

[redacted brand] Linking and Single Sign-On

Programmer Reference

Release 22.2



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About This Manual

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Introduction

The [redacted brand] *Linking and Single Sign-On (SSO) Programmer Reference* provides information on integrating a third-party electronic medical record (EMR) application into the [redacted] product suite. The linking and single sign-on features allow a third-party EMR to directly access specific functions of [redacted] via single sign-on (SSO).

Additional services available to a linked application include the following:

- **User summary services.** The ability to view [redacted] lab result and user message counts from within the linked application.
- **[redacted] user interface (UI) customization.** The ability to customize certain elements of the [redacted] user interface to more closely resemble partner applications or product branding.
- **Order echo.** The ability to receive copies of lab orders and Rx orders placed using [redacted] within the linked application.
- **Patient demographic updates.** The ability for the linked application to synchronize patient demographic, scheduling, and/or billing data with [redacted] patient database (via [redacted brand]). The linked application can submit patient add, update, merge, delete, and/or schedule updates to [redacted]. It also has the option to either receive (via push), or retrieve (via pull), patient demographic and/or billing updates that have been submitted by [redacted].

Disclaimers

- This Programmer Reference provides specifications necessary for exchanging laboratory data between a third-party Service Provider (laboratory) or EMR application and the various components of [redacted brand]. It does not, however, provide documentation on creating or updating an application to produce data files that conform to these specifications.
- All sample code referenced in this Programmer Reference is provided for example purposes only, and it may need to be modified to work in your environment. It is provided “as is,” without warranty of any kind, or support, from [redacted brand].

What's New in This Release

Linking and Single Sign-On (SSO) provides no updates or enhancements for the 22.3 release.

There is a branding change.

- [redacted brand] is now known as [redacted brand]

Documentation Conventions

This manual help uses the following conventions:

- Manual titles, special terms, webpage and dialog box titles, menu items, toolbar button names, labels that appear on webpages and dialog boxes, and keyboard key names appear in *italic*.
Italic is also used to indicate variables. For example, an email address might be presented as *name@company.com*. When typing the address, you would use the actual user name and company name rather than *name* and *company*.
- Words that are being emphasized appear in **bold**.
- Text that you type as well as messages and prompts that appear on the screen appear in `this type style`.
- The greater than symbol (>) indicates a series of menu items to click. For example, the instructions to click the *File* menu item and then click *Open* might be presented in the following way: “Click *File* > *Open*.”
- This manual help calls your attention to important information in several ways:

Tip: A tip contains information that, while not essential, may make your task easier.

Note: A note indicates exceptions to the stated rule, or information that emphasizes or supplements important points in the main text. A note can supply information that might apply only in a special case.

Caution! A caution indicates that failure to take or avoid a specified action could result in losing data. When you see a caution, follow the instructions carefully.

- When viewing this manual using Adobe® Reader®, we recommend that you do the following to ensure optimal display:
 - a Click *Edit* > *Preferences*.
 - b In the *Categories* list, click *Page Display*.
 - c In the *Rendering* area, clear the *Enhance thin lines* check box. You may also want to clear the *Use 2D graphics acceleration* check box, based on capabilities of your graphics card.
 - d Click *OK*.

Note: The preceding steps are specific to Adobe Reader X; the procedure may vary based on the version you are using.

Abbreviations and Acronyms

The following is a list of abbreviations and acronyms that are used in this manual.

Abbreviation/Acronym	Description
ADT	Admission Discharge Transfer
AMA	American Medical Association
API	Application Programming Interface
CCR	Continuity of Care Record
CMS	Centers for Medicare and Medicaid Services
CPT®	Current Procedural Terminology
CRNA	Certified Registered Nurse Anesthetists
DFT	(HL7) Detail Financial Transaction message
DOB	Date of Birth
EHR	Electronic Health Record
EMR	Electronic Medical Record
HCPCS	Healthcare Common Procedure Coding System
HL7	Health Level Seven
HTTP	Hypertext Transfer Protocol
HTTPS	Hypertext Transfer Protocol, Secure
ICDA	International Classification of Diseases
ICD10 or ICD-10	International Classification of Diseases (of the World Health Organization), 10th Revision
IPA	Independent Physician Association
MDM	(HL7) Medical Document Management message
MRN	Medical Record Number
NPI	National Provider Identifier
NDC	National Drug Code
PBM	Pharmacy Benefit Manager
PDF	Portable Document Format
PMS	Practice Management System
PPMS	Physician Practice Management System
SAML	Security Assertion Markup Language

Abbreviation/Acronym	Description
SOAP	Simple Object Access Protocol
SIU	(HL7) Patient Schedule message
SSL	Secure Sockets Layer
SSO	Single Sign-On
UB	Universal Bill
UDDI	Universal Description, Discovery, and Integration
URI	Uniform Resource Identifier
URL	Uniform Resource Locator
W3C	World Wide Web Consortium
WSDL	Web Services Definition Language
XML	eXtensible Markup Language

Related Documentation

In addition to this Programmer Reference, the following resources are also available for the individual components of [redacted brand]:

- **EHR Interfaces Programmer Reference.** Provides information on integrating a non-service provider (laboratory) and/or third-party electronic medical record (EMR) or electronic health record (EHR) application into the [redacted brand] product suite. The integration of a third-party laboratory or EMR/EHR application involves the following primary services:
 - **Universal lab orders.** The ability to submit lab orders to a third-party laboratory via [redacted brand], or via a third-party EMR/EHR application.
 - **Universal lab results.** The ability to receive test results and radiology results generated by a third-party laboratory via [redacted brand], or via a third-party EMR/EHR application.
- **[redacted] User Manual.** Provides information on accessing and using the [redacted] application, which includes the integrated *Lab Orders* function. Intended for end users of the application, including physicians, clinicians, phlebotomists, clinical office staff, and administrative office staff.

Third-Party Internet Resources

The following is a list of third-party resources (available via the Internet) that you can access for more information on specific programming subjects.

Subject	Internet Resources	
Health Level 7 (HL7®)	Health Level Seven (HL7), Inc.	http://www.hl7.org/
SAML	Security Assertion Markup Language	http://www.oasis-open.org/committees/tc_home.php?wg_abbrev=security
SSL Certificates	VeriSign® SSL Certificates	http://www.verisign.com/products-services/security-services/ssl/

Chapter 1: Linking to [redacted]

In This Chapter:

- About Linking and Single Sign-On (SSO) 2
- Customizing the [redacted] User Interface13
- About the [redacted brand] SSO and Web Services Site 16
- About Lab Order Echo19
- About Rx Order Echo20

About Linking and Single Sign-On (SSO)

This chapter provides information about linking from a partner application—for example, an electronic medical record (EMR) application, electronic health record (EHR) application, or practice management system (PMS)—to [redacted]. Application linking enables the partner application to directly access specific functions of [redacted], from within the context of the partner application.

Linking to [redacted] enables a partner application to effectively offer lab order and result services through an existing EMR solution. Users can launch directly into a specific [redacted] function, using SSO and maintaining their current patient context. SSO access allows the user to transparently log in to [redacted] from within the partner application. (For more information about SSO, see [“About Single Sign-On \(SSO\)” on the next page.](#))

A partner application that is linked to [redacted] can also take advantage of a number of related services, including the following:

- **[redacted] UI customization.** For more information, see [“Customizing the \[redacted\] User Interface” on page 13.](#)
- **Lab order echo.** For more information, see [“About Lab Order Echo” on page 19.](#)
- **Rx order echo.** For more information, see [“About Rx Order Echo” on page 20.](#)
- **User summary services.** For more information, see [Chapter 3, “User Summary Web Service API Reference” beginning on page 33.](#)
- **Patient demographic, scheduling, and/or billing services.** For more information, see [Chapter 4, “Submit Patient Demographic Web Service API Reference” beginning on page 41](#) and [Chapter 5, “Retrieve Patient Demographic Web Service API Reference” beginning on page 54.](#)

Note: A partner application must allow users to view [redacted] in its native resolution (1024x768), displaying all existing menus, headers, and other navigation elements. In most cases, [redacted] will appear in a new browser window; otherwise, the partner application must display in a higher resolution so that [redacted] can appear in a separate frame within the application.

[redacted] Functions Available for Linking

A partner application can link directly to the following [redacted] functions (also referred to as the “landing” page):

- **New Results.** The EMR user can directly access the [redacted] *New Results* page to view the latest test results that have been received for *all* of their patients. Results can be viewed or printed, and can be forwarded to other [redacted] users via user messaging or fax.
- **Lab Orders.** The EMR user can directly access the [redacted] *Lab Orders* page to create an electronic lab order for submission to either a lab or a third-party lab for processing. The link to Lab Orders can occur in one of the following ways:
 - With patient context—*Lab Orders* opens with the current EMR patient’s data pre-populated, based on the patient’s PID.
 - Without patient context—*Lab Orders* opens with no specific patient pre-populated. The user can then search for a patient within *Lab Orders*, as needed.
- **Patient Summary.** The EMR user can directly access the [redacted] *Patient Summary* page. In [redacted], a Patient Summary is essentially a “collapsed” or summarized view of the patient’s complete chart. To view a more detailed history for the patient, you can access individual items within each section of the Patient Summary to display additional data.

- Patient Summary (fully expanded)—*Patient Summary* opens with all of the patient’s latest data displayed, as well as all of the page’s navigational features visible.
- Patient Summary (collapsed) with Write a Prescription displayed—*Patient Summary* opens with a summarized view of the patient’s chart, with only the *Write a Prescription* task link visible.
- Patient Summary (collapsed) with Write a Lab Order displayed—*Patient Summary* opens with a summarized view of the patient’s chart, with only the *Write a Lab Order* task link visible.
- **Action Items Inbox.** The EMR can directly access the *Action Items Inbox* screen related to their organization.
 - *Pending Items*—Displays a collapsed view of the pending items for the logged-in user. Click for an expanded view.
 - *Renewal Items*—Displays a collapsed view of the pending items for the logged-in user. Click for an expanded view.
 - *Failed Faxes*—Displays a collapsed view of failed faxes sent by the logged-in user. Click for an expanded view.

Once the user has linked to a particular [redacted] function, the user can then access the entire application, limited only by their assigned access permissions. For information about using specific [redacted] functions, refer to the *[redacted brand] User Manual* or online help.

Formatting Requirements for Linking to [redacted brand]

When a partner enables users to link directly to [redacted] functions, the link that appears within the partner application must be formatted according to the following guidelines:

- The full [redacted] product name must be displayed whenever possible, and should appear as shown below:
[redacted]
- If the partner application will display a logo, the following logo must be used: [redacted brand]

Note: You can obtain the logo from the [redacted] SSO and Web Services site. For more information, see [“About the \[redacted brand\] SSO and Web Services Site” on page 16.](#)

Prior to appearing in a production environment, any links to [redacted] must be submitted (through the project manager) for compliance review and approval.

About Single Sign-On (SSO)

When a partner application establishes a link to [redacted], the user of the partner application can transparently log in to [redacted] via the SSO capability. That is, the user is not required to log in separately to [redacted] in order to use its services. This allows the user’s workflow to continue uninterrupted, and reduces the number of steps and pages necessary for the user to complete a task.

The basic steps to establish an SSO connection to [redacted] are as follows:

- 1 An authorized user logs in to the partner application.
- 2 Within the partner application, the user activates a link to the desired [redacted] function, and is immediately redirected to the appropriate area of [redacted]. If possible, the user’s current patient context is maintained within the selected [redacted] function (see [“Maintaining Patient Context” on the next page](#)).
- 3 The partner application performs user authentication (in the background) to [redacted].

Note: Authentication to [redacted] is managed through the Sun Java™ System Access Manager, which utilizes the Security Assertion Markup Language (SAML) single sign-on protocol, using 128-bit encryption. For details on establishing an SSO connection to [redacted], see “[About the \[redacted\] brand SSO and Web Services Site](#)” on page 16.

Maintaining Patient Context

A partner application can be configured so that when a user accesses a [redacted] function via SSO, the current patient context is automatically maintained between the two applications whenever possible. For example, if the user has already searched for a particular patient within the partner application, and then wants to place a new lab order for that patient, the user clicks the appropriate link and [redacted] opens to the *Lab Orders* function, with the same patient preselected.

There are two ways in which patient context is maintained:

- The partner application can use the Submit Patient Demographic Services to submit ADT messages to [redacted] to populate the database with patient demographic information. The partner application can then pass their unique patient identifier (PID) to [redacted], so that a search for the matching patient can be performed as the linking occurs. If an exact PID match is found, then the patient context is maintained; otherwise, the user can access the selected [redacted] function, but will need to manually search for the desired patient.
- For applications that do not utilize the ADT messaging, the partner application can pass an additional HTTP Post parameter name QuantumTransaction with the initial SSO request. The value of this parameter is XML which follows the rules defined in <http://custcenter.medplus.com/tech-support/portalcenter/docs/xsd/Care360Transaction.xsd>. This field can contain various forms of information, one of which is patient demographics. If [redacted] is configured to accept updated patient information, the demographics information contained within the message is used to create a patient if one does not exist. This method relies solely on the ability of the partner application to identify a patient using a unique patient identifier (PID) and provide a full set of patient demographics on the SSO request to [redacted].

If the partner application is configured to accept updated information and uses this method to maintain patient context, then the information provided by the partner application is always considered the most accurate (that is, it overrides any existing data in [redacted]). The patient demographics part of the Transaction XML is based on the HL7 A31 segment, defined by the xsd file [http://\[redacted URL\].xsd](http://[redacted URL].xsd). The value of the Transaction parameter must be Base64-encoded by the partner application.

When utilizing the Transaction method and requesting to land on the lab orders function, a partner application must include the bill type (client, patient, or insurance) and associated required fields.

SSO Field Definitions

The table below describes the required fields for each available bill type. The transaction method also allows for the inclusion of diagnosis codes and test codes via the laborderInfo node when requesting the Lab Orders function. The XSD files used to define the contents of the Transaction HTTP parameter and a transaction example XML message can be accessed from the following URL:

[http://\[redacted\]](http://[redacted])

Header	XML Main Tag	XML Sub Tag	Description	Bill Types - The required fields based on what is sent ^a			
				Client	Patient	Insurance	ePre
lab.Lab Order Info	dxCodes		Diagnosis code (ICD-10 codes), 12 codes max.	O	O	O	I
	testCodes		Order code, 15 codes max.	O	O	O	I
PID.Patient Information	PID.02	CM_Pat_ID.1	Unique patient ID Note: *The patient ID or SSN is always required. If patient SSN (PID.19) is supplied, patient ID is optional.	R*	R*	R*	R*
	PID.04		Lab Ref ID/ Encounter ID	O	O	O	O
	PID.05	PN.1	Last name of patient	R	R	R	R
		PN.2	First name of patient	R	R	R	R
		PN.3	Middle initial of patient	O	O	O	O
	PID.07	TS.1	Birth Date (mm/dd/yyyyhhmmss or mmddyyyyhhmmss)	R	R	R	R

^aR = Required, O = Optional, I = Ignored

				Bill Types - The required fields based on what is sent ^a			
Header	XML Main Tag	XML Sub Tag	Description	Client	Patient	Insurance	ePre
			Note: Pad the date with zeroes for the <i>hhmmss</i> timestamp, for example, 19901124000000.				
	PID.08		Gender (M/m or F/f) Note: "Unknown" gender will display blank.	R	R	R	R
	PID.11	AD.1	Address 1	R	R	R	R
		AD.2	Address 2	O	O	O	O
		AD.3	City	O	O	O	O
		AD.4	State (2-digit alpha)	O	R	R	R
		AD.5	Zip (5 or 9 digits, no hyphens or dashes allowed)	R	R	R	R
		AD.6	Country	O	O	O	O
	PID.13		Home Phone (1234567890, no hyphens or dashes allowed)	O	O	O	O
	PID.14		Work Phone (1234567890, no hyphens or dashes allowed)	O	O	O	O
	PID.19		SSN (9 digits, no hyphens or dashes allowed) Note: *The patient SSN or ID is always required. If patient ID (PID.2) is supplied, patient SSN is optional.	R*	R*	R*	R*

^aR = Required, O = Optional, I = Ignored

				Bill Types - The required fields based on what is sent ^a			
Header	XML Main Tag	XML Sub Tag	Description	Client	Patient	Insurance	ePre
GT1.Guarantor Information	GT1.03	PN.1	Last Name	O	R	R	O
		PN.2	First Name	O	R	R	O
		PN.3	Middle Initial	O	O	O	O
	GT1.05	AD.1	Address 1	O	R	R	O
		AD.2	Address 2	O	O	O	O
		AD.3	City	O	R	R	O
		AD.4	State (2-digit alpha)	O	R	R	O
		AD.5	Zip (5 or 9 digits, no hyphens or dashes allowed)	O	R	R	O
		AD.5	Zip (5 or 9 digits, no hyphens or dashes allowed)	O	R	R	O
		AD.6	Country	O	O	O	O
	GT1.06		Home Phone (1234567890, no hyphens or dashes allowed)	O	O	O	O
			Note: Home phone number is recommended for bill types of patient (IN1.47 = P) and insurance (IN1.47 = T). If home phone number is not provided, it must be entered manually before an order can be placed.				

^aR = Required, O = Optional, I = Ignored

Header	XML Main Tag	XML Sub Tag	Description	Bill Types - The required fields based on what is sent ^a			
				Client	Patient	Insurance	ePre
	GT1.07		Work Phone (1234567890, no hyphens or dashes allowed)	0	0	0	0
	GT1.08		Birth Date (mm/d-d/yyyyhhmmss or mmdyyyhhmmss, no hyphens or dashes allowed) Note: Pad the date with zeroes for the hhmmss timestamp, for example, 19901124000000.	0	0	0	0
	GT1.09		Gender (M/m or F/f) Note: "Unknown" displays as blank.	0	0	0	0
	GT1.11		Relationship to patient <ul style="list-style-type: none"> • 1 = Self • 2 = Spouse • 3 = Child 	R	R	R	0
	GT1.12		SSN (9 digits, no hyphens or dashes allowed)	0	0	0	0

^aR = Required, O = Optional, I = Ignored

				Bill Types - The required fields based on what is sent ^a			
Header	XML Main Tag	XML Sub Tag	Description	Client	Patient	Insurance	ePre
Employer Information	GT1.16		Employer Name	0	0	0	0
	GT1.17	AD.1	Address 1	0	0	0	0
		AD.2	Address 2	0	0	0	0
		AD.3	City	0	0	0	0
		AD.4	State (2-digit alpha)	0	0	0	0
		AD.5	Zip (5 or 9 digits, no hyphens or dashes allowed)	0	0	0	0
		AD.6	Country	0	0	0	0
IN1. Insurance Information	IN1.03		Insurance Company ID	I	0	R	0
			Valid insurance IDs appear in the order entry <i>Insurance ID</i> field in Lab Orders and Results.				
	IN1.04		Insurance Name	I	0	0	0
			Valid insurance names appear in the <i>Select Carrier</i> drop-down list in Lab Orders and Results.				
			Note: Insurance name is recommended for a bill type (IN1.47) of T (Insurance). If insurance name is not provided, it must be entered manually before an order can be placed.				

^aR = Required, 0 = Optional, I = Ignored

				Bill Types - The required fields based on what is sent ^a			
Header	XML Main Tag	XML Sub Tag	Description	Client	Patient	Insurance	ePre
			If an invalid insurance name is provided, a valid insurance carrier will need to be selected from the carriers listed during order entry.				
	IN1.05	AD.1	Address 1	I	O	O	O
		AD.2	Address 2	I	O	O	O
		AD.3	City	I	O	O	O
		AD.4	State (2-digit alpha)	I	O	O	O
		AD.5	Zip (5 or 9 digits, no hyphens or dashes allowed)	I	O	O	O
		AD.6	Country	I	O	O	O
	IN1.08		Group Number (no hyphens or dashes allowed)	I	O	O	O
	IN1.36		Insurance ID	I	O	O	O
	IN1.47		Bill Type: <ul style="list-style-type: none"> • P = Patient • C = Client • T = Insurance 	R	R	R	O

^aR = Required, O = Optional, I = Ignored

Process Walkthrough: Linking and SSO

The diagram below illustrates (at a high level) the flow of information between [redacted] and a linked partner application. Following the diagram is a step-by-step walkthrough of the linking and SSO processes illustrated in the diagram.

Initializing a User's SSO Connection

The following steps outline the procedure—and associated systems—involved in initializing an SSO connection from a partner application to [redacted].

- 1 [redacted brand] issues a [redacted] user ID and (temporary) password to the partner application user.
- 2 The user logs in to the partner application as before (using their existing partner application username and password).
- 3 The first time the user attempts to link to [redacted] from the partner application, a login page appears, prompting the user to enter their assigned [redacted] user ID and password.

Note: The user is allowed five attempts to log in using their assigned [redacted] credentials. If the user cannot successfully log in—or if the user ID that was entered is already in use—a message appears, indicating that the user must contact [redacted] Customer Support in order to proceed.

- 4 When the user successfully logs in to [redacted] the first time, their user information and password are saved to a SAML user mapping table.
- 5 When the user subsequently links to [redacted], the [redacted] login process is completed automatically based on their stored user credentials.

When a user links to [redacted] via an SSO connection, they can then access *any* [redacted] functions that are enabled by their user credentials.

Accessing [redacted] via an Established SSO Link

The following steps outline the procedure—and associated systems—involved in accessing [redacted] from a partner application, after a user's SSO link has been initialized (outlined in “[Initializing a User's SSO Connection](#)” above).

- 1 A user logs in to the partner application.
- 2 The partner application user initiates a link to [redacted]. A link to [redacted] can be established in one of the following ways:
 - The link can open [redacted] directly to a specific function. For example, the *Home* page, the *Lab Orders* page, the *New Results* page, the *Patient Summary* page, or the *Action Items Inbox*. For *Lab Orders*, the current patient context may be maintained if an appropriate match can be determined, based on the supplied patient identifier (PID) or inclusion of the Transaction field ID.
 - The link can open [redacted] with no specific function specified. In this case, the user's default page (as configured in the [redacted]) appears.
- 3 [redacted] opens either in a separate browser window, or framed within the context of the partner application (if the required 1024x768 resolution can be maintained).
- 4 The user can then access *any* [redacted] functions that are enabled by their user credentials.

Accessing [redacted] Directly

Allowing a user direct access to [redacted] is optional. When a user accesses [redacted] directly, there is no connection established to a partner application, and [redacted] may appear in its default format (that is, with no custom UI branding).

The procedure for accessing [redacted] directly varies depending on the partner application's configuration. If the partner application's SSO credentials are configured for direct access to [redacted], all of the partner application's users can log directly into [redacted] using their existing [redacted] user ID and password. If the partner application is not configured for direct access to [redacted], direct access must be requested on a per user basis.

The following steps outline the procedure—and associated systems—involved in accessing [redacted] directly for partner applications that are **not** configured for direct access.

- 1 [redacted] issues a user a separate password, associated with either their existing [redacted] user ID, or a separate user ID.
- 2 The user logs in to [redacted] directly with their assigned user ID and password.

Note: The [redacted] password is not the same password used to initialize or maintain the SSO link from the partner application. The user ID may or may not be the same as used for SSO linking.

The user can access *any* [redacted] functions that are enabled by their user credentials.

Customizing the [redacted] User Interface

When [redacted] is linked to a partner application, it is possible to customize certain elements of the [redacted] user interface (UI) to provide a more seamless experience for users as they move between the two applications.

The elements of the [redacted] that can be customized include the following:

- **Logos and images.** The [redacted] logo (in the upper-left corner), as well as the [redacted brand] logo (in the lower-left corner) can each be replaced with a similarly-sized logo or image to reflect the branding of the partner organization or application. For details, see [“Logo and Image Specifications” below](#).
- **Color palette.** The overall color scheme of the [redacted] user interface, including the navigational buttons, can be modified to reflect the partner organization or application. For details, see [“Color Palette Specifications” on the next page](#).
- **Copyright and trademark text.** The copyright and trademark text (along the bottom of each page) can be changed to reflect the applicable copyright or trademark text of the partner organization. For details, see [“Copyright and Trademark Text Specifications” on the next page](#).
- **Link names and destinations.** Several of the hypertext links (along the bottom of each page) can be changed to display custom text, as well as to link to web-based resources associated with the partner organization. For example, the *Contact Us* link could be changed to *Contact University Hospital*, with the link providing direct access to the hospital’s customer support website. For details, see [“Link Name and Destination Specifications” on the next page](#).
- **Custom uniform resource locator (URL).** The web address (or *URL*) that is used to access [redacted]—and appears in the user’s web browser while using the [redacted]—can be changed to include a domain name that reflects the partner organization or application. For details, see [“Custom URL Specifications” on page 15](#).
- **User manual and help.** The *[redacted] User Manual* and online help can be replaced with a “generic” version (with references and branding removed). For details, see [“User Manual and Help Specifications” on page 15](#).

Custom UI Specifications

The following sections provide detailed specifications of the [redacted] UI elements that can be customized for use with a partner application.

Logo and Image Specifications

The following [redacted] logos and/or images can be replaced or removed:

Logo/Image	Location	File Type	Dimensions (Pixels)
[redacted] logo	Upper-left corner of application	.GIF	197 W x 70 H
logo	Left-hand navigation pane of application	.GIF	125 W x 41 H
[redacted] logo	Upper-left corner of login page	.GIF	302 W x 99 H

Color Palette Specifications

The overall color scheme of the [redacted] user interface, including navigational buttons, can be customized to reflect the partner organization or application. Elements for which color can be defined include the following:

- Text color
- Background colors (including lighter, middle, and darker)
- Button text color
- Button background color

Colors for each option are specified using one of the following three color formats: RGB (composed of three number or percentage values), hexadecimal (a 3- or 6-digit hex value), or color name (standard colors defined by the World Wide Web Consortium (W3C)).

Copyright and Trademark Text Specifications

The copyright and trademark text that appears along the bottom of each [redacted] page can be changed to reflect the applicable copyright, trademark, or disclaimer text (up to 500 characters) of the partner organization. The text can also contain HTML tags, which enables additional formatting or linking options to be included.

Link Name and Destination Specifications

The following hypertext links—which appear along the bottom of each page—can be customized to display a different link name (up to 30 characters each) and/or to link to a different destination, or they can be removed altogether:

[redacted] Link	Location	Customization Options
About [redacted]	Login page	Can be renamed and/or linked to a different destination page, or removed.
Forgot Password?	Login page	Can be renamed or removed.
Contact Us	Login page, Each portal page	Can be renamed and/or linked to a different destination page, or removed.
Feedback	Each portal page	Can change email recipient.
Resource	Each portal page	Can be renamed and/or linked to a different destination page, or removed.
Logo in Left-Hand Navigation Pane	Each portal page	Can be replaced and/or linked to a different destination page.
Quick View	Each portal page	Cannot be changed or removed (links to [redacted] internal destination).

Custom URL Specifications

In order for a partner application to link to a custom “branded” version of [redacted], the partner application must connect via a custom URL that identifies the branded version of [redacted] to display. The custom URL can be used to programmatically link the applications, or to enable an end user to access the branded version of [redacted] directly (outside the context of the partner application).

The format of the custom URL is as follows:

```
https://<portal server name>:<port>/portal.[redacted].com  
/login.jsp?branduid=<brand uid>
```

where:

- *<portal server name>:<port>* are the server name and (optional) port number associated with the [redacted] installation to which the partner application is connecting
 - and –
- *<brand uid>* is a random number that is generated to identify the branded [redacted] instance to display.

For example:

```
https://portal.[redacted].com/login.jsp?branduid=12345
```

Partners that allow their users to access [redacted] directly (outside the context of the partner application) can either provide their users with the URL, or they can create a custom URL by aliasing a more appropriate domain name.

User Manual and Help Specifications

The [redacted] *User Manual* and online help can be replaced with a generic user manual and help, which contain no references, and no [redacted] or [redacted] branding, such as logos or images.

About the [redacted brand] SSO and Web Services Site

The [redacted] SSO and Web Services site is a companion to the [redacted] *Linking and Single Sign-On Programmer Reference* that provides additional support to vendors who are developing partner applications to interact with [redacted]. The website provides sample code, documentation, and other tools and resources that can be used to understand how to develop a partner application to interact with [redacted] via SSO and web services.

This section provides an overview of each of the tools provided on the [redacted] SSO and Web Services site, as well information about accessing the site online.

Note: For information about linking a partner application to [redacted], see [Chapter 1, “Linking to \[redacted\]”](#) beginning on page 1.

Accessing the [redacted brand] SSO and Web Services Site

The *Example SSO - [redacted] Stage* application—in addition to a number of other resources for partners who are developing applications to interact with [redacted]—is available for download from the [redacted] SSO and Web Services site. The Example SSO application, as well as the complete source code, are provided as individual .zip files, and require a valid username and password (provided by [redacted]) for access.

In addition to providing access to the Example SSO application, the [redacted brand] SSO and Web Services site provides additional [redacted]-related information and resources, such as the following:

- **Support.** Contact information for various members of the [redacted] support team, URLs for the WSDL documents for the Staging and Production environments, and a PDF version of this Programmer Reference.
- **Resources.** Downloads of the latest Example SSO - Stage sample application and source code.

Download the Sample Application and Source Code

- 1 Access the [redacted brand] SSO and Web Services site at the following URL:
[http://\[redacted URL\]/](http://[redacted URL]/)
- 2 If prompted, type your *username* and *password*, and then press Enter.
- 3 From the *Resources* area, do the following:
 - To download the sample application, click the *Example-SSO-Care360-stage* link. When prompted, click *Save*, and then locate the desired download directory on your hard disk.
 - To download the sample source code, click the *Example-SSO-Care360-stage-src* link. When prompted, click *Save*, and then locate the desired download directory on your hard disk.
- 4 Unzip the contents of the sample application and source code files.
For an overview of the file contents, see [“About the Sample Application ” below](#).

About the Sample Application

The [redacted] SSO and Web Services site provides the resources described in this section for partner application developers. In addition to the information provided here, additional details of each of these resources are provided in a Readme file included with each sample application.

Example SSO Application

The [redacted] SSO and Web Services site provides the *Example SSO - Stage* executable client application (shown below), for linking to [redacted] via SSO in the [redacted] Staging environment. Once connected, the Example SSO - Stage application demonstrates the use of the User Summary web service for retrieving user data, and the Branding options for linking to [redacted] with specific product branding displayed.

This sample application can be used to help understand SSO workflow, as well as to verify responses to User Summary requests. It can also be used to help troubleshoot issues; for example, to determine whether a problem exists within a vendor application (or message format), as opposed to within [redacted] itself.

Sample Source Code

The [redacted] SSO and Web Services site also provides code samples and supporting project files (as applicable) to demonstrate the working Example SSO - Stage application. (For more information about the sample code, see [“About the Sample Code” below](#).)

About the Sample Code

The [redacted] SSO and Web Services site provides sample source code to illustrate recommended coding practices for interacting with the various SSO and web services provided by [redacted]. Though the samples are specific to a particular SSO function or web service, they help illustrate general programming practices that can be used with any of the SSO functions or web services provided by [redacted].

A Readme file is included with the sample application, describing the application and how it is to be used. In addition, detailed comments are provided throughout the sample code to illustrate the implementation of key functions.

Disclaimer

All sample code referenced in this Programmer Reference and the [redacted] SSO and Web Services site is provided for example purposes only, and it may need to be modified to work in your environment. It is provided “as is,” without warranty of any kind, or support, from [redacted].

Third-Party Disclaimer

[redacted] has a software license to use a library written by ComponentSpace. It is used by the sample application to create assertions and other SAML features in C#. In order to use the sample application, a third-party application developer must download and install the ComponentSpace library for SAML (version 1.1).

For more information, refer to the following ComponentSpace website:

<http://www.componentspace.com/Products/SAMLv11.aspx>

About Lab Order Echo

When the user of a partner application links to [redacted] to place a lab order, that order can be “echoed” back to the partner application. Order echo involves [redacted] sending a copy of the order back to the partner application, so that it can store a record of the order for the associated patient. Benefits of order echo include the following:

- Enables the partner application to store a copy of each order (placed through the *Lab Orders* function of [redacted]) to the patient’s chart.
- Improves patient records management and office workflow.
- Eliminates the need for redundant data entry.
- Stores order data in standard HL7 format, so that it can be easily reused as needed.

Order messages that are echoed back to the partner application are formatted according to the specifications detailed in the *Order 2.3 HL7 Specification* (spec_hl7_orders_23.pdf) document.

Process Walkthrough: Lab Order Echo

The diagram below illustrates (at a high level) the flow of order data between [redacted] and a linked partner application. Following the diagram is a step-by-step walkthrough of the order echo process illustrated in the diagram.

[redacted graphic]

The following steps outline the process and associated systems involved in placing an order and having the order echoed back to the partner application.

- 1 A user logs in to the partner application.
- 2 The partner application user initiates a link to the *Lab Orders* function of [redacted].
When linking to *Lab Orders*, the current patient context may be maintained if an appropriate match can be determined, based on the supplied PID.
- 3 The user creates and submits a lab order for a [redacted] lab or any lab that is in the [redacted brand] system, or the user creates and prints/delivers a lab order for a generic lab.
- 4 The [redacted] records the order transaction, and stores a copy of the discrete content of the order.
- 5 The [redacted] “echoes” (returns) a copy of the order back to the partner application.

About Rx Order Echo

When the user of a partner application links to [redacted] to place a prescription order, that order can be “echoed” back to the partner application. Rx Order echo involves [redacted] sending a copy of the prescription order back to the partner application so that it can store a record of the prescription order for the associated patient. Benefits of Rx prescription order echo include the following:

- Enables the partner application to store a copy of each prescription order (placed through the *Prescription Orders* function of [redacted]) to the patient’s chart.
- Improves patient records management and office workflow.
- Eliminates the need for redundant data entry.

Note: Only approved prescriptions can be echoed. This includes both new prescriptions and renewals.

Rx Order messages that are echoed back to the partner application are formatted in Continuity of Care Record (CCR) format. For more information, see [Chapter 7, “CCR Message Specification ” beginning on page 187](#).

Process Walkthrough: Rx Order Echo

The diagram below illustrates (at a high level) the flow of prescription order data between [redacted] and a linked partner application. Following the diagram is a step-by-step walkthrough of the Rx order echo process illustrated in the diagram.

[redacted graphic]

The following steps outline the process and associated systems involved in placing a prescription order and having the prescription order echoed back to the partner application.

- 1 A user logs in to the partner application.
- 2 The partner application user initiates a link to the *Prescription Orders* function of [redacted].
When linking to *Prescription Orders*, the current patient context may be maintained if an appropriate match can be determined, based on the supplied PID.
- 3 The user creates and submits a prescription order, or approves a renewal request.
- 4 [redacted] sends the prescription echo to the [redacted] at the time the prescription is submitted.
- 5 The [redacted] records the prescription order transaction, and stores a copy of the discrete content of the prescription order.
- 6 The [redacted] “echoes” (returns) a copy of the prescription order back to the partner application.

Note: Clients must be able to utilize patient fuzzy matching for prescription orders without a Medical Record Number (MRN).

Chapter 2: [redacted] SSO Specification

In This Chapter:

- About the [redacted] SSO Specification22
- Establishing Organizational Trust23
- Implementing SAML 24
- Scenario 1: [redacted] SSO for Interactive Users 28
- Scenario 2: [redacted] SSO for Web Services30

About the [redacted] SSO Specification

[redacted] SSO utilizes the [Oasis SAML 1.1](#) specification for exchanging credentials securely between itself and a partner application. The implementation of this trust model is based upon a combination of the following items:

- A *digital certificate* that identifies the external partner.
- An *organizational trust record* that is recorded with [redacted].

The organizational trust record follows an assessment process, verifying that the partner site can securely and accurately assert the identities of its users on behalf of [redacted]. Since password management is not required to access [redacted], the password management at the partner application endpoint must be comparable.

Once the organizational trust has been established, the partner application can submit authentication requests to [redacted] in the form of a *SAML assertion*. SAML is an XML-based messaging standard that provides for the specification of a partner site identifier, user name identifier, digital signature of the asserted information, and so on. This SAML message is typically posted directly to the [redacted] secure web server, using the SAML Browser/POST profile.

Some of the various third-party SAML toolsets available include the following:

- ComponentSpace SAML.NET, for the Windows .NET platform
- OpenSAML, for Java

[redacted brand] can provide sample implementations using the above toolsets, which can be used as a starting point and for performing system checks for your configuration.

