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## Version 3 Publishing Facilitator's Guide

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Last Published: 07/20/2005 3:19 PM

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## Preface

### i **Notes to Readers**

The Publishing Facilitator's Guide is intended to assist the Publishing Facilitator in creating and maintaining correct and consistent HL7 Version 3 Standards. It is also intended to assist balloters by providing rules for required and recommended elements within an HL7 Version 3 Standard.

This document is part of our effort to create more "background documentation" and is published in September 2005 in conjunction with the HL7 Development Framework (HDF) and the Version 3 Substantivity Guide.

It also contains some elements of a "V3 Styleguide." Content creators are encouraged to follow the rules and guidelines that are contained in this document. Balloters may refer to this document when requesting that documents be changed to "follow the rules."

### ii **Acknowledgements**

Many members of the HL7 community proofed early drafts of this document and provided valuable feedback.

This document was created in response to Dick Harding's request to "bring back the style."

The Publishing Committee would like to thank Dick Harding, Lloyd McKenzie and Alexis Granger for comments and suggestions on early drafts.

### iii **Changes from Previous Release**

This is a new document.

### iv **Prerequisites, Assumptions & Conventions**

[This section is optional. It allows the assertion of prerequisites, assumptions and/or conventions upon which the interpretation and use of this document is dependent. Delete this division if no prerequisites, assumptions or conventions exist.]

#### iv - a **Prerequisites**

Text for prerequisites

#### iv - b **Assumptions**

Text for assumptions

## v **Known Issues & Planned Changes**

This is a draft. We are looking for comments, feedback and additional examples.

## vi **Other Notes**

[This section is optional. It provides a place to list additional informative notes for the reader. Delete this division, if no further notes are needed.]

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# 1 **Overview**

## 1.1 **Introduction and Scope**

The HL7 Version 3 Standards are a collection of related standards built upon a common Reference Information Model. Due to the extensive range of standards the development of consistent content and presentation can become a complex task. The HL7 Modeling & Methodology Committee has produced the HL7 Development Framework to guide the technical development of the standards and the HL7 Tooling Committee is mandated with developing appropriate tooling to support this methodology. The HL7 Publishing Committee is responsible for developing a presentation of the Version 3 standards that is a consistent, easy to use format appropriate for a variety of audiences.

This document presents an overview of the Publishing Process, the tools that are used to create the content, and some guidance on creating consistent and correct content. The goal of this document is to provide the information needed to create a consistent Version 3 Standard that conforms to the M&M methodology and uses the appropriate tooling.

## 1.2 **Roles and Responsibilities**

### 1.2.1 **Publishing Committee Leadership**

The Publishing Committee is an HL7 Board appointed committee and as such the leadership of the committee is appointed by the chair of the HL7 Board of Directors. The committee co-chairs are changed or reconfirmed whenever the HL7 Chair is changed.

The role of the Publishing Committee Co-chair(s) are as follows:

- Chair conference calls and meetings.
- Liaison with HL7 Board, TSC, International Affiliate Realms and other committees necessary to represent the HL7 Publishing Committee and provide updates as appropriate.
- Ensure that appropriate HL7 policies and procedures are followed by the committee.
- Guide the activities of the Publications Technical Manager in accordance with his or her responsibilities.

### 1.2.2 **Publishing Facilitators**

The Publishing Facilitator is a person responsible for the submission of content to the HL7 Publishing committee to be published on behalf of a committee or realm.

All HL7 groups (Technical Committee (TC), Special Interest Group (SIG), Realms, Focus Group (Project)) that are in the process of developing content that will be submitted for consideration

an HL7 standard must select a Publishing Facilitator. The selection process is governed by group's processes (for example elected or appointed).

For the purposes of simplicity in this document we will refer to the group for which the facilitator acts the "TC" recognizing that it may in fact be any of the above mentioned types of group.

Although the focus of this document is for Version 3 standards it should be noted that a Publishing Facilitator should also be assigned for management of the Version 2 standards this may be the same person at the discretion of the TC. The traditional term "Editor" was determined to be inadequate as it did not represent the full range of activities and responsibilities expected of this role; consequently the Publishing Committee felt that creating another term would encompass these expanded responsibilities.

The role of a Publishing Facilitator includes the following:

- Participating as a member of the TC for which he is acting. Informing the TC of any issues, questions or decisions from the Publishing Committee that may affect the TC.
- Participating in the Publishing Committee conference calls and meetings whenever possible. Informing the Publishing Committee of any issues, questions or decisions relevant to the represented TC relevant to publishing.
- Ensuring that the TC is aware of any schedules or deadlines from Publishing.
- Ensuring that a Ballot Request for Information Form is submitted to HL7 HQ by the deadline as is required for content to be included in a Ballot Cycle.
- Ensuring that the TC's content is submitted to Publishing in the correct format, using correct tooling by the required schedule to meet the publishing deadlines.
- Ensuring that the TC's content is represented correctly and completely during the ballot (Preview) and that any revisions are submitted appropriately.

Note that although it is the responsibility of the Publishing Facilitator to ensure the above tasks are completed it is not necessarily his responsibility to perform all these tasks himself. The division of tasks within a TC is the responsibility of the TC's leadership.

### 1.2.3 Technical Publications Manager

HL7 HQ employs a Technical Publications Manager (TPM) who is responsible for supporting HL7 Publishing Committee's activities. This role provides a consistent point of contact for publishing related queries and support for the Publishing Facilitators and other HL7 members working on the development of HL7 standards.

The role of the Technical Publications Manager includes the following:

- Attending HL7 Publishing Committee meetings and conference calls and taking minutes.
- Receiving content from the TC's for consideration to be published by the Publishing Committee.
- Responding to HL7 Member queries regarding Publishing Committee activities or directing these queries to the Publishing committee co-chairs as appropriate.
- Supporting Publishing Facilitators in the conversion of content to Publishing approved formats or in performing Quality Assurance as requested by the Publishing Committee co-chairs.
- Other activities in support of the publishing Committee as requested by the co-chairs or HL7 Leadership.

## 1.3 Publishing Schedule

The HL7 content developed must undergo balloting prior to approval as HL7 standards. The process of publishing the documents and voting on them is known as a Ballot Cycle and the Publishing Committee has scheduled a ballot cycle prior to each Working Group Meeting (

The results of a Ballot Cycle are discussed at the next WGM; consequently the ballot cycle named for the year and month when the next WGM occurs. For example, the 2005Sep Ballot Cycle opens on August 1 and closes on September 3, and the WGM runs from September

The Publishing Schedule is defined by the Publishing Committee each year and then presented to the Technical Steering Committee (TSC) at the Plenary Working Group Meeting for approval. The Publishing Schedule becomes official after the TSC accepts it. The [current Publishing Schedule](#) can be found on the HL7 Website under Events, or at the Publishing Committee's webpage. Although there is a ballot cycle prior to every WGM any TC may opt in or out of any ballot. There is NO requirement to ballot a document in every cycle if resources are not available or the content is not ready to be submitted for another round of balloting. If a TC decides to opt out of a ballot cycle they may request one of the following:

1. Content from the previous cycle be re-presented with no changes. A note will be added to indicate that the content is not open for balloting and is only being displayed to show the last balloted material. Any comments received on this material may be processed by the committee according to their internal processes and are not subject to the normal ballot reconciliation rules.
2. The current work in progress may be presented with a note indicating that the material is for comment only to show the current working direction of the TC. Any comments received on this material may be processed by the committee according to their internal processes and are not subject to the normal ballot reconciliation rules.
3. The content may be removed completely from the ballot cycle. This is not available for documents upon which other documents are reliant or may reference (e.g. Shared Messages). This strategy is not always recommended as it triggers questions about the material that may have gone.

[Link to wide graphic \(opens in a new window\)](#)

The Publishing Schedule outlines deadline dates of the Publishing Process which must be met in order to publish and ballot the content. The deadlines are designed to ensure a high quality balloted material and unnecessary negative votes are avoided. The schedule includes a testing/preview period and a five-day window for ballot package preparation. Some of the deadlines on the Publishing Schedule include:

- **Ballot Announcement**

A Ballot Announcement must be sent to the membership 30 days before a ballot opens. Any documents that are to be included in the ballot cycle must be a part of the announcement; since this is an ANSI and HL7 requirement no exceptions will be made. It is the responsibility of the Publishing Facilitator to ensure that the TC co-chairs submit a completed Ballot Request for Information Form to the [Project Management website](#) in order to be included in a Ballot Cycle.

