |
|---|---|---|---|
| 83330001 | Patent ductus arteriosus (disorder) | SNOMED-CT | 2.16.840.1.113883.6.96 |
| 253686000 | Patent ductus arteriosus - persisting type (disorder) | SNOMED-CT | 2.16.840.1.113883.6.96 |
| 253685001 | Patent ductus arteriosus - delayed closure (disorder) | SNOMED-CT | 2.16.840.1.113883.6.96 |
| 125963005 | Patent ductus arteriosus with left-to-right shunt (disorder) | SNOMED-CT | 2.16.840.1.113883.6.96 |
| 22033007 | Fetal growth retardation (disorder) | SNOMED-CT | 2.16.840.1.113883.6.96 |
| 181000119105 | Fetal growth retardation, antenatal (disorder) | SNOMED-CT | 2.16.840.1.113883.6.96 |
| 276606009 | Asymmetrical growth retardation (disorder) | SNOMED-CT | 2.16.840.1.113883.6.96 |
| 276607000 | Symmetrical growth retardation (disorder) | SNOMED-CT | 2.16.840.1.113883.6.96 |
| 234350007 | Neonatal anemia (disorder) | SNOMED-CT | 2.16.840.1.113883.6.96 |
| 47100003 | Anemia of prematurity (disorder) | SNOMED-CT | 2.16.840.1.113883.6.96 |
| 359007 | Kernicterus due to isoimmunization (disorder) | SNOMED-CT | 2.16.840.1.113883.6.96 |
| 276579007 | Late anemia of newborn (disorder) | SNOMED-CT | 2.16.840.1.113883.6.96 |
| 276578004 | Physiological anemia of infancy (disorder) | SNOMED-CT | 2.16.840.1.113883.6.96 |
| 387702001 | Perinatal anemia (disorder) | SNOMED-CT | 2.16.840.1.113883.6.96 |
| 67569000 | Bronchopulmonary dysplasia of newborn (disorder) | SNOMED-CT | 2.16.840.1.113883.6.96 |
| 17190001 | Congenital diaphragmatic hernia (disorder) | SNOMED-CT | 2.16.840.1.113883.6.96 |
| 447821002 | Congenital posterolateral diaphragmatic hernia (disorder) | SNOMED-CT | 2.16.840.1.113883.6.96 |
| 204271000 | Preauricular sinus (disorder) | SNOMED-CT | 2.16.840.1.113883.6.96 |
| 18820007 | Preauricular cyst (disorder) | SNOMED-CT | 2.16.840.1.113883.6.96 |

 

| Code | Display Name | Code System Name | Code System OID |
|---|---|---|---|
| 205616004 | Trisomy 21- mitotic nondisjunction mosaicism (disorder) | SNOMED-CT | 2.16.840.1.113883.6.96 |
| 80281008 | Cleft lip (disorder) | SNOMED-CT | 2.16.840.1.113883.6.96 |
| 304068004 | Bilateral cleft lip (disorder) | SNOMED-CT | 2.16.840.1.113883.6.96 |

### 6.5.18 VS_HPoCProcedureActivityActs 1.3.6.1.4.1.19376.1.7.3.1.1.26.2.5.18

This value set holds a list of coded concepts representing the care activities (those acts not categorized as procedures) considered relevant for hearing care planning.(Note: these acts also are not diagnostic tests. Historical testing is recorded in the Results section.)

| Code | Display Name | Code System Name | Code System OID |
|---|---|---|---|
| IHE-TSC-7.3.1.1.2.5.18.001 | Participate in parental support group | SNOMED-CT | 2.16.840.1.113883.6.96 |
| IHE-TSC-7.3.1.1.2.5.18.002 | Attend education for parents on newborn developmental issues. | SNOMED-CT | 2.16.840.1.113883.6.96 |
| IHE-TSC-7.3.1.1.2.5.18.003 | Implement home safety improvements | SNOMED-CT | 2.16.840.1.113883.6.96 |

### 6.5.19 VS_HPoCProcedureActivityProcedures 1.3.6.1.4.1.19376.1.7.3.1.1.26.2.5.19

This value set holds a list of coded concepts representing the procedures considered relevant for hearing care planning. (Note: this value set is not complete. It is representative of some of the concepts that would be defined for this value set. Before completion of Trial Implementation, the value set will be finalized and entered in a value set repository, then referenced in the EHDI Profile by URL)

| Code | Display Name | Code System Name | Code System OID |
|---|---|---|---|
| 359612003 | Implantation of cochlear prosthetic device (procedure) | SNOMED-CT | 2.16.840.1.113883.6.96 |
| 44218004 | Implantation of cochlear electrode (procedure) | SNOMED-CT | 2.16.840.1.113883.6.96 |
| 359608009 | Implantation of cochlear prosthetic device, electrode and receiver (procedure) | SNOMED-CT | 2.16.840.1.113883.6.96 |