Establishing Organizational Trust

This section provides a list of business processes that you can follow to facilitate the collection of identifiers and credentials for your site, as well as to assess the fitness and requirements of your application infrastructure for the use of SAML in place of [redacted] passwords.

The high-level processes for establishing organization trust include the following:

- **Performing a security assessment.** [redacted] will work with you to review application security, network security, password aging practices, password complexity rules, and user account management practices to determine whether or not your system operates at a minimum level of discipline across these areas.
- **Obtaining a digital certificate.** This is an RSA-encrypted certificate that your application will use for signing SAML assertions, before passing them to [redacted]. You must generate a private key and certificate request to be authorized by a third-party certificate authority (for example, VeriSign), and then forward the public key to [redacted].
- **Providing SAML credentials.** Your SAML implementation must employ a few key pieces of information that must be shared with [redacted] (your SAML partner), including:
 - *Source ID.* A Base64-encoded identifier that uniquely identifies your site. This is the “primary key” component of the organizational trust record [redacted] creates for you in our system.
 - *Issuer.* A unique string (typically in URL format) that identifies your Internet host point. This string is stored in the organizational trust record that [redacted] maintains for you, and is also included in all SAML assertions transmitted by your site to [redacted].
 - *SAML Artifact Redemption Servlet.* Applies only to partners using the SAML Browser/Artifact profile. If your site uses the SAML Browser/Artifact profile method of authentication, this is a URL on your system to which [redacted] SSO can call back to redeem an SAML artifact. This must be a secure (SSL-accessible) endpoint on your system, and may require special firewall configuration, which would be examined as part of the security assessment.

Note: If you are using the recommended SAML Browser/POST profile, this component is not necessary.

Implementing SAML

Your SAML implementation must employ the digital certificate and SAML identifiers shared and configured as outlined in the previous sections of this chapter. This section outlines the general steps required to authenticate successfully to [redacted] via SAML. Sample implementations are provided later in this guide to illustrate how these steps are facilitated on various platforms, and in various usage scenarios (for example, a web service vs. a user's browser). These instructions are based upon the SAML Browser/POST profile model.

The following general actions must occur in order to authenticate a partner application user to [redacted] using SAML 1.1:

- 1 The user is authenticated in the partner application. Before accessing a link to a [redacted] feature using SSO, the user must authenticate to the partner application environment. The means used to authenticate must be that which was previously approved during the security assessment.
- 2 The user selects a linked [redacted] feature. The user takes some action (for example, clicking a button or submitting a form) that correlates to a feature hosted by [redacted]. This action triggers the SAML authentication process, and directs [redacted] to serve the requested content once authentication has been achieved. The requested content contains a target URI (*targetUri*), plus possible application context parameters.
- 3 The SAML assertion is created. Using a SAML library or application installed within the partner application environment, a SAML assertion is created. This assertion contains the user identity (*NameIdentifier*), the partner's *Issuer* value, and a precise and current timestamp based on Greenwich Mean Time (GMT).
- 4 The SAML assertion is signed. The partner site's private key is used to digitally sign the SAML assertion. An encoded copy of the resulting signature and an encoded copy of the partner site's public key are coupled with the SAML assertion to form a SAML response. (This is referred to as a SAML *response*, as opposed to a *request*. Refer to the Oasis website for a detailed explanation of each.)
- 5 The SAML response (assertion + signature) is transmitted to [redacted] via HTTP+SSL. The SAML response is POSTed to the following URL:

<https://portal.quantumsolutions.com/Care360SSOSecurityCheck>

The following parameters are passed within the form, using the standard application/x-www-form-urlencoded format.

Parameter	Description	Example Value	Req'd?	Default
Process Control Parameters				
quantumTransaction	A Base64-encoded [redacted brand] Transaction Document containing an A31 XML message.	[Base64-encoded <c360:Care360Transaction>... </c360:Care360Transaction> payload]	N	

Parameter	Description	Example Value	Req'd?	Default
SAMLResponse	A Base64-encoded copy of the SAML response XML message.	[Base64-encoded copy of the <saml:Response>... </saml:Response> payload]	Y	
targetUri	A [redacted] page identifier, indicating the preferred “landing page.”	One of the following: <ul style="list-style-type: none"> • NewResults • LabOrders • Home • BlankPage • PatientSummary • RxPad • ActionItems • ActionItemFailedFaxes • ActionItemsPending Renewals • ActionItemsPending Approvals Notes: <ul style="list-style-type: none"> • Home specifies the user’s default page. • BlankPage is valid only for web service calls. 	N	Home
branduid	A string value indicating the preferred UI brand.	2c9252d710e58d150110e58d67190001	N	[redacted] default brand

Parameter	Description	Example Value	Req'd?	Default
TARGET	A SAML 1.1 parameter that identifies a target page. This parameter is not used by [redacted] SSO, even though it is in the standard. If your SAML implementation or library requires this name/value pair, specify it with any arbitrary value (the value is ignored).	[any value]	N	

Application Context Parameters

ctx.patientID	A [redacted] patient identifier (PID). Note: Valid only for the LabOrders, PatientSummary, and RxPad landing pages.	23456	N	
---------------	---	-------	---	--

- The SAML response is authenticated by [redacted]. [redacted] SSO verifies the SAML response, and authenticates the asserted user based upon the following:
 - Was the SAML response signed by a trusted partner? The public key passed within the SAML response is sought in the [redacted] SSO keystore. If found, this step succeeds. This control prevents rogue third parties from forging the identities of [redacted] customers, and also thwarts “man in the middle” attacks that attempt to modify the SAML message in transit.
 - Was the SAML response created in a timely manner? [redacted] SSO enforces a strict time tolerance window (allowing only for a 180-second discrepancy between your clock and ours), outside of which a SAML response is not accepted. This control prevents the future posting of any intercepted and captured SAML response by a malicious third party, should a security breach occur, and helps to ensure that timely information transmitted.

Note: You may specify a *Conditions* node within your SAML assertion to narrow the time tolerance window, if you prefer. The time tolerance window always reflects the narrower of the two settings.

- Is the partner’s *Issuer* recognized by [redacted]? Having verified the signature of the SAML response, [redacted] is assured that the *Issuer* value transmitted within the SAML assertion reflects your partner profile. When [redacted] SSO locates this value in its SAML partner configuration data, your site’s identity is verified as a viable SAML assenter.

- Is the asserted partner application user recognized by [redacted]? The `NameIdentifier` value within the SAML assertion provides unique identification of the user, as recognized by the partner application. [redacted] SSO looks up this user identifier in its user mapping table to determine the correlating [redacted] user identity. If found, a [redacted] login session is established for the user. If not found, [redacted] SSO presumes the user is accessing [redacted] via SSO for the first time, and directs the user to a one-time [redacted] login page (for an overview of this process, see [“Initializing a User’s SSO Connection” on page 11](#)).
- Does the asserted partner application user correlate to the partner providing the assertion? When a user’s identity from the partner application is correlated to his/her [redacted] user identity, the partner application’s *Issuer* is also recorded for that user. On subsequent requests to [redacted], the SAML *Issuer* is compared to that stored in the user’s mapping record. If they match, [redacted] SSO is assured that the user does, in fact, belong to the partner site that is asserting the user’s identity.
- HTTP Response is received. The page requested via the `targetUri` HTTP POST parameter is returned by [redacted] to the partner application user/application within the HTTP Response. The returned page reflects the user’s new [redacted] login session.

Scenario 1: [redacted] SSO for Interactive Users

In this scenario, SSO is used to establish a [redacted] session for an end user within a web browser window (specifically, Internet Explorer) on the user's computer. The SAML 1.1 Browser/POST implementation, as outlined in “[Implementing SAML](#)” on page 24, is manifested when the partner application launches the web browser. Doing so loads an HTML document containing a form that targets the [redacted] SSO security check servlet with the appropriate parameters as hidden input nodes.

Example: Browser/POST

Note: The SAMLResponse value in the following example is truncated for the sake of brevity.

```
<HTML>
<BODY Onload="document.forms[0].submit()">
<FORM METHOD="POST" ACTION="https://portal.quantumsolutions.com/Care360SSOSecurityCheck">
  <INPUT TYPE="HIDDEN" NAME="targetUri" value="NewResults"></input>
  <INPUT TYPE="HIDDEN" NAME="branduid" value="2c9252d710e58d150110e58d67190001"></input>
  <INPUT TYPE="HIDDEN" NAME="SAMLResponse" VALUE="PHNhbwXwOlJ..."></INPUT>
</FORM>
</BODY>
</HTML>
```

In the example above, the form is posted to Care360SSOSecurityCheck from the web browser, such that the specified landing page is displayed to the user, and the session cookie is established within the browser process for use on subsequent requests. After the user has accessed [redacted] from the partner application link, the user may remain within [redacted] and perform any other tasks he/she is authorized to perform, based upon the [redacted] user access rights previously configured.

About Session Timeouts and Terminations

A user who connects to [redacted] via an SSO link is subject to the same timeout conditions as they would if they were to access [redacted] directly. When a directly-accessed session times out, [redacted] displays the login page. For an SSO-authenticated session, [redacted] displays a page indicating that the user has timed out, but it does not allow the user to re-enter their login credentials. (A similar message appears if the user clicks *Log Out* within [redacted] after authenticating via SSO.)

The message presented to the user indicates that in order to begin a new session, the user must return to the partner application and click a [redacted] link. Doing so results in a new SSO authentication request to [redacted].

It is quite possible that users who interact with [redacted] only via links from the partner application will not be aware that a session timeout has occurred. Each time a link from the partner application to Care360SSOSecurityCheck is invoked, a new SAML assertion is passed using an HTML FORM of the type discussed above.

[redacted] evaluates the current user session in conjunction with the SAML assertion provided, and performs authentication to establish a new session under the following conditions (evaluated in the order shown):

- 1 The partner application link has launched a *new* browser window.
- 2 The partner application link attempts to update the *existing* browser window, for which the [redacted] session has timed out.

- 3 A different user has authenticated to the running partner application since the [redacted] browser window was launched. This requires authentication to [redacted] as the “new” partner application user.

About SSO User Initialization

Before successful SSO authentication to [redacted] can occur, users of trusted partner applications must be mapped to [redacted]. This process includes verifying that the user knows his/her [redacted] credentials (*User ID* and *Password*) the first time the user accesses [redacted] via a link from the partner application.

The first time the user initiates SSO-based access to [redacted], the absence of a user mapping on file for the user elicits a login page, displaying a message indicating why the credentials are being requested. Both new and existing [redacted] users will see this page on their first SSO-based access attempt. Both temporary passwords (issued by Customer Support) and permanent passwords (set by the user via the *Change Password* function) are accepted on this page.

Upon successful authentication of a user's [redacted] *User ID* and *Password*, a mapping record is stored within [redacted] that relates the [redacted] user identity to the partner application user identity passed within the SAML assertion.

At the same time, the user's [redacted] password is obfuscated, so the user will *only* be able to access [redacted] via SSO from that point forward. If the user requires both SSO-based and password-based authentication, Customer Support may be contacted to request a password reset. Existing [redacted] practices are employed for password resets; that is, the user must change the password upon the first password-based login following a password reset.

Scenario 2: [redacted] SSO for Web Services

A partner application can leverage SSO in the process of invoking [redacted] web services on behalf of a previously-mapped user (see [“About SSO User Initialization” on the previous page](#)). Establishing a session using SSO enables the partner application to establish a user-specific context to [redacted] without having to know (or store) the user’s [redacted] password. The only web service available for integration is the User Summary service, which is referenced in the following sections.

From the [redacted] server perspective, the SSO “handshake” for web service usage is identical to the handshake for browser usage. The primary difference from the partner application perspective is that instead of sending an HTML form to a web browser, the application opens a direct HTTPS connection to the [redacted] server. It can then invoke a POST request to send the authentication information, and receive a landing page response along with the [redacted] session cookie.

Example 1: Traffic of HTTP+SSL Request to Care360SSOSecurityCheck

```
--- REQUEST ---  
[redacted]
```

```
--- RESPONSE ---  
[redacted]
```

Following are a few details from the traffic example on the previous page:

- A `User-Agent` header must be specified. [redacted] authentication will fail if this header is not provided. The header value is not important, so you may specify anything you want, as long as it is unique and does not match that of any popular web browser.
- A `X-Care360-IsForWebService` header must be specified, in order to prevent concurrent-session termination issues, as the user will likely be using [redacted] within a web browser as well.
- The `targetUri` parameter is not needed. However, if provided, it will be ignored. A ‘blank’ HTML page is returned regardless, upon successful authentication. Only the [redacted] session cookies (‘Set-Cookie’ response headers) are important within an HTTP response indicating success.

The session cookies are passed back to the [redacted] server on a subsequent web service request.

Example 2: Traffic of HTTP+SSL Request to User Summary Service Following Authentication

```
--- REQUEST ---  
[redacted]
```

```
--- RESPONSE ---  
[redacted]
```

For more information about the User Summary services, see [Chapter 3, “User Summary Web Service API Reference ” beginning on page 33](#).

About Session Timeouts and Terminations

Session timeout conditions do not need to be actively considered by the partner application integrator when establishing SSO for web services, as long as an SSO authentication action is made on a new session each time a web service is called. (The example application code, above, demonstrates this model.) However, following is some background as to how [redacted] web service usage is impacted:

- Sessions established on behalf of [redacted] user for web service usage (as indicated by the `X-[redacted]-IsForWebService` header) are managed separately from sessions established for web browser usage. This means that user browser sessions to [redacted] will not be terminated due to a multiple-login condition, if the partner application invokes a web service call (in the background) on the user’s behalf.
- Web service sessions are limited to [redacted] (by default) in order to avoid the proliferation of abandoned non-interactive sessions on the [redacted] server.
- Sessions created for web service usage neither support nor require a “log out” feature, in part due to the 60-second limit on web service-oriented sessions.

About SSO User Initialization

SSO authentication will not succeed when executed on behalf of a yet-unmapped user for web service usage; that is, an HTTP 401 status will be returned with appropriate response text. The partner application will need to gracefully handle this condition. This differs from the web browser usage scenario, where the user is directed to a login verification page.

About the Landing Page

When accessing [redacted] from a partner application via SSO linking in a web service context, the `BlankPage` option is the only landing page option that is applicable. The `BlankPage` option displays a blank page to the user. This is used as the landing page from a successful SSO authentication, and is irrelevant to the subsequent web service call.

Chapter 3: User Summary Web Service API Reference

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About the User Summary Web Service

When new lab results or user messages are received by [redacted] for a user or an organization, the partner application can automatically receive notification of their availability. These user summary notifications enable the partner application to display related counts for affected patients, rather than requiring users to access [redacted] on a regular basis to view the information.

When the user summary notification indicates that new information is available within [redacted], the user can access the desired [redacted] function to view the associated data. Specific data counts that can be communicated to the partner application include the following:

- New results (including Abnormals, Partials, Partials/Abnormals, and Finals)
- Message counts (including user messages and failed faxes)
- Action Items (including Failed Faxes, Pending Renewals, and Pending Approvals)

If a notification of new results is received, for example, the user can link directly to the [redacted] *New Results* page. New results can be viewed for all associated service providers, including regional hospital laboratories, or independent laboratories.

Process Walkthrough: Retrieving User Summary Data

The diagram below illustrates (at a high level) the flow of user summary data between [redacted] and a linked partner application. Following the diagram is a step-by-step walkthrough of the user summary data retrieval illustrated in the diagram.

[redacted graphic]

The following steps outline the procedure—and associated systems—involved in communicating user data (for example, result and user message counts) from [redacted] to a partner application.

- 1 A user (with an established SSO connection) logs in to a partner application.
- 2 The partner application sends a request to [redacted] for associated user data.
- 3 [redacted] returns the requested user data to the partner application.
- 4 During the user's current session, the partner application can either allow the user to manually refresh the data displayed, or it can send automatic refresh requests on a predefined basis.

User Summary Web Service API Reference

This section provides details about the User Summary Services web service calls provided by [redacted]. The User Summary Services component of [redacted] provides operations for receiving notification of the availability of user messages, new results, and pending prescriptions within [redacted].

An authorized user name and password are required for accessing this web service.

User Summary Web Service Methods

Following is a brief overview of each method provided by the User Summary Services web service. (Usage details for each method are provided in “[User Summary Web Service Method Details](#)” below.)

- **getCounts.** Retrieves user summary data from [redacted] for all organizations with which the current partner application user is associated (up to the maximum number of organizations allowed).
- **getCountsByOrg.** Retrieves user summary data from [redacted] for one or more specific organization(s) with which the current partner application user is associated.
- **getOrgs.** Retrieves a list of organizations with which the partner application user is associated.

User Summary Web Service Method Details

The following table provides details about each of the methods listed above.

Method	Description
getCounts	<p>Summary</p> <p>Retrieves user summary data from [redacted] for all organizations with which the current partner application user is associated (up to the maximum number of organizations allowed).</p> <p>Usage</p> <p>The WSUserSummaryData object contains the user summary data that is returned. The WSUserSummaryCounts object contained by WSUserSummaryData includes data for up to the maximum number of organizations allowed.</p> <p>Method Signature</p> <p>WSUserSummaryData getCounts() throws SOAPException</p>
getCountsByOrg	<p>Summary</p> <p>Retrieves user summary data from [redacted] for one or more specific organization(s) with which the current partner application user is associated.</p> <p>Usage</p> <p>The WSUserSummaryData object contains the user summary data that is returned. Throws a SOAPException for the following conditions:</p> <ul style="list-style-type: none">• The method is called with an invalid orgUID (either the orgUID does not exist in the system, or the partner does not have access to the requested organization).• The method is called, and passes more orgUIDs than the maximum allowed.• The method is called without passing in an orgUID.

Method	Description
	Method Signature WSUserSummaryData getCountsByOrg(String orgUID[]) throws SOAPException
getOrgs	Summary Retrieves a list of organizations with which the partner application user is associated. Usage The WSOrgData object contains the list of organizations (array of WSOrg objects) that is returned. Method Signature WSOrgData getOrgs() throws SOAPException

User Summary Web Service Objects

The User Summary Services web service provides the objects described in the following table.

Note: The attributes defined in this table are case-sensitive.

Object	Description/Attributes	Data Type	Req'd? ^a
WSUserSummaryData	Contains the user summary data returned from [redacted]. Responses include: <ul style="list-style-type: none"> • counts. An array of WSUserSummaryCounts objects, one for each organization. • timeStamp. The date and time at which the query was run. • warnMessage. A message indicating an error condition (for example, the maximum number of organizations was exceeded). 	WSUserSummaryCounts[] DateTime String	0 0 0
WSUserSummaryCounts	Contains the individual data counts returned within the WSUserSummaryData object. Responses include: <ul style="list-style-type: none"> • newResultCount. The number of new results for the organization. 	Int	0

^aR = Required, O = Optional, C = Conditional.

Object	Description/Attributes	Data Type	Req'd? ^a
	<ul style="list-style-type: none"> • finalAbnormalResultCount. The number of final abnormal results for the organization. 	Int	0
	<ul style="list-style-type: none"> • finalNormalResultCount. The number of final normal results for the organization. 	Int	0
	<ul style="list-style-type: none"> • ipAbnormalResultCount. The number of abnormal results that are not yet final for the organization. 	Int	0
	<ul style="list-style-type: none"> • ipNormalResultCount. The number of normal results that are not final for the organization. 	Int	0
	<ul style="list-style-type: none"> • userFailedFaxCount. The number of faxes that have failed for the user from the specified organization. 	Int	0
	<ul style="list-style-type: none"> • orgFailedFaxCount. The number of faxes that have failed for the specified organization. 	Int	0
	<ul style="list-style-type: none"> • newUserMessageCount. The number of user messages for the user from the specified organization. 	Int	0
	<ul style="list-style-type: none"> • prescripPendingApprovalCount. The number of prescriptions for the user pending approval from the specified organization. 	Int	0
	<ul style="list-style-type: none"> • prescripPendingRenewalCount. The number of prescriptions for the user pending renewal from the specified organization. 	Int	0
	<ul style="list-style-type: none"> • prescripFailedFaxCount. The number of faxed prescriptions that have failed for the user from the specified organization. 	Int	0
WSOrgData	Contains the organization data returned by the getOrgs method.		

^aR = Required, O = Optional, C = Conditional.

Object	Description/Attributes	Data Type	Req'd? ^a
	Responses include:		
	<ul style="list-style-type: none"> • maxOrgs. The maximum number of organizations that can be queried in a single call. 	Long	O
	<ul style="list-style-type: none"> • orgList. An array of WSOrgs, one for each organization. 	WSOrg[]	O
	<ul style="list-style-type: none"> • timeStamp. The date and time at which the query was run. 	DateTime	O
WSOrg	Contains information returned about a particular organization.		
	Responses include:		
	<ul style="list-style-type: none"> • orgName. The common name of the organization. 	String	O
	<ul style="list-style-type: none"> • orgUID. The UID with which the organization is associated. 	String	R

^aR = Required, O = Optional, C = Conditional.

About the WSDL Interface Document

In order to utilize a web service, you must develop a web service client application. A client application created for accessing the User Summary web service is referred to as a *static* web service client, because the client knows where the web service is located without looking up the service in a UDDI registry. The client calls the web service via a known service URL to obtain the Web Services Definition Language (WSDL) file that describes the web service.

A WSDL interface document describes all of the information that is needed by a web service client to interact with the associated web service. The WSDL document includes the URL to locate the associated web service. Once you have located the web service, or after you have obtained the WSDL, you can build a web service client application that uses the web service to perform the desired functions.

The following section describes how to obtain the WSDL document for the User Summary web service.

Note: You must have a valid user name and password in order to access the WSDL interface document. For the [redacted] Production environment, a user name and password will be issued once your application has been developed, tested, and certified.

Accessing the User Summary Web Service WSDL Document

To access the WSDL service descriptions for the User Summary Services web service, use your browser to access the URL corresponding to one of the following environments:

- **Staging environment.** Use this environment to develop, test, and certify your web service application. For the Staging environment URL and endpoint, see “[Staging Environment](#)” below.
- **Production environment.** Use this environment after your web service application has been certified. For the Production environment URL and endpoint, see “[Production Environment](#)” below.

To save the WSDL document to your hard disk, access the document using your browser and then select *File* > *Save As*.

Staging Environment

To access the User Summary web service in the [redacted] Staging environment, access the following link:

WSDL Document

[https://\[redacted URL\]?WSDL](https://[redacted URL]?WSDL)

Endpoint

[https://\[redacted URL\]/UserSummaryWebService](https://[redacted URL]/UserSummaryWebService)

Production Environment

Once you have developed, tested, and certified your web service client application in the [redacted] Staging environment, you can then update the application to work in the [redacted] Production environment.

Connecting a web service client to the [redacted] Production environment is similar to connecting to the Staging environment (the exposed interfaces are equivalent).

Note: Client applications developed against the Staging environment WSDL document can also be used to access the [redacted] Production environment, and vice versa; the WSDL content is identical in both environments.

To access the User Summary web service in the Production environment, access the following link:

WSDL Document

[https://\[redacted URL\]/UserSummaryWebService?WSDL](https://[redacted URL]/UserSummaryWebService?WSDL)

Endpoint

[https://\[redacted URL\]/UserSummaryWebService](https://[redacted URL]/UserSummaryWebService)

Chapter 4: Submit Patient Demographic Web Service API Reference

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About the Submit Patient Demographic Web Service

Patient demographics integration enables patient demographic changes that occur within either or a partner application—for example, a Practice Management System (PMS)—to be synchronized with the other, in order to maintain the integrity of patient demographic data between the two applications. The Submit Patient Demographic web service enables each application to submit patient demographic updates to the [redacted], which then forwards (pushes) the updates to the opposing application.

The Submit Patient Demographic web service also enables a partner application to submit scheduling updates to [redacted brand], and enable [redacted brand] to submit financial (billing) transactions to a partner application.

Note: The ability for [redacted brand] to push scheduling updates to a partner application is not currently supported, nor is the ability for a partner application to push financial transactions to [redacted brand].

The patient demographic updates supported by the Submit Patient Demographic web service include the following:

- Patient Add (ADT^A28)
- Patient Update (ADT^A31)
- Patient Delete (ADT^A29)
- Patient Merge (ADT^A39)
- Schedule Patient (SIU), including:
 - New Appt (SIU^S12)
 - Modify Appt (SIU^S14)
 - Cancel Appt (SIU^S15)
 - Delete Appt (SIU^S17)
- Detail Financial Transaction (DFT^P03)

The [redacted] maintains a record of all patient demographic transactions that occur, whether they are initiated by [redacted brand] or by a partner application. Any errors that occur between the [redacted] and [redacted brand] or a partner application are returned to the [redacted].

Notes:

- For detailed specifications on the HL7 demographic (ADT), scheduling (SIU), and billing (DFT) messages that are sent either to or from the [redacted], refer to [Chapter 6, “Patient Demographic HL7 Specification ” beginning on page 65](#).
- Outbound push services to a partner application (for demographic and/or billing updates) requires additional configuration. Contact support for more information.
- A separate web service, the Retrieve Patient Demographic web service, enables a partner application to retrieve (pull) and acknowledge patient demographic (ADT) and billing (DFT) updates submitted by [redacted brand]. For more information about the Retrieve Patient Demographic web service, refer to [Chapter 5, “Retrieve Patient Demographic Web Service API Reference” beginning on page 54](#).

Submit Patient Demographic Web Service Connectivity

The transfer of all patient demographic updates between a partner application and the [redacted] will occur via the Submit Patient Demographic web service (HTTPS).

Note: For details of the Patient Demographic web service, see [“Submit Patient Demographic Web Service API Reference” on page 49.](#)

Real-Time vs. Batch Processing

Patient demographic update messages can either be submitted individually for *real-time* updates that will be processed immediately, or they can be submitted individually for *batch* processing that will occur at a later time. Unlike real-time updates that are processed immediately, HL7 messages that are submitted for batch processing are placed in a queue.

- Use real-time updates for submitting individual patient demographic update messages that are time sensitive.
- Use batch updates for submitting a large number of individual patient demographic messages that are not time sensitive. For example, use batch updates to process the initial patient demographic data load between a partner application and [redacted brand].

Both update types are processed in the order in which they are received by [redacted brand]. To distinguish real-time and batch updates, each type is submitted to the [redacted] via its own Submit Patient Demographic web service method. For information on the real-time and batch methods, see [“Submit Patient Demographics Method Details” on page 49.](#)

PID-Only vs. “Fuzzy” Matching

There are two methods available for processing patient demographic merge requests. Partners must specify their preferred method during the initial integration process with [redacted brand]. The two methods include the following:

- **PID-Only Matching.** This method relies solely on the ability of the partner application to identify a patient using a unique patient identifier (PID). When using this method, the information provided by the partner application is always considered the most accurate (that is, it overrides any existing data in [redacted brand]).
- **“Fuzzy” Matching.** This method requires the partner application to pass a minimum set of patient demographic data, in addition to the PID, to identify the patient. [redacted brand] uses the supplied patient demographic data to attempt to identify the matching patient(s) to complete the patient demographic update request.

For additional information, see [“PID-Only Matching Detail” on the next page](#) and [““Fuzzy” Matching Detail” on page 45.](#)

PID-Only Matching Detail

The following table provides additional details on the rules associated with PID-only matching for patient demographic updates.

PID-Only Matching Request	Potential Results
Add Patient	<ul style="list-style-type: none">• If the incoming PID matches no existing patient in the target organization, the patient is added.• If the incoming PID matches a single patient in the target organization, that patient is updated.• If the incoming PID matches more than one existing patient, [redacted brand] returns an error to the partner application.
Update Patient	<ul style="list-style-type: none">• If the incoming PID matches no existing patient in the target organization, the patient is added.• If the incoming PID matches a single patient in the target organization, that patient is updated.• If the incoming PID matches more than one existing patient, [redacted brand] returns an error to the partner application.
Delete Patient	<ul style="list-style-type: none">• If the incoming PID matches no existing patient in the target organization, [redacted brand] returns an error to the partner application.• If the incoming PID matches a single patient in the target organization, that patient is deleted.^a• If the incoming PID matches more than one existing patient, [redacted brand] returns an error to the partner application.
Merge Patients	<ul style="list-style-type: none">• If the target organization contains no patient with the same PID for either the “correct” patient or the “incorrect” patient, [redacted brand] returns an error to the partner application.• If the target organization contains a single patient with the same PID for the “correct” patient and a single patient with the same PID for the “incorrect” patient, those patients are merged.• If the target organization contains more than one patient with the same PID for either the “correct” patient or the “incorrect” patient, [redacted brand] returns an error to the partner application.
Schedule Patient	<ul style="list-style-type: none">• If the incoming PID matches no existing patient in the target organization, the patient is added.• If the incoming PID matches a single patient in the target organization, that patient is updated.• If the incoming PID matches more than one existing patient, [redacted brand] returns an error to the partner application.

^aYou cannot delete a patient after clinical entries (for example, lab results) have been associated with that patient, or if the patient is associated with an alias patient. If a delete cannot be performed due to either of these conditions, an error message is returned.

"Fuzzy" Matching Detail

The following table provides additional details on the rules associated with "fuzzy" matching for patient demographic updates.

"Fuzzy" Matching Request	Potential Results
Add Patient	<ul style="list-style-type: none">• If [redacted brand] finds no high-confidence match between existing patients in the target organization and the incoming patient demographics, the patient is added.• If [redacted brand] finds a high-confidence match between a single patient in the target organization and the incoming patient demographics, the matching patient is updated.• If [redacted brand] finds more than one existing patient that has a high-confidence or ambiguous match with the incoming patient demographics, [redacted brand] adds the patient, and marks the patient as a potential duplicate.• If [redacted brand] finds an ambiguous match between the incoming patient demographics and a single patient in the target organization, [redacted brand] adds the patient, and marks the patient as a potential duplicate.
Update Patient	<ul style="list-style-type: none">• If [redacted brand] finds no high-confidence match between existing patients in the target organization and the incoming patient demographics, the patient is added.• If [redacted brand] finds a high-confidence match between a single patient in the target organization and the incoming patient demographics, the matching patient is updated.• If [redacted brand] finds more than one existing patient that has a high-confidence or ambiguous match with the incoming patient demographics, [redacted brand] adds the patient, and marks the patient as a potential duplicate.• If [redacted brand] finds an ambiguous match between the incoming patient demographics and a single patient in the target organization, [redacted brand] adds the patient, and marks the patient as a potential duplicate.
Delete Patient	<ul style="list-style-type: none">• If [redacted brand] finds no high-confidence match between existing patients in the target organization and the incoming patient demographics, [redacted brand] returns an error to the partner application.• If [redacted brand] finds a high-confidence match between a single patient in the target organization and the incoming patient demographics, the matching patient is deleted.^a

^aYou cannot delete a patient after clinical entries (for example, lab results) have been associated with that patient, or if the patient is associated with an alias patient. If a delete cannot be performed due to either of these conditions, an error message is returned.

“Fuzzy” Matching Request	Potential Results
Merge Patients	<ul style="list-style-type: none"> • If [redacted brand] finds more than one high-confidence match between existing patients in the target Organization and the incoming patient demographics, [redacted brand] returns an error to the partner application. • If the target organization contains no match for either the “correct” patient or the “incorrect” patient, [redacted brand] returns an error to the partner application. • If the target organization contains a single high-confidence match for the “correct” patient and a single high-confidence match for the “incorrect” patient, those patients are merged. • If the target organization contains more than one high-confidence match for either the “correct” patient or the “incorrect” patient, [redacted brand] returns an error to the partner application.
Schedule Patient	<ul style="list-style-type: none"> • If the incoming PID matches no existing patient in the target organization, the patient is added. • If the incoming PID matches a single patient in the target organization, that patient is updated. • If the incoming PID matches more than one existing patient, [redacted brand] returns an error to the partner application.

Process Walkthrough: Submitting Patient Demographic Updates

The diagram below illustrates (at a high level) the flow of information between a partner application, the [redacted], and [redacted brand]. Following the diagram is a step-by-step walkthrough of the patient demographic processes illustrated in the diagram.

[redacted graphic]

The following steps outline the process—and associated systems—involved in a partner application submitting patient demographic and/or scheduling updates to [redacted brand].

- 1 The partner application submits patient demographic and/or scheduling update messages to the [redacted] via the Submit Patient Demographic web service.

Note: Patient demographic and/or scheduling update messages provided by the partner application must be formatted according to the specifications detailed in [Chapter 6, “Patient Demographic HL7 Specification ” beginning on page 65](#).

- 2 The [redacted] receives the patient demographic and/or scheduling messages from the partner application, and verifies the format and content of those messages.
- 3 The [redacted] records the patient demographic transaction, and stores a copy of the discrete content of the messages for 90 days.
- 4 The [redacted] converts the patient demographic (ADT) and/or scheduling (SIU) update messages to the [redacted brand] format, and then forwards the messages to [redacted brand].
- 5 [redacted brand] applies the updates to its patient database and/or scheduling system.
Any validation errors that occur within [redacted brand] are returned to the [redacted].

Process Walkthrough: Receiving Patient Demographic Updates

The diagram below illustrates (at a high level) the flow of information between [redacted brand], the [redacted], and a partner application. Following the diagram is a step-by-step walkthrough of the patient demographic processes illustrated in the diagram

[redacted graphic].

The following steps outline the process—and associated systems—involved in a partner application receiving patient demographic and/or billing updates from [redacted brand].

- 1 The [redacted] receives the patient demographic and/or billing messages from [redacted brand], and verifies the format and content of those messages.
- 2 The [redacted] records the patient demographic transaction, and stores a copy of the discrete content of the messages for 90 days.
- 3 The [redacted] converts the [redacted brand] patient demographic and/or billing messages to the standard HL7 ADT and/or DFT message format, and then forwards (pushes) the messages to the partner application.

Note: The configuration of outbound push services to the partner application (for demographic or billing updates) is outside the scope of the Submit Patient Demographic web service. Contact support for more information.

- 4 The partner application applies the updates to its patient database and/or billing system. Any validation errors that occur within the partner application are returned to the [redacted].

Submit Patient Demographic Web Service API Reference

This section provides details about the Submit Patient Demographic web service calls provided by the [redacted]. The Submit Patient Demographic web service provides operations for receiving and processing patient demographic updates from a partner application, and forwarding those updates to [redacted brand]. Demographic updates can be submitted either in real-time or batch mode.

Your credentials are required in order to access [redacted] web services.

Note: For detailed specifications on the HL7 demographic (ADT) and scheduling (SIU) messages that are sent to the [redacted] for processing, see [Chapter 6, “Patient Demographic HL7 Specification ” beginning on page 65](#).

Submit Patient Demographics Methods

Following is a brief overview of each method provided by the Submit Patient Demographic web service. (Usage details for each method are provided in “[Submit Patient Demographics Method Details](#)” below.)

- **submitRealTimeADTMessage.** Submits a patient demographic update ADT message (in HL7 format) to the [redacted] for real-time delivery to [redacted brand].
- **submitBatchADTMessage.** Submits a patient demographic update ADT message (in HL7 format) to the [redacted] in batch mode, placing the message in a queue for later delivery to [redacted brand].

Submit Patient Demographics Method Details

The following table provides details about each of the methods listed above.

Method	Description
submitRealTimeADTMessage	<p>Summary</p> <p>Submits a patient demographic update (in HL7 format) to the [redacted] in real-time mode. This means that each HL7 message is delivered to [redacted brand] immediately.</p> <p>Usage</p> <p>The DemographicRequest object contains the inbound patient demographic update.</p> <p>Notes:</p> <ul style="list-style-type: none">• Even if an inbound patient demographic update is accepted by the [redacted], it still may ultimately be rejected by [redacted brand].• For detailed specifications on formatting patient demographic update messages that are sent to the [redacted] for processing, see Chapter 6, “Patient Demographic HL7 Specification ” beginning on page 65. <p>Method Signature</p> <p>DemographicResponse submitRealTimeADTMessage(DemographicRequest request) throws SOAPException</p>

Method	Description
submitBatchADTMessage	<p>Summary</p> <p>Submits a patient demographic update (in HL7 format) to the [redacted] in batch mode. This means that each HL7 message will be placed in a queue for later delivery (for example, several hours) to [redacted brand].</p> <p>Note: Only one HL7 message for one patient can be submitted per submitBatchADTMessage call.</p> <p>Usage</p> <p>The InboundPatientDemographicRequest object contains the inbound patient demographic update.</p> <p>Notes:</p> <ul style="list-style-type: none"> • Even if an inbound patient demographic update is accepted by the [redacted], it still may ultimately be rejected by [redacted brand]. • For detailed specifications on formatting patient demographic update messages that are sent to the [redacted] for processing, see Chapter 6, “Patient Demographic HL7 Specification ” beginning on page 65. <p>Method Signature</p> <p>DemographicResponse submitBatchADTMessage(DemographicRequest request) throws SOAPException</p>

Submit Patient Demographics Objects

The Submit Patient Demographic web service provides the objects described in the following table.