- **Ballot Preview and Testing Period**

The Ballot Preview and Testing period is a two week window prior to the ballot cycle opening that provides an opportunity to look at the content on the Ballot Preview site before the Ballot Cycle officially opens. During the Ballot Preview Period, the Publishing Facilitator, and other TC members, should review the content to ensure that it is complete and ready to be voted upon. Any errors or omissions should be identified and either corrected by the Publishing Facilitator or brought to the attention of the Publishing Committee prior to ballot cycle opening. During the preview period the Publishing Committee will commit to updating the preview site with corrections within 48 hours of receiving the corrected content (usually sooner).

- **Content Deadline**

The Content Deadline is set the Sunday before the Ballot Cycle is scheduled to open. This is the deadline for any content to be submitted to the Technical Publishing Meeting if it is to be included in the ballot cycle. The Publishing Committee has allocated a week between the content deadline before the ballot cycle open date because it

necessary to use this time to build the ballot website. Any content not received by Wednesday before ballot opens will automatically not be included in the ballot cycle with the following exception: If a preview of the content has been received and processed AND permission is requested and granted based on extreme special circumstances an extension may be considered. Examples of extreme circumstances include unexpected tooling problems or the publishing facilitator being hit by a bus.

- **Ballot Cycle Open**

The Ballot Cycle Open and Close dates are the bookends to the Ballot Cycle. During the time between the Open and Close dates, the Ballot Cycle is referred to as being 'Open'. This means that HL7 members (and paying non-members) will be reviewing and commenting upon the content.

There is always a one week period between the closing of a Ballot Cycle and the following Working Group Meeting. This week is reserved to allow for the tabulation of the votes and organization of the reconciliation meetings during the WGM. The intent is that the TC discuss the votes and comments received during the ballot cycle on the content at the Working Group Meeting.

Refer to the [HL7 Ballot System](#) documentation for more information on Balloting.

## 2 Publishing Tools

The complexity of the Version 3 methodology and interdependence between the components of the standard requires that tools be used to develop the standard and to publish it in a coordinated manner. Although some TC's may choose to use common applications such as MS Word when they are developing the content it is necessary to convert any content into the standard Publishing Tools and technologies before it can be published and balloted.

### 2.1 Installation

All HL7 Version 3 Publishing Tools may be downloaded from the [Tools Website](#). The following table is a summary of the tools.

Table 1: Version 3 Domain Documentation Tools

| Tool  | Description  |
|---|--|
| Pub DB Installer of PubDB as MSI                | Installs a Publication DB and necessary support files. VB code in the Pub DB will invoke WYSIWYG editing of the XML markup using XML Spy Suite 4.4 or 5.0 Supports local publication of domain content. Requires CURRENT RoseTree. User Guide included. Be sure to 'remove' or uninstall the previous version before installing this one.  |
| PubDB Merge Widget Installer -- DBManage -msi   | The Pub DB Manager is a widget created to facilitate the merger of PubDBs, both across domains and within a domain. Its primary focus is for internal use in publishing HL7 ballots, and is offered with no additional documentation.  |
| Stand-alone DescriptionEditor DescEditor as MSI | The Description Editor is a component of the Pub Db that can be installed separately to support editing of descriptive text for HL7 ballots. Do not install this if RoseTree and/or the PubDb are already on your system. It is installed as part of those packages and a separate installation will cause conflicts. User Guide included. |

Table 2: Version 3 Static Model Design & Documentation Tools

| Tool   | Description  |
|--|--|
| RMIM Designer<br>HL7_RmimDesign<br>Installer.msi CMETInfo.txt in<br>ZIPFormal Naming<br>FormalNamingSource | <p>Link is Windows Installer (Win2k, XP, ME).</p> <p>Contents: This is an intelligent installer for the HL7 R-MIM design templates for interactive design with Visio 2000 or 2002. These tools do not work with Visio 2003 (See advisory).</p> <p>This tool requires a Design/RIM Repository (below) and the installation of RoseTree (below) to function. The installer includes instructions for installation and use of these tools. This is the latest "official" release.</p> <p>CMETInfo.txt file is used by the RMIM design tools (in Visio) to specify the CMETs that may be included in a design. This file should be downloaded and placed in your Visio "Solutions\HL7" directory if it is more recently released than the Visio RMIM Designer tools</p> <p>Formal naming in the RMIM designer can be updated independently from the Formal Naming Source file. Installation instructions are on a ReadMe in the archive.</p> |
| RIM, Voc Naming<br>Design/RIM Repository in<br>ZIP   | <p>The most recent HL7 Model Repository for capturing message designs. Includes the most recent RIM and Vocabulary. This is updated as additional columns and tables are added to the repository.</p> <p>Note: Use of this design repository with the RMIM Designer (in Visio) or with other RoseTree-supported applications requires RoseTree Version 3.0.0 or later.</p> <p>The archive also holds the latest formal naming source file for the RMIM Designer in Visio. This source file can also be downloaded separately.</p>  |
| RoseTree RoseTree II.msi<br>(downloads "msi" file needs<br>Win Installer)                                  | <p>Contents: This is the most current release of RoseTree, which builds R-MIMs and HMDs for the Version 3 demonstration. This will INSTALL RoseTree.exe on your system, works with the published, R-MIM-enabled repository. It will also install Microsoft's MSXML4 (if this is not already on your machine) to perform XML extracts from Repository. Be sure to 'remove' or uninstall the previous version before installing this one.</p>  |
|  | <p>The HL7 Design Documentation Editor (CICmDocEdit) is an application for attaching detailed annotations to</p>   |



|   |  |
|---|--|
| HL7 Design Documentation Editor CICmDocEdit.msi | individual rows of HL7 Version 3 message designs. The power of the editor stems from the ability to re-use a particular definition based upon the semantic scope of the element being annotated. User Guide included. (Provided by Clinical Information Consultancy and Beeler Consulting) |
|---|--|

Some of these tools are updated frequently; consequently it is recommended that facilitators check this page before beginning any work to ensure that they are using the latest version of the tools. When a new version of a tool is available, an announcement is usually sent to the editor's mailing list.

The general order for installing the tools is:

1. RoseTree must be installed before the RMIM Designer (in Visio). RoseTree also installs MSXML4, which is used by the RMIM Designer and Visio.
2. XMLSpy should be installed before the PubDB.
3. Visio is used to create the graphical representations of the models (DMIM, RMIM, CI etc), as well as the other diagrams that appear in the document.

Note that before you install an updated version of any of the HL7 Tools, you must uninstall the previous version.

### 3 Narrative Guidelines

It is important that the narrative content within the HL7 standard is consistent from one document to another and is professionally presented. The following are some guidelines that should be followed when writing narrative text:

- Never reference a section number in the narrative, as these can change when the documents are rendered in different formats or from one ballot cycle to another. Artifacts and sections are introduced. Reference by artifact Code using the appropriate hyperlink if appropriate. For example: `<artref ref="PRPM_IN106010" alt="PRPM_IN106010 Terminate Human Resource Record"></artref>`
- Titles and Structured Sort Names should be in title case.
- Descriptions should always be full sentences terminated with appropriate punctuation.
- Use Publishing HTML to format narrative presentation.
- Each domain introduction should be included in the PubDb using HTML markup.
- If tables are required within the introduction, please contact publishing committee for instructions.

### 4 HTML Markup

All Description (memo type) fields in the PubDb support HTML to assist with formatting and display.

The following HTML tags are allowed in the PubDb description fields:

This list is not complete

Formatting:

- Ordered list `<ol> <li>` (close each with `</li> </ol>`)
- Unordered list `<ul> <li>` (close each with `</li> </ul>`)
- Bold Emphasis `<b>` (close with `</b>`)
- Italics `<i>` (close with `</i>`)

- Note: You may not nest `<b>` and `<i>`

Diagram References:

- `<diagref ref="{filename}"/>`

Artifact References:

- `<artref ref="{artifact code}" alt="{Caption text}"></artref>`

Graphics:

- `<graphic source="./Graphics/{fileName}.gif" alt="{Caption text}"/>`

Line Break – will occur:

- At a pair of CR/LFs (carriage return-linefeed combination)
- after `</li>`,
- where a CR/LF immediately follows `</b>` or `</i>`
- [A single CR/LF is replaced with a space.]
- after a paragraph (`<p> ... </p>`)

It is recommended that you reference standard HTML documentation for more information how to use HTML tags.