 

| Code | Display Name | Code System Name | Code System OID |
|---|---|---|---|
| 50676004 | Implantation of cochlear prosthetic device, multiple channels (procedure) | SNOMED-CT | 2.16.840.1.113883.6.96 |
| 43815004 | Implantation of cochlear prosthetic device, single channel (procedure) | SNOMED-CT | 2.16.840.1.113883.6.96 |
| 172732009 | Implantation of intracochlear prosthesis (procedure) | SNOMED-CT | 2.16.840.1.113883.6.96 |
| IHE-TSC-7.3.1.1.2.5.7.002 | Reconstruction to resolve atresia | SNOMED-CT | 2.16.840.1.113883.6.96 |
| 84088001 | Correction of atresia of external meatus of ear (procedure) | SNOMED-CT | 2.16.840.1.113883.6.96 |
| IHE-TSC-7.3.1.1.2.5.7.003 | Treatment for otitis media | SNOMED-CT | 2.16.840.1.113883.6.96 |
| IHE-TSC-7.3.1.1.2.5.7.004 | Cleft Lip/Palate Repair | SNOMED-CT | 2.16.840.1.113883.6.96 |
| 234647001 | Repair of cleft lip (procedure) | SNOMED-CT | 2.16.840.1.113883.6.96 |
| 89432003 | Lemesurier operation, cleft lip repair (procedure) | SNOMED-CT | 2.16.840.1.113883.6.96 |
| 248929000 | Pharyngorrhaphy for cleft palate (procedure) | SNOMED-CT | 2.16.840.1.113883.6.96 |
| 315313007 | Primary repair of cleft lip (procedure) | SNOMED-CT | 2.16.840.1.113883.6.96 |
| 234650003 | Repair of bilateral cleft lip (procedure) | SNOMED-CT | 2.16.840.1.113883.6.96 |
| 8616005 | Rhinocheiloplasty repair for cleft lip (procedure) | SNOMED-CT | 2.16.840.1.113883.6.96 |
| 57217008 | Thompson operation, cleft lip repair (procedure) | SNOMED-CT | 2.16.840.1.113883.6.96 |
| 234890003 | Repair of cleft palate (procedure) | SNOMED-CT | 2.16.840.1.113883.6.96 |
| 450350009 | Primary repair of cleft palate (procedure) | SNOMED-CT | 2.16.840.1.113883.6.96 |
| 12826007 | Dorrance operation, push-back operation for cleft palate (procedure) | SNOMED-CT | 2.16.840.1.113883.6.96 |
| 234891004 | Repair of cleft of hard palate (procedure) | SNOMED-CT | 2.16.840.1.113883.6.96 |
| 234892006 | Repair of cleft of soft palate (procedure) | SNOMED-CT | 2.16.840.1.113883.6.96 |

 

| Code | Display Name | Code System Name | Code System OID |
|---|---|---|---|
| 12132004 | Langenbeck operation, cleft palate repair (procedure) | SNOMED-CT | 2.16.840.1.113883.6.96 |
| 68792000 | Wardill operation, cleft palate repair (procedure) | SNOMED-CT | 2.16.840.1.113883.6.96 |
| IHE-TSC-7.3.1.1.2.5.7.005 | Myringotomy and PE tube placement | SNOMED-CT | 2.16.840.1.113883.6.96 |
| 284532000 | Myringotomy and insertion of tympanic ventilation tube (procedure) | SNOMED-CT | 2.16.840.1.113883.6.96 |
| 172679002 | Myringotomy and insertion of T tube (procedure) | SNOMED-CT | 2.16.840.1.113883.6.96 |
| 275001008 | Myringotomy and insertion of long-term ventilation tube (procedure) | SNOMED-CT | 2.16.840.1.113883.6.96 |
| 172676009 | Myringotomy and insertion of short-term tympanic ventilation tube (procedure) | SNOMED-CT | 2.16.840.1.113883.6.96 |
| 43252007 | Cochlear prosthesis, device (physical object) | SNOMED-CT | 2.16.840.1.113883.6.96 |
| 360104003 | Extracochlear prosthesis (physical object) | SNOMED-CT | 2.16.840.1.113883.6.96 |
| 360103009 | Intracochlear prosthesis (physical object) | SNOMED-CT | 2.16.840.1.113883.6.96 |
| 233573008 | Extracorporeal membrane oxygenation (procedure) | SNOMED-CT | 2.16.840.1.113883.6.96 |
| 180202002 | Neonatal exchange transfusion (procedure) | SNOMED-CT | 2.16.840.1.113883.6.96 |
| 243155002 | High frequency oscillatory ventilation (procedure) | SNOMED-CT | 2.16.840.1.113883.6.96 |
| 281790008 | Intravenous antibiotic therapy (procedure) | SNOMED-CT | 2.16.840.1.113883.6.96 |