Note: The attributes defined in this table are case-sensitive.

Object	Description/Attributes	Data Type	Req'd? ^a
DemographicRequest	<p>Contains the inbound patient demographic update.</p> <p>Note: For detailed specifications on formatting patient demographic updates that are sent to the [redacted] for processing, see Chapter 6, “Patient Demographic HL7 Specification ” beginning on page 65.</p> <p>Attributes that can be set for this object include:</p> <ul style="list-style-type: none"> • ADTMessage. The HL7 (ADT and/or SIU) Patient Demographic update message content. 	byte[]	R
DemographicResponse	Represents the response elements for a demographic update request. This includes the transaction ID and any validation errors that occur.		

^aR = Required, O = Optional, C = Conditional.

Object	Description/Attributes	Data Type	Req'd? ^a
	Responses include:		
	<ul style="list-style-type: none"> • messageControlUid. The message control ID included in the patient demographic update message that was submitted to the [redacted]. 	String	O
	<ul style="list-style-type: none"> • hubTransactionUid. The transaction ID for the response. 	String	O
	<ul style="list-style-type: none"> • errors. The array of validation and authorization errors returned, if the patient demographic update message is returned based on validation. 	String[]	O
	<ul style="list-style-type: none"> • status. The status of the transaction response. Valid values: SUCCESS or FAILURE. 	String	R

^aR = Required, O = Optional, C = Conditional.

About the WSDL Interface Document

In order to utilize a web service, you must develop a web service client application. A client application created for accessing the Submit Patient Demographics web service is referred to as a *static* web service client, because the client knows where the web service is located without looking up the service in a Universal Description, Discovery, and Integration (UDDI) registry. The client calls the web services via a known service URL to obtain the WSDL file that describes the web services.

A WSDL interface document describes all of the information that is needed by a web service client to interact with the associated web service. The WSDL document includes the URL to locate the associated web services. Once you have obtained the WSDL, you can build a web service client application that uses the web service to perform the desired functions.

The following section describes how to obtain the WSDL document for Submit the Patient Demographic web service.

Note: Your credentials are required in order to access [redacted] web services such as the WSDL interface documents. For the Production environment, your credentials are issued once your application has been developed, tested, and certified.

Accessing the Submit Patient Demographic Web Service WSDL Document

To access the WSDL service description for the Submit Patient Demographic web service, use your browser to access the URL corresponding to one of the following [redacted] environments:

- **Staging environment.** Use this environment for developing, testing, and certifying your web service application. For the Staging environment URL and endpoint, see “[Staging Environment](#)” below.
- **Production environment.** Use this environment after your web service application has been certified. For the Production environment URL and endpoint, see “[Production Environment](#)” below.

To save the WSDL document to your hard disk, access the document using your browser and then select *File* > *Save As*.

Staging Environment

To access the Submit Patient Demographic web service in the Staging environment, access the following link:

WSDL Document

[https://\[redacted URL\]/demographic/service?wsdl](https://[redacted URL]/demographic/service?wsdl)

Endpoint

[https://\[redacted URL\]/demographic/service](https://[redacted URL]/demographic/service)

Production Environment

Once you have developed, tested, and certified your web service client application in the Staging environment, you can then update the application to work in the Production environment. Connecting a web service client to the Production environment is similar to connecting to the Staging environment (the exposed interfaces are equivalent).

Note: Client applications developed against the Staging environment WSDL documents can also be used to access the Production environment, and vice versa; the WSDL content is identical in both environments.

To access the Submit Patient Demographic web service in the Production environment, access the following link:

WSDL Document

[https://\[redacted URL\]/demographic/service?wsdl](https://[redacted URL]/demographic/service?wsdl)

Endpoint

[https://\[redacted URL\]/demographic/service](https://[redacted URL]/demographic/service)

Chapter 5: Retrieve Patient Demographic Web Service API Reference

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About the Retrieve Patient Demographic Web Service

Patient demographics integration enables patient demographic and billing updates that occur within [redacted brand] to be synchronized with a partner application—for example, a Practice Management System (PMS)—to maintain the integrity of patient demographic and billing data between the two applications.

[redacted brand] submits demographic and/or billing updates to the [redacted], where they are stored in a queue until they are retrieved by a partner application. The Retrieve Patient Demographic web service enables a partner application to retrieve (pull) demographic and/or billing updates from the [redacted] on a regular basis (15 minute intervals are recommended). This enables the partner application to stay current with any updates that have been submitted to the [redacted] by [redacted brand].

Note: Demographic and billing messages are stored in the [redacted] for 90 days, regardless of whether or not they have been retrieved and/or acknowledged.

The types of patient demographic update and billing messages supported by the Retrieve Patient Demographic web service include the following:

- Patient Add (ADT^A28)
- Patient Update (ADT^A31)
- Patient Delete (ADT^A29)
- Patient Merge (ADT^A39)
- Detail Financial Transaction (DFT^P03)

The [redacted] maintains a record of all patient demographic transactions that occur, whether they are initiated by [redacted brand] or by a partner application.

Notes:

- For detailed specifications on the HL7 demographic (ADT) and billing (DFT) messages that are retrieved from the [redacted], refer to [Chapter 6, “Patient Demographic HL7 Specification ” beginning on page 65](#).
- A separate web service, the Submit Patient Demographic web service, enables a partner application to submit patient demographic and scheduling updates to the [redacted], which it then forwards to [redacted brand]. For more information about the Submit Patient Demographic web service, refer to [Chapter 4, “Submit Patient Demographic Web Service API Reference” beginning on page 41](#).

Process Walkthrough: Retrieving Patient Demographic Updates

The diagram below illustrates (at a high level) the flow of information between [redacted brand], the [redacted], and a partner application. Following the diagram is a step-by-step walkthrough of the patient demographic processes illustrated in the diagram.

[redacted graphic]

The following steps outline the process—and associated systems—involved in a partner application retrieving (pulling) patient demographic and/or billing updates from [redacted brand].

- 1 [redacted brand] submits patient demographic and/or billing messages to the [redacted], which verifies the format and content of those messages.
- 2 The [redacted] records the patient demographic transaction, and stores a copy of the discrete content of the demographic and/or billing messages for 90 days.
- 3 The [redacted] converts the demographic and/or billing messages to the standard HL7 ADT or DFT message format, respectively, and then stores the messages in a queue for retrieval.
- 4 The partner application retrieves and acknowledges (ACKs or NAKs) the messages from the [redacted], and then applies the updates to its patient database and/or billing system.

Retrieve Patient Demographic Web Service API Reference

This section provides details about the Retrieve Patient Demographic web service calls provided by the [redacted]. The Retrieve Patient Demographic web service provides operations that enable a partner application to retrieve and acknowledge patient demographic and billing updates submitted by [redacted brand].

Your credentials are required to use a [redacted] web services.

Note: For detailed specifications on the HL7 ADT and DFT messages that are retrieved from the [redacted], see [Chapter 6, “Patient Demographic HL7 Specification ” beginning on page 65.](#)

Retrieve Patient Demographics Methods

Following is a brief overview of each method provided by the Retrieve Patient Demographic web service. (Usage details for each method are provided in the following section, “[Retrieve Patient Demographics Method Details](#)” below.)

- **retrieveDemographicMessages.** Retrieves demographic and/or billing messages (in HL7 format) that have been submitted by [redacted brand] for the associated hub account and stored in the [redacted] retrieval queue.
- **ackDemographicMessages.** Returns an acknowledgement (ACK) or negative acknowledgement (NAK) for the demographic and/or billing messages received, both of which remove the messages from the retrieval queue. Also returns the number of ACK'd or NAK'd messages.

Retrieve Patient Demographics Method Details

The following table provides details about each of the methods listed above.

Method	Description
retrieveDemographicMessages	<p>Summary</p> <p>Retrieves a batch of available ADT and/or DFT messages (in HL7 format) that have been submitted by [redacted brand] for the associated hub account and stored in the [redacted] retrieval queue. Up to 50 messages can be retrieved at one time.</p> <p>Usage</p> <p>The RetrievalRequest object specifies the requested batch size (optional), as well as the message types to retrieve (ADT, DFT, or both).</p> <p>The requested batch size indicates the number of demographic and/or billing messages to be retrieved for the transaction (the maximum number allowed is 50). If the batch size is not specified, or if the specified number is not from 1 to 50, then it defaults to 50.</p> <p>Notes:</p> <ul style="list-style-type: none">• Demographic and billing messages are stored in the [redacted] for 90 days, regardless of whether or not they have been retrieved and/or acknowledged.

Method	Description
	<ul style="list-style-type: none"> For detailed specifications on the ADT and DFT messages that are retrieved from the [redacted], see Chapter 6, “Patient Demographic HL7 Specification ” beginning on page 65. <p>Method Signature</p> <p>RetrievalResult retrieveDemographicMessages(RetrievalRequest request) throws SOAPException</p>
ackDemographicMessages	<p>Summary</p> <p>Returns an acknowledgement (ACK) or negative acknowledgement (NAK) for the demographic and/or billing messages received, both of which remove the messages from the retrieval queue. Also returns the number of ACK'd or NAK'd messages.</p> <p>A NAK is returned for any messages that resulted in an error.</p> <p>Note: Demographic and billing messages are stored in the [redacted] for 90 days, regardless of whether or not they have been retrieved and/or acknowledged.</p> <p>Usage</p> <p>You must supply the AckRequest object, which describes the demographic or billing messages being acknowledged. This method must be called to acknowledge (either ACK or NAK) all demographic or billing messages that were retrieved.</p> <p>Method Signature</p> <p>AckResult ackDemographicMessages(AckRequest acks) throws SOAP exception</p>

Retrieve Patient Demographics Objects

The Retrieve Patient Demographic web service provides the objects described in the following table.

Note: The attributes defined in this table are case-sensitive.

Object	Description/Attributes	Data Type	Req'd? ^a
RetrievalRequest	<p>Sets parameters to confine the retrieve transaction.</p> <p>Note: For detailed specifications on the ADT and DFT messages that are retrieved from the [redacted], see Chapter 6, “Patient Demographic HL7 Specification ” beginning on page 65.</p> <p>Attributes that can be set for this object include:</p> <ul style="list-style-type: none">• RequestedBatchSize. The number of demographic and/or billing messages to be retrieved for the transaction (the maximum number allowed is 50). If the batch size is not specified, or if the specified number is not from 1 to 50, then it defaults to 50.• RequestType. The type(s) of messages to retrieve. Valid values: ADT and/or DFT. If no value is specified, both message types are retrieved.	Integer	O
RetrievalResult	<p>Represents the response elements for a demographic retrieval request. This includes the transaction ID, the requested and actual batch sizes, a flag indicating whether or not more messages are available in the queue, and any validation errors that occur.</p> <p>Responses include:</p> <ul style="list-style-type: none">• RetrievalId. The transaction ID for the retrieval response (used to acknowledge retrieved messages).• RequestedBatchSize. The number of messages that were requested in the retrieve transaction.• ActualBatchSize. The actual number of messages that were retrieved by the transaction.• isMore. Indicates whether or not additional messages are available for retrieval. Valid values: TRUE (if there are more messages) or FALSE (if no more messages are available).	String	R
		Integer	R
		Integer	R
		Boolean	R

^aR = Required, O = Optional, C = Conditional.

Object	Description/Attributes	Data Type	Req'd? ^a
	<ul style="list-style-type: none"> • Status. The status of the transaction response. Valid values: SUCCESS or FAILURE. • ErrorDescription. A description of the error that occurred, if the status is FAILURE. • RetrievalResultItem. The array of retrieved RetrievalResultItem objects returned. 	String	R
		String	O
		String[]	R
RetrievalResultItem	<p>The content of the retrieved ADT or DFT message. Includes the message control ID, as well as the Base64-encoded message content.</p> <p>Responses include:</p> <ul style="list-style-type: none"> • MessageId. The message control ID included in the ADT or DFT message that was retrieved from the [redacted]. This ID is used for acknowledging retrieved demographic or billing messages. • HL7AsBase64Encoded. The Base64-encoded HL7 (ADT or DFT) message content. 	String	R
		base64Binary	R
AckRequest	<p>Represents the retrieval transaction being acknowledged.</p> <p>Attributes that can be set for this object include:</p> <ul style="list-style-type: none"> • RetrievalId. The transaction ID that has been associated with this retrieval request. This is used to acknowledge the retrieved messages. • AckRequestItem. The array of AckRequestItem objects indicating the demographic and/or billing messages that are being acknowledged. 	String	R
		AckRequestItem[]	O
AckRequestItem	<p>Represents the demographic and/or billing messages being acknowledged.</p> <p>Attributes that can be set for this object include:</p> <ul style="list-style-type: none"> • messageID. The message control ID that identifies the demographic and/or billing messages being acknowledged. (provided in the RetrievalResultItem object of the RetrievalResult). • ackCode. Identifies whether or not the message was acknowledged. Valid values: <ul style="list-style-type: none"> • ACK. The message was successfully retrieved and removed from the queue. 	String	R
		String	R

^aR = Required, O = Optional, C = Conditional.

Object	Description/Attributes	Data Type	Req'd? ^a
	<ul style="list-style-type: none"> • NAK. The message was rejected by the retrieving system, but is still removed from the queue. 		
AckResult	<p>Represents the response elements for the acknowledgement. This includes the status and any error conditions.</p> <p>Responses include:</p> <ul style="list-style-type: none"> • Status. The status of the acknowledgement. Valid values: SUCCESS or FAILURE. • ErrorDescription. A description of the error that occurred, if the status is FAILURE. This may include a list of one or more messages IDs, if the failure involved the submission of invalid message IDs (for example, they were not returned from the associated retrieval request). 	<p>String</p> <p>String</p>	<p>R</p> <p>O</p>

^aR = Required, O = Optional, C = Conditional.

Retrieve Patient Demographic Web Service XML Schema

The messages that are sent to, or retrieved from, the hub to either retrieve or acknowledge demographic updates via the Retrieve Patient Demographic web service must conform to the following XML schema:

[redacted]

About the WSDL Interface Document

In order to utilize a web service, you must develop a web service client application. A client application created for accessing the Retrieve Patient Demographic web service is referred to as a *static* web service client, because the client knows where the web service is located without looking up the service in a Universal Description, Discovery, and Integration (UDDI) registry. The client calls the web services via a known service URL to obtain the WSDL file that describes the web services.

A WSDL interface document describes all of the information that is needed by a web service client to interact with the associated web service. The WSDL document includes the URL to locate the associated web services. Once you have obtained the WSDL, you can build a web service client application that uses the web service to perform the desired functions.

The following section describes how to obtain the WSDL document for the Retrieve Patient Demographic web service.

Note: Your credentials are required in order to access the WSDL interface documents. For the Production environment, your credentials are issued once your application has been developed, tested, and certified.

Accessing the Retrieve Patient Demographic Web Service WSDL Document

To access the WSDL service description for the Retrieve Patient Demographic web service, use your browser to access the URL corresponding to one of the following [redacted] environments:

- **Staging environment.** Use this [redacted] environment for developing, testing, and certifying your web service application. For the Staging environment URL and endpoint, see “[Staging Environment](#)” below.
- **Production environment.** Use this [redacted] environment after your web service application has been certified. For the Production environment URL and endpoint, see “[Production Environment](#)” below.

To save the WSDL document to your hard disk, access the document using your browser and then select *File* > *Save As*.

Staging Environment

To access the Retrieve Patient Demographic web service in the Staging environment, access the following link:

WSDL Document

[https://\[redacted\]/demographic/retrieval/service?wsdl](https://[redacted]/demographic/retrieval/service?wsdl)

Endpoint

[https://\[redacted\]/demographic/retrieval/service](https://[redacted]/demographic/retrieval/service)

Production Environment

Once you have developed, tested, and certified your web service client application in the Staging environment, you can then update the application to work in the Production environment. Connecting a web service client to the Production environment is similar to connecting to the Staging environment (the exposed interfaces are equivalent).

Note: Client applications developed against the Staging environment WSDL documents can also be used to access the Production environment, and vice versa; the WSDL content is identical in both environments.

To access the Retrieve Patient Demographic web service in the Production environment, access the following link:

WSDL Document

[https://\[redacted\].com/demographic/retrieval/service?wsdl](https://[redacted].com/demographic/retrieval/service?wsdl)

Endpoint

[https://\[redacted\].com/demographic/retrieval/service](https://[redacted].com/demographic/retrieval/service)

Chapter 6: Patient Demographic HL7 Specification

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About the Patient Demographic HL7 Specification

This chapter provides detailed format specifications for patient demographic add, delete, update, and merge requests that are submitted by a partner application. This exchange of messages allows [redacted] and the partner application to synchronize their patient databases. In addition, this chapter provides detailed format specifications for scheduling messages, which are sent from a partner application to [redacted], and for financial transaction (billing) messages, which are sent from [redacted] to a partner application.

All of the demographic messages submitted to [redacted] must adhere to the HL7 2.3 Specification, with any exceptions noted in this chapter (for example, there are three PID fields that support HL7 3.0 values). Likewise, [redacted] adheres to this same specification when submitting messages to partner applications.

The following table shows which patient demographic messages are supported for **inbound** (partner application to [redacted]) and **outbound** ([redacted] to partner application or other entity such as state or federal registry for immunization reports) feeds.

HL7 Message	Inbound	Outbound
A28—ADT^A28 (Patient Add)	Yes	Yes
A29—ADT^A29 (Patient Delete)	Yes	Yes
A31—ADT^A31 (Patient Update)	Yes	Yes
A39—ADT^A39 (Patient Merge)	Yes	Yes
SIU—SIU (Patient Schedule): S12 (New Appt), S14 (Modify Appt), S15 (Cancel Appt), S17 (Delete Appt)	Yes	No
DFT—DFT^P03 (Detail Financial Transaction)	No	Yes

This chapter includes the following sections:

- **Patient demographic message format requirements.** For information on the message format requirements, see [“Patient Demographic Message Format Requirements” on the next page](#).
- **Patient demographic message segment specifications.** Each message contains a number of standard sections. For requirements on the standard segments of a message, see the following:
 - [“ADT^A28 \(Patient Add\) and ADT^A31 \(Patient Update\) Message Segment Specifications” on page 69](#).
 - [“ADT^A29 \(Patient Delete\) Message Segment Specifications” on page 98](#).
 - [“ADT^A39 \(Patient Merge\) Message Segment Specifications” on page 110](#).
 - [“SIU \(Schedule Information Unsolicited\) Message Segment Specifications” on page 124](#).
 - [“DFT^P03 \(Detail Financial Transaction\) Message Segment Specifications” on page 149](#).
- **Sample patient demographic messages.** For samples of the various patient demographic messages, see [“Sample Patient Demographic Messages” on page 178](#).

Patient Demographic Message Format Requirements

The following requirements apply to all of the patient demographic message types described in this chapter.

Newline Characters

Patient demographic HL7 messages must use the carriage return (CR) character (ASCII 0x0D) to indicate a newline. Patient demographic messages that contain a line feed (LF) character (ASCII 0x0A) to indicate a newline will be rejected.

Field Delimiters

A delimiter must separate each field. Even if a field contains no data, it must still be delimited. The delimiter for HL7 messages is defined in the MSH segment of the message as the first character following the segment identifier (MSH.00). See the message segment specifications (later in this chapter) for more detail. Standard HL7 delimiters are used.

Field Specifications

The following table describes the parameters used to define the data fields within each message segment.

Parameter	Description
Type	An HL7 standard data type as defined in the HL7 2.3 Specification.
Length	The maximum allowed length for the field.
Required	<p>The fields within each segment are classified based on their requirement status of <i>Required</i> (R), <i>Optional</i> (O), <i>Conditional</i> (C), or <i>Not Supported</i> (X) in the context of an inbound (partner application to [redacted]) or outbound ([redacted] to partner application) message:</p> <ul style="list-style-type: none">• Required. If the corresponding segment is present, the field must also be present within the segment.<ul style="list-style-type: none">• For inbound feeds, <i>Required</i> indicates that the field must be present or the message will be rejected.• For outbound feeds, <i>Required</i> indicates that the field will always be present in the message.• Optional. The field is not required.<ul style="list-style-type: none">• For inbound feeds, <i>Optional</i> indicates that the field can be present. The segment is accepted whether or not this field is present. If present, the field is validated against any stated requirements.• For outbound feeds, <i>Optional</i> indicates that the field may or may not be present in the message.• Conditional. The field may or may not be required, depending on certain conditions (stipulated in the <i>Comments</i> column of each segment table).<ul style="list-style-type: none">• For inbound feeds, <i>Conditional</i> indicates that if the stated conditions are not met, the message is rejected. If present, the field is validated against any stated requirements.

Parameter	Description
	<ul style="list-style-type: none"> For outbound feeds, <i>Conditional</i> indicates that the field may or may not be present in the message, depending on the stated conditions. Not Supported. The field is not used (the corresponding fields appear in <i>gray text</i> in the table). For inbound feeds, <i>Not Supported</i> indicates that the field can be present. The segment is accepted whether or not this field is present. The content of the field is not used, but it is validated for field type and length, as well as conformance to the specified HL7 table or user-defined table (as applicable). If all fields are successfully validated, the content is passed through; otherwise, the message is rejected. For outbound feeds, <i>Not Supported</i> indicates that the field is never present in the message.

ADT^A28 (Patient Add) and ADT^A31 (Patient Update) Message Segment Specifications

The ADT^A28 (Patient Add) message is used as follows:

- **Inbound (partner application to [redacted]).** For the partner application to add new patients to [redacted], the ADT^A28 messages must be written to the specifications in this chapter.
- **Outbound ([redacted] to partner application or other entity).**
 - For [redacted] to update the partner application with patients that were added to [redacted], [redacted] adheres to the ADT^A28 message specification in this chapter so that the partner application knows what it will be receiving.
For a sample ADT^A28 message, see [“Sample 1—Add Patient ” on page 178.](#)
 - For [redacted] to provide immunization reports to state and federal registries, [redacted] adheres to the ADT^A28 message specification in this chapter.

The ADT^A31 (Patient Update) message is used as follows:

- **Inbound (partner application to [redacted]).** For the partner application to update existing patients in [redacted], the ADT^A31 messages must be written to the specifications in this chapter.
- **Outbound ([redacted] to partner application).** For [redacted] to update the partner application with changed patient information, [redacted] adheres to the ADT^A31 message specification in this chapter.
For a sample ADT^A31 message, see [“Sample 3—Update Patient ” on page 178.](#)

Several of the inbound fields for the ADT^A28 and ADT^A31 messages populate the UI. In general:

- All submitted values are stored in the database, but not all values are displayed.
- If a list of valid values is presented for a given field and a value other than one of those listed is submitted on inbound feeds, the corresponding field in the [redacted] appears with a blank in the user interface. The value will be stored in the database but will not be available via the UI.
- After submitting an add or update message, the demographic values can be verified in [redacted] in the patient chart on the *Demography*, *Contacts*, and *Billing* pages.

Message Segment Hierarchy

The ADT^A28 and ADT^A31 message segment hierarchy is specified below:

MSH	Message Header (<i>Required</i> ; one per file)
EVN	Event Type (<i>Required</i>)
PID	Patient Identification (<i>Required</i>)
[PD1]	Additional Demographics (<i>Optional</i>)
[{NK1}]	Next of Kin /Associated Parties (<i>Optional</i> ; ignored on inbound messages. Not present on outbound messages except for immunization registry reports.)
PV1	Patient Visit Data (<i>Required</i>)
[PV2]	Patient Visit—Additional Info. (<i>Optional</i> ; not supported)
[{DB1}]	Disability Information (<i>Optional</i> ; not supported)
[{OBX}]	Observation/Result (<i>Optional</i> ; not supported)
[{AL1}]	Allergy Information (<i>Optional</i> ; not supported)
[{DG1}]	Diagnosis Information (<i>Optional</i> ; not present on outbound messages)
[DRG]	Diagnosis Related Group (<i>Optional</i> ; not supported)
[{PR1]	Procedures (<i>Optional</i> ; not supported)

[{ROL}]	Role (<i>Optional</i> ; not supported)
}]	
[{GT1}]	Guarantor (<i>Optional</i> ; forwarded to [redacted] if provided. The system can only handle one GT1. There can be one Guarantor with two insurances but not two Guarantors.)
[
{ IN1	Insurance (<i>Optional</i> ; forwarded to [redacted] if provided. The first IN1=Primary Insurance is for Guarantor. The second IN1=Secondary Insurance is for Guarantor (if provided). For the IN1 information to be stored [redacted], the IN1.47 field must be populated with a T or a P.)
[IN2]	Insurance Additional Info. (<i>Optional</i> ; not supported)
[IN3]	Insurance Additional Info. (<i>Optional</i> ; not supported)
}	
]	
[ACC]	Accident Information (<i>Optional</i> ; not supported)
[UB1]	Universal Bill Information (<i>Optional</i> ; not supported)
[UB2]	Universal Bill 92 Information (<i>Optional</i> ; not supported)

Braces ({}) indicate where multiple items are allowed, and brackets ([]) indicate items that are optional.

Message Segment Specifications

This section provides detailed specifications for each segment of an ADT^A28 (Patient Add) and ADT^A31 message. Supported message segments include the following:

- “MSH—Message Header Segment” below.
- “EVN—Event Type Segment ” on page 72.
- “PID—Patient Identification Segment” on page 73.
- “PD1—Patient Additional Demographic Segment” on page 79.
- “NK1—Next of Kin Segment ” on page 81.
- “PV1—Patient Visit Data Segment ” on page 83.
- “DG1—Diagnosis Segment ” on page 86.
- “GT1—Guarantor Segment” on page 88.
- “IN1—Insurance Segment ” on page 93.

Notes:

- ADT^A28 and ADT^A31 message segments that are not supported are **not** included in this section; for detailed specifications, refer to the HL7 2.3 Specification.
- All date timestamps are set to Coordinated Universal Time (UTC).

MSH—Message Header Segment

The Message Header (MSH) segment defines the intent, source, destination, and some specifics of the syntax of a message.

Field	Name	Type	Length	Comments	Req'd
MSH.00	Segment Type ID	ST	4	Must be MSH.	R
MSH.01	Field Separator	ST	1	The separator between the message segment ID (“MSH”) and the first real data field (MSH.02). Defines the character to be used as a separator for the rest of the message. The value is a vertical bar ().	R
MSH.02	Encoding Characters	ST	4	<p>Four (4) characters that are used in the following order: component separator, repetition separator, escape character, and subcomponent separator.</p> <p>Format: ^~\&</p> <p>These values are recommended by HL7 and are the only values supported.</p>	R
MSH.03	Sending Application	HD	180	The name of the sending application.	O
MSH.04	Sending Facility	HD	180	<p>The sending facility. Identifies the owner of the patient data and who initiated the patient demographic request.</p> <p>The [redacted] verifies that the field is populated.</p>	R
MSH.05	Receiving Application	HD	180	The receiving application identifier.	O
MSH.06	Receiving Facility	HD	180	<p>The receiving facility. The account number defined for the requester. This value will be determined by the Client team.</p> <p>The [redacted] verifies that the field is populated.</p>	R
MSH.07	Date/Time of Message	TS	26	<p>The date and time that the sending system created the message.</p> <p>Format: <code>yyyymmddhhmmss</code></p> <p>Note: All date timestamps are set to Coordinated Universal Time (UTC).</p> <p>The [redacted] verifies that this field is populated, and that the value complies with the format above.</p>	R
MSH.08	Security				X
MSH.09	Message Type	CM	7	The type of message being transmitted, and the event leading to the creation of the message. Valid values:	R

Field	Name	Type	Length	Comments	Req'd
				<ul style="list-style-type: none"> • A28 = Add Person Information • A31 = Update Person Information 	
MSH.10	Message Control ID	ST	20	<p>A number or other data that uniquely identifies the message in its transmission to the receiving system.</p> <p>The [redacted] verifies that this field is populated.</p>	R
MSH.11	Processing ID	PT	3	<p>The placer system's intent for the message. Valid values include:</p> <ul style="list-style-type: none"> • P = Production • T = Testing <p>The [redacted] verifies that the value in this field is P or T.</p>	R
MSH.12	Version ID	ID	8	The value for this field is 2.3.	R
MSH.13	Sequence Number				X
MSH.14	Continuation Pointer				X
MSH.15	Accept Acknowledgment Type				X
MSH.16	Application Acknowledgment Type				X
MSH.17	Country Code				X
MSH.18	Character Set				X
MSH.19	Principal Language of Message				X

EVN—Event Type Segment

The Event Type (EVN) segment is used to communicate necessary trigger event information to receiving applications.

Field	Name	Type	Length	Comments	Req'd
EVN.00	Segment Type ID	ST	4	Must be EVN.	R
EVN.01	Event Type Code	ID	3	<p>The second component (trigger event) of MSH.09 (Message Type) should be used to transmit event type code information. This field contains the events corresponding to the trigger events described in this section. Valid values:</p> <ul style="list-style-type: none"> • A28 = Add Person Information • A31 = Update Person Information <p>Note: This field has been retained for backward compatibility only.</p>	R
EVN.02	Recorded Date/Time				X
EVN.03	Date/Time Planned Event				X
EVN.04	Event Reason Code				X
EVN.05	Operator ID				X
EVN.06	Event Occurred				X

PID—Patient Identification Segment

The Patient Identification (PID) segment is used by all applications as the primary means of communicating patient identification information. This segment contains permanent patient identifying and demographic information that, for the most part, is not likely to change frequently.

Field	Name	Type	Length	Comments	Req'd
PID.00	Segment Type ID	ST	4	Must be PID.	R
PID.01	Set ID	SI	4	Only one PID segment per message is allowed, so a valid value would be 1, indicating one segment.	O
PID.02	Patient ID	CX	40	<p>[redacted brand] patient identifier (PID) used to uniquely identify a patient within [redacted brand].</p> <p>The PID.02 value appears in the [redacted] patient chart and several other places and can be used to search for patients. After submitting an add or update, it can be verified on the <i>Demography</i> tab > <i>Administrative Details</i> section.</p> <p>Example: BB1123</p>	R

Field	Name	Type	Length	Comments	Req'd
PID.03	Patient ID	CX	40	<p>The primary identifier, or other identifiers used by the facility to identify a patient uniquely (for example, medical record number, billing number, birth registry, etc.).</p> <p>This is the patient identifier associated with the system, and it is not always available within [redacted brand].</p>	O
PID.04	Alternate Patient ID (PID)				X
PID.05	Patient Name	XPN	48	<p>No more than 48 characters, including the delimiter between the last and first names. At least one character for first and last name. Alphanumeric data only, but a numeric value cannot be used as the first character of the last name.</p> <p><family name (ST)> ^ <given name (ST)> ^ <middle initial or name (ST)> ^ <suffix (for example, JR or III) (ST)> ^ <prefix (for example, DR) (ST)> ^ <degree (for example, MD) (ST)> ^ <name type code (ID)></p> <p>The [redacted] verifies that the field length complies with the rules above.</p> <p>The patient name appears in the [redacted] patient chart and several other places throughout eLabs. After submitting an add or update, it can be verified on the <i>Demography</i> tab > <i>Patient Information</i> section.</p>	R
PID.06	Mother's Maiden Name				X
PID.07	Date of Birth	TS	26	<p>Patient date of birth (DOB) in the following format:</p> <ul style="list-style-type: none"> Inbound: <i>yyyymmdd</i> or <i>yyyymmddhhmmss</i>. The [redacted] accepts the timestamp (<i>hhmmss</i>) but forwards only the date (<i>yyyymmdd</i>) to [redacted]. The [redacted] verifies that the date is in one of these formats. Outbound: <i>yyyymmdd</i> <p>The patient's DOB appears along with the patient name throughout [redacted], specifically on the <i>Demography</i> tab > <i>Patient Information</i> section.</p>	R

Field	Name	Type	Length	Comments	Req'd
PID.08	Sex	IS	1	<p>Possible values are listed below.</p> <ul style="list-style-type: none"> • M = Male • F = Female • O = Other • U = Unknown • A = Ambiguous • N = Not applicable • Z = Undifferentiated <p>The patient's gender appears on the <i>Demography</i> tab > <i>Patient Information</i> section.</p>	R
PID.09	Patient Alias	XPN	48	<p>Patient alias name. Only the first five subfields (Family Name, Given Name, Middle Name or Initial, Suffix, Prefix, and Degree) are passed to/from [redacted].</p>	O
PID.10	Race	CE	250	<p>Repeating field with a maximum of three instances allowed. This field supports both HL7 2.3 and HL7 3.0 values.</p> <p>For HL7 2.3, values supported by [redacted] are listed below.</p> <ul style="list-style-type: none"> • W = White • B = Black • A = Asian • I = American Indian or Alaskan • O = Other <p>For HL7 3.0, values supported by [redacted] are the same as the Centers for Disease Control and Prevention (CDC) race code set (http://phinvads.cdc.gov/vads/ViewCodeSystemConcept.action?oid=2.16.840.1.113883.6.238&code=1000-9) with a Concept Status Date of 09/26/2008.</p> <p>Because this is a repeating field, for a patient whose race is Apache (1010-8), White (2106-3), and Asian (2028-9), for example, you would send all three of the codes:</p> <p>1010-8^2106-3^2028-9</p> <p>This value appears on the <i>Demography</i> tab > <i>Ethnicity/Race/Language</i> section.</p>	O

Field	Name	Type	Length	Comments	Req'd
PID.11	Patient Address	XAD	106	<p>No more than 106 characters; however, limits may apply to some subfields depending on your implementation. Check with your project manager for the subfield limits. Alphanumeric data only.</p> <pre><street address (ST)> ^ <other designation (ST)> ^ <city (ST)> ^ <state or province (ST)> ^ <zip or postal code (ST)> ^ <country (FULL name)> ^ <address type (ID)> ^ <other geographic designation (ST)> ^ <county/parish code (IS)> ^ <census tract (IS)></pre> <p>The [redacted] verifies that the field length complies with the rules above.</p> <p>The patient address appears on the <i>Demography</i> tab > <i>Contact Information</i> section.</p>	0
PID.12	County Code				X
PID.13	Phone Number - Home	XTN	255	<p>Repeating field that can accept Home phone number, Cell/Mobile phone number, and email address:</p> <ul style="list-style-type: none"> • If the Home phone number is sent, it must be the first occurrence. • If the Cell/Mobile phone number is sent, then <telecommunication equipment type (ID)> must equal CP. • If there is a Cell/Mobile phone number but no primary Home phone number, the first sequence must be blank (~). • The accepted length for each phone number is 20 numeric characters. No dashes or other separating characters are allowed. <p>Example with home and cell phone (extension and country code omitted) and email:</p> <pre>^^^^^333^4445555~^NET^^ example@email.com~^^CP^^^777^8889999</pre> <p>Example with home and cell phone (including country code):</p> <pre>^^^^1^333^4445555~^^CP^^1^777^8889999^</pre> <p>The [redacted] verifies that the value complies with the rules above.</p>	0

Field	Name	Type	Length	Comments	Req'd
				The home number, mobile number, and email address appear on the <i>Demography</i> tab > <i>Contact Information</i> section.	
PID.14	Phone Number - Business	XTN	255	<p>Accepted length of this field is 20 numeric characters. No dashes or other separating characters.</p> <p>Example with extension (country code omitted): <code>^^^^333^4445555^999^</code></p> <p>Example with extension and country code: <code>^^^^1^333^4445555^999^</code></p> <p>The [redacted] verifies that the value complies with the rules above.</p> <p>Only the first phone number is passed to [redacted]; any other fields are ignored.</p> <p>The work number appears on the <i>Demography</i> tab > <i>Contact Information</i> section.</p>	0
PID.15	Language - Patient	CE	250	This field is not supported.	0
PID.16	Marital Status	IS	1	<p>Values supported by [redacted]:</p> <ul style="list-style-type: none"> • P = Polygamous • W = Widowed • D = Divorced • M = Married • A = Annulled • S = Never Married • L = Legally Separated • I = Interlocutory • T = Domestic Partner <p>The patient's marital status appears on the <i>Demography</i> tab > <i>Patient Information</i> section.</p>	0
PID.17	Religion	IS	3	Patient religion	0
PID.18	Patient Account Number	CX	20	<p>Contains the patient account number assigned by accounting and to which all charges, payments, etc., are recorded. It is used to identify the patient's account.</p> <p>Only the first subfield (ID Number) is passed to/from [redacted].</p>	0

Field	Name	Type	Length	Comments	Req'd
PID.19	SSN Number - Patient	ST	16	<p>Must contain 9 numeric digits, or 11 with hyphens. Cannot be all zeros, and first three numbers cannot be 666, 800, or 900.</p> <p>If present, the [redacted] verifies that the value complies with the rules above.</p> <p>The patient's SSN appears on the <i>Demography</i> tab > <i>Patient Information</i> section.</p>	0
PID.20	Driver's Lic Num - Patient	DLN	25	<p>DLN format:</p> <p><license number (ST)> ^ <issuing state, province, country (IS)> ^ <expiration date (DT)></p> <p>Only the first subfield (License Number) is passed to/from [redacted].</p>	0
PID.21	Mother's Identifier	CX	20	<p>Used, for example, as a link field for newborns. Typically a patient ID or account number may be used. This field can contain multiple identifiers for the same mother.</p> <p>Only the first subfield (ID Number) is passed to/from [redacted].</p>	0
PID.22	Ethnic Group	CE	250	<p>This field supports both HL7 2.3 and HL7 3.0 values.</p> <p>For HL7 2.3, values supported by [redacted] are listed below.</p> <ul style="list-style-type: none"> • H = Hispanic • N = Non-Hispanic <p>For HL7 3.0, values supported by [redacted] are the same as the Centers for Disease Control and Prevention (CDC) ethnicity code set (http://phinvals.cdc.gov/vads/ViewCodeSystemConcept.action?oid=2.16.840.1.113883.6.238&code=2133-7) with a Concept Status Date of 09/26/2008.</p> <p>For example, for Mexican American, you would send 2149-3.</p> <p>This value appears on the <i>Demography</i> tab > <i>Ethnicity/Race/Language</i> section.</p>	0
PID.23	Birth Place	ST	60	Indicates the location of the patient's birth.	0

Field	Name	Type	Length	Comments	Req'd
PID.24	Multiple Birth Indicator	ID	2	Indicates whether or not the patient was part of a multiple birth (Yes/No indicator). Valid values: <ul style="list-style-type: none"> Y = Yes N = No blank The [redacted] validates this field.	0
PID.25	Birth Order	NM	2	When a patient was part of a multiple birth, a number indicating the patient's birth order is entered in this field.	0
PID.26	Citizenship	IS	4	Contains the patient's country of citizenship.	0
PID.27	Veterans Military Status	CE	60	Contains the military status assigned to a veteran. Only the first subfield (Identifier) is passed to/from [redacted].	0
PID.28	Nationality	CD	80	Contains a code that identifies the nation or national grouping to which the insured person belongs. This information may be different from a person's citizenship in countries in which multiple nationalities are recognized (for example, Spain: Basque, Catalan, etc.). Only the first subfield (Identifier) is passed to/from [redacted].	0
PID.29	Patient Death Date & Time	TS	26	Contains the date and time at which the patient death occurred in the following format: <ul style="list-style-type: none"> Inbound: <code>yyyymmdd</code> or <code>yyyymmddhhmmss</code>. The [redacted] accepts the timestamp (<code>hhmmss</code>) but forwards only the date (<code>yyyymmdd</code>) to [redacted]. The [redacted] verifies that the date is in one of these formats. Outbound: <code>yyyymmdd</code> 	0
PID.30	Patient Death Indicator	ID	1	Indicates whether or not the patient is deceased (Yes/No indicator). Valid values: <ul style="list-style-type: none"> Y = Yes N = No blank The [redacted] validates this field.	0

PD1—Patient Additional Demographic Segment

The Patient Additional Demographic (PD1) segment contains demographic information that is likely to change about the patient.