## 5 Artifact Identification

### 5.1 Structured Sort Names

All artifacts will sort in the Publication using the Structured Sort Name' (SSN). Artifacts w have a 'Title Name' this will appear as the artifact title and should be 'human readable frie but will not be used for sorting. The reason for using the SSN for sorting is to ensure that content is organized in a logical and consistent manner between different domains. The P has a Widget to assist in the assigning of correct SSN codes to the different artifacts. Additionally, if an artifact has an invalid SSN assigned a warning will appear in the PubDb description of the SSN is included in [Version 3 Guide](#).

### 5.2 Artifact Codes

All artifacts within HL7 Version 3 are identified with a unique Code is reserved for the arti may not be reused, replace or removed once the artifact has been approved as standard. following convention is used to create the Artifact Codes:

UUDD\_AAAnnnnnRRvv

Table 3: Artifact Coding System

| Code   | Description                  |
|--------|------------------------------|
| UU     | Sub-Section code             |
| DD     | Domain code                  |
| AA     | Artifact or Document code    |
| nnnnnn | Six digit zero-filled number |
| RR     | Realm code                   |
|        |                              |

|   |              |
|---|--------------|
| w | Version code |
|---|--------------|

Example:

PORX\_AR000001UV01

Practices & Operations Sub-Section, Pharmacy Domain, Application Role Artifact number C  
Universal Realm, Version 01.

See Appendix X for more details.

## 6 Graphics

Graphics are used as illustrations of models and processes. If a graphic is "too large" it will be taken out of the document and a hyperlink will be generated. This is done to keep the document text from being rendered off the right side of the screen, which would require horizontal scrolling to read the document. To keep your graphics inline, keep them less than 600 pixels wide.

The general rule for keeping graphics inline is "Go Long, not Wide"

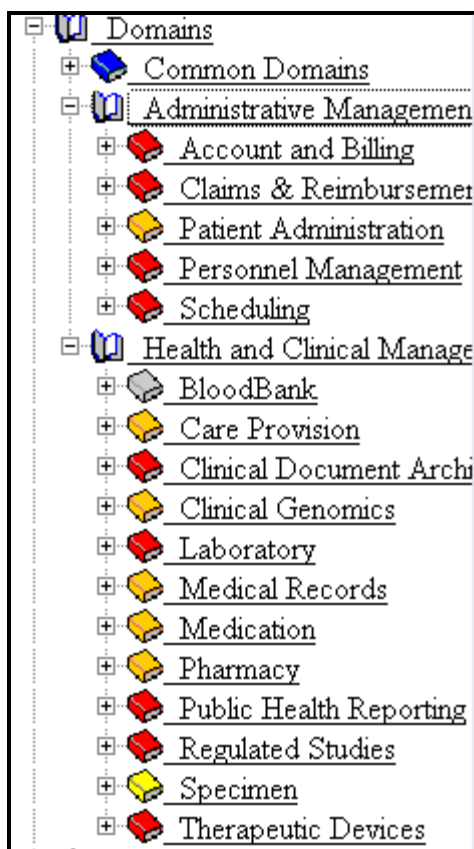
See Appendix 3 for templates that you can use to create many of the common graphics.

## 7 Content Domains

### 7.1 Introduction

The purpose of this section is to provide guidelines to assist in the development of consistent methodology conformant Version 3 content domains. Content Domains include messaging domains that conform to the Version 3 methodology for message development. Refer to Appendix XXX for a list of current content domains.

The content domains are listed in the publication ballot under Domains in either Administrative Management Domains or Health and Clinical Domains. The Common Domains follow some guidelines however there may be noted exceptions where the structure does not apply. Refer to Section 4.0 Common Domains for information specific to these domains.



Sections in this chapter will be identified with one of the following categories

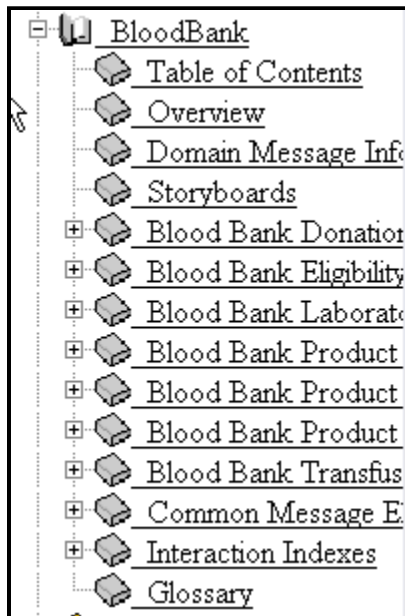
- **Requirement** – These items must be followed to produce content that is compliant with the Version 3 methodology. Any omissions of required items will automatically prevent a document from being published and consequently being included in a ballot cycle. Helpful checklists have been provided to assist in ensuring all required elements are included.
- **Recommendation** – These items are recommended to be followed however the developer may decide to vary from this item if it is not applicable or appropriate to the content being developed.
- **Best Practice** – These items are examples that have been highlighted from previous content submissions that are particularly good or helpful. A TC may choose to follow these items as appropriate.

### 7.1.1 General Principles

A Domain is a way to organize standards that are related to a common area of healthcare. A Domain Name should clearly convey some meaning to the Standard Developer, but most importantly, to the reader. For example, Patient Administration and Pharmacy are concepts that the reader can grasp. It is not necessary, or expected, for all the content developed by a particular TC to fit within a single Domain. There will be cases where a TC has content in more than one Domain and there will be cases where a Domain contains content from more than one TC.

A Topic is a subdivision of a Domain that allows the Domain to be organized so that the reader can quickly identify and focus in on the content they are looking for.

The following example is drawn from the Blood Bank domain and shows how seven Topics have been created.



The reader should have a clear idea of the document's contents by looking at the Topic or Domain Names. Avoid using Topic names like "Topic 1" or "Combined" or "Not Specified". Topic Name is rendered in both the Table of Contents and the Document as "Topic\_Name". When you create a Topic Name, you should consider how it will appear to the reader.

The Topic Name is the base of the Structured Sort Name (SSN).

The order that the Topic appears within the Domain is specified by setting the Sort Order of the Topic in the PubDB.

When creating topic names, keep in mind that no baseClass name can be the opening string of another baseclass name. (e.g. 'Care' and 'Care Record' are not OK. 'Care Record' and 'Care Transfer' are OK.) .

### 7.1.2 Publication Section Indexes

The beginning of each section in the publication includes three indexes to provide links to artifacts. These indexes are designed to support a variety of readers and their requirements. It is not necessary for the Publishing Facilitator to do anything to create or manage these indexes; they are automatically generated by the publishing process.

| § Storyboards (Sorted by Title)  |
|--|
| • Add New Person( <a href="#">PRPA_ST101001</a> )                                    |
| • Add New Person Request( <a href="#">PRPA_ST101201</a> )                            |
| • Nullify Person( <a href="#">PRPA_ST101999</a> )                                    |
| • Person Registry Find Associated Identifiers Query( <a href="#">QUPA_ST101003</a> ) |
| • Person Registry Find Candidates Query( <a href="#">QUPA_ST101002</a> )             |
| • Person Registry Get Demographics Query( <a href="#">QUPA_ST101001</a> )            |
| • Resolve Duplicate Person Registrations( <a href="#">PRPA_ST101004</a> )            |
| • Revise Person Information( <a href="#">PRPA_ST101002</a> )                         |
| • Revise Person Information Request( <a href="#">PRPA_ST101202</a> )                 |
| § Storyboards (Sorted by Structured Sort Name)                                       |
| • Person Notification - Activate( <a href="#">PRPA_ST101001</a> )                    |
| • Person Notification - Edit( <a href="#">PRPA_ST101002</a> )                        |
| • Person Notification - Nullify( <a href="#">PRPA_ST101999</a> )                     |
| • Person Registry Find Candidates Query( <a href="#">QUPA_ST101002</a> )             |
| • Person Registry Get Associated Ids Query( <a href="#">QUPA_ST101003</a> )          |
| • Person Registry Get Demographics Query( <a href="#">QUPA_ST101001</a> )            |
| • Person Request Add( <a href="#">PRPA_ST101201</a> )                                |
| • Person Request Revise( <a href="#">PRPA_ST101202</a> )                             |
| • Person Resolve Duplicates( <a href="#">PRPA_ST101004</a> )                         |
| § Storyboards (Sorted by Display Order)  |
| • Add New Person( <a href="#">PRPA_ST101001</a> )                                    |
| • Revise Person Information( <a href="#">PRPA_ST101002</a> )                         |
| • Nullify Person( <a href="#">PRPA_ST101999</a> )                                    |
| • Person Registry Find Candidates Query( <a href="#">QUPA_ST101002</a> )             |
| • Person Registry Find Associated Identifiers Query( <a href="#">QUPA_ST101003</a> ) |
| • Person Registry Get Demographics Query( <a href="#">QUPA_ST101001</a> )            |
| • Add New Person Request( <a href="#">PRPA_ST101201</a> )                            |
| • Revise Person Information Request( <a href="#">PRPA_ST101202</a> )                 |
| • Resolve Duplicate Person Registrations( <a href="#">PRPA_ST101004</a> )            |

- Sorted by Title - alphabetical list by title name
- Sorted by Structured Sort Name - alphabetical list by the SSN
- Sorted by Display Order - This is a list showing the Title name, but sorted by the that the artifacts will appear in the publication which is based on an algorithmic calculation of the SSN.