### 6.5.20 VS_NewbornHearingScreeningOutcomeResultsOrganizer 1.3.6.1.4.1.19376.1.7.3.1.1.26.2.5.20

3990 This value set that holds a list of coded concepts representing concepts indicating that information is a newborn hearing screening outcome result organizer.

| Code | Display Name | Code System Name | Code System OID |
|---|---|---|---|
| 54111-0 | Newborn Hearing Loss Panel | LOINC | 2.16.840.1.113883.6.1 |

 

### 6.5.21 VS_HearingScreeningOutcomeObservation-LeftEar 1.3.6.1.4.1.19376.1.7.3.1.1.26.2.5.21

This value set that holds a list of coded concepts representing concepts indicating that information is a hearing screening outcome observation for the left ear.

| Code | Display Name | Code System Name | Code System OID |
|---|---|---|---|
| 73741-1 | Newborn Hearing screen panel of Ear - left | LOINC | 2.16.840.1.113883.6.1 |

### 6.5.22 VS_HearingScreeningOutcomeObservation-RightEar 1.3.6.1.4.1.19376.1.7.3.1.1.26.2.5.22

This value set that holds a list of coded concepts representing concepts indicating that information is a hearing screening outcome observation for the right ear.

| Code | Display Name | Code System Name | Code System OID |
|---|---|---|---|
| 73744-5 | Newborn Hearing screen panel of Ear – right | LOINC | 2.16.840.1.113883.6.1 |

### 6.5.23 VS_HearingScreeningResultOrganizer 1.3.6.1.4.1.19376.1.7.3.1.1.26.2.5.23

This value set that holds a list of coded concepts representing concepts indicating that information is a hearing screening result organizer.

| Code | Display Name | Code System Name | Code System OID |
|---|---|---|---|
| 417491009 | Neonatal Hearing Test Procedure | SNOMED-CT | 2.16.840.1.113883.6.96 |

### 6.5.24 VS_NeonatalHearingScreeningTest 1.3.6.1.4.1.19376.1.7.3.1.1.26.2.5.24

This value set that holds a list of coded concepts representing concepts indicating that information is a neonatal hearing screening test.

| Code | Display Name | Code System Name | Code System OID |
|---|---|---|---|
| 417491009 | Neonatal Hearing Test Procedure | SNOMED-CT | 2.16.840.1.113883.6.96 |

 

# Appendices

 

# Appendix G – EHDI Profile - Additional Implementer Guidance

## G.1 Date Time Precision

Date/time information for hearing screening information needs to be assessed temporally. For example, the hearing screening quality measure that is part of the CMS Meaningful Use incentive program for eligible hospitals needs to be able to compare the date/time of the hearing screening with the date/time of the discharge from the birth encounter. Also, assessment of newborn hearing screening outcomes often requires temporal processing when a newborn's hearing was screened multiple times. The "biologically relevant time" of the hearing screening needs to be captured and exchanged to support the needed data interoperability. The date that screening information was manually entered or shared for exchange is not equivalent to the biologically relevant time of the hearing screening. This requirement needs to be taken into consideration when creating hearing screening messages as well as hearing plan of care documents.

## G.2 No Known Information

When the hearing plan of care calls for a section of information in the document, and the system creating the document has no information which would be relevant to populate in that section, then the section should be represented using the patterns established in C-CDA for representing "no known information".

Note, the representation of "no known information" is not equivalent to a positive assertion of "none". Thus, if the risk factors section of a hearing plan of care document is coded as "no known information", it cannot be assumed that the newborn has no associated risk factors. It only means the system sending the hearing plan of care document did not have any risk factor information to share.

Examples showing how to encode a section with no known information are available from the CDA Examples Task Force. (http://wiki.hl7.org/index.php?title=CDA_Example_Task_Force#No_Information_Problems_Section )

## G.3 Representation of Maiden Name

When including the mother's maiden name, the following xml representation is used:

```
<name use="L">
  <given>Mary</given>
  <family qualifier="SP">Jones</family>
</name>
<name use="SRCH">
  <given>Mary</given>
```

 

```
  <family qualifier="BR">Smith</family>
</name>
```

 