Field	Name	Type	Length	Comments	Req'd
PD1.00	Segment Type ID	ST	4	Must be PD1.	R
PD1.01	Living Dependency	IS	2		0
PD1.02	Living Arrangement	IS	2		0
PD1.03	Patient Primary Facility	XON	90		0
PD1.04	Patient Primary Care Provider Name & ID No.	XON	90	This information does not display in the interface.	0
PD1.05	Student Indicator	IS	2		0
PD1.06	Handicap	IS	2		0
PD1.07	Living Will	IS	2		0
PD1.08	Organ Donor	IS	2		0
PD1.09	Separate Bill	ID	2		0
PD1.10	Duplicate Patient	CX	2		0
PD1.11	Publicity Indicator	CE	1	<p>Represents the value for <i>Consent given to share clinical documentation</i> in <i>Demography</i> tab > <i>Administrative Details</i> section.</p> <p>Format: <identifier (ST)> ^ <text (ST)> ^ <name of coding system (ST)> ^ <alternate identifier (ST)> ^ <alternate text (ST)> ^ <name of alternate coding system (ST)></p> <p>Inbound valid values for PD1.11.01:</p> <ul style="list-style-type: none"> Y = Yes, which overrides the existing setting in [redacted] N = No, which overrides the existing setting in [redacted] blank, which retains the existing setting in [redacted] <p>Note: [redacted] will not edit to ensure valid values.</p> <p>Outbound valid values:</p> <ul style="list-style-type: none"> Y = Yes N = No 	0

Field	Name	Type	Length	Comments	Req'd
				<ul style="list-style-type: none"> • P = Pending • blank 	
PD1.12	Protection Indicator	ID	1	<p>[redacted] ignores the value for this field. Instead, PD1.11 (Publicity Indicator) sets the value for <i>Consent given to share clinical documentation</i>.</p> <p>Inbound valid values:</p> <ul style="list-style-type: none"> • Y = Yes • N = No • blank <p>Note: [redacted] will not edit to ensure valid values.</p> <p>Outbound valid values:</p> <ul style="list-style-type: none"> • Y = Yes • N = No • P = Pending • blank 	0

NK1—Next of Kin Segment

The Next of Kin (NK1) segment is ignored on inbound (partner application to [redacted]) messages. For outbound ([redacted] to partner application or other entity) messages, NK1 may or may not be present depending on the intended destination of the message:

- For messages destined for partner applications, NK1 is not present.
- For messages that contain immunization reports destined for state or federal registries, NK1 is present.

Field	Name	Type	Length	Comments	Req'd
NK1.00	Segment Type ID	ST	4	Must be NK1.	R
NK1.01	Set ID	SI	4	Used to number NK1 message segments sequentially beginning with 1.	R
NK1.02	Name	XP	48	No more than 48 characters, including the delimiter between the last and first names. At least one character must be used for first and last name. A numeric value cannot be used as the first character of the last name.	0

Field	Name	Type	Length	Comments	Req'd
				<p><family name (ST)> ^ <given name (ST)> ^ <middle initial or name (ST)> ^ <suffix (for example, JR or III) (ST)> ^ <prefix (for example, DR) (ST)> ^ <degree (for example, MD) (ST)> ^ <name type code (ID)></p> <p>Note: If the patient is under 18 years old, the first name and last name is supplied for at least one contact.</p>	
NK1.03	Relationship	CE	60	<p>Values supported by [redacted] are the same as the HL7 values for Family Relation Type Value Set (http://www.hl7.org/memonly/downloads/v3edition.cfm#V32008).</p> <p>Note: For patients under 18 years old, the relationship value will be for father, mother, guardian, or parent.</p>	0
NK1.04	Address	XAD	106	<p>No more than 106 characters. Alphanumeric data only.</p> <p><street address (ST)> ^ <other designation (ST)> ^ <city (ST)> ^ <state or province (ST)> ^ <zip or postal code (ST)> ^ <country (ID)> ^ <address type (ID)> ^ <other geographic designation (ST)> ^ <county/parish code (IS)> ^ <census tract (IS)></p> <p>Note: If the patient is under 18 years old, the street address, city, state, and zip or postal code is supplied for at least one contact.</p>	0
NK1.05	Phone Number	XTN	255	<p>Repeating field that holds all of the phone numbers for the next of kin.</p> <p>All unique instances within NK1.05 are separated by a tilde (~).</p> <ul style="list-style-type: none"> If Home phone number is sent, then <telecommunication equipment type (ID)> must equal PH. If the Cell/Mobile phone number is sent, then <telecommunication equipment type (ID)> must equal CP. 	0

Field	Name	Type	Length	Comments	Req'd
				<p>The accepted length for each phone number is 20 numeric characters. No dashes or other separating characters are allowed.</p> <p>Example with just cell/mobile phone:</p> <p>~ CP^^^^^777^8889999^</p>	
NK1.06	Business Phone Number	XTN	255	<p>Accepted length of this field is 20 numeric characters. No dashes or other separating characters.</p> <p>Example with extension (country code omitted):</p> <p>^^^^^333^4445555^999^</p> <p>Example with extension and country code:</p> <p>^^^^1^333^4445555^999^</p>	O
NK1.07	Contact Role	CE	60	<p>Values supported by [redacted] are below. The default is PRS.</p> <ul style="list-style-type: none"> • AGNT = Agent • CAREGIVER = Caregiver • ECON = Emergency Contact • GUARD = Guardian • NOK = Next of Kin • PRS = Personal <p>Note: When the value for NK1.07 is guardian, the value for NK1.03 (Relationship) is also guardian.</p>	R
NK1.08- NK1.37					X

PV1—Patient Visit Data Segment

The Patient Visit Data (PV1) segment is used by registration/patient administration applications to communicate information on a visit-specific basis. This segment can be used to send multiple-visit statistic records to the same patient account, or single-visit records to more than one account.

Field	Name	Type	Length	Comments	Req'd
PV1.00	Segment Type ID	ST	4	Must be PV1.	R
PV1.01	Set ID	SI	4	Will always be 1.	O
PV1.02	Patient Class	IS	1	<p>For inbound messages, [redacted] verifies that this field is populated. Example values include:</p> <ul style="list-style-type: none"> • E = Emergency 	R

Field	Name	Type	Length	Comments	Req'd
				<ul style="list-style-type: none"> • I = Inpatient • O = Outpatient <p>For outbound messages, this value will be N (Not Applicable).</p>	
PV1.03	Assigned Patient Location				X
PV1.04	Admission Type				X
PV1.05	Preadmit Number				X
PV1.06	Prior Patient Location				X
PV1.07	Attending Doctor				X
PV1.08	Referring Doctor				X
PV1.09	Consulting Doctor				X
PV1.10	Hospital Service				X
PV1.11	Temporary Location				X
PV1.12	Preadmit Test Indicator				X
PV1.13	Readmission Indicator				X
PV1.14	Admit Source				X
PV1.15	Ambulatory Status				X
PV1.16	VIP Indicator				X
PV1.17	Admitting Doctor				X
PV1.18	Patient Type				X
PV1.19	Visit Number				X
PV1.20	Financial Class				X
PV1.21	Charge Price Indicator				X
PV1.22	Courtesy Code				X
PV1.23	Credit Rating				X

Field	Name	Type	Length	Comments	Req'd
PV1.24	Contract Code				X
PV1.25	Contract Effective Date				X
PV1.26	Contract Amount				X
PV1.27	Contract Period				X
PV1.28	Interest Code				X
PV1.29	Transfer to Bad Debt Code				X
PV1.30	Transfer to Bad Debt Date				X
PV1.31	Bad Debt Agency Code				X
PV1.32	Bad Debt Transfer Amount				X
PV1.33	Bad Debt Recovery Amount				X
PV1.34	Delete Account Indicator				X
PV1.35	Delete Account Date				X
PV1.36	Discharge Disposition				X
PV1.37	Discharged to Location				X
PV1.38	Diet Type				X
PV1.39	Servicing Facility				X
PV1.40	Bed Status				X
PV1.41	Account Status				X
PV1.42	Pending Location				X
PV1.43	Prior Temporary Location				X
PV1.44	Admit Date/Time				X
PV1.45	Discharge Date/Time				X

Field	Name	Type	Length	Comments	Req'd
PV1.46	Current Patient Balance				X
PV1.47	Total Charges				X
PV1.48	Total Adjustments				X
PV1.49	Total Payments				X
PV1.50	Alternate Visit ID				X
PV1.51	Visit Indicator				X
PV1.52	Other Healthcare Provider				X

DG1—Diagnosis Segment

The Diagnosis (DG1) segment contains patient diagnosis information.

Note: The DG1 segment is not generated on outbound ([redacted] to partner application) messages.

Field	Name	Type	Length	Comments	Req'd
DG1.00	Segment Type ID	ST	4	Must be DG1.	R
DG1.01	Set ID - Patient ID	SI	4	Used to number DG1 message segments sequentially beginning with 1.	R
DG1.02	Diagnosis Coding Method	ID	2		R
DG1.03	Diagnosis Code	CE	60	<p>Format: <identifier (ST)> ^ <text (ST)> ^ <name of coding system (ST)> ^ <alternate identifier (ST)> ^ <alternate text (ST)> ^ <name of alternate coding system (ST)></p> <p>Both ICD-9 and ICD-10 codes are supported before and after the government ICD-10 compliance date. The value in DG1.03.03 is used to define which ICD code set is being used, as follows:</p> <ul style="list-style-type: none"> DG1.03.01 = <i>ICD-9_code</i> or <i>ICD-10_code</i> DG1.03.03 = I9 or I10 <p>The values appear on the <i>External Diagnoses</i> tab.</p>	O

Field	Name	Type	Length	Comments	Req'd
DG1.04	Diagnosis Description	ST	40	Diagnosis name and description. This value appears on the <i>External Diagnoses</i> tab.	0
DG1.05	Diagnosis Date/Time	TS	26	Date/Time that the diagnosis was determined. Format: <i>yyyymmddhhmmss</i> This value appears on the <i>External Diagnoses</i> tab.	0
DG1.06	Diagnosis Type	IS	2	Valid values: <ul style="list-style-type: none"> • A = Admitting • W = Working • F = Final This value appears on the <i>External Diagnoses</i> tab.	R
DG1.07	Major Diagnostic Category	CE	60		0
DG1.08	Diagnostic Related Group	CE	60		0
DG1.09	DRG Approval Indicator	ID	2		0
DG1.10	DRG Grouper Review Code	IS	2		0
DG1.11	Outlier Type	CE	60		0
DG1.12	Outlier Days	NM	3		0
DG1.13	Outlier Cost	CP	12		0
DG1.14	Grouper Version and Type	ST	4		0
DG1.15	Diagnosis Priority	NM	2		0
DG1.16	Diagnosing Clinician	XCN	60	This value appears on the <i>External Diagnoses</i> tab.	0
DG1.17	Diagnosis Classification	IS	3	Valid values: <ul style="list-style-type: none"> • C = Consultation • D = Diagnosis • M = Medication (antibiotic) • O = Other 	0

Field	Name	Type	Length	Comments	Req'd
				<ul style="list-style-type: none"> • R = Radiological scheduling (not using ICDA codes) • S = Sign and symptom • T = Tissue diagnosis • I = Invasive procedure not classified elsewhere (I.V., catheter, etc.) <p>This value appears on the <i>External Diagnoses</i> tab.</p>	
DG1.18	Confidential Indicator	ID	1	<p>Valid values for this field include:</p> <ul style="list-style-type: none"> • Y = Yes • N = No <p>This value appears on the <i>External Diagnoses</i> tab.</p>	O
DG1.19	Attestation Date/Time	TS	26		O

GT1—Guarantor Segment

The Guarantor (GT1) segment contains guarantor (for example, the person or the organization with financial responsibility for payment of a patient account) data for patient and insurance billing applications. This segment is applicable only for patient and insurance billing.

Note: If the guarantor name is blank in [redacted], the GT1 segment is not created in outbound messages.

Field	Name	Type	Length	Comments	Req'd
GT1.00	Segment Type ID	ST	4	Must be GT1.	R
GT1.01	Set ID	SI	4	GT1 message segments should be numbered sequentially from 1.	R
GT1.02	Guarantor Number				X
GT1.03	Guarantor Name	XPN	48	No more than 48 characters, including the delimiter between the last and first names. At least one character for first and last name. Alphanumeric data only, but a numeric value cannot be used as the first character of the last name.	R

Field	Name	Type	Length	Comments	Req'd
				<p><family name (ST)> ^ <given name (ST)> ^ <middle initial or name (ST)> ^ <suffix (for example, JR or III) (ST)> ^ <prefix (for example, DR) (ST)> ^ <degree (for example, MD) (ST)> ^ <name type code (ID)></p> <p>The [redacted] verifies that the value complies with the rules above.</p> <p>This value appears on the <i>Billing</i> tab > <i>Guarantor Information</i> section.</p>	
GT1.04	Guarantor Spouse Name				X
GT1.05	Guarantor Address	XAD	106	<p>No more than 106 characters. Alphanumeric data only.</p> <p><street address (ST)> ^ <other designation (ST)> ^ <city (ST)> ^ <state or province (ST)> ^ <zip or postal code (ST)> ^ <country (ID)> ^ <address type (ID)> ^ <other geographic designation (ST)> ^ <county/parish code (IS)> ^ <census tract (IS)></p> <p>If present, the [redacted] verifies that the value complies with the rules above.</p> <p>This value appears on the <i>Billing</i> tab > <i>Contact Information</i> section.</p>	0
GT1.06	Guarantor Ph Num-Home	XTN	255	<p>Accepted length of this field is 20 numeric characters. No dashes or other separating characters.</p> <p>Example with country code and extension omitted:</p> <p>^^^^^333^4445555</p> <p>Example with country code:</p> <p>^^^^1^333^4445555</p> <p>If present, the [redacted] verifies that the value complies with the rules above.</p> <p>This value appears on the <i>Billing</i> tab > <i>Guarantor Information</i> section.</p>	0

Field	Name	Type	Length	Comments	Req'd
GT1.07	Guarantor Ph Num-Business	XTN	255	<p>Accepted length of this field is 20 numeric characters. No dashes or other separating characters.</p> <p>Example with country code omitted: <code>^^^^333^4445555^999^</code></p> <p>Example with country code: <code>^^^^1^333^4445555^999^</code></p> <p>If present, the [redacted] verifies that the value complies with the rules above.</p> <p>This value appears on the <i>Billing</i> tab > <i>Guarantor Information</i> section.</p>	0
GT1.08	Guarantor Date/Time of Birth	TS	26	<p>Guarantor DOB in the following format:</p> <ul style="list-style-type: none"> Inbound: <i>yyyymmdd</i> or <i>yyyymmddhhmmss</i>. The [redacted] accepts the timestamp (<i>hhmmss</i>) but forwards only the date (<i>yyyymmdd</i>) to in [redacted]. The [redacted] verifies that the DOB is in one of these formats. Outbound: <i>yyyymmdd</i> <p>This value appears on the <i>Billing</i> tab > <i>Guarantor Information</i> section.</p>	0
GT1.09	Guarantor Sex	IS	1	<p>Valid values for this field include:</p> <ul style="list-style-type: none"> M = Male F = Female O = Other U = Unknown A = Ambiguous N = Not applicable Z = Undifferentiated blank <p>This value appears on the <i>Billing</i> tab > <i>Guarantor Information</i> section.</p>	0
GT1.10	Guarantor Type				X
GT1.11	Guarantor Relationship	IS	2	<p>Describes relations to patient. Valid values:</p> <ul style="list-style-type: none"> 1 = Self 2 = Spouse 8 = Dependent blank 	0

Field	Name	Type	Length	Comments	Req'd
				This value appears on the <i>Billing</i> tab > <i>Guarantor Information</i> section.	
GT1.12	Guarantor SSN	ST	11	<p>Must contain 9 numeric digits, or 11 with hyphens. Cannot be all zeros, and first three numbers cannot be 666, 800, or 900.</p> <p>If present, the [redacted] verifies that the value complies with the rules above.</p> <p>This value appears on the <i>Billing</i> tab > <i>Guarantor Information</i> section.</p>	O
GT1.13	Guarantor Date - Begin				X
GT1.14	Guarantor Date - End				X
GT1.15	Guarantor Priority				X
GT1.16	Guarantor Employer Name	XPN	130	<p>Employer name. No more than 130 characters. Alphanumeric data only.</p> <p>This value appears on the <i>Billing</i> tab > <i>Employer Information</i> section.</p>	O
GT1.17	Guarantor Employer Address	XAD	106	<p>No more than 106 characters. Alphanumeric data only.</p> <p><street address (ST)> ^ <other designation (ST)> ^ <city (ST)> ^ <state or province (ST)> ^ <zip or postal code (ST)> ^ <country (ID)> ^ <address type (ID)> ^ <other geographic designation (ST)> ^ <county/parish code (IS)> ^ <census tract (IS)></p> <p>The [redacted] verifies that the value complies with the rules above.</p> <p>This value appears on the <i>Billing</i> tab > <i>Employer Information</i> section.</p>	O
GT1.18	Guarantor Employer Phone Number				X
GT1.19	Guarantor Employee ID Number				X

Field	Name	Type	Length	Comments	Req'd
GT1.20	Guarantor Employment Status				X
GT1.21	Guarantor Organization Name				X
GT1.22	Guarantor Billing Hold Flag				X
GT1.23	Guarantor Credit Rating Code				X
GT1.24	Guarantor Death Date And Time				X
GT1.25	Guarantor Death Flag				X
GT1.26	Guarantor Charge Adjustment Code				X
GT1.27	Guarantor Household Annual Income				X
GT1.28	Guarantor Household Size				X
GT1.29	Guarantor Employer ID Number				X
GT1.30	Guarantor Marital Status Code				X
GT1.31	Guarantor Hire Effective Date				X
GT1.32	Employment Stop Date				X
GT1.33	Living Dependency				X
GT1.34	Ambulatory Status				X
GT1.35	Citizenship				X

Field	Name	Type	Length	Comments	Req'd
GT1.36	Primary Language				X
GT1.37	Living Arrangement				X
GT1.38	Publicity Indicator				X
GT1.39	Protection Indicator				X
GT1.40	Student Indicator				X
GT1.41	Religion				X
GT1.42	Mother's Maiden Name				X
GT1.43	Nationality				X
GT1.44	Ethnic Group				X
GT1.45	Contact Person's Name				X
GT1.46	Contact Person's Telephone Number				X
GT1.47	Contact Reason				X
GT1.48	Contact Relationship				X
GT1.49	Job Title				X
GT1.50	Job Code/Class				X
GT1.51	Guarantor Employer's Organ. Name				X
GT1.52	Handicap				X
GT1.53	Job Status				X
GT1.54	Guarantor Financial Class				X
GT1.55	Guarantor Race				X

IN1—Insurance Segment

The Insurance (IN1) segment contains insurance policy coverage information necessary to produce properly pro-rated and patient and insurance bills. This segment is applicable only for insurance billing.

Field	Name	Type	Length	Comments	Req'd
IN1.00	Segment Type ID	ST	4	Must be IN1.	R
IN1.01	Set ID	SI	4	IN1 message segments should be numbered sequentially from 1.	R
IN1.02	Insurance Plan ID	CE	50	In outbound messages, this field is populated with UNK (for “unknown”) when the insurance plan ID is not available in in [redacted]. In inbound messages, the [redacted] verifies that the field is populated.	R
IN1.03	Insurance Company ID	CX	59	QDI Bill mnemonic. Note: Required only if IN1.47 = T (Third-Party Bill). This value appears on the <i>Billing</i> tab > <i>Primary Insurance Information</i> section.	C
IN1.04	Insurance Company Name	XON	130	This value appears on the <i>Billing</i> tab > <i>Primary Insurance Information</i> section.	O
IN1.05	Insurance Company Address	XAD	106	No more than 106 characters. Alphanumeric data only. <street address (ST)> ^ <other designation (ST)> ^ <city (ST)> ^ <state or province (ST)> ^ <zip or postal code (ST)> ^ <country (ID)> ^ <address type (ID)> ^ <other geographic designation (ST)> ^ <county/parish code (IS)> ^ <census tract (IS)>	O
IN1.06	Insurance Co. Contact Person				X
IN1.07	Insurance Co Phone Number				X
IN1.08	Group Number	ST	50	Characters permitted include: A–Z and 0–9. If present, the [redacted] verifies that the value complies with the rules above. This value appears on the <i>Billing</i> tab > <i>Primary Insurance Information</i> section.	O
IN1.09	Group Name	XON	130		O

Field	Name	Type	Length	Comments	Req'd
IN1.10	Insured's Group Emp ID				X
IN1.11	Insured's Group Emp Name				X
IN1.12	Plan Effective Date				X
IN1.13	Plan Expiration Date				X
IN1.14	Authorization Information				X
IN1.15	Plan Type				X
IN1.16	Name Of Insured				X
IN1.17	Insured's Relationship To Patient				X
IN1.18	Insured's Date Of Birth				X
IN1.19	Insured's Address				X
IN1.20	Assignment Of Benefits				X
IN1.21	Coordination Of Benefits				X
IN1.22	Coord Of Ben. Priority				X
IN1.23	Notice Of Admission Flag				X
IN1.24	Notice Of Admission Date				X
IN1.25	Report Of Eligibility Flag				X
IN1.26	Report Of Eligibility Date				X
IN1.27	Release Information Code				X

Field	Name	Type	Length	Comments	Req'd
IN1.28	Pre-Admit Cert (PAC)				X
IN1.29	Verification Date/Time				X
IN1.30	Verification By				X
IN1.31	Type Of Agreement Code				X
IN1.32	Billing Status				X
IN1.33	Lifetime Reserve Days				X
IN1.34	Delay Before L.R. Day				X
IN1.35	Company Plan Code				X
IN1.36	Policy Number	ST	50	This value appears on the <i>Billing</i> tab > <i>Primary Insurance Information</i> section.	O
IN1.37	Policy Deductible				X
IN1.38	Policy Limit - Amount				X
IN1.39	Policy Limit - Days				X
IN1.40	Room Rate - Semi-Private				X
IN1.41	Room Rate - Private				X
IN1.42	Insured's Employment Status				X
IN1.43	Insured's Sex				X
IN1.44	Insured's Employer Address				X
IN1.45	Verification Status				X
IN1.46	Prior Insurance Plan ID				X

Field	Name	Type	Length	Comments	Req'd
IN1.47	Coverage Type	IS	3	Valid values include: <ul style="list-style-type: none"> • T = Third-party bill • P = Patient bill • C = Client bill If present, the [redacted] verifies that the value complies with the rules above. This value appears on the <i>Billing</i> tab.	0
IN1.48	Handicap				X
IN1.49	Insured's ID Number				X

ADT^A29 (Patient Delete) Message Segment Specifications

The ADT^A29 (Patient Delete) message is used as follows:

- **Inbound (partner application to [redacted]).** For the partner application to delete patients from [redacted], the ADT^A29 messages must be written to the specifications in this chapter.

Note: You cannot delete a patient from [redacted] after clinical entries (for example, lab results) have been associated with that patient, or if the patient is associated with an alias patient. If a delete cannot be performed due to either of these conditions, an error message is returned if your EMR is configured to receive errors from [redacted]. Otherwise, the error message is logged.

- **Outbound ([redacted] to partner application).** For [redacted] to update the partner application with patients that were deleted from [redacted], [redacted] adheres to the ADT^A29 message specification in this chapter so that the partner application knows what it will be receiving.

In general, this message can be used to correct an error in adding the information, to delete a duplicate patient record, or to purge a patient from [redacted]. For a sample message, see [“Sample 2—Delete Patient” on page 178](#).

Message Segment Hierarchy

The ADT^A29 message segment hierarchy is specified below:

MSH	Message Header (<i>Required</i> ; one per file)
EVN	Event Type (<i>Required</i>)
PID	Patient Identification (<i>Required</i>)
[PD1]	Additional Demographics (<i>Optional</i> ; not supported)
PV1	Patient Visit Data (<i>Required</i>)
[PV2]	Patient Visit—Additional Info. (<i>Optional</i> ; not supported)
[{DB1}]	Disability Information (<i>Optional</i> ; not supported)
[{OBX}]	Observation/Result (<i>Optional</i> ; not supported)

In the hierarchy shown above, braces ({ }) indicate where multiple items are allowed, and brackets ([]) indicate items that are optional.

Message Segment Specifications

This section provides detailed specifications for each segment of an ADT^A29 (Patient Delete) message. Supported message segments include the following:

- “MSH—Message Header Segment” below.
- “EVN—Event Type Segment ” on page 101.
- “PID—Patient Identification Segment ” on page 101.
- “PV1—Patient Visit Data Segment ” on page 107.

Notes:

- ADT^A29 message segments that are not supported are **not** included in this section; for detailed specifications, refer to the HL7 2.3 Specification.
- All date timestamps are set to Coordinated Universal Time (UTC).

MSH—Message Header Segment

The Message Header (MSH) segment defines the intent, source, destination, and some specifics of the syntax of a message.

Field	Name	Type	Length	Comments	Req'd
MSH.00	Segment Type ID	ST	4	Must be MSH.	R
MSH.01	Field Separator	ST	1	The separator between the message segment ID (“MSH”) and the first real data field (MSH.02). Defines the character to be used as a separator for the rest of the message. The value is a vertical bar ().	R
MSH.02	Encoding Characters	ST	4	Four characters that are used in the following order: component separator, repetition separator, escape character, and subcomponent separator. Format: ^~\& These values are recommended by HL7 and are the only values supported.	R
MSH.03	Sending Application	HD	180	The name of the sending application.	O
MSH.04	Sending Facility	HD	180	The sending facility. Identifies the owner of the patient data and who initiated the patient demographic request. The [redacted] verifies that the field is populated.	R
MSH.05	Receiving Application	HD	180	The receiving application identifier.	O

Field	Name	Type	Length	Comments	Req'd
MSH.06	Receiving Facility	HD	180	<p>The receiving facility. The account number defined for the requester. This value will be determined by the Client team.</p> <p>The [redacted] verifies that the field is populated.</p>	R
MSH.07	Date/Time of Message	TS	26	<p>The date and time that the sending system created the message.</p> <p>Format: <code>yyyymmddhhmmss</code></p> <p>Note: All date timestamps are set to Coordinated Universal Time (UTC).</p> <p>The [redacted] verifies that this field is populated, and that the value complies with the format above.</p>	R
MSH.08	Security				X
MSH.09	Message Type	CM	7	<p>The type of message being transmitted, and the event leading to the creation of the message. Valid value: A29 (Delete Person Information).</p>	R
MSH.10	Message Control ID	ST	20	<p>A number or other data that uniquely identifies the message in its transmission to the receiving system.</p> <p>The [redacted] verifies that this field is populated.</p>	R
MSH.11	Processing ID	PT	3	<p>The placer system's intent for the message. Valid values include:</p> <ul style="list-style-type: none"> • P = Production • T = Testing <p>The [redacted] verifies that the value in this field is P or T.</p>	R
MSH.12	Version ID	ID	8	<p>The value for this field is 2.3.</p>	R
MSH.13	Sequence Number				X
MSH.14	Continuation Pointer				X
MSH.15	Accept Acknowledgment Type				X

Field	Name	Type	Length	Comments	Req'd
MSH.16	Application Acknowledgment Type				X
MSH.17	Country Code				X
MSH.18	Character Set				X
MSH.19	Principal Language of Message				X

EVN—Event Type Segment

The Event Type (EVN) segment is used to communicate necessary trigger event information to receiving applications.

Field	Name	Type	Length	Comments	Req'd
EVN.00	Segment Type ID	ST	4	Must be EVN.	R
EVN.01	Event Type Code	ID	3	<p>The second component (trigger event) of MSH.09 (Message Type) should be used to transmit event type code information. This field contains the events corresponding to the trigger events described in this section.</p> <p>The [redacted] verifies that this field is populated with A29.</p> <p>Note: This field has been retained for backward compatibility only.</p>	R
EVN.02	Recorded Date/Time				X
EVN.03	Date/Time Planned Event				X
EVN.04	Event Reason Code				X
EVN.05	Operator ID				X
EVN.06	Event Occurred				X

PID—Patient Identification Segment

The Patient Identification (PID) segment is used by all applications as the primary means of communicating patient identification information. This segment contains permanent patient identifying and demographic information that, for the most part, is not likely to change frequently.