Note that the SSN is used to algorithmically organize the artifacts into a logical order based on the components of the SSN (for example mood Proposal, then order, then intent, then ev). For details on how this works please look at the V3Guide.

## 7.2 Preface and Table of Contents Section

The layout for the preface section is:

- Notes to Readers
- Acknowledgements
- Changes from Previous Release
- Prerequisites, Assumptions and Conventions
- Known Issues and Planned Changes
- Other Notes
- Message Design Element Navigation

### 7.2.1 Required

- Notes to Readers
- Changes from Previous Release
- Message Design Element Navigation

### 7.2.2 Recommended

The Acknowledgements section should be used to formally acknowledge individuals and organizations that contributed to the creation of the document.

The Prerequisites, Assumptions and Conventions section should be used to provide the reader with an overview of background material.

The Known Issues and Planned Changes section should be used to provide the reader with an overview of areas that the TC has identified as requiring additional work and some indication of what will be done to address them.

### 7.2.3 Best Practices

The Changes from Previous Release section should be used to describe the changes in general terms. You should tell the reader where significant changes were made and the type of change that was made. The information in this section should allow the reader to easily locate and identify artifacts that have been changed. A good practice is to provide hyperlinks to each change. You do not need to list changes using the level of detail that was required for VeriStandards.

## 7.3 Overview Section

### 7.3.1 Required

None

### 7.3.2 Recommended

The Overview Section should contain a brief description of the Domain or Topic.

### 7.3.3 Best Practices

The Overview should be short, sweet and to the point.

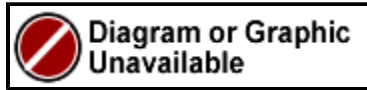
## 7.4 Domain Message Information Models (DMIM)

The Domain Message Information Model (D-MIM) is a subset of the Reference Information Model (RIM) that includes a fully expanded set of class clones, attributes and relationships that are used to create messages for a particular domain.

The basic principle is One DMIM Per Domain.

The DMIM is a unified model that represents how all classes and attributes fit together. The DMIM should be refined so that it is less abstract. Simply copying the RIM into your DMIM is not sufficient. The DMIM has to be understandable.

**Don't re-invent the wheel.** If you are modeling a concept that exists in another Domain with them. If you can find a CMET, use it.



The Domain Message Information Model (D-MIM) is a subset of the Reference Information Model (RIM) that includes a fully expanded set of class clones, attributes and relationships that are used to create messages for a particular domain.

#### 7.4.1 Required

- Title
- Code
- Structured Sort Name
- Walkthrough

#### 7.4.2 Recommended

TBD

#### 7.4.3 Best Practice

TBD

### 7.5 Storyboards

A storyboard consists of a short description, typically less than 100 words, of its purpose. A Storyboard Interaction Diagram that shows the progression of interactions between application roles. A storyboard narrative is a description of a real-life event that provides the necessary context for the development of a specific interaction described in the storyboard.

Storyboards should explain the use of Messages and Trigger Events that are in the Domain Topic.

The process of storyboarding lays the foundation for describing HL7 messages and their context.

#### 7.5.1 Required

- Title
- Code
- Structured Sort Name
- Purpose
- Diagram
- Interaction List
- Narrative Title
- Narrative Code
- Narrative Structured Sort Name
- Narrative Text



#### General Rules:

1. There may be more than one storyboard, but one is required.
2. Storyboards must use the names and contact information as outlined in Appendix 4 entities (People, organizations etc).
3. Each Message Type and Trigger Event should be used in a storyboard.
4. Each storyboard narrative should be an 'alternative' narrative that fulfills the purpose. Storyboards should not build or depend upon each other (cumulative).
  - o NOT: create/update/replace
  - o OK: Admit Emergency; Admit Inpatient

#### **7.5.2 Recommended**

Use sub-headings (HTML markup) within the storyboards to organize the information. Ref Appendix TBD for listing of the HTML markup allowed.

Use references to Application Roles, Trigger Events or Interactions in the narratives. Use hyperlinks to the actual artifacts.

Support hierarchical Storyboards where one storyboard can list storyboards that are dependent upon it. This is done by identifying and linking to a parent storyboard in the dependent storyboard's purpose statement using the HTML markup

#### **7.5.3 Best Practice**

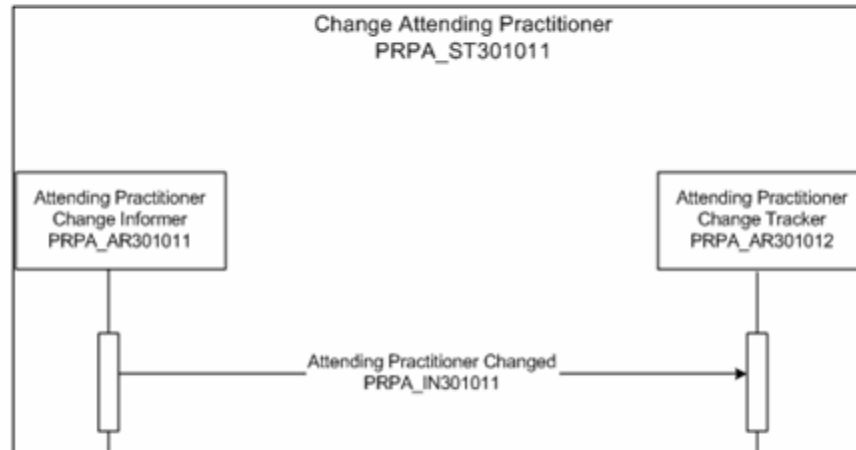
1. Storyboard Narrative Headings. The following is an example of a structure within the storyboard narrative.
  - o Introduction introduces the environment where the storyboard is occurring and existing systems or assumptions in that environment and
  - o Story Event describes the actual event that is the subject of the storyboard and cause of the messaging. Within the Story Event is a listing of the Message Flow where each interaction is listed and explained.
2. Avoid including excess information that is not relevant to the messaging scenario. If not relevant to the HL7 messaging being described in the ballot, leave it out. If it is relevant, put it in.

### 9.1.1 Change Attending Practitioner (PRPA\_ST301011)

#### Purpose

This storyboard demonstrates changing the attending practitioner assignment during an encounter.

#### Diagram



#### Interaction List

Attending Practitioner Changed



[PRPA\\_IN301011](#)

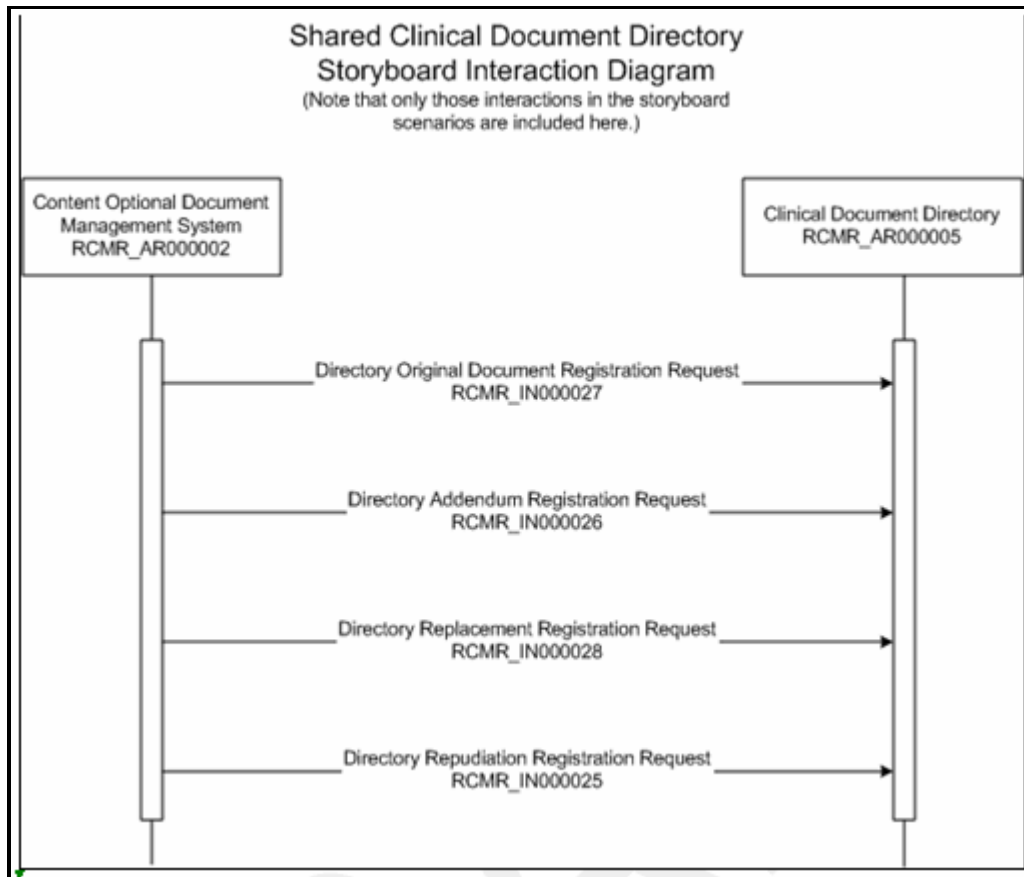
#### 9.1.1.1 Change Attending Practitioner (PRPA\_SN301001)

Mr. Adam Everyman was admitted on Monday to the Good Health Hospital Inpatient Unit for his hip replacement surgery with Dr. Sara Specialize as his attending practitioner. Dr. Specialize was called out of town on a family emergency before arriving at the hospital on Tuesday morning. The active attending practitioner for Mr. Everyman's encounter was changed from Dr. Sara Specialize to Dr. Aaron Attending as of Tuesday morning, 7am [Interaction [Attending Practitioner Changed](#)].

#### Example Storyboard

Storyboard Interaction Diagram. The following is an example of a good Storyboard Interaction Diagram. Specifically:

- Application Roles are identified by name and code
- Interactions are identified by name and code
- All interactions are listed (see note under the heading)



Sample Storyboard Interaction Diagram

## 7.6 Application Roles

Application Roles represent a set of communication responsibilities that might be implemented in an application. They describe system components or sub-components that send or receive interactions. Application Roles are not presently normative.

Published Application roles must be aggregated at a more general level (similar to what was done in Patient Administration). This level was also called “business groups.”

### Hidden Roles

The PubDb will allow detailed (low-level) application roles to be defined and “hidden,” if that facilitates assembling the higher level Application roles. The purpose of hidden roles was for the definition of a granular level of roles within a hierarchy; however it is not currently recommended that hidden application roles be used as they are not necessary due to a change in how application roles are assigned to the Interactions. A “hidden” role will not appear in the ballot. However, interactions that are defined using a hidden role as a sender or receiver, appear in the ballot and will be assigned to the higher level (unhidden) roles that aggregate responsibilities of (or “include”) the lower level roles.

### 7.6.1 Required

- Title
- Code
- Structured Sort Name

- Description

### 7.6.2 Recommended

The Title Name for any Application role should be meaningful and unique. It is recommended using [Topic] [Mood] where applicable.

### 7.6.3 Best Practices

TBD

## 7.7 Trigger Events

A Trigger Event is an explicit set of conditions that initiate the transfer of information between system components (application roles).

Each Trigger Event must have a Trigger Event Type defined from one of the following three values:

- State-transition based: Based on the state transition of a particular focal class. Some trigger events may be based on more than one state transition. If a trigger is associated with more than one state transition, it is assumed that both transitions occur at the same time
- Interaction based: Occurs when a specific interaction is received
- User Request based: (Also known as Environment based) Occurs at the request of a human user or other environmental factor (e.g. fixed point in time, particular record count, etc.)

### 7.7.1 Required

- Title
- Code
- Structured Sort Name
- Description
- Trigger Event Type

Provide a clear description referencing the state transition diagram if applicable.

### 7.7.2 Recommended

Document the state transition diagram and any variations from the RIM diagram, if needed to understand the domain.

### 7.7.3 Best Practice

TBD

## 7.8 Refined Message Information Models (RMIM)

Each Refined Message Information Model (R-MIM) is a subset of a D-MIM and contains only the classes, attributes and associations required to compose the set of messages derived from Hierarchical Message Descriptions (HMD) that originate from the R-MIM root class.

### 7.8.1 Required

- Title
- Code
- Structured Sort Name
- Description

### 7.8.2 Recommended

TBD

### 7.8.3 Best Practices

TBD

## 7.9 Heirarchical Message Descriptions

Hierarchical Message Descriptions (HMD) and their resulting Message Types define the message payload. An HMD is a tabular representation of the sequence of elements (i.e., classes, attributes, and associations) represented in an R-MIM that define the message without reference to implementation technology. The HMD defines a single base message structure - the "common" message type. A Message Type represents a unique set of constraints applied against the common message.

### 7.9.1 Required

- Title
- Code
- Structured Sort Name
- Description

### 7.9.2 Recommended

TBD

### 7.9.3 Best Practices

TBD

## 7.10 Interactions

An Interaction is a unique one-way transfer of information consisting of:

- Trigger Event
- Transmission Wrapper
- Control Act Wrapper
- Message Type
- Sending and Receiving Roles

Interactions are Normative.

### 7.10.1 Required

- Title
- Code
- Structured Sort Name

- Description
- Sending Application Role(s)
- Receiving Application Role(s)
- Initiating Trigger Event
- Message Type
- Control Act Wrapper
- Transport Wrapper

### 7.10.2 Recommended

TBD

### 7.10.3 Best Practice

Initial experience with the first two ballot cycles has revealed four basic interaction patterns. These patterns should be the primary focus of committee-level development.

- State Transition Notification – Sending application is notifying receivers of the occurrence of a state transition
- State Transition Request – Sending application is requesting an action that will cause a state transition
- Fulfillment Request
- Query

#### State Transition Notification Pattern:

- Starts with interaction type Event Notification
- Trigger event must always be state transition based.
- May involve multiple state-transitions (possibly on different focal classes)  
E.g. Replace trigger is tied to an 'Obsolete' and a Null-to-normal transition
- Sending Application Role is Informer
- Receiving Application Role is Tracker
- No Receiver Responsibility

#### State Transition Request Pattern:

- Starts with interaction type Request for Action
- Trigger event must always be state transition based.
- May involve multiple state-transitions (possibly on different focal classes)  
E.g. Replace trigger is tied to an 'Obsolete' and a Null-to-normal transition
- Always has an associated interaction of type Request Response-Refuse
- Interaction has a trigger that is 'Interaction Based' on the previous Request for Action
- At least one additional interaction of type Request Response-Accept
- Interaction has a trigger that is 'Interaction Based' on the previous Request for Action AND is associated with a state transition for the focal class for the Confirmation

#### Sending Application Roles

- Placer
- One or more types of Confirmation Receiver for a focal class that has a 'fulfills' relationship of the class on which a transition is being requested.
- Translation:
  - Proposals are confirmed by Orders, Intents or Events
  - Orders are confirmed by Intents or Events

#### Receiving Application Roles

- Fulfiller (not 'filler')
- One or more types of Confirmer for a focal class that has a 'fulfills' relationship o

class on which a transition is being requested.