Field	Name	Type	Length	Comments	Req'd
PID.00	Segment Type ID	ST	4	Must be PID.	R
PID.01	Set ID	SI	4	Allows identification of multiple PID segments within a message. Usually a sequential number beginning with 1.	O
PID.02	Patient ID	CX	40	<p>[redacted] patient identifier used to uniquely identify a patient within [redacted].</p> <p>When the patient is from another institution, outside office, etc., the identifier used by that institution can be shown in this field. This may be a number that multiple disparate corporations or facilities share.</p> <p>Example: BB1123</p>	R
PID.03	Patient ID	CX	40	<p>The primary identifier, or other identifiers used by the facility to identify a patient uniquely (for example, medical record number, billing number, birth registry, etc.).</p> <p>This is the patient identifier associated with the non-[redacted] system, and it is not always available within [redacted].</p>	O
PID.04	Alternate Patient ID (PID)				X
PID.05	Patient Name	XP	48	<p>No more than 48 characters, including the delimiter between the last and first names. At least one character for first and last name. Alphanumeric data only, but a numeric value cannot be used as the first character of the last name.</p> <p><family name (ST)> ^ <given name (ST)> ^ <middle initial or name (ST)> ^ <suffix (for example, JR or III) (ST)> ^ <prefix (for example, DR) (ST)> ^ <degree (for example, MD) (ST)> ^ <name type code (ID)></p> <p>The [redacted] verifies that the value complies with the rules above.</p>	R
PID.06	Mother's Maiden Name				X
PID.07	Date/Time of Birth	TS	26	Patient DOB in the following format:	R

Field	Name	Type	Length	Comments	Req'd
				<ul style="list-style-type: none"> • Inbound:yyyymmdd or yyyymmddhhmmss. The [redacted] accepts the timestamp (hhmmss) but forwards only the date (yyyymmdd) to [redacted]. The [redacted] verifies that the date is in one of these formats. • Outbound:yyyymmdd 	
PID.08	Sex	IS	1	<p>Possible values are listed below.</p> <ul style="list-style-type: none"> • M = Male • F = Female • O = Other • U = Unknown • A = Ambiguous • N = Not applicable • Z = Undifferentiated 	R
PID.09	Patient Alias	XPN	48	<p>Patient alias name. Only the first five subfields (Family Name, Given Name, Middle Name or Initial, Suffix, Prefix, and Degree) are passed to/from [redacted].</p>	O
PID.10	Race	CE	250	<p>Repeating field with a maximum of three instances allowed. This field supports both HL7 2.3 and HL7 3.0 values.</p> <p>For HL7 2.3, values supported by [redacted] are listed below.</p> <ul style="list-style-type: none"> • W = White • B = Black • A = Asian • I = American Indian or Alaskan • O = Other <p>For HL7 3.0, values supported by [redacted] are the same as the Centers for Disease Control and Prevention (CDC) race code set (http://phinvals.cdc.gov/vals/ViewCodeSystemConcept.action?oid=2.16.840.1.113883.6.238&code=1000-9) with a Concept Status Date of 09/26/2008.</p> <p>Because this is a repeating field, for a patient whose race is Apache (1010-8), White (2106-3), and Asian (2028-9), for example, you would send all three of the codes:</p>	O

Field	Name	Type	Length	Comments	Req'd
				1010-8^2106-3^2028-9	
PID.11	Patient Address	XAD	106	<p>No more than 106 characters; however, limits may apply to some subfields depending on your implementation. Check with your project manager for the subfield limits. Alphanumeric data only.</p> <p><street address (ST)> ^ <other designation (ST)> ^ <city (ST)> ^ <state or province (ST)> ^ <zip or postal code (ST)> ^ <country (ID)> ^ <address type (ID)> ^ <other geographic designation (ST)> ^ <county/parish code (IS)> ^ <census tract (IS)></p> <p>The [redacted] verifies that the value complies with the rules above.</p>	O
PID.12	County Code				X
PID.13	Phone Number - Home	XTN	255	<p>Accepted length of this field is 40 numeric characters. No dashes or other separating characters.</p> <p>Example (extension and country code omitted): ^ ^ ^ ^ ^ 333 ^ 4445555 ^</p> <p>Example with country code: ^ ^ ^ ^ 1 ^ 333 ^ 4445555 ^</p> <p>The [redacted] verifies that the value complies with the rules above.</p>	O
PID.14	Phone Number - Business	XTN	255	<p>Accepted length of this field is 40 numeric characters. No dashes or other separating characters.</p> <p>Example with extension (country code omitted): ^ ^ ^ ^ ^ 333 ^ 4445555 ^ 999 ^</p> <p>Example with extension and country code: ^ ^ ^ ^ 1 ^ 333 ^ 4445555 ^ 999 ^</p> <p>The [redacted] verifies that the value complies with the rules above.</p>	O
PID.15	Language - Patient	CE	250	Values supported by [redacted] are listed in “ Patient Language (PID.15) ” on page 180.	O

Field	Name	Type	Length	Comments	Req'd
				This field uses the HL7 3.0 field length of 250 rather than the HL7 2.3 field length of 60.	
PID.16	Marital Status	IS	1	<p>Values supported by [redacted] are listed below.</p> <ul style="list-style-type: none"> • P = Polygamous • W = Widowed • D = Divorced • M = Married • A = Annulled • S = Never Married • L = Legally Separated • I = Interlocutory • T = Domestic Partner 	0
PID.17	Religion	IS	3	Patient religion	0
PID.18	Patient Account Number	CX	20	<p>Contains the patient account number assigned by accounting and to which all charges, payments, etc., are recorded. It is used to identify the patient's account.</p> <p>Only the first subfield (ID Number) is passed to/from [redacted].</p>	0
PID.19	SSN Number - Patient	ST	16	<p>Must contain 9 numeric digits, or 11 with hyphens. Cannot be all zeros, and first three numbers cannot be 666, 800, or 900.</p> <p>If present, the [redacted] verifies that the value complies with the rules above.</p>	0
PID.20	Driver's Lic Num - Patient	DLN	25	<p>DLN format:</p> <pre><license number (ST)> ^ <issuing state, province, country (IS)> ^ <expiration date (DT)></pre> <p>Only the first subfield (License Number) is passed to/from [redacted].</p>	0
PID.21	Mother's Identifier	CX	20	<p>Used, for example, as a link field for newborns. Typically a patient ID or account number may be used. This field can contain multiple identifiers for the same mother.</p> <p>Only the first subfield (ID Number) is passed to/from [redacted].</p>	0

Field	Name	Type	Length	Comments	Req'd
PID.22	Ethnic Group	IS	3	<p>This field supports both HL7 2.3 and HL7 3.0 values.</p> <p>For HL7 2.3, values supported by [redacted] are listed below.</p> <ul style="list-style-type: none"> • H = Hispanic • N = Non-Hispanic • U = Unknown <p>For HL7 3.0, values supported by [redacted] are the same as the Centers for Disease Control and Prevention (CDC) ethnicity code set (http://phinvals.cdc.gov/vads/ViewCodeSystemConcept.action?oid=2.16.840.1.113883.6.238&code=2133-7) with a Concept Status Date of 09/26/2008.</p> <p>For example, for Mexican American, you would send 2149-3.</p>	0
PID.23	Birth Place	ST	60	Indicates the location of the patient's birth.	0
PID.24	Multiple Birth Indicator	ID	2	<p>Indicates whether or not the patient was part of a multiple birth (Yes/No indicator). Valid values:</p> <ul style="list-style-type: none"> • Y = Yes • N = No • blank <p>This field is validated.</p>	0
PID.25	Birth Order	NM	2	When a patient was part of a multiple birth, a number indicating the patient's birth order is entered in this field.	0
PID.26	Citizenship	IS	4	Contains the patient's country of citizenship.	0
PID.27	Veterans Military Status	CE	60	<p>Contains the military status assigned to a veteran.</p> <p>Only the first subfield (Identifier) is passed to/from [redacted].</p>	0
PID.28	Nationality	CD	80	Contains a code that identifies the nation or national grouping to which the insured person belongs. This information may be different from a person's citizenship in countries in which multiple nationalities are recognized (for example, Spain: Basque, Catalan, etc.).	0

Field	Name	Type	Length	Comments	Req'd
				Only the first subfield (Identifier) is passed to/from [redacted].	
PID.29	Patient Death Date & Time	TS	26	<p>Contains the date and time at which the patient death occurred in the following format:</p> <ul style="list-style-type: none"> Inbound:yyyymmdd or yyyymmddhhmmss. The [redacted] accepts the timestamp (hhmmss) but forwards only the date (yyyymmdd) to [redacted]. The [redacted] verifies that the date is in one of these formats. Outbound:yyyymmdd 	O
PID.30	Patient Death Indicator	ID	1	<p>Indicates whether or not the patient is deceased (Yes/No indicator). Valid values:</p> <ul style="list-style-type: none"> Y = Yes N = No blank <p>The [redacted] validates this field.</p>	O

PV1—Patient Visit Data Segment

The Patient Visit Data (PV1) segment is used by registration/patient administration applications to communicate information on a visit-specific basis. This segment can be used to send multiple-visit statistic records to the same patient account, or single-visit records to more than one account.

Field	Name	Type	Length	Comments	Req'd
PV1.00	Segment Type ID	ST	4	Must be PV1.	R
PV1.01	Set ID	SI	4	Will always be 1.	O
PV1.02	Patient Class	IS	1	<p>For inbound messages, [redacted] verifies that this field is populated. Example values include:</p> <ul style="list-style-type: none"> E = Emergency I = Inpatient O = Outpatient <p>For outbound messages, this value will be N (Not Applicable).</p>	R
PV1.03	Assigned Patient Location				X
PV1.04	Admission Type				X
PV1.05	Preadmit Number				X

Field	Name	Type	Length	Comments	Req'd
PV1.06	Prior Patient Location				X
PV1.07	Attending Doctor				X
PV1.08	Referring Doctor				X
PV1.09	Consulting Doctor				X
PV1.10	Hospital Service				X
PV1.11	Temporary Location				X
PV1.12	Preadmit Test Indicator				X
PV1.13	Readmission Indicator				X
PV1.14	Admit Source				X
PV1.15	Ambulatory Status				X
PV1.16	VIP Indicator				X
PV1.17	Admitting Doctor				X
PV1.18	Patient Type				X
PV1.19	Visit Number				X
PV1.20	Financial Class				X
PV1.21	Charge Price Indicator				X
PV1.22	Courtesy Code				X
PV1.23	Credit Rating				X
PV1.24	Contract Code				X
PV1.25	Contract Effective Date				X
PV1.26	Contract Amount				X
PV1.27	Contract Period				X
PV1.28	Interest Code				X
PV1.29	Transfer to Bad Debt Code				X
PV1.30	Transfer to Bad Debt Date				X

Field	Name	Type	Length	Comments	Req'd
PV1.31	Bad Debt Agency Code				X
PV1.32	Bad Debt Transfer Amount				X
PV1.33	Bad Debt Recovery Amount				X
PV1.34	Delete Account Indicator				X
PV1.35	Delete Account Date				X
PV1.36	Discharge Disposition				X
PV1.37	Discharged to Location				X
PV1.38	Diet Type				X
PV1.39	Servicing Facility				X
PV1.40	Bed Status				X
PV1.41	Account Status				X
PV1.42	Pending Location				X
PV1.43	Prior Temporary Location				X
PV1.44	Admit Date/Time				X
PV1.45	Discharge Date/Time				X
PV1.46	Current Patient Balance				X
PV1.47	Total Charges				X
PV1.48	Total Adjustments				X
PV1.49	Total Payments				X
PV1.50	Alternate Visit ID				X
PV1.51	Visit Indicator				X
PV1.52	Other Healthcare Provider				X

ADT^A39 (Patient Merge) Message Segment Specifications

The ADT^A39 (Patient Merge) message is used as follows:

- **Inbound (partner application to [redacted]).** For the partner application to merge two patient records in [redacted], the ADT^A39 messages must be written to the specifications in this chapter.
- **Outbound ([redacted] to partner application).** For [redacted] to update the partner application with patient records that were merged in [redacted], [redacted] adheres to the ADT^A39 message specification in this chapter so that the partner application knows what it will be receiving.

The ADT^A39 message can be used, for example, to merge two patient records for the same patient who was incorrectly filed under two separate PIDs. For a sample message, see [“Sample 4—Merge Patient ” on page 179](#).

Message Segment Hierarchy

The ADT^A39 message segment hierarchy is specified below:

```
MSH      Message Header (Required; one per file)
EVN      Event Type (Required)
{ PID    Patient Identification—Correct (Required)
  [ PD1  Additional Demographics (Optional)
  MRG    Merge Information (Required)
  PID    Patient Identification—Incorrect (Required-Inbound Only)
  [ PV1  Patient Visit (Optional; not supported)
}
```

In the hierarchy shown above, braces ({ }) indicate where multiple items are allowed, and brackets ([]) indicate items that are optional.

Message Segment Specifications

This section provides detailed specifications for each segment of an ADT^A39 (Patient Merge) message. Supported message segments include the following:

- [“MSH—Message Header Segment” on the next page](#).
- [“EVN—Event Type Segment ” on page 113](#).
- [“PID—Patient Identification Segment—Correct” on page 113](#).
- [“PD1—Patient Additional Demographic Segment” on page 116](#).
- [“MRG—Merge Patient Information Segment ” on page 119](#).
- [“PID—Patient Identification Segment—Incorrect” on page 120](#).

Notes:

- ADT^A39 message segments that are not supported are **not** included in this section; for detailed specifications, refer to the HL7 2.3 Specification.
- All date timestamps are set to Coordinated Universal Time (UTC).

MSH—Message Header Segment

The Message Header (MSH) segment defines the intent, source, destination, and some specifics of the syntax of a message.

Field	Name	Type	Length	Comments	Req'd
MSH.00	Segment Type ID	ST	4	Must be MSH.	R
MSH.01	Field Separator	ST	1	The separator between the message segment ID (“MSH”) and the first real data field (MSH.02). Defines the character to be used as a separator for the rest of the message. The value is a vertical bar ().	R
MSH.02	Encoding Characters	ST	4	Four characters that are used in the following order: component separator, repetition separator, escape character, and subcomponent separator. Format: ^~\& These values are recommended by HL7 and are the only values supported.	R
MSH.03	Sending Application	HD	180	The name of the sending application.	O
MSH.04	Sending Facility	HD	180	The sending facility. Identifies the owner of the patient data and who initiated the patient demographic request. The [redacted] verifies that the field is populated.	R
MSH.05	Receiving Application	HD	180	The receiving application identifier.	O
MSH.06	Receiving Facility	HD	180	The receiving facility. The account number defined for the requester. This value will be determined by the Client team. The [redacted] verifies that the field is populated.	R
MSH.07	Date/Time of Message	TS	26	The date and time that the sending system created the message. Format: <i>yyyymmddhhmmss</i> Note: All date timestamps are set to Coordinated Universal Time (UTC).	R

Field	Name	Type	Length	Comments	Req'd
				The [redacted] verifies that this field is populated and that the value complies with the format above.	
MSH.08	Security				X
MSH.09	Message Type	CM	7	The type of message being transmitted, and the event leading to the creation of the message. Valid value: A39 (Merge Person Information).	R
MSH.10	Message Control ID	ST	20	A number or other data that uniquely identifies the message in its transmission to the receiving system. The [redacted] verifies that this field is populated.	R
MSH.11	Processing ID	PT	3	The placer system's intent for the message. Valid values include: <ul style="list-style-type: none"> • P = Production • T = Testing The [redacted] verifies that the value in this field is P or T.	R
MSH.12	Version ID	ID	8	The value for this field is 2.3.	R
MSH.13	Sequence Number				X
MSH.14	Continuation Pointer				X
MSH.15	Accept Acknowledgment Type				X
MSH.16	Application Acknowledgment Type				X
MSH.17	Country Code				X
MSH.18	Character Set				X
MSH.19	Principal Language of Message				X

EVN—Event Type Segment

The Event Type (EVN) segment is used to communicate necessary trigger event information to receiving applications.

Field	Name	Type	Length	Comments	Req'd
EVN.00	Segment Type ID	ST	4	Must be EVN.	R
EVN.01	Event Type Code	ID	3	The second component (trigger event) of MSH.09 (<i>Message Type</i>) should be used to transmit event type code information. This field contains the events corresponding to the trigger events described in this section. Valid value: A39. Note: This field has been retained for backward compatibility only.	R
EVN.02	Recorded Date/Time				X
EVN.03	Date/Time Planned Event				X
EVN.04	Event Reason Code				X
EVN.05	Operator ID				X
EVN.06	Event Occurred				X

PID—Patient Identification Segment—Correct

The Patient Identification (PID) segment is used by all applications as the primary means of communicating patient identification information. This segment is identified as “Correct,” which represents the patient identification information that will remain following a patient merge. This segment contains permanent patient identifying and demographic information that, for the most part, is not likely to change frequently.

Field	Name	Type	Length	Comments	Req'd
PID.00	Segment Type ID	ST	4	Must be PID.	R
PID.01	Set ID	SI	4	Allows identification of multiple PID segments within a message. Usually a sequential number beginning with 1.	R
PID.02	Patient ID	CX	40	[redacted] patient identifier used to uniquely identify a patient within [redacted]. When the patient is from another institution, outside office, etc., the identifier used by that institution can be shown in this field. This may be a number that multiple disparate corporations or facilities share.	R

Field	Name	Type	Length	Comments	Req'd
Example: BB1123					
PID.03	Patient ID	CX	40	<p>The primary identifier, or other identifiers used by the facility to identify a patient uniquely (for example, medical record number, billing number, birth registry, etc.).</p> <p>This is the patient identifier associated with the non-[redacted] system, and it is not always available within [redacted].</p>	O
PID.04	Alternate Patient ID (PID)				X
PID.05	Patient Name	XPN	48	<p>No more than 48 characters, including the delimiter between the last and first names. At least one character for first and last name. Alphanumeric data only, but a numeric value cannot be used as the first character of the last name.</p> <p><family name (ST)> ^ <given name (ST)> ^ <middle initial or name (ST)> ^ <suffix (for example, JR or III) (ST)> ^ <prefix (for example, DR) (ST)> ^ <degree (for example, MD) (ST)> ^ <name type code (ID)></p> <p>The [redacted] verifies that the field length complies with the rules above.</p>	R
PID.06	Mother's Maiden Name				X
PID.07	Date/Time of Birth	TS	26	<p>Patient DOB in the following format:</p> <ul style="list-style-type: none"> Inbound: <i>yyyymmdd</i> or <i>yyyymmddhhmmss</i>. The [redacted] accepts the timestamp (<i>hhmmss</i>) but forwards only the date (<i>yyyymmdd</i>) to [redacted]. The [redacted] verifies that the date is in one of these formats. Outbound: <i>yyyymmdd</i> 	R
PID.08	Sex	IS	1	<p>Possible values are listed below.</p> <ul style="list-style-type: none"> M = Male F = Female O = Other U = Unknown 	R

Field	Name	Type	Length	Comments	Req'd
				<ul style="list-style-type: none"> • A = Ambiguous • N = Not applicable • Z = Undifferentiated • blank <p>Note: If [redacted] does not support a value that is submitted on inbound feeds, that value appears as a blank in the user interface.</p>	
PID.09	Patient Alias	XPN	48	Patient alias name. Only the first five subfields (Family Name, Given Name, Middle Name or Initial, Suffix, Prefix, and Degree) are passed to/from [redacted].	0
PID.10	Race				X
PID.11	Patient Address	XAD	106	<p>No more than 106 characters; however, limits may apply to some subfields depending on your implementation. Check with your project manager for the subfield limits. Alphanumeric data only.</p> <p><street address (ST)> ^ <other designation (ST)> ^ <city (ST)> ^ <state or province (ST)> ^ <zip or postal code (ST)> ^ <country (ID)> ^ <address type (ID)> ^ <other geographic designation (ST)> ^ <county/parish code (IS)> ^ <census tract (IS)></p> <p>The [redacted] verifies that the field length complies with the rules above.</p>	0
PID.12	County Code				X
PID.13	Phone Number - Home	XTN	255	<p>Accepted length of this field is 40 numeric characters. No dashes or other separating characters.</p> <p>Example (extension and country code omitted):</p> <p>^^^^333^4445555^</p> <p>Example with country code:</p> <p>^^^^1^333^4445555^</p>	0
PID.14	Phone Number - Business	XTN	255	Accepted length of this field is 40 numeric characters. No dashes or other separating characters.	0

Field	Name	Type	Length	Comments	Req'd
Example with extension (country code omitted): ^^^^333^4445555^999^ Example with extension and country code: ^^^1^333^4445555^999^					
PID.15	Language - Patient				X
PID.16	Marital Status				X
PID.17	Religion				X
PID.18	Patient Account Number				X
PID.19	SSN Number - Patient	ST	16	Must contain 9 numeric digits, or 11 with hyphens. Cannot be all zeros, and first three numbers cannot be 666, 800, or 900. If present, the [redacted] verifies that the value complies with the rules above.	O
PID.20	Driver's Lic Num - Patient				X
PID.21	Mother's Identifier				X
PID.22	Ethnic Group				X
PID.23	Birth Place				X
PID.24	Multiple Birth Indicator				X
PID.25	Birth Order				X
PID.26	Citizenship				X
PID.27	Veterans Military Status				X
PID.28	Nationality				X
PID.29	Patient Death Date & Time				X
PID.30	Patient Death Indicator				X

PD1—Patient Additional Demographic Segment

The Patient Additional Demographic (PD1) segment contains demographic information that is likely to change about the patient.

Field	Name	Type	Length	Comments	Req'd
PD1.01	Living Dependency	IS	2		0
PD1.02	Living Arrangement	IS	2		0
PD1.03	Patient Primary Facility	XON	90		0
PD1.04	Patient Primary Care Provider Name & ID No.	XON	90		0
PD1.05	Student Indicator	IS	2		0
PD1.06	Handicap	IS	2		0
PD1.07	Living Will	IS	2		0
PD1.08	Organ Donor	IS	2		0
PD1.09	Separate Bill	ID	2		0
PD1.10	Duplicate Patient	CX	2		0

Field	Name	Type	Length	Comments	Req'd
PD1.11	Publicity Indicator	CE	1	<p>Represents the value for <i>Consent given to share clinical documentation</i> in [redacted].</p> <p>Format: <identifier (ST)> ^ <text (ST)> ^ <name of coding system (ST)> ^ <alternate identifier (ST)> ^ <alternate text (ST)> ^ <name of alternate coding system (ST)></p> <p>Inbound valid values for PD1.11.01:</p> <ul style="list-style-type: none"> • Y = Yes, which overrides the existing setting in [redacted] • N = No, which overrides the existing setting in [redacted] • blank, which retains the existing setting in [redacted] <p>Note: [redacted] will not edit to ensure valid values.</p> <p>Outbound valid values:</p> <ul style="list-style-type: none"> • Y = Yes • N = No • P = Pending • blank 	0
PD1.12	Protection Indicator	ID	1	<p>[redacted] ignores the value for this field. Instead, PD1.11 (Publicity Indicator) sets the value for <i>Consent given to share clinical documentation</i>.</p> <p>Inbound valid values:</p> <ul style="list-style-type: none"> • Y = Yes • N = No • blank <p>Note: [redacted] will not edit to ensure valid values.</p> <p>Outbound valid values:</p> <ul style="list-style-type: none"> • Y = Yes • N = No • P = Pending • blank 	0

MRG—Merge Patient Information Segment

The Merge Patient Information (MRG) segment provides receiving applications with information necessary to initiate the merging of patient data, as well as groups of records.

Field	Name	Type	Length	Comments	Req'd
MRG.00	Segment Type ID	ST	4	Must be MRG.	R
MRG.01	Prior Patient ID - Internal	CX	20	The internal prior patient identifier. This field contains a list of potential “old” numbers to match. Only one old number can be merged with one new number in a transaction.	O
MRG.02	Prior Alternate Patient ID	CX	20	The prior alternate patient identifier.	O
MRG.03	Prior Patient Account Number	CX	20	The prior patient account number.	O
MRG.04	Prior Patient ID - External	CX	40	The external prior patient identifier. Note: Must not contain the same value as PID.02.	R
MRG.05	Prior Visit Number	CX	20	The prior visit number.	O
MRG.06	Prior Alternate Visit ID	CX	20	The prior alternate visit number.	O
MRG.07	Prior Patient Name	XPN	48	<p>The prior name of the patient. This field is not used to change a patient name.</p> <p>No more than 48 characters, including the delimiter between the last and first names. At least one character for first and last name. Alphanumeric data only, but a numeric value cannot be used as the first character of the last name.</p> <p><family name (ST)> ^ <given name (ST)> ^ <middle initial or name (ST)> ^ <suffix (for example, JR or III) (ST)> ^ <prefix (for example, DR) (ST)> ^ <degree (for example, MD) (ST)> ^ <name type code (ID)></p> <p>The [redacted] verifies that the value complies with the rules above.</p>	R

PID—Patient Identification Segment—Incorrect

The Patient Identification (PID) segment is used by all applications as the primary means of communicating patient identification information. This segment is identified as “Incorrect,” which represents the patient identification information that will be replaced as the result of a patient merge. This segment contains permanent patient identifying and demographic information that, for the most part, is not likely to change frequently.

Note: This segment is used on inbound transactions **only**.

Field	Name	Type	Length	Comments	Req'd
PID.00	Segment Type ID	ST	4	Must be PID.	R
PID.01	Set ID	SI	4	Allows identification of multiple PID segments within a message. Usually a sequential number beginning with 1. Must be set to 2 to identify incorrect person information. The [redacted] verifies that the value complies with the rules above.	R
PID.02	Patient ID	CX	40	[redacted] patient identifier used to uniquely identify a patient within [redacted]. The [redacted] verifies that this field is populated. Example: BB1123	R
PID.03	Patient ID				X
PID.04	Alternate Patient ID (PID)				X
PID.05	Patient Name	XPN	48	No more than 48 characters, including the delimiter between the last and first names. At least one character for first and last name. Alphanumeric data only, but a numeric value cannot be used as the first character of the last name. <family name (ST)> ^ <given name (ST)> ^ <middle initial or name (ST)> ^ <suffix (for example, JR or III) (ST)> ^ <prefix (for example, DR) (ST)> ^ <degree (for example, MD) (ST)> ^ <name type code (ID)> The [redacted] verifies that the field length complies with the rules above.	R

Field	Name	Type	Length	Comments	Req'd
PID.06	Mother's Maiden Name				X
PID.07	Date/Time of Birth	TS	26	<p>Patient DOB.</p> <p>Format: <i>yyyymmdd</i> or <i>yyyymmddhhmmss</i></p> <p>The [redacted] accepts the timestamp (<i>hhmmss</i>) but forwards only the date (<i>yyyymmdd</i>) to [redacted]. The [redacted] verifies that the date is in one of these formats.</p>	R
PID.08	Sex	IS	1	<p>Possible values are listed below.</p> <ul style="list-style-type: none"> • M = Male • F = Female • O = Other • U = Unknown • A = Ambiguous • N = Not applicable • Z = Undifferentiated • blank <p>Note: If [redacted] does not support a value that is submitted on inbound feeds, that value appears as a blank in the user interface.</p>	R
PID.09	Patient Alias	XPN	48	Patient alias name. Only the first five subfields (Family Name, Given Name, Middle Name or Initial, Suffix, Prefix, and Degree) are passed to/from [redacted].	O
PID.10	Race				X
PID.11	Patient Address	XAD	106	<p>No more than 106 characters; however, limits may apply to some subfields depending on your implementation. Check with your project manager for the subfield limits. Alphanumeric data only.</p> <pre><street address (ST)> ^ <other designation (ST)> ^ <city (ST)> ^ <state or province (ST)> ^ <zip or postal code (ST)> ^ <country (ID)> ^ <address type (ID)> ^ <other geographic designation (ST)> ^ <county/parish code (IS)> ^ <census tract (IS)></pre>	O

Field	Name	Type	Length	Comments	Req'd
				The [redacted] verifies that the field length complies with the rules above.	
PID.12	County Code				X
PID.13	Phone Number - Home	XTN	255	Accepted length of this field is 40 numeric characters. No dashes or other separating characters. Example (extension and country code omitted): ^^^^333^4445555^ Example with country code: ^^^^1^333^4445555^	O
PID.14	Phone Number - Business	XTN	255	Accepted length of this field is 40 numeric characters. No dashes or other separating characters. Example with extension (country code omitted): ^^^^333^4445555^999^ Example with extension and country code: ^^^^1^333^4445555^999^	O
PID.15	Language - Patient				X
PID.16	Marital Status				X
PID.17	Religion				X
PID.18	Patient Account Number				X
PID.19	SSN Number - Patient	ST	16	Must contain 9 numeric digits, or 11 with hyphens. Cannot be all zeros, and first three numbers cannot be 666, 800, or 900. If present, the [redacted] verifies that the value complies with the rules above.	O
PID.20	Driver's Lic Num - Patient				X
PID.21	Mother's Identifier				X
PID.22	Ethnic Group				X
PID.23	Birth Place				X

Field	Name	Type	Length	Comments	Req'd
PID.24	Multiple Birth Indicator				X
PID.25	Birth Order				X
PID.26	Citizenship				X
PID.27	Veterans Military Status				X
PID.28	Nationality				X
PID.29	Patient Death Date & Time				X
PID.30	Patient Death Indicator				X

SIU (Schedule Information Unsolicited) Message Segment Specifications

The purpose of the SIU (Schedule Information Unsolicited) HL7 message type is to enable a partner application to submit patient scheduling data to [redacted]. This can be used, for example, to gather pre-visit data, medication history, or to check patient eligibility.

SIU messages are inbound-only (partner application to [redacted]). The following SIU messages are supported:

- SIU^S12 (New Appt)
- SIU^S14 (Modify Appt)
- SIU^S15 (Cancel Appt)
- SIU^S17 (Delete Appt)

Notes:

- Only one appointment per message is processed. If multiple appointments are sent in the same message, [redacted] will only process the first appointment.
- For scheduling information, the AIP (Appointment Information–Personnel Resource) segment is the only one used by [redacted]. AIS (Appointment Information–Services), AIG (Appointment Information–General Resources), and AIL (Appointment Information–Location) are not used.

For a sample message, see [“Sample 5—Schedule Patient”](#) on page 179.

Message Segment Hierarchy

The SIU message segment hierarchy is specified below:

MSH	Message Header (<i>Required</i> ; one per file)
SCH	Schedule Activity Information (<i>Required</i> ; one per file)
[{NTE}]	Notes (<i>Optional</i> ; multiple per SCH)
[{PID}]	Patient Identification (<i>Required</i> ; one per file)
[PV1]	Patient Visit Data (<i>Optional</i> ; one per PID)
[PV2]	Patient Visit Data - Additional Information (<i>Optional</i> ; one per PID)
[{OBX}]	Observation Result (<i>Optional</i> ; multiple per PID)
[{DG1}]	Diagnosis (<i>Optional</i> ; multiple per PID)
{RGS}	Resource Group Segment (<i>Required</i> ; multiple per file. Only the first segment sent is used.)
[{AIS}]	Appt info - Services (<i>Optional</i> ; multiple per RGS)
[{NTE}]	Notes (<i>Optional</i> ; multiple per AIS)
[{AIG}]	Appt info - General resources (<i>Optional</i> ; multiple per RGS)
[{NTE}]	Notes (<i>Optional</i> ; multiple per AIG)
[{AIL}]	Appt info - Location (<i>Optional</i> ; not supported)
[{NTE}]	Notes (<i>Optional</i> ; multiple per AIL)
[{AIP}]	Appt info - Personnel Resource (<i>Optional</i> ; multiple per RGS. Only the first segment sent is used.)
[{NTE}]	Notes (<i>Optional</i> ; multiple per AIP)
}	

In the hierarchy shown above, braces ({ }) indicate where multiple items are allowed, and brackets ([]) indicate items that are optional.

Message Segment Specifications

This section provides detailed specifications for each segment of an SIU (Schedule Information Unsolicited) message. Supported message segments include the following:

- “MSH—Message Header Segment” below.
- “SCH—Schedule Activity Information Segment” on page 127.
- “PID—Patient Identification Segment” on page 132.
- “PV1—Patient Visit Data Segment ” on page 138.
- “DG1—Diagnosis Segment ” on page 142.
- “RGS—Resource Group Segment” on page 143.
- “EVN—Event Type Segment ” on page 101.
- “AIG—Appointment Information–General Resources Segment” on page 144.
- “AIL—Appointment Information–Location Segment” on page 145.
- “AIP—Appointment Information–Personnel Resource Segment” on page 146.

Notes:

- SIU message segments that are not supported are **not** included in this section; for detailed specifications, refer to the HL7 2.3 Specification.
- All date timestamps are set to Coordinated Universal Time (UTC).

MSH—Message Header Segment

The Message Header (MSH) segment defines the intent, source, destination, and some specifics of the syntax of a message.

Field	Name	Type	Length	Comments	Req'd
MSH.00	Segment Type ID	ST	4	Must be MSH.	R
MSH.01	Field Separator	ST	1	The separator between the message segment ID (“MSH”) and the first real data field (MSH.02). Defines the character to be used as a separator for the rest of the message. The value is a vertical bar ().	R
MSH.02	Encoding Characters	ST	4	Four characters that are used in the following order: component separator, repetition separator, escape character, and subcomponent separator. Format: ^~\& These values are recommended by HL7 and are the only values supported.	R

Field	Name	Type	Length	Comments	Req'd
MSH.03	Sending Application	HD	180	The name of the sending application.	O
MSH.04	Sending Facility	HD	180	The sending facility. Identifies the owner of the patient data and who initiated the patient demographic request. The [redacted] verifies that the field is populated.	R
MSH.05	Receiving Application	HD	180	The receiving application identifier.	O
MSH.06	Receiving Facility	HD	180	The receiving facility. The account number defined for the requester. This value will be determined by the Client team. The [redacted] verifies that the field is populated.	R
MSH.07	Date/Time of Message	TS	26	The date and time that the sending system created the message. Format: <i>yyyymmddhhmmss</i> Note: All date timestamps are set to Coordinated Universal Time (UTC). The [redacted] verifies that this field is populated, and that the value complies with the format above.	R
MSH.08	Security				X
MSH.09	Message Type	CM	7	The type of message being transmitted, and the event leading to the creation of the message. Acceptable values for this field: <ul style="list-style-type: none"> • SIU^S12 = New Appt • SIU^S14 = Modify Appt • SIU^S15 = Cancel Appt • SIU^S17 = Delete Appt 	R
MSH.10	Message Control ID	ST	20	A number or other data that uniquely identifies the message in its transmission to the receiving system.	R
MSH.11	Processing ID	PT	3	The placer system's intent for the message. Valid values include: <ul style="list-style-type: none"> • P = Production • T = Testing 	R

Field	Name	Type	Length	Comments	Req'd
				The [redacted] verifies that the value in this field is P or T.	
MSH.12	Version ID	ID	8	The value for this field is 2.3.	R
MSH.13	Sequence Number				X

SCH—Schedule Activity Information Segment

The Schedule Activity Information (SCH) segment is used to communicate necessary schedule activity information to receiving applications.

Field	Name	Type	Length	Comments	Req'd
SCH.00	Segment Type ID	ST	4	Must be SCH.	R
SCH.01	Placer Appointment ID	EI	75	<p>Contains the placer application's permanent identifier for the appointment request (and the scheduled appointment itself, when it has been confirmed as a booked slot by the filler application). The first component is a string that identifies an individual appointment request, or a booked appointment.</p> <p>Format: <entity identifier (ST)> ^ <namespace ID (IS)> ^ <universal ID (ST)> ^ <universal ID type (ID)></p> <p>Notes:</p> <ul style="list-style-type: none"> • This is your unique identifier for an appointment. It is created for a new appointment (S12), and the same value should be sent for any subsequent updates, cancels or deletes (S14, S15, S17). • The first subcomponent is the unique id and the second subcomponent is the system responsible for creating the ID (namespace). • The first and second subcomponents must be populated. They are both used to populate PV1.19 (Visit Number) when a superbill is generated and sent to you as a DFT message: <ul style="list-style-type: none"> • The value in SCH.01.01 is used to populate PV1.19.01. 	R

Field	Name	Type	Length	Comments	Req'd
				<ul style="list-style-type: none"> The value in SCH.01.02 is used to populate PV1.19.04. 	
SCH.02	Filler Appointment ID	EI	75	On initial request and other messages where a filler has not yet assigned a filler appointment ID, this field should not contain a value. In all subsequent messages where a filler application has assigned a filler appointment ID and communicated it to other applications, this field is required.	C
SCH.03	Occurrence Number	NM	5	If the transaction using this segment is meant to apply to only one occurrence of a repeating appointment, and an occurrence number is required to uniquely identify the child appointment (that is, the child does not have a separate and unique placer appointment ID or filler appointment ID), then this field is required.	C
SCH.04	Placer Group Number	EI	75		O
SCH.05	Schedule ID	CE	200	<p>Contains an identifier code for the schedule in which this appointment is (or will be) booked. This field is provided for instances in which filler applications maintain multiple schedules, and when a particular resource or set of resources is controlled by more than one of those schedules.</p> <p>Format: <identifier (ST)> ^ <text (ST)> ^ <name of coding system (ST)> ^ <alternate identifier (ST)> ^ <alternate text (ST)> ^ <name of alternate coding system (ST)></p>	O
SCH.06	Event Reason	CE	200	Contains an identifier code for the reason that the notification event was triggered. This field may contain a code describing the cancel reason, the delete reason, the discontinue reason, the add reason, the block reason or any other code describing the reason that a specific event will occur.	R

Field	Name	Type	Length	Comments	Req'd
				<p>Both of the following subfields are required by [redacted], and SCH.06.02 (Event Reason Text) must be populated for a DFT message to be generated:</p> <ul style="list-style-type: none"> SCH.06.01 = Event reason ID SCH.06.02 = Event reason text <p>Format: <i>Event_Reason_ID^Event_Reason_Text</i></p> <p>There is no validation that SCH.06.02 is populated.</p> <p>SCH.06.02 is displayed in [redacted] on the main page, <i>Today's Patients</i> section. The event reason itself does not trigger an action, such as canceling an appointment if the event reason is "Canceled." However, lack of a value for SCH.06.02 prohibits a DFT message from being created.</p>	
SCH.07	Appointment Reason	CE	200	<p>Contains an identifier code for the reason that the appointment is to take place. This field may contain a Universal Service Identifier describing the observation/test/battery/ procedure or other activity that is to take place during the requested appointment, similar to the Universal Service Identifier defined for the OBR segment in the Order Entry chapter (of the HL7 standard). It may also contain a site-specific code describing a pre-defined set of reasons that an appointment may be set to occur. This code can be based on local and/or universal codes.</p> <p>Format: <identifier (ST)> ^ <text (ST)> ^ <name of coding system (ST)> ^ <alternate identifier (ST)> ^ <alternate text (ST)> ^ <name of alternate coding system (ST)></p> <p>The following identifier codes are valid:</p> <ul style="list-style-type: none"> ROUTINE = Routine appointment - default if not valued. WALKIN = A previously unscheduled walk-in visit. 	0

Field	Name	Type	Length	Comments	Req'd
				<ul style="list-style-type: none"> CHECKUP = A routine check-up, such as an annual physical. FOLLOWUP = A follow up visit from a previous appointment. EMERGENCY = Emergency appointment. 	
SCH.08	Appointment Type	CE	200	<p>Contains the identifier code for the type of appointment.</p> <p>Format: <identifier (ST)> ^ <text (ST)> ^ <name of coding system (ST)> ^ <alternate identifier (ST)> ^ <alternate text (ST)> ^ <name of alternate coding system (ST)></p> <p>The following identifier codes are valid:</p> <ul style="list-style-type: none"> NORMAL = Routine schedule request type - default if not valued. TENTATIVE = A request for a tentative (for example, "penciled in") appointment. COMPLETE = A request to add a completed appointment, used to maintain records of completed appointments that did not appear in the schedule (for example, STAT, walk-in, etc.). 	0
SCH.09	Appointment Duration	NM	20		0
SCH.10	Appointment Duration Units	CE	200		0
SCH.11	Appointment Timing Quantity	TQ	200	<p>Contains the scheduled appointment's timing and quantity, as scheduled by the filler application.</p> <p>Format: <quantity (CQ)> ^ <interval (CM)> ^ <duration (CM)> ^ <start date/time (TS)> ^ <end date/time (TS)> ^ <priority (ID)> ^ <condition (ST)> ^ <text (TX)> ^ <conjunction (ID)> ^ <order sequencing (CM)></p> <p>Note: The date timestamp must be set to Coordinated Universal Time (UTC).</p>	R

Field	Name	Type	Length	Comments	Req'd
				<p>The [redacted] verifies that the start date and time (SCH.11.04) and end date and time (SCH.11.05) are valid.</p> <p>Used on the [redacted] main page in the <i>Today's Patients</i> section to group appointments by date and time.</p>	
SCH.12	Placer Contact Person	XCN	48	Identifies the person responsible for requesting the scheduling of a requested appointment. Most often, this person will be the same person responsible for executing the appointment.	O
SCH.13	Placer Contact Phone Number	XTN	255		O
SCH.14	Placer Contact Address	XAD	106		O
SCH.15	Placer Contact Location	PL	80		O
SCH.16	Filler Contact Person	XCN	48	Identifies the person responsible for the scheduling of the requested appointment. Most often, this person will be the same person responsible for maintaining the schedule and for reviewing appointment requests.	R
SCH.17	Filler Contact Phone Number	XTN	255		O
SCH.18	Filler Contact Address	XAD	106		O
SCH.19	Filler Contact Location	PL	80		O
SCH.20	Entered by Person	XCN	48	Identifies the person responsible for entering the request for the scheduling of an appointment. It is included to provide an audit trail of persons responsible for the request. This person may be someone other than the placer contact person, who is responsible for entering orders and requests.	R
SCH.21	Entered by Phone Number	XTN	255		O

Field	Name	Type	Length	Comments	Req'd
SCH.22	Entered by Location	PL	80		0
SCH.23	Parent Placer Appointment ID	EI	75		0
SCH.24	Parent Filler Appointment ID	EI	75		0
SCH.25	Filler Status Code	CE	200	<p>Contains a code describing the status of the appointment with respect to the filler application. Valid values:</p> <ul style="list-style-type: none"> • PENDING • WAITLIST • BOOKED • STARTED • COMPLETE • DELETED • BLOCKED • OVERBOOK <p>Note: Values must be submitted in uppercase.</p> <p>If this field is populated, the [redacted] validates it for one of the above values. Note, however, that [redacted] does not currently use this appointment status.</p>	0

PID—Patient Identification Segment

The Patient Identification (PID) segment is used by all applications as the primary means of communicating patient identification information. This segment contains permanent patient identifying and demographic information that, for the most part, is not likely to change frequently.

Field	Name	Type	Length	Comments	Req'd
PID.00	Segment Type ID	ST	4	Must be PID.	R
PID.01	Set ID - Patient ID	SI	4	Allows identification of multiple PID segments within a message. Usually a sequential number beginning with 1.	0
PID.02	Patient ID	CX	40	[redacted] patient identifier used to uniquely identify a patient within [redacted].	R

Field	Name	Type	Length	Comments	Req'd
				<p>When the patient is from another institution, outside office, etc., the identifier used by that institution can be shown in this field. This may be a number that multiple disparate corporations or facilities share.</p> <p>Example: BB1123</p>	
PID.03	Patient ID	CX	40	<p>The primary identifier, or other identifiers used by the facility to identify a patient uniquely (for example, medical record number, billing number, birth registry, etc.).</p> <p>This is the patient identifier associated with the non-[redacted] system, and it is not always available within [redacted].</p>	O
PID.04	Alternate Patient ID (PID)				X
PID.05	Patient Name	XPN	48	<p>No more than 48 characters, including the delimiter between the last and first names. At least one character for first and last name. Alphanumeric data only, but a numeric value cannot be used as the first character of the last name.</p> <p><family name (ST)> ^ <given name (ST)> ^ <middle initial or name (ST)> ^ <suffix (for example, JR or III) (ST)> ^ <prefix (for example, DR) (ST)> ^ <degree (for example, MD) (ST)> ^ <name type code (ID)></p> <p>The [redacted] verifies that the field length complies with the rules above.</p>	R
PID.06	Mother's Maiden Name				X
PID.07	Date/Time of Birth	TS	26	<p>Patient DOB.</p> <p>Format: <i>yyyymmdd</i> or <i>yyyymmddhhmmss</i></p> <p>The [redacted] accepts the timestamp (<i>hhmmss</i>) but forwards only the date (<i>yyyymmdd</i>) to [redacted]. The [redacted] verifies that the date is in one of these formats.</p>	O
PID.08	Sex	IS	1	<p>Possible values are listed below.</p> <ul style="list-style-type: none"> M = Male 	O

Field	Name	Type	Length	Comments	Req'd
				<ul style="list-style-type: none"> • F = Female • O = Other • U = Unknown • A = Ambiguous • N = Not applicable • Z = Undifferentiated • blank <p>Note: If [redacted] does not support a value that is submitted on inbound feeds, that value appears as a blank in the user interface.</p>	
PID.09	Patient Alias	XPN	48	Patient alias name. Only the first five subfields (Family Name, Given Name, Middle Name or Initial, Suffix, Prefix, and Degree) are passed to [redacted].	0
PID.10	Race	CE	250	<p>Repeating field with a maximum of three instances allowed. This field supports both HL7 2.3 and HL7 3.0 values.</p> <p>For HL7 2.3, values supported by [redacted] are listed below.</p> <ul style="list-style-type: none"> • W = White • B = Black • A = Asian • I = American Indian or Alaskan • O = Other <p>For HL7 3.0, values supported by [redacted] are the same as the Centers for Disease Control and Prevention (CDC) race code set (http://phinvads.cdc.gov/vads/ViewCodeSystemConcept.action?oid=2.16.840.1.113883.6.238&code=1000-9) with a Concept Status Date of 09/26/2008.</p> <p>Because this is a repeating field, for a patient whose race is Apache (1010-8), White (2106-3), and Asian (2028-9), for example, you would send all three of the codes:</p> <p>1010-8^2106-3^2028-9</p> <p>If a value other than one of those in the CDC race code set is sent, the patient's race will not appear in the [redacted] user interface.</p>	0

Field	Name	Type	Length	Comments	Req'd
PID.11	Patient Address	XAD	106	<p>No more than 106 characters; however, limits may apply to some subfields depending on your implementation. Check with your project manager for the subfield limits. Alphanumeric data only.</p> <pre><street address (ST)> ^ <other designation (ST)> ^ <city (ST)> ^ <state or province (ST)> ^ <zip or postal code (ST)> ^ <country (ID)> ^ <address type (ID)> ^ <other geographic designation (ST)> ^ <county/parish code (IS)> ^ <census tract (IS)></pre> <p>The [redacted] verifies that the field length complies with the rules above.</p>	0
PID.12	County Code				X
PID.13	Phone Number - Home	XTN	255	<p>Repeating field that can accept Home phone number, Cell/Mobile phone number, and email address. Note the following:</p> <ul style="list-style-type: none"> • If the Home phone number is sent, it must be the first occurrence. • If the Cell/Mobile phone number is sent, then <telecommunication equipment type (ID)> must equal CP. • If there is a Cell/Mobile phone number but no primary Home phone number, the first sequence must be blank (~). • The accepted length for each phone number is 20 numeric characters. No dashes or other separating characters are allowed. <p>Example with home and cell phone (extension and country code omitted) and email:</p> <pre>^^^^333^4445555~^NET^^ example@email.com~^^CP^^^777^8889999</pre> <p>Example with home and cell phone (including country code):</p> <pre>^^^^1^333^4445555^~ ^^CP^^1^777^8889999^</pre> <p>The [redacted] verifies that the value complies with the rules above.</p>	0

Field	Name	Type	Length	Comments	Req'd
PID.14	Phone Number - Business	XTN	255	Accepted length of this field is 40 numeric characters. No dashes or other separating characters. Example with extension (country code omitted): ^^^^333^4445555^999^ Example with extension and country code: ^^^^1^333^4445555^999^	0
PID.15	Language - Patient	CE	250	This field is not supported.	0
PID.16	Marital Status	IS	1	Values supported by [redacted] are listed below. <ul style="list-style-type: none"> • P = Polygamous • W = Widowed • D = Divorced • M = Married • A = Annulled • S = Never Married • L = Legally Separated • I = Interlocutory • T = Domestic Partner <p>If a value other than those listed is sent, the patient's marital status will not appear in the [redacted] user interface.</p>	0
PID.17	Religion	IS	3	Patient religion	0
PID.18	Patient Account Number	CX	20	Contains the patient account number assigned by accounting and to which all charges, payments, etc., are recorded. It is used to identify the patient's account. Only the first subfield (ID Number) is passed to [redacted].	0
PID.19	SSN Number - Patient	ST	16	Must contain 9 numeric digits, or 11 with hyphens. Cannot be all zeros, and first three numbers cannot be 666, 800, or 900. If present, the [redacted] verifies that the value complies with the rules above.	0
PID.20	Driver's Lic Num - Patient	DLN	25	DLN format: <license number (ST)> ^ <issuing state, province, country (IS)> ^ <expiration date (DT)>	0

Field	Name	Type	Length	Comments	Req'd
				Only the first subfield (License Number) is passed to [redacted].	
PID.21	Mother's Identifier	CX	20	Used, for example, as a link field for newborns. Typically a patient ID or account number may be used. This field can contain multiple identifiers for the same mother. Only the first subfield (ID Number) is passed to [redacted].	0
PID.22	Ethnic Group	CE	250	This field supports both HL7 2.3 and HL7 3.0 values. For HL7 2.3, values supported by [redacted] are listed below. <ul style="list-style-type: none"> • H = Hispanic • N = Non-Hispanic • U = Unknown For HL7 3.0, values supported by [redacted] are the same as the Centers for Disease Control and Prevention (CDC) ethnicity code set (http://phinvads.cdc.gov/vads/ViewCodeSystemConcept.action?oid=2.16.840.1.113883.6.238&code=2133-7) with a Concept Status Date of 09/26/2008. For example, for Mexican American, you would send 2149-3. If a value other than those in the CDC ethnicity code set is sent, the patient's ethnicity will not appear in the [redacted] user interface.	0
PID.23	Birth Place	ST	60	Indicates the location of the patient's birth.	0
PID.24	Multiple Birth Indicator	ID	2	Indicates whether or not the patient was part of a multiple birth (Yes/No indicator). Valid values: <ul style="list-style-type: none"> • Y = Yes • N = No • blank The [redacted] validates this field.	0
PID.25	Birth Order	NM	2	When a patient was part of a multiple birth, a number indicating the patient's birth order is entered in this field.	0
PID.26	Citizenship	IS	4	Contains the patient's country of citizenship.	0

Field	Name	Type	Length	Comments	Req'd
PID.27	Veterans Military Status	CE	60	Contains the military status assigned to a veteran. Only the first subfield (Identifier) is passed to [redacted].	0
PID.28	Nationality	CD	80	Contains a code that identifies the nation or national grouping to which the insured person belongs. This information may be different from a person's citizenship in countries in which multiple nationalities are recognized (for example, Spain: Basque, Catalan, etc.). Only the first subfield (Identifier) is passed to [redacted].	0
PID.29	Patient Death Date & Time	TS	26	Contains the date and time at which the patient death occurred. Format: <i>yyyymmdd</i> or <i>yyyymmddhhmmss</i> The [redacted] accepts the timestamp (<i>hhmmss</i>) but forwards only the date (<i>yyyymmdd</i>) to [redacted].	0
PID.30	Patient Death Indicator	ID	1	Indicates whether or not the patient is deceased (Yes/No indicator). Valid values: <ul style="list-style-type: none"> • Y = Yes • N = No • blank The [redacted] validates this field.	0

PV1—Patient Visit Data Segment

The Patient Visit Data (PV1) segment is used by registration/patient administration applications to communicate information on a visit-specific basis. This segment can be used to send multiple-visit statistic records to the same patient account, or single-visit records to more than one account.

Field	Name	Type	Length	Comments	Req'd
PV1.00	Segment Type ID	ST	4	Must be PV1.	R
PV1.01	Set ID - PV1	SI	4	This field is used to number PV1 message segments sequentially starting with 1.	0
PV1.02	Patient Class	IS	1	For inbound messages, [redacted] verifies that this field is populated. Example values include: <ul style="list-style-type: none"> • E = Emergency • I = Inpatient 	R

Field	Name	Type	Length	Comments	Req'd
• 0 = Outpatient					
PV1.03	Assigned Patient Location				X
PV1.04	Admission Type				X
PV1.05	Preadmit Number				X
PV1.06	Prior Patient Location				X
PV1.07	Attending Doctor				X
PV1.08	Referring Doctor				X
PV1.09	Consulting Doctor				X
PV1.10	Hospital Service				X
PV1.11	Temporary Location				X
PV1.12	Preadmit Test Indicator				X
PV1.13	Readmission Indicator				X
PV1.14	Admit Source				X
PV1.15	Ambulatory Status				X
PV1.16	VIP Indicator				X
PV1.17	Admitting Doctor				X
PV1.18	Patient Type				X
PV1.19	Visit Number				X
PV1.20	Financial Class				X
PV1.21	Charge Price Indicator				X
PV1.22	Courtesy Code				X
PV1.23	Credit Rating				X
PV1.24	Contract Code				X
PV1.25	Contract Effective Date				X
PV1.26	Contract Amount				X
PV1.27	Contract Period				X

Field	Name	Type	Length	Comments	Req'd
PV1.28	Interest Code				X
PV1.29	Transfer to Bad Debt Code				X
PV1.30	Transfer to Bad Debt Date				X
PV1.31	Bad Debt Agency Code				X
PV1.32	Bad Debt Transfer Amount				X
PV1.33	Bad Debt Recovery Amount				X
PV1.34	Delete Account Indicator				X
PV1.35	Delete Account Date				X
PV1.36	Discharge Disposition				X
PV1.37	Discharged to Location				X
PV1.38	Diet Type				X
PV1.39	Servicing Facility				X
PV1.40	Bed Status				X
PV1.41	Account Status				X
PV1.42	Pending Location				X
PV1.43	Prior Temporary Location				X
PV1.44	Admit Date/Time				X
PV1.45	Discharge Date/Time				X
PV1.46	Current Patient Balance				X
PV1.47	Total Charges				X
PV1.48	Total Adjustments				X
PV1.49	Total Payments				X

Field	Name	Type	Length	Comments	Req'd
PV1.50	Alternate Visit ID				X
PV1.51	Visit Indicator				X
PV1.52	Other Healthcare Provider				X

DG1—Diagnosis Segment

The Diagnosis (DG1) segment contains patient diagnosis information.

Field	Name	Type	Length	Comments	Req'd
DG1.00	Segment Type ID	ST	4	Must be DG1.	R
DG1.01	Set ID - Patient ID	SI	4	Used to number DG1 message segments sequentially beginning with 1.	R
DG1.02	Diagnosis Coding Method	ID	2		R
DG1.03	Diagnosis Code	CE	60	Format: <identifier (ST)> ^ <text (ST)> ^ <name of coding system (ST)> ^ <alternate identifier (ST)> ^ <alternate text (ST)> ^ <name of alternate coding system (ST)> Both ICD-9 and ICD-10 codes are supported before and after the government ICD-10 compliance date. The value in DG1.03.03 is used to define which ICD code set is being used, as follows: <ul style="list-style-type: none">DG1.03.01 = <i>ICD-9_code</i> or <i>ICD-10_code</i>DG1.03.03 = I9 or I10 This value appears on the <i>External Diagnoses</i> tab.	O
DG1.04	Diagnosis Description	ST	40	Diagnosis name and description.	O
DG1.05	Diagnosis Date/Time	TS	26	Date/Time that the diagnosis was determined. Format: <i>yyyymmddhhmmss</i>	O
DG1.06	Diagnosis Type	IS	2	Valid values: <ul style="list-style-type: none">A = AdmittingW = WorkingF = Final	R
DG1.07	Major Diagnostic Category	CE	60		O
DG1.08	Diagnostic Related Group	CE	60		O

Field	Name	Type	Length	Comments	Req'd
DG1.09	DRG Approval Indicator	ID	2		0
DG1.10	DRG Grouper Review Code	IS	2		0
DG1.11	Outlier Type	CE	60		0
DG1.12	Outlier Days	NM	3		0
DG1.13	Outlier Cost	CP	12		0
DG1.14	Grouper Version and Type	ST	4		0
DG1.15	Diagnosis Priority	NM	2		0
DG1.16	Diagnosing Clinician	XCN	60		0
DG1.17	Diagnosis Classification	IS	3	Valid values: <ul style="list-style-type: none"> • C = Consultation • D = Diagnosis • M = Medication (antibiotic) • O = Other • R = Radiological scheduling (not using ICDA codes) • S = Sign and symptom • T = Tissue diagnosis • I = Invasive procedure not classified elsewhere (I.V., catheter, etc.) 	0
DG1.18	Confidential Indicator	ID	1		0
DG1.19	Attestation Date/Time	TS	26		0

RGS—Resource Group Segment

The Resource Group (RGS) segment contains resource group information. The RGS segment is required by HL7, so it must be sent in the SIU message. However, [redacted] does not use any of the information submitted in this segment.

Field	Name	Type	Length	Comments	Req'd
RGS.00	Segment Type ID	ST	4	Must be RGS.	R
RGS.01	Set ID - RGS	SI	4		R

Field	Name	Type	Length	Comments	Req'd
RGS.02	Segment Action Code	ID	3		O
RGS.03	Resource Group ID	CE	200		O

AIS—Appointment Information–Services Segment

The Appointment Information–Services (AIS) segment contains information about various kinds of services that can be scheduled. Services included in a transaction using this segment are assumed to be controlled by a schedule on a schedule filler application. Services not controlled by a schedule are not identified on a schedule request using this segment.

Note: This segment is not used by [redacted].

Field	Name	Type	Length	Comments	Req'd
AIS.00	Segment Type ID	ST	4	Must be AIS.	R
AIS.01	Set ID - AIS	SI	4		R
AIS.02	Segment Action Code	ID	3		C
AIS.03	Universal Service Identifier	CE	200		R
AIS.04	Start Date/Time	TS	26		C
AIS.05	Start Date/Time Offset	NM	20		C
AIS.06	Start Date/Time Units	CE	200		C
AIS.07	Duration	NM	20		O
AIS.08	Duration Units	CE	200		O
AIS.09	Allow Substitution Code	IS	10		C
AIS.10	Filler Status Code	CE	200		C

AIG—Appointment Information–General Resources Segment

The Appointment Information–General Resources (AIG) segment contains information about various kinds of resources (other than those with specifically defined segments in this chapter) that can be scheduled. Resources described by this segment are general kinds of resources, such as equipment, that are identified with a simple identification code.

Note: This segment is not used by [redacted].

Field	Name	Type	Length	Comments	Req'd
AIG.00	Segment Type ID	ST	4	Must be AIG.	R
AIG.01	Set ID - AIG	SI	4		R
AIG.02	Segment Action Code	ID	3		C
AIG.03	Resource ID	CE	200		C
AIG.04	Resource Type	CE	200		R
AIG.05	Resource Group	CE	200		O
AIG.06	Resource Quantity	NM	5		O
AIG.07	Resource Quantity Units	CE	200		O
AIG.08	Start Date/Time	TS	26		C
AIG.09	Start Date/Time Offset	NM	20		C
AIG.10	Start Date/Time Offset Units	CE	200		C
AIG.11	Duration	NM	20		O
AIG.12	Duration Units	CE	200		O
AIG.13	Allow Substitution Code	IS	10		C
AIG.14	Filler Status Code	CE	200		C

AIL—Appointment Information–Location Segment

The Appointment Information–Location (AIL) segment contains information about location resources (meeting rooms, operating rooms, examination rooms, or other locations) that can be scheduled. Resources included in a transaction using this segment are assumed to be controlled by a schedule on a schedule filler application. Resources not controlled by a schedule are not identified on a schedule request using this segment. Location resources are identified with this specific segment because of the specific encoding of locations used by the HL7 specification.

Note: This segment is not used by [redacted].

Field	Name	Type	Length	Comments	Req'd
AIL.00	Segment Type ID	ST	4	Must be AIL.	R
AIL.01	Set ID - AIL	SI	4		R
AIL.02	Segment Action Code	ID	1		C

Field	Name	Type	Length	Comments	Req'd
AIL.03	Location Resource ID	PL	80		C
AIL.04	Location Type	CE	200		R
AIL.05	Location Group				X
AIL.06	Start Date/Time	TS	26		C
AIL.07	Start Date/Time Offset	NM	20		C
AIL.08	Start Date/Time Offset Units	CE	200		C
AIL.09	Duration				X
AIL.10	Duration Units				X
AIL.11	Allow Substitution Code	IS	10		C
AIL.12	Filler Status Code				X

AIP—Appointment Information–Personnel Resource Segment

The Appointment Information–Personnel Resource (AIP) segment contains information about the personnel types that can be scheduled. Personnel included in a transaction using this segment are assumed to be controlled by a schedule on a schedule filler application. Personnel not controlled by a schedule are not identified on a schedule request using this segment. The types of personnel described on this segment include any healthcare provider in the institution controlled by a schedule (for example: technicians, physicians, nurses, surgeons, anesthesiologists, or CRNAs).

This segment is optional when submitting an SIU message to [redacted]. However, if you do send the AIP segment, the fields identified as required below must be submitted in the message.

Field	Name	Type	Length	Comments	Req'd
AIP.00	Segment Type ID	ST	4	Must be AIP.	R
AIP.01	Set ID - AIP	SI	4		R
AIP.02	Segment Action Code				X

Field	Name	Type	Length	Comments	Req'd
AIP.03	Personnel Resource ID	XCN	80	<p>Contains the ID number and name of the person being requested or scheduled for an appointment. Identifies a specific person being requested, or a specific person who has been scheduled as a resource for an appointment. If the specific person is not known but the type of resource is, AIP.04 (Resource Role) is used to identify the type of personnel resource required or scheduled.</p> <p>Format:<ID number (ST)> ^ <family name (ST)> ^ <given name (ST)> ^ <middle initial or name (ST)> ^ <suffix (e.g., JR or III) (ST)> ^ <prefix (e.g., DR) (ST)> ^ <degree (e.g., MD) (ST)> ^ <source table (IS)> ^ <assigning authority (HD)> ^ <name type (ID)> ^ <identifier check digit (ST)> ^ <code identifying the check digit scheme employed (ID)> ^ <identifier type code (IS)> ^ <assigning facility ID (HD)></p> <p>Subcomponents of assigning authority: <namespace ID (IS)> & <universal ID (ST)> & <universal ID type (ID)></p> <p>Subcomponents of assigning facility ID: <namespace ID (IS)> & <universal ID (ST)> & <universal ID type (ID)></p> <p>Valid value for source table: NPI.</p>	R
AIP.04	Resource Role	CE	200	<p>Identifies the role of the personnel requested/scheduled for an appointment. For requests, if a specific person is not identified in the AIP.03 personnel resource ID field, then this field identifies the type of person that should be scheduled by the filler application. At a minimum, the AIP.04 (Resource Role) role identifier component should be valued.</p>	R

Field	Name	Type	Length	Comments	Req'd
				Format: <identifier (ST)> ^ <text (ST)> ^ <name of coding system (ST)> ^ <alternate identifier (ST)> ^ <alternate text (ST)> ^ <name of alternate coding system (ST)>	
AIP.05	Resource Group				X
AIP.06	Start Date/Time				X
AIP.07	Start Date/Time Offset				X
AIP.08	Start Date/Time Offset Units				X
AIP.09	Duration				X
AIP.10	Duration Units				X
AIP.11	Allow Substitution Code				X
AIP.12	Filler Status Code				X

DFT^P03 (Detail Financial Transaction) Message Segment Specifications

The Detail Financial Transaction (DFT) message describes a financial transaction transmitted between systems, allowing [redacted] to send billing information to a vendor practice management system (PMS) in provider offices. This eliminates the need for the billing data to be entered manually into the PMS. If no PMS is available, the provider office can still electronically capture the billing details and view these details in [redacted].

The DFT message is outbound only ([redacted] to partner application). The following message is supported:

P03 - Post detail final transaction

For a sample message, see [“Sample 6—Detail Financial Transaction” on page 179.](#)

Message Segment Hierarchy

The DFT^P03 message submitted from [redacted] follows the message segment hierarchy specified below:

MSH	Message Header (<i>Required</i> ; one per file)
EVN	Event Type (<i>Required</i>)
PID	Patient Identification (<i>Required</i> ; one per file)
[PD1]	Additional Demographics (<i>Optional</i>)
[PV1]	Patient Visit (<i>Optional</i>)
[PV2]	Patient Visit - Additional Info (<i>Optional</i> ; not used)
[{DB1}]	Disability Information (<i>Optional</i> ; not used)
[{OBX}]	Observation/Result (<i>Optional</i> ; not used)
{FT1	Financial Transaction (<i>Required</i> ; multiple allowed, one segment for each procedure code.)
[{PR1	Procedure (<i>Optional</i> ; multiple allowed, one per procedure code)
[{ROL}]	Role (<i>Optional</i> ; not used)
}]	
}	
[{DG1}]	Diagnosis (<i>Optional</i> ; multiple allowed)
[DRG]	Diagnosis Related Group (<i>Optional</i> ; not used)
[{GT1}]	Guarantor (<i>Optional</i> ; multiple allowed)
[
{	
IN1	Insurance (<i>Optional</i> ; multiple allowed)
[IN2]	Insurance-Additional Info. (<i>Optional</i> ; not used)
[IN3]	Insurance-Additional Info.-Cert. (<i>Optional</i> ; not used)
}	
]	
[ACC]	Accident Information (<i>Optional</i> ; not used)

Note: If no procedure codes are available in the billing data, [redacted] submits the DFT message as follows:

- Only one FT1 (Financial Transaction) segment is created, and FT1.25 (Procedure Code) is blank.

- No PR1 (Procedure) segment is created.

In the hierarchy shown above, braces ({ }) indicate where multiple items are allowed, and brackets ([]) indicate items that are optional.

Message Segment Specifications

This section provides detailed specifications for each segment of the DFT^P03 message that can be submitted by [redacted]. Supported message segments include the following:

- “MSH—Message Header Segment” below.
- “EVN—Event Type Segment” on page 152.
- “PID—Patient Identification Segment” on page 152.
- “PD1—Patient Additional Demographic Segment” on page 158.
- “PV1—Patient Visit Data Segment ” on page 159.
- “FT1—Financial Transaction Segment” on page 162.
- “PR1—Procedure Segment” on page 166.
- “DG1—Diagnosis Segment ” on page 168.
- “GT1—Guarantor Segment” on page 170.
- “IN1—Insurance Segment ” on page 174.

Notes:

- DFT^P03 message segments that are not submitted by [redacted] are **not** included in this section; for detailed specifications, refer to the HL7 2.3 Specification.
- All date timestamps are set to Coordinated Universal Time (UTC).

MSH—Message Header Segment

The Message Header (MSH) segment defines the intent, source, destination, and some specifics of the syntax of a message.

Field	Name	Type	Length	Comments	Req'd
MSH.00	Segment Type ID	ST	4	Must be MSH.	R
MSH.01	Field Separator	ST	1	The separator between the message segment ID (“MSH”) and the first real data field (MSH.02). Defines the character to be used as a separator for the rest of the message. The value is a vertical bar ().	R
MSH.02	Encoding Characters	ST	4	Four characters that are used in the following order: component separator, repetition separator, escape character, and subcomponent separator. Format: ^~\&	R

Field	Name	Type	Length	Comments	Req'd
				These values are recommended by HL7 and are the only values supported.	
MSH.03	Sending Application			The name of the sending application.	X
MSH.04	Sending Facility	HD	180	The sending facility. This identifies the owner of the patient data and who initiated the request.	R
MSH.05	Receiving Application			The receiving application identifier.	X
MSH.06	Receiving Facility	HD	180	The receiving facility. The account number defined for the requester.	R
MSH.07	Date/Time of Message	TS	26	The date and time that the sending system created the message. Format: yyyymmddhhmmss Note: All date timestamps are set to Coordinated Universal Time (UTC).	R
MSH.08	Security				X
MSH.09	Message Type	CM	7	The type of message being transmitted, and the event leading to the creation of the message. Acceptable values for this field: DFT^P03	R
MSH.10	Message Control ID	ST	20	A number or other data that uniquely identifies the message in its transmission to the receiving system.	R
MSH.11	Processing ID	PT	3	The placer system's intent for the message. Valid values include: <ul style="list-style-type: none"> • P = Production • T = Testing 	R
MSH.12	Version ID	ID	8	The value for this field is 2.3.	R
MSH.13	Sequence Number				X
MSH.14	Continuation Pointer				X
MSH.15	Accept Acknowledgment Type				X

Field	Name	Type	Length	Comments	Req'd
MSH.16	Application Acknowledgment Type				X
MSH.17	Country Code				X
MSH.18	Character Set				X
MSH.19	Principal Language of Message				X

EVN—Event Type Segment

The Event Type (EVN) segment is used to communicate necessary trigger event information to receiving applications.

Field	Name	Type	Length	Comments	Req'd
EVN.00	Segment Type ID	ST	4	Must be EVN.	R
EVN.01	Event Type Code	ID	3	Note: This field has been retained for backward compatibility only. The second component (trigger event) of MSH.09 (Message Type) will be used to transmit event type code information. Will be set to P03.	R
EVN.02	Recorded Date/Time				X
EVN.03	Date/Time Planned Event				X
EVN.04	Event Reason Code				X
EVN.05	Operator ID				X
EVN.06	Event Occurred				X

PID—Patient Identification Segment

The Patient Identification (PID) segment is used by all applications as the primary means of communicating patient identification information. This segment contains permanent patient identifying and demographic information that, for the most part, is not likely to change frequently.

Field	Name	Type	Length	Comments	Req'd
PID.00	Segment Type ID	ST	4	Must be PID.	R
PID.01	Set ID	SI	4	Will be set to 1.	O
PID.02	Patient ID	CX	40	<p>[redacted] patient identifier used to uniquely identify a patient within [redacted].</p> <p>When the patient is from another institution, outside office, etc., the identifier used by that institution can be shown in this field. This may be a number that multiple disparate corporations or facilities share.</p> <p>Example: BB1123</p>	R
PID.03	Patient ID	CX	40	<p>The primary identifier, or other identifiers used by the facility to identify a patient uniquely (for example, medical record number, billing number, birth registry, etc.).</p> <p>This is the patient identifier associated with the non-[redacted] system, and it is not always available within [redacted].</p>	O
PID.04	Alternate Patient ID (PID)				X
PID.05	Patient Name	XPN	48	<p>No more than 48 characters, including the delimiter between the last and first names. At least one character for first and last name. Alphanumeric data only, but a numeric value cannot be used as the first character of the last name.</p> <p><family name (ST)> ^ <given name (ST)> ^ <middle initial or name (ST)> ^ <suffix (for example, JR or III) (ST)> ^ <prefix (for example, DR) (ST)> ^ <degree (for example, MD) (ST)> ^ <name type code (ID)></p> <p>The [redacted] verifies that the field length complies with the rules above.</p>	R
PID.06	Mother's Maiden Name				X
PID.07	Date/Time of Birth	TS	26	<p>Patient DOB.</p> <p>Format: <i>yyyymmdd</i></p>	O

Field	Name	Type	Length	Comments	Req'd
PID.08	Sex	IS	1	<p>Possible values are listed below.</p> <ul style="list-style-type: none"> • M = Male • F = Female • O = Other • U = Unknown • A = Ambiguous • N = Not applicable • Z = Undifferentiated • blank 	0
PID.09	Patient Alias	XPN	48	<p>Patient alias name. Only the first five subfields (Family Name, Given Name, Middle Name or Initial, Suffix, Prefix, and Degree) are passed from [redacted].</p>	0
PID.10	Race	CE	250	<p>Repeating field with a maximum of three instances allowed. This field supports both HL7 2.3 and HL7 3.0 values.</p> <p>For HL7 2.3, values supported by [redacted] are listed below.</p> <ul style="list-style-type: none"> • W = White • B = Black • A = Asian • I = American Indian or Alaskan • O = Other <p>For HL7 3.0, values supported by [redacted] are the same as the Centers for Disease Control and Prevention (CDC) race code set (http://phinvads.cdc.gov/vads/ViewCodeSystemConcept.action?oid=2.16.840.1.113883.6.238&code=1000-9) with a Concept Status Date of 09/26/2008.</p> <p>Example: Because this is a repeating field, a patient whose race is Apache (1010-8), White (2106-3), and Asian (2028-9), would be submitted as follows:</p> <p>1010-8^2106-3^2028-9</p>	0
PID.11	Patient Address	XAD	106	<p>No more than 106 characters; however, limits may apply to some subfields depending on your implementation. Check with your project manager for the subfield limits. Alphanumeric data only.</p>	0

Field	Name	Type	Length	Comments	Req'd
				<code><street address (ST)> ^ <other designation (ST)> ^ <city (ST)> ^ <state or province (ST)> ^ <zip or postal code (ST)> ^ <country (ID)> ^ <address type (ID)> ^ <other geographic designation (ST)> ^ <county/parish code (IS)> ^ <census tract (IS)></code>	
PID.12	County Code				X
PID.13	Phone Number - Home	XTN	255	<p>Repeating field that can included Home phone number, Cell/Mobile phone number, and email address. Note the following:</p> <ul style="list-style-type: none"> • If the Home phone number is sent, it will be the first occurrence. • If the Cell/Mobile phone number is sent, then <code><telecommunication equipment type (ID)></code> will equal CP. • If there is a Cell/Mobile phone number but no primary Home phone number, the first sequence will be blank (~). • The accepted length for each phone number is 20 numeric characters. No dashes or other separating characters are allowed. <p>Example with home and cell phone (extension and country code omitted) and email:</p> <pre>^^^^333^4445555~^NET^^ example@email.com~^^CP^^^777^8889999</pre> <p>Example with home and cell phone (including country code):</p> <pre>^^^^1^333^4445555^~ ^^CP^^1^777^8889999^</pre>	0
PID.14	Phone Number - Business	XTN	255	<p>Length of this field is 20 numeric characters. No dashes or other separating characters.</p> <p>Example with extension (country code omitted):</p> <pre>^^^^333^4445555^999^</pre> <p>Example with extension and country code:</p> <pre>^^^^1^333^4445555^999^</pre>	0
PID.15	Language - Patient	CE	250	<p>Values supported by [redacted] are listed in “Patient Language (PID.15)” on page 180.</p> <p>This field uses the HL7 3.0 field length of 250 rather than the HL7 2.3 field length of 60.</p>	0

Field	Name	Type	Length	Comments	Req'd
PID.16	Marital Status	IS	1	<p>Values supported by [redacted] are listed below.</p> <ul style="list-style-type: none"> • P = Polygamous • W = Widowed • D = Divorced • M = Married • A = Annulled • S = Never Married • L = Legally Separated • I = Interlocutory • T = Domestic Partner 	0
PID.17	Religion	IS	3	Patient religion	0
PID.18	Patient Account Number	CX	20	<p>Contains the patient account number assigned by accounting and to which all charges, payments, etc., are recorded. It is used to identify the patient's account.</p> <p>Only the first subfield (ID Number) is passed from [redacted].</p>	0
PID.19	SSN Number - Patient	ST	16	Must contain 9 numeric digits, or 11 with hyphens. Cannot be all zeros, and first three numbers cannot be 666, 800, or 900.	0
PID.20	Driver's Lic Num - Patient	DLN	25	<p>DLN format:</p> <pre><license number (ST)> ^ <issuing state, province, country (IS)> ^ <expiration date (DT)></pre> <p>Only the first subfield (License Number) is passed from [redacted].</p>	0
PID.21	Mother's Identifier	CX	20	<p>Used, for example, as a link field for newborns. Typically a patient ID or account number may be used. This field can contain multiple identifiers for the same mother.</p> <p>Only the first subfield (ID Number) is passed from [redacted].</p>	0
PID.22	Ethnic Group	CE	250	<p>This field supports both HL7 2.3 and HL7 3.0 values.</p> <p>For HL7 2.3, values supported by [redacted] are listed below.</p> <ul style="list-style-type: none"> • H = Hispanic • N = Non-Hispanic 	0

Field	Name	Type	Length	Comments	Req'd
				<ul style="list-style-type: none"> • U = Unknown <p>For HL7 3.0, values supported by [redacted] are the same as the Centers for Disease Control and Prevention (CDC) ethnicity code set (http://phinvads.cdc.gov/vads/ViewCodeSystemConcept.action?oid=2.16.840.1.113883.6.238&code=2133-7) with a Concept Status Date of 09/26/2008.</p>	
PID.23	Birth Place	ST	60	Indicates the location of the patient's birth.	0
PID.24	Multiple Birth Indicator	ID	2	<p>Indicates whether or not the patient was part of a multiple birth (Yes/No indicator). Valid values:</p> <ul style="list-style-type: none"> • Y = Yes • N = No • blank <p>The [redacted] validates this field.</p>	0
PID.25	Birth Order	NM	2	When a patient was part of a multiple birth, a number indicating the patient's birth order is entered in this field.	0
PID.26	Citizenship	IS	4	Contains the patient's country of citizenship.	0
PID.27	Veterans Military Status	CE	60	<p>Contains the military status assigned to a veteran.</p> <p>Only the first subfield (Identifier) is passed from [redacted].</p>	0
PID.28	Nationality	CD	80	<p>Contains a code that identifies the nation or national grouping to which the insured person belongs. This information may be different from a person's citizenship in countries in which multiple nationalities are recognized (for example, Spain: Basque, Catalan, etc.).</p> <p>Only the first subfield (Identifier) is passed from [redacted].</p>	0

Field	Name	Type	Length	Comments	Req'd
PID.29	Patient Death Date & Time	TS	26	Contains the date and time at which the patient death occurred. Format: yyyymmdd	O
PID.30	Patient Death Indicator	ID	1	Indicates whether or not the patient is deceased (Yes/No indicator). Valid values: <ul style="list-style-type: none"> • Y = Yes • N = No • blank The [redacted] validates this field.	O

PD1—Patient Additional Demographic Segment

The Patient Additional Demographic (PD1) segment contains demographic information that is likely to change about the patient.