- Translation:
  - Proposals are confirmed by Orders, Intents or Events
  - Orders are confirmed by Intents or Events

### **Fulfillment Request Pattern**

To Be Written

### **Query Pattern**

- Starts with interaction type Query
- Trigger event is of type User-Request
- Always has an associated interaction of type Query Response
- Interaction has a trigger that is 'Interaction Based' on the previous Query

Sending Application Roles

- Informer
- Placer
- Translation:
  - Proposals are confirmed by Orders, Intents or Events
  - Orders are confirmed by Intents or Events

Receiving Application Roles

- Tracker
- Fulfiller (not 'filler')
- One or more types of Confirmer for a focal class that has a 'fulfills' relationship to a class on which a transition is being requested.
- Translation:
  - Proposals are confirmed by Orders, Intents or Events
  - Orders are confirmed by Intents or Events

## **8 Common Domains**

The Common Domains are domains that generally follow the structure of the Content Domain, however they are designed to be used by the Content Domains and as such may not include the same artifacts. For example, Common Message Element Types do not include Interactions.

### **8.1 Common Message Element Types (CMETs)**

Common Message Element Types (CMETs) are a work product produced by a Technical Committee for expressing a common, useful and reusable concept. They are generally "consumed", or used by both the producing committee and other committees.

Because they are intended for common use across messages produced by all committees, they are proposed to, reviewed by, and maintained by the CMET task force of the Modeling and Methodology committee. The CMET task force harmonizes and becomes steward for all CMETs.

A CMET can be envisioned as a message type fragment that is reusable by other message types. Any message type can reference a CMET, including other CMETs. As an example, several committees may require the use of a common concept, that of a person in the role of a participant. A CMET can be defined to express this concept as a message type that clones a role played by a person, with all appropriate attributes. The CMET is then used to uniformly represent the concept for all interested committees.

Your domain should use CMETs wherever possible so that you do not have to "reinvent the wheel".

wheel."

## 8.2 Shared Messages

Shared Messages are a work product produced for expressing common, useful and reusable message types. A Shared Message can be envisioned as a message type that is reusable interactions in any of the domains within the HL7 standard. The scope of the Shared Message Domain includes message types shared by all the clinical domains. The domain model covers a minimalistic Act payload used to convey generic information related to an Act and its subclasses. Although CMET terminology does not apply to Message Types, the Common Message domain model can be thought of as an Act CMET [minimal].

The Act in the Shared Message Domain can be thought of as a reference to, or as a summary version of, an act. This includes use-cases such as the notification of a status change of the sending of application level accept/reject messages, the registration of acts in repository and responding to Act-related queries.

Note: The Shared Messages domain will include storyboards, application roles, trigger event interactions, and message types shared by any of the healthcare domains. Some of these are for example purposes only. The examples will not be used in their own right but as a reusable payload in various domains. When used in this fashion, the message is transmitted as a domain interaction and between two domain application roles. Artifacts will be documented to whether they are examples or can be used in their own right.

## 8.3 ClinicalStatementPattern

The model described in this document is a pattern designed to be used within multiple HL7 Version 3 domain models. This 'pattern' is intended to facilitate the consistent design of communications that convey clinical information to meet specific use cases. It is not intended that the 'pattern' itself is ever used in a communication, and consequently the information document is necessarily at a high level with a minimum of constraints applied. The 'pattern' does NOT represent a Record Architecture or a physical structure for storing data on an EHR database although it does cover many of the types of clinical information that should be part of an Electronic Health Record.

The formal definition of clinical statement for the care of patients is:

"An expression of a discrete item of clinical (or clinically related) information that is recorded because of its relevance to the care of a patient. Clinical information is fractal in nature and therefore the extent and detail conveyed in a single statement may vary. To be regarded as a clinical statement, a concept must be associated with a patient in a manner which makes

- Its temporal context
- Its relationship to the patient
- In the case of an observation, its mood and presence, absence or value
- In the case of a procedure, its mood and status

This clarity may be achieved by

- Explicit representation; or
- Implicit application of defaults ONLY where explicitly modeled rules state the appropriate defaults."

## 8.4 Messaging Infrastructure

The HL7 Infrastructure addresses the following aspects of the communications environment



is considered common to all

- HL7 Version 3 messaging implementations:
- A specification for the composite HL7 Version 3 message.
- A protocol for reliable message delivery.
- Generic "Communication Roles" that support the modes of HL7 messaging.
- Message control events that describe a framework for generic HL7 messaging.

### 8.4.1 Wrappers

HL7 Version 3 provides a substantial level of functionality in the provision of envelopes to the transport of HL7 messages from sender to receiver. HL7 calls these wrappers. Wrappers are defined in the same way as message content; by defining object classes and relationships. Wrapper specifications can then be used to generate an XML schema, or other ITS-defined syntax for the wire.

## 9 Supporting Documents

### 9.1 Foundation Documents

The HL7 Version 3 Methodology is built upon a foundation that includes the RIM, Vocabulary, Abstract Data Type definition, conformance rules and a common expression language (GE

These documents are published with the Version 3 material so that they can be referenced by the reader when reviewing the standard's documents. It is important that Publishing Facilitators refer appropriately to this reference material and not duplicate it within individual documents. A hyperlink may be made to the foundation documents from any description (or text) field within the Domains. If the foundation content were duplicated within the domain it is possible that it become outdated as the foundation content is updated; by using the appropriate hyperlink the facilitator will ensure that the link is maintained to the current version of the foundation documents.

#### 9.1.1 Reference Information Model

The Health Level Seven (HL7) Reference Information Model (RIM) is a static model of health care information as viewed within the scope of HL7 standards development activities. It represents the combined consensus view of information from the perspective of the HL7 working groups and the HL7 international affiliates. The RIM is the ultimate source from which all HL7 version 3 protocol specification standards draw their information-related content.

Your Domain's DMIM will be a subset of the RIM.

#### 9.1.2 Data Types Abstract

This document specifies the HL7 Version 3 Data Types on an abstract layer, independent of representation. By "independent of representation" we mean independent of both abstract representation as well as implementation in any particular implementation technology.

This document is accompanied by Implementation Technology Specifications (ITS). The ITS documents can serve as a quick compendium to the data types that is more practically oriented toward the representation in that particular implementation technology.

Vocabulary tables within this specification list the current contents of vocabulary domains to ease of reference by the reader. However, at any given time the normative source for the domains is the vocabulary tables in the RIM database. For some large domains, only a sa

possible values is shown. The complete domains can be referenced in the vocabulary table by looking up the domain name associated with the table in the RIM vocabulary tables.

### **9.1.3 Vocabulary**

The HL7-defined vocabulary domain tables that have been developed for coded class attributes are stored in the HL7 repository, from which a number of views have been extracted to produce the HL7 Vocabulary Domain Listings for the HL7 Reference Information Model (RIM). They are presented in table format and include the HL7 Vocabulary Domain Values, the HL7 Domain Tables and Coded Attributes Cross-reference. HL7-recognized external vocabulary domains are described in the External Domains list.

### **9.1.4 Refinement, Constraint and Localization**

The Version 3 Messaging standard provides a rich set of messages to support a variety of clinical and other health related endeavors. Moreover, HL7 Version 3 messages can be specific enough to permit strong conformance claims to be asserted and verified. Refer to Conformance Statements for more details. Nevertheless, any standard faces two challenges. First, it can always be made more specific in order to provide a more precise solution to a particular requirement. Second, it will not contain all of the data needed in every environment, particularly when international requirements are considered. These challenges lead to a pair of complementary requirements: the ability to constrain the standard in more detail, and the ability to extend the standard in a controlled fashion.

### **9.1.5 GELLO**

GELLO is a class-based, object-oriented (OO) language that is built on existing standards. GELLO expression language is based on the Object Constraint Language (OCL), developed by the Object Management Group. Relevant components of OCL have been selected and integrated into GELLO to provide a suitable framework for manipulation of clinical data for decision support in health care.

## **9.2 Background Documents**

### **9.2.1 Version 3 Guide**

The Version 3 Guide is a useful introduction to the concepts that underlie Version 3, providing an introduction to terminology that is used, and gives an overview of the basic layout of a Version 3 Standard.

### **9.2.2 Glossary**

There are actually several Glossaries that are published as part of Version 3. Each Domain contains a Glossary of terms that are defined and used within it. The main Version 3 Glossary is a combination of the terms from each Domain and Core Terms that are common to all Version 3 Standards.

As a Publishing Facilitator, you will define the terms that are used in your Domain. These terms and their definitions are referred to as the Domain Glossary. The publishing process automatically generates the Glossary for your Domain, and will also place your Domain's terms into the Combined Glossary.

The Core Glossary is maintained by the Publishing Committee. It contains terms that are

commonly used in all Version 3 Standards. For example, artifact and mandatory are defined in the Core Glossary.