Field	Name	Type	Length	Comments	Req'd
PD1.00	Segment Type ID	ST	4	Will always be PD1.	R
PD1.01	Living Dependency				X
PD1.02	Living Arrangement				X
PD1.03	Patient Primary Facility				X
PD1.04	Patient Primary Care Provider Name & ID No.				X
PD1.05	Student Indicator				X
PD1.06	Handicap				X
PD1.07	Living Will				X
PD1.08	Organ Donor				X
PD1.09	Separate Bill				X
PD1.10	Duplicate Patient				X
PD1.11	Publicity Indicator	CE	1	Format: <identifier (ST)> ^ <text (ST)> ^ <name of coding system (ST)> ^ <alternate identifier (ST)> ^ <alternate text (ST)> ^ <name of alternate coding system (ST)> Valid outbound values for PD1.11.01:	O

Field	Name	Type	Length	Comments	Req'd
				<ul style="list-style-type: none"> • Y = Yes • N = No • P = Pending • blank 	
PD1.12	Protection Indicator	ID	1	Valid outbound values: <ul style="list-style-type: none"> • Y = Yes • N = No • P = Pending • blank 	O

PV1—Patient Visit Data Segment

The Patient Visit Data (PV1) segment is used by registration/patient administration applications to communicate information on a visit-specific basis. This segment can be used to send multiple-visit statistic records to the same patient account, or single-visit records to more than one account.

Field	Name	Type	Length	Comments	Req'd
PV1.00	Segment Type ID	ST	4	Must be PV1.	R
PV1.01	Set ID	SI	4	Will always be 1.	O
PV1.02	Patient Class	IS	1	For outbound messages, this value will be N (Not Applicable).	R
PV1.03	Assigned Patient Location				X
PV1.04	Admission Type				X
PV1.05	Preadmit Number				X
PV1.06	Prior Patient Location				X
PV1.07	Attending Doctor				X
PV1.08	Referring Doctor				X
PV1.09	Consulting Doctor				X
PV1.10	Hospital Service				X
PV1.11	Temporary Location				X
PV1.12	Preadmit Test Indicator				X

Field	Name	Type	Length	Comments	Req'd
PV1.13	Readmission Indicator				X
PV1.14	Admit Source				X
PV1.15	Ambulatory Status				X
PV1.16	VIP Indicator				X
PV1.17	Admitting Doctor				X
PV1.18	Patient Type				X
PV1.19	Visit Number	CX	20	<p>Format: <ID (ST)> ^ <check digit (ST)> ^ <code identifying the check digit scheme employed (ID)> ^ <assigning authority (HD)> ^ <identifier type code (IS)> ^ <assigning facility (HD)></p> <p>Subfields sent by [redacted] as populated in SCH.02 (Filler Appointment ID) in the original SIU message:</p> <ul style="list-style-type: none"> • PV1.19.01 = The vendor-specific appointment ID as populated in SCH.01.01 • PV1.19.04 = The system that created the ID, as populated in SCH.02.02 <p>PV1.19 is not always populated. The following scenarios explain when you can expect a value for PV1.19:</p> <ul style="list-style-type: none"> • If the patient has one appointment and one superbill, the first DFT message sent to the partner application after the appointment contains the visit number (appointment ID) in PV1.19. • If the patient has one appointment and two superbills, PV1.19 is populated only in the first superbill. • If the patient has two appointments on the same day and two superbills, PV1.19 is populated as follows: <ul style="list-style-type: none"> • For the first SOAP note, the [redacted] user is prompted to select the correct appointment, and that value is sent in PV1.19 in the first superbill. 	0

Field	Name	Type	Length	Comments	Req'd
				<ul style="list-style-type: none"> For the second SOAP note, the remaining appointment is automatically sent in PV1.19 in the second superbill. If the patient has two appointments and one superbill, then the other appointment ID is available to be billed, as follows: <ul style="list-style-type: none"> If you want to send a superbill without that ID, then you must manually select an older, closed appointment (one that has already been billed out) or the new bill will contain the open appointment ID. If another appointment is made so that there are two open appointment IDs, select the appointment ID to use. 	
PV1.20	Financial Class				X
PV1.21	Charge Price Indicator				X
PV1.22	Courtesy Code				X
PV1.23	Credit Rating				X
PV1.24	Contract Code				X
PV1.25	Contract Effective Date				X
PV1.26	Contract Amount				X
PV1.27	Contract Period				X
PV1.28	Interest Code				X
PV1.29	Transfer to Bad Debt Code				X
PV1.30	Transfer to Bad Debt Date				X
PV1.31	Bad Debt Agency Code				X
PV1.32	Bad Debt Transfer Amount				X

Field	Name	Type	Length	Comments	Req'd
PV1.33	Bad Debt Recovery Amount				X
PV1.34	Delete Account Indicator				X
PV1.35	Delete Account Date				X
PV1.36	Discharge Disposition				X
PV1.37	Discharged to Location				X
PV1.38	Diet Type				X
PV1.39	Servicing Facility				X
PV1.40	Bed Status				X
PV1.41	Account Status				X
PV1.42	Pending Location				X
PV1.43	Prior Temporary Location				X
PV1.44	Admit Date/Time				X
PV1.45	Discharge Date/Time				X
PV1.46	Current Patient Balance				X
PV1.47	Total Charges				X
PV1.48	Total Adjustments				X
PV1.49	Total Payments				X
PV1.50	Alternate Visit ID				X
PV1.51	Visit Indicator				X
PV1.52	Other Healthcare Provider				X

FT1—Financial Transaction Segment

The FT1 segment contains the detail data necessary to post charges, payments, adjustments, etc., to patient accounting records.

Field	Name	Type	Length	Comments	Req'd
FT1.00	Segment Type ID	ST	4	Must be FT1.	R
FT1.01	Set ID - FT1	SI	4	Contains the number that identifies this transaction. For the first occurrence of the segment the sequence number shall be 1, for the second occurrence it shall be 2, etc.	O
FT1.02	Transaction ID				X
FT1.03	Transaction Batch ID				X
FT1.04	Transaction Date	TS	26	Contains the date of the transaction per the [redacted] encounter note.	R
FT1.05	Transaction Posting Date	TS	26	Contains the date of the transaction that was sent to the financial system for posting.	O
FT1.06	Transaction Type	IS	8	Contains the code that identifies the type of transaction: <ul style="list-style-type: none"> • CG = Charge • CD = Credit • PY = Payment • AJ = Adjustment 	R
FT1.07	Transaction Code	CE	80	Contains the ID assigned by [redacted] to this transaction (bill).	R
FT1.08	Transaction Description				X
FT1.09	Transaction Description - Alt				X
FT1.10	Transaction Quantity	NM	6	Contains the quantity of items associated with this transaction.	O
FT1.11	Transaction Amount - Extended				X
FT1.12	Transaction Amount - Unit				X
FT1.13	Department Code				X
FT1.14	Insurance Plan ID				X
FT1.15	Insurance Amount				X

Field	Name	Type	Length	Comments	Req'd
FT1.16	Assigned Patient Location	PL	80	This field is not supported.	0
FT1.17	Fee Schedule				X
FT1.18	Patient Type				X
FT1.19	Diagnosis Code	CE	60	<p>Contains the primary diagnosis code for billing purposes and is the most current diagnosis code that has been assigned to the patient. This is a repeating field that contains all of the diagnosis codes for the procedure code specified in FT1.25 (Procedure Code).</p> <p>Format: <identifier (ST)> ^ <text (ST)> ^ <name of coding system (ST)> ^ <alternate identifier (ST)> ^ <alternate text (ST)> ^ <name of alternate coding system (ST)></p> <p>Both ICD-9 and ICD-10 codes are supported before and after the government ICD-10 compliance date. The value in FT1.19.03 is used to define which ICD code set is being used, as follows:</p> <ul style="list-style-type: none"> • FT1.19.01 = Diagnosis code • FT1.19.02 = Diagnosis text • FT1.19.03 = Coding system: I9 or I10 	0
FT1.20	Performed By Code	XCN	120	<p>Contains the composite number/name of the person/group that performed the test/procedure/transaction, etc.</p> <p>Multiple names and identifiers for the same practitioner may be sent in this field, not multiple practitioners. The legal name is assumed to be in the first repetition. When the legal name is not sent, a repeat delimiter must be sent first for the first repetition.</p>	0

Field	Name	Type	Length	Comments	Req'd
				Format: <ID number (ST)> ^ <family name (ST)> ^ <given name (ST)> ^ <middle initial or name (ST)> ^ <suffix (e.g., JR or III) (ST)> ^ <prefix (e.g., DR) (ST)> ^ <degree (e.g., MD) (ST)> ^ <source table (IS)> ^ <assigning authority (HD)> ^ <name type (ID)> ^ <identifier check digit (ST)> ^ <code identifying the check digit scheme employed (ID)> ^ <identifier type code (IS)> ^ <assigning facility ID (HD)>	
FT1.21	Ordered By Code	XCN	120	<p>Contains the composite number/name of the person/group that ordered the test/procedure/transaction, etc.</p> <p>Multiple names and identifiers for the same practitioner may be sent in this field, not multiple practitioners. The legal name is assumed to be in the first repetition. When the legal name is not sent, a repeat delimiter must be sent first for the first repetition.</p>	0
FT1.22	Unit Cost				X
FT1.23	Filler Order Number				X
FT1.24	Entered By Code				X
FT1.25	Procedure Code	CE	80	<p>Contains a unique identifier assigned to the procedure, if any, associated with the charge. This field is a CE data type for compatibility with clinical and ancillary systems.</p> <p>Format: <identifier (ST)> ^ <text (ST)> ^ <name of coding system (ST)> ^ <alternate identifier (ST)> ^ <alternate text (ST)> ^ <name of alternate coding system (ST)></p> <p>Subfields sent by [redacted]:</p> <ul style="list-style-type: none"> • FT1.25.01 = PC (Procedure Code) • FT1.25.02 = PC description 	0

Field	Name	Type	Length	Comments	Req'd
				<ul style="list-style-type: none"> FT1.25.03 = PC coding system: CPT or HCPCS 	
FT1.26	Procedure Code Modifier	CE	80	<p>When applicable, contains the procedure code modifier to the procedure code reported in FT1.25 (Procedure Code). Procedure code modifiers are defined by regulatory agencies such as Centers for Medicare and Medicaid Services (CMS) and the American Medical Association (AMA). Multiple modifiers may be reported. The modifiers are sequenced in priority according to user entry. This is a requirement of the Universal Bill (UB) and the 1500 claim forms. Multiple modifiers are allowed and the order placed on the form affects reimbursement.</p> <p>This is a repeating field with each instance delimited by ~ (tilde).</p> <p>Format: <identifier (ST)> ^ <text (ST)> ^ <name of coding system (ST)> ^ <alternate identifier (ST)> ^ <alternate text (ST)> ^ <name of alternate coding system (ST)></p> <p>Subfields sent by [redacted]:</p> <ul style="list-style-type: none"> FT1.26.01 = PMC (Procedure Modifier Code) FT1.26.02 = PMC description FT1.26.03 = PMC coding system: MOD (FT1.26.03 is always set to MOD per Joannie's review 5/3/2011.) <p>Note: This is an HL7 2.4 field.</p>	0

PR1—Procedure Segment

The PR1 segment contains information relative to various types of procedures that can be performed on a patient. The PR1 segment is used to send multiple procedures, for example, for medical records encoding or for billing systems.

Field	Name	Type	Length	Comments	Req'd
PR1.00	Segment Type ID	ST	4	Must be PR1 .	R
PR1.01	Set ID - PR1	SI	4	Contains the number that identifies this transaction. For the first occurrence of the segment the sequence number shall be 1, for the second occurrence it shall be 2, etc.	R
PR1.02	Procedure Coding Method				X
PR1.03	Procedure Code	CE	80	Used instead of PR1.02 and PR1.04 (which are retained for backward compatibility only) for a unique identifier assigned to the procedure. The value returned for the coding system will be either Current Procedural Terminology (CPT) or Healthcare Common Procedure Coding System (HCPCS). This is a repeating field with each instance delimited by ~ (tilde).	R
PR1.04	Procedure Description				X
PR1.05	Procedure Date/Time	TS	26	Contains the date/time that the procedure was performed per the [redacted] encounter note. Format: <i>yyyymmdd</i>	R
PR1.06	Procedure Functional Type				X
PR1.07	Procedure Minutes				X
PR1.08	Anesthesiologist				X
PR1.09	Anesthesia Code				X
PR1.10	Anesthesia Minutes				X
PR1.11	Surgeon				X
PR1.12	Procedure Practitioner				X
PR1.13	Consent Code				X

Field	Name	Type	Length	Comments	Req'd
PR1.14	Procedure Priority				X
PR1.15	Associated Diagnosis Code	CE	80	<p>Contains the diagnosis that is the primary reason this procedure was performed.</p> <p>Format: <identifier (ST)> ^ <text (ST)> ^ <name of coding system (ST)> ^ <alternate identifier (ST)> ^ <alternate text (ST)> ^ <name of alternate coding system (ST)></p> <p>Both ICD-9 and ICD-10 codes are supported before and after the government ICD-10 compliance date. The values of the subfields sent by [redacted] define which ICD code set is being used, as follows:</p> <ul style="list-style-type: none"> PR1.15.01 = ICD-9_code or ICD-10_code PR1.15.03 = I9 or I10 <p>Note: This is a non-repeating field in HL7 2.3, but this [redacted] specification uses the HL7 2.5.1 definition, which allows the field to repeat.</p>	O

DG1—Diagnosis Segment

The Diagnosis (DG1) segment contains patient diagnosis information.

Note: Diagnosis codes sent in the DG1 segment are diagnoses that were not associated with a specific procedure code.

Field	Name	Type	Length	Comments	Req'd
DG1.00	Segment Type ID	ST	4	Must be DG1.	R
DG1.01	Set ID - Patient ID	SI	4	Used to number DG1 message segments sequentially beginning with 1.	R
DG1.02	Diagnosis Coding Method	ID	2		X
DG1.03	Diagnosis Code	CE	60	<p>Format: <identifier (ST)> ^ <text (ST)> ^ <name of coding system (ST)> ^ <alternate identifier (ST)> ^ <alternate text (ST)> ^ <name of alternate coding system (ST)></p>	O

Field	Name	Type	Length	Comments	Req'd
				<p>Both ICD-9 and ICD-10 codes are supported before and after the government ICD-10 compliance date. The value in DG1.03.03 is used to define which ICD code set is being used, as follows:</p> <ul style="list-style-type: none"> DG1.03.01 = <i>ICD-9_code</i> or <i>ICD-10_code</i> DG1.03.03 = I9 or I10 <p>The values appear on the <i>External Diagnoses</i> tab.</p>	
DG1.04	Diagnosis Description				X
DG1.05	Diagnosis Date/Time	TS	26	<p>Date/Time that the diagnosis was determined.</p> <p>Format: <i>yyyymmddhhmmss</i></p> <p>Note: All date timestamps are set to Coordinated Universal Time (UTC).</p>	O
DG1.06	Diagnosis Type	IS	2	<p>Valid values:</p> <ul style="list-style-type: none"> A = Admitting W = Working F = Final 	R
DG1.07	Major Diagnostic Category	CE	60		X
DG1.08	Diagnostic Related Group	CE	60		X
DG1.09	DRG Approval Indicator	ID	2		X
DG1.10	DRG Grouper Review Code	IS	2		X
DG1.11	Outlier Type	CE	60		X
DG1.12	Outlier Days	NM	3		X
DG1.13	Outlier Cost	CP	12		X
DG1.14	Grouper Version and Type	ST	4		X
DG1.15	Diagnosis Priority	NM	2		X

Field	Name	Type	Length	Comments	Req'd
DG1.16	Diagnosing Clinician	XCN	60		O
DG1.17	Diagnosis Classification	IS	3	Valid values: <ul style="list-style-type: none"> • C = Consultation • D = Diagnosis • M = Medication (antibiotic) • O = Other • R = Radiological scheduling (not using ICDA codes) • S = Sign and symptom • T = Tissue diagnosis • I = Invasive procedure not classified elsewhere (I.V., catheter, etc.) 	O
DG1.18	Confidential Indicator	ID	1	Valid values: <ul style="list-style-type: none"> • Y = Yes • N = No 	O
DG1.19	Attestation Date/Time	TS	26		X

GT1—Guarantor Segment

The Guarantor (GT1) segment contains guarantor (for example, the person or the organization with financial responsibility for payment of a patient account) data for patient and insurance billing applications. This segment is applicable only for patient and insurance billing.

Note: If the guarantor name is blank in [redacted], the GT1 segment is not created in outbound messages.

Field	Name	Type	Length	Comments	Req'd
GT1.00	Segment Type ID	ST	4	Must be GT1.	R
GT1.01	Set ID	SI	4	Used to number GT1 message segments sequentially beginning with 1.	R
GT1.02	Guarantor Number				X
GT1.03	Guarantor Name	XPN	48	No more than 48 characters, including the delimiter between the last and first names. At least one character for first and last name. Alphanumeric data only, but a numeric value cannot be used as the first character of the last name.	R

Field	Name	Type	Length	Comments	Req'd
				<family name (ST)> ^ <given name (ST)> ^ <middle initial or name (ST)> ^ <suffix (for example, JR or III) (ST)> ^ <prefix (for example, DR) (ST)> ^ <degree (for example, MD) (ST)> ^ <name type code (ID)>	
GT1.04	Guarantor Spouse Name				X
GT1.05	Guarantor Address	XAD	106	No more than 106 characters. Alphanumeric data only. <street address (ST)> ^ <other designation (ST)> ^ <city (ST)> ^ <state or province (ST)> ^ <zip or postal code (ST)> ^ <country (ID)> ^ <address type (ID)> ^ <other geographic designation (ST)> ^ <county/parish code (IS)> ^ <census tract (IS)>	O
GT1.06	Guarantor Ph Num-Home	XTN	255	Accepted length of this field is 20 numeric characters. No dashes or other separating characters. Example with country code and extension omitted: ^^^^^333^4445555 Example with country code: ^^^^1^333^4445555	O
GT1.07	Guarantor Ph Num-Business	XTN	255	Accepted length of this field is 20 numeric characters. No dashes or other separating characters. Example with country code omitted: ^^^^^333^4445555^999^ Example with country code: ^^^^1^333^4445555^999^	O
GT1.08	Guarantor Date/Time of Birth	TS	26	Guarantor DOB. Format: yyyymmdd	O
GT1.09	Guarantor Sex	IS	1	Valid values for this field include: <ul style="list-style-type: none"> • M = Male • F = Female • O = Other 	O

Field	Name	Type	Length	Comments	Req'd
				<ul style="list-style-type: none"> • U = Unknown • A = Ambiguous • N = Not applicable • Z = Undifferentiated • blank 	
GT1.10	Guarantor Type				X
GT1.11	Guarantor Relationship	IS	2	Describes relations to patient. Valid values: <ul style="list-style-type: none"> • 1 = Self • 2 = Spouse • 8 = Dependent • blank 	O
GT1.12	Guarantor SSN	ST	11	Will contain 9 numeric digits, or 11 with hyphens. Cannot be all zeros, and first three numbers cannot be 666, 800, or 900.	O
GT1.13	Guarantor Date - Begin				X
GT1.14	Guarantor Date - End				X
GT1.15	Guarantor Priority				X
GT1.16	Guarantor Employer Name	XP	130	Employer name. No more than 130 characters. Alphanumeric data only.	O
GT1.17	Guarantor Employer Address	XAD	106	No more than 106 characters. Alphanumeric only. <street address (ST)> ^ <other designation (ST)> ^ <city (ST)> ^ <state or province (ST)> ^ <zip or postal code (ST)> ^ <country (ID)> ^ <address type (ID)> ^ <other geographic designation (ST)> ^ <county/parish code (IS)> ^ <census tract (IS)>	O
GT1.18	Guarantor Employer Phone Number				X
GT1.19	Guarantor Employee ID Number				X

Field	Name	Type	Length	Comments	Req'd
GT1.20	Guarantor Employment Status				X
GT1.21	Guarantor Organization Name				X
GT1.22	Guarantor Billing Hold Flag				X
GT1.23	Guarantor Credit Rating Code				X
GT1.24	Guarantor Death Date And Time				X
GT1.25	Guarantor Death Flag				X
GT1.26	Guarantor Charge Adjustment Code				X
GT1.27	Guarantor Household Annual Income				X
GT1.28	Guarantor Household Size				X
GT1.29	Guarantor Employer ID Number				X
GT1.30	Guarantor Marital Status Code				X
GT1.31	Guarantor Hire Effective Date				X
GT1.32	Employment Stop Date				X
GT1.33	Living Dependency				X
GT1.34	Ambulatory Status				X
GT1.35	Citizenship				X
GT1.36	Primary Language				X

Field	Name	Type	Length	Comments	Req'd
GT1.37	Living Arrangement				X
GT1.38	Publicity Indicator				X
GT1.39	Protection Indicator				X
GT1.40	Student Indicator				X
GT1.41	Religion				X
GT1.42	Mother's Maiden Name				X
GT1.43	Nationality				X
GT1.44	Ethnic Group				X
GT1.45	Contact Person's Name				X
GT1.46	Contact Person's Telephone Number				X
GT1.47	Contact Reason				X
GT1.48	Contact Relationship				X
GT1.49	Job Title				X
GT1.50	Job Code/Class				X
GT1.51	Guarantor Employer's Organ. Name				X
GT1.52	Handicap				X
GT1.53	Job Status				X
GT1.54	Guarantor Financial Class				X
GT1.55	Guarantor Race				X

IN1—Insurance Segment

The Insurance (IN1) segment contains insurance policy coverage information necessary to produce properly pro-rated and patient and insurance bills. This segment is applicable only for insurance billing.

Field	Name	Type	Length	Comments	Req'd
IN1.00	Segment Type ID	ST	4	Must be IN1.	R
IN1.01	Set ID	SI	4	IN1 message segments are numbered sequentially from 1.	R
IN1.02	Insurance Plan ID	CE	50	Populated with UNK (for “unknown”) when the insurance plan ID is not available in [redacted].	R
IN1.03	Insurance Company ID	CX	59	QDI Bill mnemonic. Note: Required only if IN1.47 = T (Third-Party Bill).	C
IN1.04	Insurance Company Name	XON	130		O
IN1.05	Insurance Company Address	XAD	106	No more than 106 characters. Alphanumeric data only. <street address (ST)> ^ <other designation (ST)> ^ <city (ST)> ^ <state or province (ST)> ^ <zip or postal code (ST)> ^ <country (ID)> ^ <address type (ID)> ^ <other geographic designation (ST)> ^ <county/parish code (IS)> ^ <census tract (IS)>	O
IN1.06	Insurance Co. Contact Person				X
IN1.07	Insurance Co Phone Number				X
IN1.08	Group Number	ST	50	Characters permitted include: A–Z and 0–9.	O
IN1.09	Group Name	XON	130		O
IN1.10	Insured’s Group Emp ID				X
IN1.11	Insured’s Group Emp Name				X
IN1.12	Plan Effective Date				X
IN1.13	Plan Expiration Date				X
IN1.14	Authorization Information				X

Field	Name	Type	Length	Comments	Req'd
IN1.15	Plan Type				X
IN1.16	Name Of Insured				X
IN1.17	Insured's Relationship To Patient				X
IN1.18	Insured's Date Of Birth				X
IN1.19	Insured's Address				X
IN1.20	Assignment Of Benefits				X
IN1.21	Coordination Of Benefits				X
IN1.22	Coord Of Ben. Priority				X
IN1.23	Notice Of Admission Flag				X
IN1.24	Notice Of Admission Date				X
IN1.25	Report Of Eligibility Flag				X
IN1.26	Report Of Eligibility Date				X
IN1.27	Release Information Code				X
IN1.28	Pre-Admit Cert (PAC)				X
IN1.29	Verification Date/Time				X
IN1.30	Verification By				X
IN1.31	Type Of Agreement Code				X
IN1.32	Billing Status				X
IN1.33	Lifetime Reserve Days				X
IN1.34	Delay Before L.R. Day				X

Field	Name	Type	Length	Comments	Req'd
IN1.35	Company Plan Code				X
IN1.36	Policy Number	ST	50		O
IN1.37	Policy Deductible				X
IN1.38	Policy Limit - Amount				X
IN1.39	Policy Limit - Days				X
IN1.40	Room Rate - Semi-Private				X
IN1.41	Room Rate - Private				X
IN1.42	Insured's Employment Status				X
IN1.43	Insured's Sex				X
IN1.44	Insured's Employer Address				X
IN1.45	Verification Status				X
IN1.46	Prior Insurance Plan ID				X
IN1.47	Coverage Type	IS	3	Valid values include: <ul style="list-style-type: none"> • T = Third-party bill • P = Patient bill • C = Client bill 	O
IN1.48	Handicap				X
IN1.49	Insured's ID Number				X

Sample Patient Demographic Messages

Following are several sample patient demographic messages, formatted according to the “[Patient Demographic Message Format Requirements](#)” on page 67 and the corresponding message segment specifications (Patient Add, Patient Delete, Patient Update, Patient Merge, Schedule Patient, or Detail Financial Transaction).

Sample 1—Add Patient

```
MSH|^~\&|sending application|DemographicDemo||DemographicDemoOrg|20061211153336||A28|
|msgControlID123|P|2.3
EVN|A28
PID|1|pid123|^^^LH||PATIENT_LASTNAME^PATIENT_FIRSTNAME^M||20000101153336|U|ALIAS_
LASTNAME^ALIAS_FIRSTNAME|2056-0~2056-0|4690 Parkway
Dr.^Mason^OH^45040^USA||^CP^86^999^9999999^99999
|^513^9999999^|ENG^text^Census^EGL^alttext^Census2|M||1-FOUND|444669999|||2148-5^text^
Census^2149-3^alttext^Census
NK1|1|LASTNAME^FIRSTNAME^^II^Mrs^Ba|Sister|Main St^^Austin^TX^78704^USA|^235^1320440^
65~^204^5551212||AGENT
PV1|1|O
GT1|1||GUARANTOR_LASTNAME^GUARANTOR_FIRSTNAME^M^JR^DR^MD||1234 Emery Road^^Cincinnati^OH
^45010|^1^513^8888888^1234|^1^238^4444444^5678|19960708112233|M|I|8|287889999|||ABC
Inc.^Limited^M |1234 Main Drive^^Oxford^OH^45068
IN1|1|INSID123^Insurance Plan ABC|INSCOID123|insuranceco|1800 Insurance Rd.^Detroit^MI^45777
|||3433|name|||||||||||||||||||||||||||||||||T
```

Sample 2—Delete Patient

```
MSH|^~\&|SecondSub|DemographicDemo||DemographicDemoOrg|20070321000000||A29|1|P|2.3
EVN|A29|199608190820
PID|1|pid666|NEWMRN-2^^LH||PATIENT_LASTNAME^PATIENT_FIRSTNAME^1^^DR||20000101000000|F|ALIAS_
LASTNAME^ALIAS_FIRSTNAME||B||^1^513^8888888^9999|^1^520^6666666^7777|a5||X|1-FOUND
PV1|1|O
```

Sample 3—Update Patient

```
MSH|^~\&|sending application|DemographicDemo||DemographicDemoOrg|20061211153336||A31|
|msgControlID123|P|2.3
EVN|A31|199608190820
PID|1|pid123|^^^LH||PATIENT_LASTNAME^PATIENT_FIRSTNAME^M||20000101153336|U|ALIAS_LASTNAME^
ALIAS_FIRSTNAME|2056-0~2056-0|4690 Parkway Dr.^Mason^OH^45040^USA||^CP^86^999^9999999
^99999|^513^9999999^|ENG^text^Census^EGL^alttext^Census2|M||1-FOUND|444669999|||
2148-5^text^Census^2149-3^alttext^Census
NK1|1|LASTNAME^FIRSTNAME^^II^Mrs^Ba|Sister|Main St^^Austin^TX^78704^USA|^235^1320440^
65~^204^5551212||AGENT
PV1|1|O
GT1|1||GUARANTOR_LASTNAME^GUARANTOR_FIRSTNAME^M^JR^DR^MD||1234 Emery Road^^Cincinnati^OH
^45010|^1^513^8888888^1234|^1^238^4444444^5678|19960708000000|M|I|8|444556666|||ABC
Inc.^EFG^M |1234 Main Dr^^Oxford^OH^45068
IN1|1|INSID123^Insurance Plan ABC|INSCOID123|insuranceco|1000 Insurance Rd.^Detroit^MI^45777
|||3433|name|||||||||||||||||||||||||||||||||T
```

Sample 4—Merge Patient

```
MSH|^~\&|SecondSub|DemographicDemo||DemographicDemoOrg|20061211153336||A39|A39M|P|2.3
EVN|A39|199608190820
PID|1|ABC|NEWMRN-2||PATIENT_LASTNAME^PATIENT_FIRSTNAME^^Dr||20000101|F||4690 Parkway Dr.^
^Mason^OH^45040||^1^226^1111111^2222|^1^222^5555555^6666|||287-87-8787
MRG|||pid666||PRIOR_LASTNAME^PRIOR_FIRSTNAME^L
PID|2|||19681121|M||1234 Emery Rd^^Mason^OH^45040|||999-99-9999
```

Sample 5—Schedule Patient

```
MSH|^~\&||PD_ACCT||C360PD_PA1|20090624094442||SIU^S12|MSGID100|P|2.3
SCH|APPID^APP|FILL|1||ID^REASON|ROUTINE^TEXT|NORMAL^TEXT||^20120219094442^20120219094442|
PLACER^PERSON||ADDR1^ADDR2||CONTACT^PERSON|||ENTERED^FIRST^MIDDLE|||PENDING
PID|1|pid123|^LH|PATIENT_LASTNAME^PATIENT_FIRSTNAME^M|20000101153336|F|ALIAS_
LASTNAME^ALIAS_FIRSTNAME||4690 Parkway Dr.^Mason^OH^45040^USA||^86^999^9999999^99999
|^513^9999998|a5||1-FOUND|444669999
PV1|1|O|123^456^789|E|preadmit|pri/loc^bed^||1234pb^^^Dr^M.D^LastName^FirstName^M|Y|Y|ER||
Y||1|^a|i19960706|77|Y|Y|Y||19960708|77|11|9||e19960708|77|7|19960708|06|home^1998|N|MA|C-
|
I|pendloc||199709090800||77|77|77|77
DG1|1||CODEID^DIAGCODE^I10|DESCIGNORED|20090219094442|A|||ID123^CLINICIAN_LASTNAME^
CLINICIAN_FIRSTNAME^J^JR^DR^MD|C|Y
DG1|22||CODE222^DIAGCODE2^I9|DESCIGNORED2|20090119094442|A|||ID456^CLINICIAN_
LASTNAME^CLINICIAN_FIRSTNAME^J^^DR^MD|M|N
RGS|1|U|GRPID
AIP|1||1234567890^LASTNAME^FIRSTNAME^MIDDLE^MD^DR^NPI|ROLE
```

Sample 6—Detail Financial Transaction

```
MSH|^~\&||SENDING_FACILITY|RECEIVING_APPLICATION|RECEIVING_FACILITY|20120401142955||DFT^P03
|127723|P|2.3
EVN|P03
PID|1|12365966191815042004||PATIENT_LASTNAME^PATIENT_FIRSTNAME^A
PV1|1|N|||||||APPID^^^APP
FT1|1||20120207112233|20120401182956|CG|4007||1||||10||PC1DC1^PC1DC1Text^I9~PC1DC2
^PC1DC2Text^I9|738492^PATIENT^NAME^^^^NPI|738492^PATIENT^NAME^^^^NPI||PC1^PC1DESC^CPT|
PC1M1^PC1M1DESC^MOD~PC1M2^PC1M2DESC^MOD
PR1|1||PC1^PC1DESC^CPT|20120207112233|||PC1DC1^PC1DC1Text^i9~PC1DC2^PC1DC2Text^I9
FT1|2||20120207113344|20120401182956|CG|4007||1||||10||PC1DC1^PC1DC1Text^I9~PC1DC2
^PC1DC2Text^I9|738492^PATIENT^NAME^^^^NPI|738492^PATIENT^NAME^^^^NPI||PC1^PC1DESC^CPT|
PC1M1^PC1M1DESC^MOD~PC1M2^PC1M2DESC^MOD
PR1|2||PC2^PC1DESC^CPT|20120207113344|||PC2DC1^PC2DC1Text^i9~PC1DC2^PC2DC2Text^I9
```

About Patient Demographic Reference Data

This section lists patient demographic data that is accepted by [redacted] and that is not available in total from other sources (such as the official HL7 web site, Centers for Disease Control and Prevention (CDC) web site, etc.).

This patient demographic data is used in “ADT^A28 (Patient Add) and ADT^A31 (Patient Update) Message Segment Specifications” on page 69.

For patient language (PID.15), [redacted] supports a subset of the ISO 639-2 languages. For more information, see “Patient Language (PID.15)” below.

Patient Language (PID.15)

The patient languages supported by [redacted] are a subset of the ISO 639-2 languages provided by the Library of Congress (http://www.loc.gov/standards/iso639-2/php/code_list.php).

Send the ISO 639-2 code (not the full name) for the language. For example, for Japanese, you would send jpn.