Before you define a term in your Domain Glossary, you should look to see if it exists in the Core Glossary. You should not define a term in your Domain Glossary if it would duplicate the definition that is in the Core Glossary. However, if your Domain uses a term in a manner different from the Core Definition, you should add it to your Domain Glossary. For example, Application is defined in the Core Glossary and refers to a software program; Application is defined by Personnel Management in the context of applying for a job.

### 9.2.3 Methodology

The Health Level 7 (HL7) Development Framework Methodology Specification is a product of the HL7 Development Framework (HDF) project. The purpose of the Health Level Seven (HL7) Development Framework Project is to research, analyze, design, and document the processes, policies, and artifacts associated with development of HL7 standards specifications.

If you are new to developing HL7 Standards, this is a very good reference.

---

## A Templates and Building Blocks

You don't have to create all of this from scratch. Here is a list of templates and fragments that can be used as a starting point for creating diagrams and other content.

### A.1 Graphic Templates

- Storyboard Template
- State Diagram Template

### A.2 Content Templates

Need some ideas here.

## B HL7 Mailing Lists

HL7 has many electronic mailing lists. Several of them will be of interest to Publishing Facilitators.

This is a [complete listing](#) of HL7 mailing lists.

### B.1 Editors List

This is the primary mailing list for Publishing Facilitators.

[editors@lists.hl7.org](mailto:editors@lists.hl7.org)

[Subscribe to the Editor's Mailing list](#)

### B.2 Tooling Committee's Mailing List

This is the primary mailing list for Tooling Developers and for the announcement of new releases.

of tools.

[tooling@lists.hl7.org](mailto:tooling@lists.hl7.org)

[Subscribe to the Tooling Committee's Mailing list](#)

## C Storyboard Names

When you develop Storyboards it is important that you do not refer to any real persons o

### C.1 Patients

Table 4: Patient Information for Storyboards

| Cast                 | Family     | Given   | MI | Gender | SSN         | Phone        | Cell             | Street |
|----------------------|------------|---------|----|--------|-------------|--------------|------------------|--------|
| patient, female      | Everywoman | Eve     | E  | F      | 444-22-2222 | 555-555-2003 | 2222 Home Street |        |
| patient, male        | Everyman   | Adam    | A  | M      | 444-33-3333 | 555-555-2004 | 2222 Home Street |        |
| patient, child       | Kidd       | Kari    | K  | F      | 444-55-5555 | 555-555-2005 | 2222 Home Street |        |
| family, daughter     | Nuclear    | Nancy   | D  | F      | 444-11-4567 | 555-555-5001 | 6666 Home Street |        |
| family, husband      | Nuclear    | Neville | H  | M      | 444-11-1234 | 555-555-5001 | 6666 Home Street |        |
| family, son          | Nuclear    | Ned     | S  | M      | 444-11-3456 | 555-555-5001 | 6666 Home Street |        |
| family, wife         | Nuclear    | Nelda   | W  | F      | 444-11-2345 | 555-555-5001 | 6666 Home Street |        |
| next of kin (parent) | Mum        | Martha  | M  | F      | 444-66-6666 | 555-555-2006 | 4444 Home Street |        |
| next of kin (child)  | Sons       | Stuart  | S  | M      | 444-77-7777 | 555-555-2007 | 4444 Home Street |        |
| next of kin (spouse) | Betterhalf | Boris   | B  | M      | 444-88-8888 | 555-555-2008 | 2222 Home Street |        |
|                      |            |         |    |        | 444-        | 555-         | 4444             |        |

|                        |          |        |   |   |                     |                      |                        |  |
|------------------------|----------|--------|---|---|---------------------|----------------------|------------------------|--|
| next of kin<br>(other) | Relative | Ralph  | R | M | 99-<br>9999         | 555-<br>2009         | Home<br>Street         |  |
| contact<br>person      | Contact  | Carrie | C | F | 555-<br>22-<br>2222 | 555-<br>555-<br>2010 | 5555<br>Home<br>Street |  |

## C.2 Healthcare Staff

| Cast                      | Family      | Given    | MI | Gender | SN                  | Phone                | Cell                 | S                  |
|---------------------------|-------------|----------|----|--------|---------------------|----------------------|----------------------|--------------------|
| healthcare provider       | Seven       | Henry    | L  | M      | 333-<br>33-<br>3333 | 555-<br>555-<br>1002 | 955-<br>555-<br>1002 | 100<br>Hea<br>Driv |
| assigned practitioner     | Assigned    | Amanda   | A  | F      | 333-<br>44-<br>444  | 555-<br>555-<br>1021 | 955-<br>555-<br>1021 | 102<br>Hea<br>Driv |
| physician                 | Hippocrates | Harold   | H  | M      | 444-<br>44-<br>4444 | 555-<br>555-<br>1003 | 955-<br>555-<br>1003 | 100<br>Hea<br>Driv |
| primary care<br>physician | Primary     | Patricia | P  | F      | 555-<br>55-<br>5555 | 555-<br>555-<br>1004 | 955-<br>555-<br>1004 | 100<br>Hea<br>Driv |
| admitting physician       | Admit       | Alan     | A  | M      | 666-<br>66-<br>6666 | 555-<br>555-<br>1005 | 955-<br>555-<br>1005 | 100<br>Hea<br>Driv |
| attending physician       | Attend      | Aaron    | A  | M      | 777-<br>77-<br>7777 | 555-<br>555-<br>1006 | 955-<br>555-<br>1006 | 100<br>Hea<br>Driv |
| referring physician       | Sender      | Sam      | S  | M      | 888-<br>88-<br>8888 | 555-<br>555-<br>1007 | 955-<br>555-<br>1007 | 100<br>Hea<br>Driv |
| intern                    | Intern      | Irving   | I  | M      | 888-<br>22-<br>2222 | 555-<br>555-<br>1022 | 955-<br>555-<br>1022 | 102<br>Hea<br>Driv |
| resident                  | Resident    | Rachel   | R  | F      | 888-<br>33-<br>3333 | 555-<br>555-<br>1023 | 955-<br>555-<br>1023 | 102<br>Hea<br>Driv |
| chief of staff            | Leader      | Linda    | L  | F      | 888-<br>44-<br>4444 | 555-<br>555-<br>1024 | 955-<br>555-<br>1024 | 102<br>Hea<br>Driv |
|                           |             |          |    |        |                     |                      |                      |                    |

|                               |            |         |   |   |             |              |              |                     |
|-------------------------------|------------|---------|---|---|-------------|--------------|--------------|---------------------|
| authenticator                 | Verify     | Virgil  | V | M | 999-99-9999 | 555-555-1008 | 955-555-1008 | 1008<br>Hea<br>Driv |
| specialist                    | Specialize | Sara    | S | F | 222-33-3333 | 555-555-1009 | 955-555-1009 | 1009<br>Hea<br>Driv |
| allergist/immunologist        | Reaction   | Ramsey  | R | M | 222-22-3333 | 555-555-1025 | 955-555-1025 | 1025<br>Hea<br>Driv |
| anesthesiologist              | Sleeper    | Sally   | S | F | 222-66-6666 | 555-555-1012 | 955-555-1012 | 1012<br>Hea<br>Driv |
| cardiologist                  | Pump       | Patrick | P | M | 222-33-4444 | 555-555-1027 | 955-555-1027 | 1027<br>Hea<br>Driv |
| cardiovascular surgeon        | Valve      | Vera    | V | F | 222-33-5555 | 555-555-1028 | 955-555-1028 | 1028<br>Hea<br>Driv |
| dermatologist                 | Scratch    | Sophie  | S | F | 222-33-6666 | 555-555-1029 | 955-555-1029 | 1029<br>Hea<br>Driv |
| emergency medicine specialist | Emergency  | Eric    | E | M | 222-33-7777 | 555-555-1030 | 955-555-1030 | 1030<br>Hea<br>Driv |
| endocrinologist               | Hormone    | Horace  | H | M | 222-33-8888 | 555-555-1031 | 955-555-1031 | 1031<br>Hea<br>Driv |
| family practitioner           | Family     | Fay     | F | F | 222-33-9999 | 555-555-1032 | 955-555-1032 | 1032<br>Hea<br>Driv |
| gastroenterologist            | Tum        | Tony    | T | M | 222-44-2222 | 555-555-1033 | 955-555-1033 | 1033<br>Hea<br>Driv |
| geriatrician                  | Sage       | Stanley | S | M | 222-44-3333 | 555-555-1034 | 955-555-1034 | 1034<br>Hea<br>Driv |
| hematologist                  | Bleeder    | Boris   | B | M | 222-44-     | 555-555-     | 955-555-     | 1034<br>Hea         |

|                               |           |        |   |   |             |              |              |                    |
|-------------------------------|-----------|--------|---|---|-------------|--------------|--------------|--------------------|
|                               |           |        |   |   | 3344        | 1035         | 1035         | Driv               |
| infectious disease specialist | Pasteur   | Paula  | P | F | 222-44-5555 | 555-555-1036 | 955-555-1036 | 103<br>Hea<br>Driv |
| internist                     | Osler     | Otto   | O | M | 222-44-6666 | 555-555-1037 | 955-555-1037 | 103<br>Hea<br>Driv |
| nephrologist                  | Renal     | Rory   | R | M | 222-44-7777 | 555-555-1038 | 955-555-1038 | 103<br>Hea<br>Driv |
| neurologist                   | Brain     | Barry  | B | M | 222-44-8888 | 555-555-1039 | 955-555-1039 | 103<br>Hea<br>Driv |
| neurosurgeon                  | Cranium   | Carol  | C | F | 222-44-9999 | 555-555-1040 | 955-555-1040 | 103<br>Hea<br>Driv |
| OB/GYN                        | Fem       | Flora  | F | F | 222-55-2222 | 555-555-1041 | 955-555-1041 | 103<br>Hea<br>Driv |
| oncologist                    | Tumor     | Trudy  | T | F | 222-55-3333 | 555-555-1042 | 955-555-1042 | 104<br>Hea<br>Driv |
| ophthalmologist               | Vision    | Victor | V | M | 222-55-4444 | 555-555-1043 | 955-555-1043 | 104<br>Hea<br>Driv |
| orthopedic surgeon            | Carpenter | Calvin | C | M | 222-55-5545 | 555-555-1044 | 955-555-1044 | 104<br>Hea<br>Driv |
| otolaryngologist (ENT)        | Rhino     | Rick   | R | M | 222-55-6666 | 555-555-1045 | 955-555-1045 | 104<br>Hea<br>Driv |
| pathologist                   | Slide     | Stan   | S | M | 222-44-4444 | 555-555-1010 | 955-555-1010 | 101<br>Hea<br>Driv |
| pediatrician                  | Kidder    | Karen  | K | F | 222-55-7777 | 555-555-1046 | 955-555-1046 | 104<br>Hea<br>Driv |
|                               |           |        |   |   |             |              |              |                    |

|                     |             |           |   |   |             |              |              |                    |
|---------------------|-------------|-----------|---|---|-------------|--------------|--------------|--------------------|
| plastic surgeon     | Hollywood   | Heddie    | H | F | 222-55-8888 | 555-555-1047 | 955-555-1047 | 104<br>Hea<br>Driv |
| psychiatrist        | Shrink      | Serena    | S | F | 222-55-9999 | 555-555-1048 | 955-555-1048 | 104<br>Hea<br>Driv |
| pulmonologist       | Puffer      | Penny     | P | F | 222-66-2222 | 555-555-1049 | 955-555-1049 | 104<br>Hea<br>Driv |
| radiologist         | Curie       | Christine | C | F | 222-55-5555 | 555-555-1011 | 955-555-1011 | 101<br>Hea<br>Driv |
| rheumatologist      | Joint       | Jeffrey   | J | M | 222-66-3333 | 555-555-1050 | 955-555-1050 | 104<br>Hea<br>Driv |
| surgeon             | Cutter      | Carl      | C | M | 222-77-7777 | 555-555-1013 | 955-555-1013 | 101<br>Hea<br>Driv |
| urologist           | Plumber     | Peter     | P | M | 222-66-4444 | 555-555-1051 | 955-555-1051 | 104<br>Hea<br>Driv |
| physician assistant | Helper      | Horace    | H | M | 222-66-5555 | 555-555-1052 | 955-555-1052 | 105<br>Hea<br>Driv |
| registered nurse    | Nightingale | Nancy     | N | F | 222-88-8888 | 555-555-1014 | 955-555-1014 | 101<br>Hea<br>Driv |
| nursing assistant   | Barton      | Clarence  | C | M | 222-99-9999 | 555-555-1015 | 955-555-1015 | 101<br>Hea<br>Driv |
| chiropractor        | Bender      | Bob       | B | M | 222-66-6666 | 555-555-1053 | 955-555-1053 | >10<br>Hea<br>Driv |
| dentist             | Chopper     | Charlie   | C | M | 222-66-7777 | 555-555-1054 | 955-555-1054 | 105<br>Hea<br>Driv |
| orthodontist        | Brace       | Ben       | B | M | 222-66-     | 555-555-     | 955-555-     | 105<br>Hea         |



|                        |           |        |   |   |             |              |              |                    |
|------------------------|-----------|--------|---|---|-------------|--------------|--------------|--------------------|
|                        |           |        |   |   | 8888        | 1055         | 1055         | Driv               |
| optometrist            | Specs     | Sylvia | S | F | 222-66-9999 | 555-555-1056 | 955-555-1056 | 105<br>Hea<br>Driv |
| pharmacist             | Script    | Susan  | S | F | 333-22-2222 | 555-555-1016 | 955-555-1016 | 101<br>Hea<br>Driv |
| podiatrist             | Bunion    | Paul   | B | M | 222-77-2222 | 555-555-1057 | 955-555-1057 | 105<br>Hea<br>Driv |
| psychologist           | Listener  | Larry  | L | M | 222-77-3333 | 555-555-1058 | 955-555-1058 | 105<br>Hea<br>Driv |
| lab technician         | Beaker    | Bill   | B | M | 333-44-4444 | 555-555-1017 | 955-555-1017 | 101<br>Hea<br>Driv |
| dietician              | Chow      | Connie | C | F | 333-55-5555 | 555-555-1018 | 955-555-1018 | 101<br>Hea<br>Driv |
| social worker          | Helper    | Helen  | H | F | 333-66-6666 | 555-555-1019 | 955-555-1019 | 101<br>Hea<br>Driv |
| occupational therapist | Player    | Pamela | P | F | 222-77-6666 | 555-555-1059 | 955-555-1059 | 105<br>Hea<br>Driv |
| physical therapist     | Stretcher | Seth   | S | M | 222-77-8888 | 555-555-1060 | 955-555-1060 | 105<br>Hea<br>Driv |
| transcriptionist       | Enter     | Ellen  | E | F | 333-77-7777 | 555-555-1020 |              |                    |

### C.3 Locations

- Good Health Hospital
- Good Health Hospital Inpatient Unit
- Good Health Hospital Pediatric Clinic
- Good Health Hospital Patient Registry
- Good Nursing Home
- Good Home Health

- Home Health Care Agency
- Anyplace Community College
- Doctorsareus Medical School
- Health Authority West
- People's Pharmacy
- Good Neighbor Pharmacy
- The DoctorsApart Physician Group
- The DoctorsTogether Physician Group
- NextDoorTown
- HC Payor, Inc.

## **D Section, Subsection and Domain Codes**

- AM – Administrative Management (Section)
  - PR – Subsection: Practice
    - PA: Domain: Patient Administration
    - SC: Domain: Scheduling
    - PM: Domain: Personnel Management
  - FI -- Subsection: Financial
    - CR: Domain: Claims and Reimbursement
    - AB: Domain: Accounting and Billing
- HM – Health and Clinical Management (Section) PO – Subsection: Operations BB Domain: Bloodbank CG: Domain: Clinical Genomics LB: Domain: Laboratory ME: Domain: Medication RI: Domain: Informative Public Health RR: Domain: Public Health Reporting RT: Domain: Regulated Studies RX: Domain: Pharmacy TD: Domain: Therapeutic Devices RE – Subsection: Reasoning PC: Domain: Care Provision (For Patient Care) RC – Subsection: Records MR: Domain: Medical Records
- IM – Infrastructure Management (Section) CO – Subsection: Common Message Elements (CMETs) CT: Domain: Common Message Elements MT: Domain: Share Messages MC – Subsection: Message Control CI: Domain Message Control Infrast MF – Subsection: Master File Management AC: Domain: Act Classes EN: Domain Classes MI: Domain: Master File Infrastructure RO: Domain: Role Classes QU – Subsection: Query PA: Domain: Patient Administration QI: Domain: Query Infrastructure