ISO 639-2 Code	English Name	ISO 639-2 Code	English Name
eng	English	urd	Urdu
spa	Spanish	vie	Vietnamese
ara	Arabic	abk	Abkhazian
chi	Chinese	ace	Achinese
fre	French	ach	Acoli
cpf	French Creole	ada	Adangme
ger	German	ady	Adygei
gre	Greek	aar	Afar
hin	Hindi	afr	Afrikaans
ita	Italian	ain	Ainu
jpn	Japanese	aka	Akan
kor	Korean	alb	Albanian
per	Persian	gsw	Alemannic
pol	Polish	ale	Aleut
por	Portuguese	amh	Amharic
rus	Russian	anp	Angika
sgn	Sign Language	arg	Aragonese

ISO 639-2 Code	English Name	ISO 639-2 Code	English Name
tgl	Tagalog	arp	Arapaho
arw	Arawak	bua	Buriat
arm	Armenian	bur	Burmese
rup	Aromanian	cad	Caddo
asm	Assamese	cat	Catalan
ava	Avaric	ceb	Cebuano
awa	Awadhi	khm	Central Khmer
aym	Aymara	cha	Chamorro
aze	Azerbaijani	che	Chechen
ast	Bable	chr	Cherokee
ban	Balinese	chy	Cheyenne
bal	Baluchi	nya	Chichewa
bam	Bambara	chn	Chinook jargon
bas	Basa	cho	Choctaw
bak	Bashkir	chk	Chuukese
baq	Basque	chv	Chuvash
bej	Beja	rar	Cook Islands Maori
bel	Belarusian	cop	Coptic
bem	Bemba	cor	Cornish
ben	Bengali	cos	Corsican
bho	Bhojpuri	cre	Cree
bik	Bikol	mus	Creek
bis	Bislama	crp	Creoles and pidgins
byn	Blin	cpe	Creoles and pidgins, English-based
nob	Bokmål, Norwegian	cpp	Creoles and pidgins, Portuguese-based
bos	Bosnian	crh	Crimean Turkish
bra	Braj	hrv	Croatian
bre	Breton	cze	Czech
bug	Buginese	dak	Dakota

ISO 639-2 Code	English Name	ISO 639-2 Code	English Name
bul	Bulgarian	dan	Danish
del	Delaware	gla	Gaelic
dar	Dargwa	car	Galibi Carib
chp	Dene Suline	glg	Galician
din	Dinka	lug	Ganda
div	Divehi	gay	Gayo
doi	Dogri	gba	Gbaya
dgr	Dogrib	geo	Georgian
dua	Duala	gil	Gilbertese
dut	Dutch	gon	Gondi
dyu	Dyula	gor	Gorontalo
dzo	Dzongkha	grb	Grebo
frs	Eastern Frisian	kal	Greenlandic
bin	Edo	grn	Guarani
efi	Efik	guj	Gujarati
eka	Ekajuk	gwi	Gwich'in
myv	Erzya	hai	Haida
epo	Esperanto	hat	Haitian Creole
est	Estonian	hau	Hausa
ewe	Ewe	haw	Hawaiian
ewo	Ewondo	heb	Hebrew
fan	Fang	her	Herero
fat	Fanti	hil	Hiligaynon
fao	Faroese	hmo	Hiri Motu
fij	Fijian	hmn	Hmong
fil	Filipino	hun	Hungarian
fin	Finnish	hup	Hupa
fon	Fon	iba	Iban
fur	Friulian	ice	Icelandic

ISO 639-2 Code	English Name	ISO 639-2 Code	English Name
ful	Fulah	ibo	Igbo
gaa	Ga	ilo	Iloko
smn	Inari Sami	kos	Kosraean
ind	Indonesian	kpe	Kpelle
inh	Ingush	kum	Kumyk
iku	Inuktitut	kur	Kurdish
ipk	Inupiaq	kru	Kurukh
gle	Irish	kut	Kutenai
jav	Javanese	kua	Kwanyama
kac	Jingpho	kir	Kyrgyz
jrb	Judeo-Arabic	lad	Ladino
jpr	Judeo-Persian	lah	Lahnda
kbd	Kabardian	lam	Lamba
kab	Kabyle	lao	Lao
xal	Kalmyk	lav	Latvian
kam	Kamba	lez	Lezghian
kan	Kannada	lim	Limburgish
kau	Kanuri	lin	Lingala
pam	Kapampangan	lit	Lithuanian
kaa	Kara-Kalpak	nds	Low German
krc	Karachay-Balkar	dsb	Lower Sorbian
krl	Karelian	loz	Lozi
kas	Kashmiri	lub	Luba-Katanga
csb	Kashubian	lua	Luba-Lulua
kaz	Kazakh	lui	Luiseno
kha	Khasi	smj	Lule Sami
kik	Kikuyu	lun	Lunda
kmb	Kimbundu	luo	Luo (Kenya and Tanzania)
kin	Kinyarwanda	lus	Lushai

ISO 639-2 Code	English Name	ISO 639-2 Code	English Name
kom	Komi	ltz	Luxembourgish
kon	Kongo	mac	Macedonian
kok	Konkani	mad	Madurese
mag	Magahi	nav	Navajo
mai	Maithili	ndo	Ndonga
mak	Makasar	nap	Neapolitan
mlg	Malagasy	new	Nepal Bhasa
may	Malay	nep	Nepali
mal	Malayalam	nia	Nias
mlt	Maltese	niu	Niuean
mnc	Manchu	nog	Nogai
mdr	Mandar	nde	North Ndebele
man	Mandingo	frr	Northern Frisian
mni	Manipuri	sme	Northern Sami
glv	Manx	nso	Northern Sotho
mao	Maori	nor	Norwegian
arn	Mapuche	nno	Norwegian Nynorsk
mar	Marathi	iii	Nuosu
chm	Mari	nym	Nyamwezi
mah	Marshallese	nyn	Nyankole
mwr	Marwari	nyo	Nyoro
mas	Masai	nzi	Nzima
men	Mende	oji	Ojibwa
mic	Micmac	ori	Oriya
min	Minangkabau	orm	Oromo
mwł	Mirandese	osa	Osage
moh	Mohawk	oss	Ossetian
mdf	Moksha	pau	Palauan
lol	Mongo	pag	Pangasinan

ISO 639-2 Code	English Name	ISO 639-2 Code	English Name
mon	Mongolian	pap	Papiamento
mos	Mossi	pus	Pashto
nqo	N'Ko	pon	Pohnpeian
nau	Nauru	pan	Punjabi
que	Quechua	snk	Soninke
raj	Rajasthani	sot	Sotho, Southern
rap	Rapanui	nbl	South Ndebele
rum	Romanian	alt	Southern Altai
roh	Romansh	sma	Southern Sami
rom	Romany	srn	Sranan Tongo
run	Rundi	suk	Sukuma
smo	Samoan	sun	Sundanese
sad	Sandawe	sus	Susu
sag	Sango	swa	Swahili
san	Sanskrit	ssw	Swati
sat	Santali	swe	Swedish
srd	Sardinian	syr	Syriac
sas	Sasak	tah	Tahitian
sco	Scots	tgk	Tajik
sel	Selkup	tmh	Tamashek
srp	Serbian	tam	Tamil
srr	Serer	tat	Tatar
shn	Shan	tel	Telugu
sna	Shona	ter	Tereno
scn	Sicilian	tet	Tetum
sid	Sidamo	tha	Thai
bla	Siksika	tib	Tibetan
snd	Sindhi	tig	Tigre
sin	Sinhala	tir	Tigrinya

ISO 639-2 Code	English Name	ISO 639-2 Code	English Name
sms	Skolt Sami	tem	Timne
den	Slave (Athapascan)	tiv	Tiv
slo	Slovak	tli	Tlingit
slv	Slovenian	tpi	Tok Pisin
som	Somali	tkl	Tokelau
tog	Tonga (Nyasa)	vot	Votic
ton	Tonga (Tonga Islands)	wln	Walloon
tsi	Tsimshian	war	Waray
tso	Tsonga	was	Washo
tsn	Tswana	wel	Welsh
tum	Tumbuka	fry	Western Frisian
tur	Turkish	wal	Wolaytta
tuk	Turkmen	wol	Wolof
tlv	Tuvalu	xho	Xhosa
tyv	Tuvianian	sah	Yakut
twi	Twi	yao	Yao
udm	Udmurt	yap	Yapese
ukr	Ukrainian	yid	Yiddish
umb	Umbundu	yor	Yoruba
und	Undetermined	zap	Zapotec
hsb	Upper Sorbian	zza	Zazaki
uig	Uyghur	zen	Zenaga
uzb	Uzbek	zha	Zhuang
vai	Vai	zul	Zulu
ven	Venda	zun	Zuni

Chapter 7: CCR Message Specification

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About the CCR Message Specification

This chapter provides detailed format specifications for Prescription Order messages in Continuity of Care Record (CCR) format.

This chapter includes the following sections:

- **CCR message specifications.** The CCR Message Specification defines the intent, source, destination, and some specifics of the syntax of a message. The [redacted] translates the Rx Order Echo message into the standard CCR Prescription message format. For more information, see [“CCR Message Specification” on the next page](#).
- **Sample CCR message.** The prescription order message is “Echoed” back to the Partner Application/EMRs in CCR format. For more information, see [“Sample CCR Message” on page 202](#).

CCR Message Specification

The CCR Message Specification defines the intent, source, destination, and some specifics of the syntax of a message. The [redacted] translates the Rx Order Echo message into the standard CCR Prescription message format.

Note: The following table provides a **partial** list of the fields that are in the XSD. In general, if the field is in the XSD but not listed in the table below, that field is not used in Rx order echo message translation.

Attributes / Data Objects	XML Tag	Comments	Req'd ^a
CCR Header		[redacted brand] will now only send one header at a time, but the CCR can support multiple headers (no limit).	
CCR Unique Identifier	<CCRDableObjectID>	Must be a unique Object ID to identify this specific instance of a CCR. Type: xs:string, should be a UUID or OID.	R
Language	<Language>	Set to English with type of xs:string.	R
Version	<Version>	Set to 1.0 (version of the CCR Implementation Guide used as reference to develop this scope). The Version element is defined as a xs:string type.	R
CCR Creations Date/Time	<Date Time>	Date/Time that the CCR record was created. Date format is: yyyy-mm-ddThh:mm:ss+00:00 The ExactDateTime element is defined as a xs:string type.	R
Patient	<Patient>	Identifies the patient (can be only one) per CCR. Should equal an <ActorObjectID> of xs:string type. Define as <Actors> for the patient object. Example: <Patient> <ActorID> 0c3299677f00010104507926bfbda468 </ActorID> </Patient>	R

^aR = Required, O = Optional, C = Conditional (required for drugs, optional for supplies), NS = Not Supported.

Attributes / Data Objects	XML Tag	Comments	Req'd ^a
From	<From>	<p>Identifies who created the prescription. An Actor and its Role must be specified under From.</p> <p>Should equal an <ActorId> (xs:string) defined in <Actors> and <ActorRole> with the <Text>Primary Care Provider</Text> (xs:string).</p> <p>Example:</p> <pre> <From> <ActorLink> <ActorID> 0c32996a7f00010104507926d8e440fc </ActorID> <ActorRole> <Text>Primary Care Provider</Text> </ActorRole> </ActorLink> </From> </pre>	R
To		Not currently used.	NS
Purpose		Not currently used.	NS
Body	<Body>	Structural grouping element.	
Payers		Not currently used.	NS
Advanced Directives		Not currently used.	NS
Support		Not currently used.	NS
Functional Status		Not currently used.	NS
Problems		Not currently used.	NS
Family History		Not currently used.	NS
Social History		Not currently used.	NS
Alerts	<Alert>	Alerts are not currently being sent in this document.	NS
Medications	<Medication>	Structural grouping element.	O

^aR = Required, O = Optional, C = Conditional (required for drugs, optional for supplies), NS = Not Supported.

Attributes / Data Objects	XML Tag	Comments	Req'd ^a
	<CCRDataObjectID>	<p>Must be a unique Object ID to identify this specific instance of a Medication for this CCR document.</p> <p>Type: xs:string, should be a UUID or OID.</p>	R
	<DateTime>	<p>Medication start date.</p> <p><Type><Text>Start Date</Text></Type></p> <p>Date format is:</p> <p>yyyy-mm-ddThh:mm:ss+00:00</p> <p>The ExactDateTime element is defined as xs:string type.</p> <p>Example:</p> <pre><DateTime> <Type> <Text>StartDate</Text> </Type> <ExactDateTime> 2010-03-12T12:00:00+00:00 </ExactDateTime> </DateTime></pre>	O
	<DateTime>	<p>Medication stop date. Using the Date Issued field and the Days Supply, calculate the Stop Date by Date Issued + Days Supply.</p> <p><Type><Text>Stop Date</Text></Type></p> <p>Date format is:</p> <p>yyyy-mm-ddThh:mm:ss+00:00</p> <p>The ExactDateTime element is defined as xs:string type.</p> <p>Example:</p> <pre><DateTime> <Type> <Text>StopDate</Text> </Type> <ExactDateTime> 2010-04-16T12:00:00+00:00 </ExactDateTime> </DateTime></pre>	O

^aR = Required, O = Optional, C = Conditional (required for drugs, optional for supplies), NS = Not Supported.

Attributes / Data Objects	XML Tag	Comments	Req'd ^a
	<IDs>	Not currently used.	NS
	<Type>	<p>Call to Multim database. If NDC is found in the medication tables, set to Medication. If NDC is found in the supply tables, set to Supply.</p> <p>The Type element is defined as xs:string type.</p> <p>Example:</p> <pre><Type> <Text>Medication</Text> </Type></pre>	O
	<Status>	<p>Always set to "Active".</p> <p>The Status element is defined as xs:string type.</p> <p>Example:</p> <pre><Status> <Text>Active</Text> </Status></pre>	O
	<Source>	<p>This is an Actor tag with the ActorID of the Physician Actor in the Actor section.</p> <p>The ActorID and ActorRole elements are all defined as xs:string type.</p> <p>Example:</p> <pre><Source> <Actor> <ActorID> 0C329aef7f0001010450792624f1f5cd </ActorID> <ActorRole> <Text>Primary Care Provider</Text> </ActorRole> </Actor> </Source></pre>	R
	<CommentID>	Not currently used.	NS
	<Description>	Not currently used.	NS
	<Product>	Structural grouping element.	O
	<ProductName>	Call to Multim database to retrieve product name using NDC.	R

^aR = Required, O = Optional, C = Conditional (required for drugs, optional for supplies), NS = Not Supported.

Attributes / Data Objects	XML Tag	Comments	Req'd ^a
		<p>The ProductName Text element and the Value and Coding System are all defined as xs:string types.</p> <p>Example:</p> <pre><ProductName> <Text>fluocinolone topical</Text> <Code> <Value>99220750917</Value> <CodingSystem>NDC</CodingSystem> </Code> </ProductName></pre>	
	<Code>	<p>The Code tag will have the <Value> set to the NDC DrugNumber and the <Coding> set to NDC as in the <ProductName> example above.</p>	O
	<BrandName>	<p>Call to Multim database to retrieve brand name using NDC.</p> <p>The BrandName Text element is defined as xs:string type.</p> <p>Example:</p> <pre><BrandName> <Text>Synemol</Text> </BrandName></pre>	O
	<Manufacturer>	<p>Call to Multim database to retrieve Manufacturer Name using NDC. The Manufacturer contains an ActorID which will correspond to an entry in the Actors section of the CCR.</p> <p>Example:</p> <pre><Manufacturer> <ActorID> 0c329b267f00010104507926758f725e </ActorID> </Manufacturer></pre>	O
	<Strength>	<p>Call to Multim database to retrieve strength using NDC.</p> <p>The Strength element is defined as xs:string type.</p> <p>Example:</p>	C

^aR = Required, O = Optional, C = Conditional (required for drugs, optional for supplies), NS = Not Supported.

Attributes / Data Objects	XML Tag	Comments	Req'd ^a
		<pre> <Strength> <Text>0.025%</Text> </Strength> </pre>	
	<Form>	<p>Call to Multim database to retrieve dose form using NDC.</p> <p>The Form element is defined as xs:string type.</p> <p>Example:</p> <pre> <Form> <Text>cream</Text> </Form> </pre>	C
	<Concentration>	Not currently used.	NS
	<Size>	Not currently used.	NS
	<Quantity>	<p>The amount of the medication to be given.</p> <p>The Quantity element is defined as xs:string type.</p> <p>Example:</p> <pre> <Quantity> <Value>2</Value> </Quantity> </pre>	R
	<Directions>	<p>The directions given by the physician on the order. The directions from [redacted brand] are placed in their entirety in the <Dose> XML tag. The <Frequency> XML tag is not used.</p> <p>Example:</p> <pre> <Directions> <Direction> <Route> <Text>topical</Text> </Route> <Duration> <Description> <Text>35</Text> </Description> </Duration> </Direction> </Directions> </pre>	C
	<DoseIndicator>	Not currently used.	NS

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Attributes / Data Objects	XML Tag	Comments	Req'd ^a
	<DeliveryMethod>	Not currently used.	NS
	<Dose>	Contains the drug directions from [redacted brand].	C
	<DoseCalculation>	Not currently used.	NS
	<Vehicle>	Not currently used.	NS
	<Route>	<p>Call to Multim database to retrieve route using NDC.</p> <p>The Route element is defined as xs:string type.</p> <p>Example:</p> <pre><Route> <Text>topical</Text> </Route></pre>	C
	<Site>	Not currently used.	NS
	<Administration Timing>	Not currently used.	NS
	<Frequency>	Not currently used.	NS
	<Interval>	Not currently used.	NS
	<Duration>	<p>The duration is set as the Days Supply from the order.</p> <p>The Duration element is defined as xs:string type.</p> <p>Example:</p> <pre><Duration> <Description> <Text>35</Text> </Description> </Duration></pre>	O
	<DoseRestrictions>	Not currently used.	NS
	<Indication>	Not currently used.	NS
	<StopIndicator>	Not currently used.	NS
	<DirectionSequence Position>	Not currently used.	NS

^aR = Required, O = Optional, C = Conditional (required for drugs, optional for supplies), NS = Not Supported.

Attributes / Data Objects	XML Tag	Comments	Req'd ^a
	<MultipleDirection Modifier>	Not currently used.	NS
	<PatientInstructions>	Set to the Comments to the Pharmacist. The Patient Instructions element is defined as xs:string type.	O
	<Fulfillment Instructions>	Not currently used.	NS
	<Refill>	Set to the Refill Quantity from the order. The Refill element is defined as xs:string type. Example: <pre> <Refills> <Refill> <Quantity> <Value>1</Value> </Quantity> </Refill> </Refills> </pre>	O
	<SeriesNumber>	Not currently used.	NS
	<Consent>	Not currently used.	NS
	<Reaction>	Not currently used.	NS
	<FulfillmentHistory>	Not currently used.	NS
	<InternalCCRLink>	Not currently used.	NS
	<ReferenceID>	Not currently used.	NS
Medical Equipment	<MedicalEquipment>	Not currently used.	NS
Immunizations	<Immunizations>	Not currently used.	NS
Vital Signs	<VitalSigns>	Not currently used.	NS
Results	<Results>	Not currently used.	NS
Procedures	<Procedures>	Not currently used.	NS
Encounters	<Encounters>	Not currently used.	NS
Plan Of Care	<PlanOfCare>	Not currently used.	NS

^aR = Required, O = Optional, C = Conditional (required for drugs, optional for supplies), NS = Not Supported.

Attributes / Data Objects	XML Tag	Comments	Req'd ^a
Healthcare Providers	<HealthCare Providers>	Not currently used.	NS
CCR Footer			
Actors	<Actor>	Patient information structural grouping element.	R
	<ActorObjectID>	Must be a unique Object ID to identify this specific instance of an Actor for this CCR document. Type: xs:string, should be a UUID or OID.	R
	<Person>	Structural grouping element.	O
	<Name>	Structural grouping element.	O
	<BirthName>	Not currently used.	NS
	<AdditionalName>	Not currently used.	NS
	<CurrentName>	The Given, Family, Middle, Title, and Suffix are being set. The names are all defined as xs:string type. Example: <pre><CurrentName> <Given>Minnie</Given> <Family>Mouse</Family> </CurrentName></pre>	O
	<DisplayName>	Not currently used.	NS
	<DateOfBirth>	The DateOfBirth element is defined as xs:string type. DateOfBirth format is: yyyy-mm-dd Example: <pre><DateOfBirth> <ExactDateTime>1951-06-18 </ExactDateTime> </DateOfBirth></pre>	O
	<Gender>	Male, Female, Unknown The Gender element is defined as xs:string type. Example:	O

^aR = Required, O = Optional, C = Conditional (required for drugs, optional for supplies), NS = Not Supported.

Attributes / Data Objects	XML Tag	Comments	Req'd ^a
		<Gender> <Text>Female</Text> </Gender>	
	<Organization>	Not currently used.	NS
	<InformationSystem>	Not currently used.	NS
	<IDs>	<p>All patient IDs sent from [redacted brand] will be in the CCR. This information is sent over in the patientReferenceNumber field.</p> <p>Note: The social security number is sent as “Social Security Number” instead of “SSN” in <Type>. All other reference number qualifiers are the same as those sent from [redacted brand].</p> <p>The <Text> tag contains the value “Social Security Number” or “MRN”. The <ID> tag will contain the actual value of the ID. The Type, ID, ActorID, and ActorRole are defined as xs:string type.</p> <p>The <ID> tag will contain the patientReferenceNumber that has a patientReferenceNbrQualifier or “SY” or “ZZ”. Each patientReferenceNumber sent from [redacted brand] is sent in a different <Ids> element.</p> <p>Example:</p> <pre> <Ids> <Type> <Text>Social Security Number</Text> </Type> <ID>123456789</ID> <Source> <Actor> <ActorID> 0C32996a7f00010104507926d8e 440fc </ActorID> <ActorRole> <Text>Primary Care Provider </Text> </ActorRole> </pre>	0

^aR = Required, O = Optional, C = Conditional (required for drugs, optional for supplies), NS = Not Supported.

Attributes / Data Objects	XML Tag	Comments	Req'd ^a
		</Actor> </Source> </Ids>	
	<Relation>	Not currently used.	NS
	<Specialty>	Not currently used.	NS
	<Address>	All of the Address elements are defined as xs:string type. Example: <pre> <Address> <Line1>1234 Mulberry Lane</Line1> <Line2>additional address</Line2> <City>Toledo</City> <State>OH</State> <PostalCode>54360</PostalCode> <Country>USA</Country> </Address> </pre>	0
	<Telephone>	Can be more than one depending on what [redacted brand] sends. A separate telephone instance is created for each. The Value and Type elements are all defined as xs:string type. Example: <pre> <Telephone> <Value>1234567890</Value> <Type> <Text>Telephone</Text> </Type> </Telephone> <Telephone> <Value>1234567890</Value> <Type> <Text>Nighttime Phone</Text> </Type> </Telephone> <Telephone> <Value>1234567890</Value> <Type> <Text>Work Phone</Text> </Type> </Telephone> <Telephone> </pre>	0

^aR = Required, 0 = Optional, C = Conditional (required for drugs, optional for supplies), NS = Not Supported.

Attributes / Data Objects	XML Tag	Comments	Req'd ^a
		<Value>1234567890</Value> <Type> <Text>Fax Number</Text> </Type> </Telephone> Values from [redacted brand]: PAGE = "BN" CELLULAR = "CP" FAX = "FX" HOME = "HP" NIGHT = "NP" TELEPHONE = "TE" WORK = "WP" EMAIL = "EM"	
	<Email>	If an email address is available it will be included in the CCR message. The <Email> element is used only for the Prescriber communication numbers, and only the email address of the Prescriber is used. All other communication numbers are ignored. The Value and Type elements are all defined as xs:string type. Values from [redacted brand]: EMAIL = "EM"	O
	<URL>	Not currently used.	NS
	<Status>	The Status element is defined as xs:string type. Example: <Status> <Text>Active</Text> </Status>	O
	<Source>	The ActorObjectID of the Care Site or Account. All of the elements in the Source element are defined as xs:string type. Example: <Source> <Actor>	R

^aR = Required, O = Optional, C = Conditional (required for drugs, optional for supplies), NS = Not Supported.

Attributes / Data Objects	XML Tag	Comments	Req'd ^a
		<ActorID> 0c32996a7f00010104507926d8e440fc </ActorID> <ActorRole> <Text>Primary Care Provider </Text> </ActorRole> </Actor> </Source>	
	<InternalCCRLink>	Not currently used.	NS
	<ReferenceID>	Not currently used.	NS
	<CommentID>	Not currently used.	NS
References	<References>	Not currently used.	NS
Comments	<Comments>	Not currently used.	NS
Signatures	<Signatures>	Not currently used.	NS

^aR = Required, O = Optional, C = Conditional (required for drugs, optional for supplies), NS = Not Supported.

Sample CCR Message

The following is a sample XML message, formatted according to the “CCR Message Specification” on [page 189](#).

```
<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<ContinuityOfCareRecord xmlns="urn:astm-org:CCR">
  <CCRDokumentObjectID>0c3299627f0001010450792695a0fd38</CCRDokumentObjectID>
  <Language>
    <Text>English</Text>
  </Language>
  <Version>1.0</Version>
  <DateTime>
    <ExactDateTime>2010-05-04T10:16:31+00:00</ExactDateTime>
  </DateTime>
  <Patient>
    <ActorID>0c3299677f00010104507926bfbda468</ActorID>
  </Patient>
  <From>
    <ActorLink>
      <ActorID>0c32996a7f00010104507926d8e440fc</ActorID>
      <ActorRole>
        <Text>Primary Care Provider</Text>
      </ActorRole>
    </ActorLink>
  </From>
  <Body>
    <Medications>
      <Medication>
        <CCRDokumentObjectID>
          0c329ae17f00010104507926a3f3bb06
        </CCRDokumentObjectID>
        <DateTime>
          <Type>
            <Text>Start Date</Text>
          </Type>
          <ExactDateTime>2010-03-12T12:00:00+00:00</ExactDateTime>
        </DateTime>
        <DateTime>
          <Type>
            <Text>Stop Date</Text>
          </Type>
          <ExactDateTime>2010-04-16T12:00:00+00:00</ExactDateTime>
        </DateTime>
        <Type>
          <Text>Medication</Text>
        </Type>
        <Status>
          <Text>Active</Text>
        </Status>
        <Source>
          <Actor>
            <ActorID>0c329aef7f0001010450792624f1f5cd</ActorID>
```

```

    <ActorRole>
      <Text>Primary Care Provider</Text>
    </ActorRole>
  </Actor>
</Source>
<Product>
  <ProductName>
    <Text>fluocinolone topical</Text>
  <Code>
    <Value>99220750917</Value>
    <CodingSystem>NDC</CodingSystem>
  </Code>
</ProductName>
  <BrandName>
    <Text>Synemol</Text>
  </BrandName>
  <Strength>
    <Text>0.025%</Text>
  </Strength>
  <Form>
    <Text>cream</Text>
  </Form>
  <Manufacturer>
    <ActorID>0c329b267f00010104507926758f725e</ActorID>
  </Manufacturer>
</Product>
<Quantity>
  <Value>2</Value>
</Quantity>
<Directions>
  <Direction>
    <Dose>
      <Value>Twice a day</Value>
    </Dose>
    <Route>
      <Text>topical</Text>
    </Route>
    <Frequency>
      <Description>
        <Text></Text>
      </Description>
    </Frequency>
    <Duration>
      <Description>
        <Text>35</Text>
      </Description>
    </Duration>
  </Direction>
</Directions>
<PatientInstructions>
  <Instruction>
    <Text>Comments to Pharmacist</Text>
  </Instruction>

```

```

    </PatientInstructions>
    <Refills>
      <Refill>
        <Quantity>
          <Value>1</Value>
        </Quantity>
      </Refill>
    </Refills>
  </Medication>
</Medications>
</Body>

<Actors>
  <Actor>
    <ActorObjectID>0c329aef7f0001010450792624f1f5cd</ActorObjectID>
  <Person>
    <Name>
      <CurrentName>
        <Given>FirstName</Given>
        <Family>LastName</Family>
      </CurrentName>
    </Name>
  </Person>
  <IDs>
    <Type>
      <Text>DEA</Text>
    </Type>
    <ID>888888</ID>
    <Source>
      <Actor>
        <ActorID>0c32996a7f00010104507926d8e440fc</ActorID>
        <ActorRole>
          <Text>Primary Care Provider</Text>
        </ActorRole>
      </Actor>
    </Source>
  </IDs>
  <IDs>
    <Type>
      <Text>State License</Text>
    </Type>
    <ID>ST-888888</ID>
    <Source>
      <Actor>
        <ActorID>0c32996a7f00010104507926d8e440fc</ActorID>
        <ActorRole>
          <Text>Primary Care Provider</Text>
        </ActorRole>
      </Actor>
    </Source>
  </IDs>
  <Status>
    <Text>Active</Text>
  </Status>

```



```

</Status>
<Source>
  <Actor>
    <ActorID>0c32996a7f00010104507926d8e440fc</ActorID>
    <ActorRole>
      <Text>Primary Care Provider</Text>
    </ActorRole>
  </Actor>
</Source>
</Actor>

<Actor>
  <ActorObjectID>0c32996a7f00010104507926d8e440fc</ActorObjectID>
  <Source>
    <Actor>
      <ActorID>0c32996a7f00010104507926d8e440fc</ActorID>
      <ActorRole>
        <Text>Primary Care Provider</Text>
      </ActorRole>
    </Actor>
  </Source>
</Actor>

<Actor>
  <ActorObjectID>0c329b267f00010104507926758f725e</ActorObjectID>
  <Organization>
    <Name>Medicis Pharmaceutical Corporation</Name>
  </Organization>
  <Source>
    <Actor>
      <ActorID>Care360</ActorID>
      <ActorRole>
        <Text>Medical Information System</Text>
      </ActorRole>
    </Actor>
  </Source>
</Actor>

<Actor>
  <ActorObjectID>0c329bc87f00010104507926c6a17d0e</ActorObjectID>
  <Person>
    <Name>
      <CurrentName>
        <Given>FirstName</Given>
        <Family>LastName</Family>
      </CurrentName>
    </Name>
    <DateOfBirth>
      <ExactDateTime>1951-06-18</ExactDateTime>
    </DateOfBirth>
    <Gender>
      <Text>Female</Text>
    </Gender>
  </Person>
</Actor>

```

```

</Person>

<IDs>
  <Type>
    <Text>2U</Text>
  </Type>
  <ID>B000000%111111110%002</ID>
  <Source>
    <Actor>
      <ActorID>0c32996a7f00010104507926d8e440fc</ActorID>
      <ActorRole>
        <Text>Primary Care Provider</Text>
      </ActorRole>
    </Actor>
  </Source>
</IDs>

<IDs>
  <Type>
    <Text>Social Security Number</Text>
  </Type>
  <ID>123456789</ID>
  <Source>
    <Actor>
      <ActorID>0c32996a7f00010104507926d8e440fc</ActorID>
      <ActorRole>
        <Text>Primary Care Provider</Text>
      </ActorRole>
    </Actor>
  </Source>
</IDs>

<Address>
  <Line1>4690 Parkway Drive</Line1>
  <City>Mason</City>
  <State>OH</State>
  <PostalCode>45040</PostalCode>
</Address>

<Telephone>
  <Value>1234567890</Value>
  <Type>
    <Text>Telephone</Text>
  </Type>
</Telephone>
<Telephone>
  <Value>1234567890</Value>
  <Type>
    <Text>Nighttime Phone</Text>
  </Type>
</Telephone>
<Telephone>
  <Value>1234567890</Value>

```

```

    <Type>
      <Text>Work Phone</Text>
    </Type>
  </Telephone>
  <Telephone>
    <Value>1234567890</Value>
    <Type>
      <Text>Fax Number</Text>
    </Type>
  </Telephone>

  <Source>
    <Actor>
      <ActorID>0c32996a7f00010104507926d8e440fc</ActorID>
      <ActorRole>
        <Text>Primary Care Provider</Text>
      </ActorRole>
    </Actor>
  </Source>
</Actor>

<Actor>
  <ActorObjectID>Care360</ActorObjectID>
<InformationSystem>
  <Name>[redacted]</Name>
  <Type>EMR</Type>
  <Version>2013.3</Version>
</InformationSystem>
<Source>
  <Actor>
    <ActorID>0c32996a7f00010104507926d8e440fc</ActorID>
    <ActorRole>
      <Text>Primary Care Provider</Text>
    </ActorRole>
  </Actor>
</Source>
</Actor>
</Actors>
</ContinuityOfCareRecord>

```

Glossary

Acknowledgment (ACK)

A message indicating that an action, such as downloading a lab result, has successfully been accomplished. See also [Negative Acknowledgment \(NAK\)](#).

Admission Discharge Transfer (ADT)

A type of HL7 message used to communicate patient details to external applications. Patient Administration (ADT) messages are used to exchange the patient state within a health care facility. ADT messages keep patient demographic and visit information synchronized across health care systems. See also [Health Level Seven \(HL7\)](#).

Advanced Beneficiary Notice (ABN)

A form (in PDF format) that notifies a patient when Medicare will not cover the costs of the ordered tests, based on an evaluation of the submitted CPT and ICD codes.

A current collection of all reference data—for example, test codes, diagnosis codes, and Ask at Order Entry (AOE) questions—needed to create a complete and valid electronic order for submission to a third-party laboratory system.

Electronic Health Record (EHR)

The Electronic Health Record (EHR) is a longitudinal electronic record of patient health information generated by one or more encounters in any care delivery setting. Included in this information are patient demographics, progress notes, problems, medications, vital signs, past medical history, immunizations, laboratory data and radiology reports. The EHR automates and streamlines the clinician's workflow. The EHR has the ability to generate a complete record of a clinical patient encounter - as well as supporting other care-related activities directly or indirectly via interface - including evidence-based decision support, quality management, and outcomes reporting.

Electronic Medical Record (EMR)

Technology that meets provider needs for real-time data access and evaluation in medical care. In concert with clinical workstations and clinical data repository technologies, the EMR provides the means for longitudinal data storage and access. The result will be increased efficiency, reduced cost, and improved quality of care.

ePrescribing

A prescriber's ability to electronically send an accurate, error-free and understandable prescription directly to a pharmacy from the point of care, which is an important element in improving the quality of patient care.

Formulary

List of preferred medications. They are used as a mechanism to encourage the use of less-costly drugs. Formularies are updated frequently to reflect new drugs being introduced into the market, current clinical information, and information on drug interactions.

Health Level Seven (HL7)

A data interchange transaction protocol for healthcare technology applications that simplifies the ability of different vendor-supplied IS systems to assure inter operability. Although not a software program in itself, HL7 requires that each healthcare software vendor program supports HL7 interfaces for its products.

Healthcare Provider Directory (HPD)

An electronic listing of individual and organizational healthcare providers that are classified by provider type, specialties, credentials, relationships, demographics, and service locations. The standards for the Healthcare Provider Directory were developed by Integrating the Healthcare Enterprise (IHE).

Hospital Information System (HIS)

The common term for the computer hardware and software that provides the support of the hospital.

Interface

The code written and the specifications and protocols used for the transmission of electronic data between the [redacted] and the participants' and/or vendors' computing environments.

Logical Observation Identifiers Names and Codes (LOINC)

An industry database that is used to facilitate the exchange of pooling results for clinical care, outcomes management and research. LOINC codes are universal identifiers for laboratory and other clinical observations.

Master Files

Files containing a current collection of all reference data needed to create a complete and valid electronic order for a specific laboratory. Master files are converted to the CDC format for use within the *Lab Orders* component.

Master Patient Index (MPI)

An index or file with a unique identifier for each patient that serves as a key to a patient's health record.

National Drug Code (NDC)

Each drug product listed under Section 510 of the Federal Food, Drug, and Cosmetic Act is assigned a unique 10-digit, 3-segment number. This number, known as the National Drug Code (NDC), identifies the labeler/vendor, product, and trade package size. The first segment, the labeler code, is assigned by the FDA. A labeler is any firm that manufactures, repacks or distributes a drug product. The second segment, the product code, identifies a specific strength, dosage form, and formulation for a particular firm. The third segment, the package code identifies package sizes. Both the product and package codes are assigned by the firm. The NDC will be in one of the following configurations: 4-4-2, 5-3-2, or 5-4-1.

Negative Acknowledgment (NAK)

A message indicating that an action, such as downloading a lab result, was not successfully accomplished. See *also* [Acknowledgment \(ACK\)](#).

Pharmacy Benefit Manager (PBM)

Organizations that provide administrative services such as processing and analyzing prescription claims for pharmacy benefit and coverage programs. PBMs rely on a complex network of relationships with pharmacies, drug manufacturers, health plans, employer groups, providers and patients, and use a variety of mechanisms to encourage cost-effective utilization of prescription drugs.

Practice Management System (PMS)

A category of healthcare software that deals with the day-to-day operations of a medical practice. Such software frequently allows users to capture patient demographics, schedule appointments, maintain lists of insurance payers, perform billing tasks, and generate reports.

Prescriber

A health care provider licensed to prescribe drugs. Primary prescribers are physicians, but others may have prescriptive authority, depending on state statutes and laws. Other prescribers may include dentists, physician assistants, nurse practitioners and others may have authority to prescribe, typically within specific limits.

Provider

An organization that provides information or data to the [redacted]. Organizations can include reference labs, esoteric labs, hospitals, payers, radiology clinics, clearinghouses, pharmacies, or Pharmacy Benefit Managers (PBMs). Also referred to as *service provider*.

Provider Account

An organization that uses the services of a provider, such as a physician's office, an Independent Physician Association (IPA), a clinic, or a hospital. The provider account uniquely defines the organization, allowing accurate distribution of data to an authorized entity.

A unique identifier that references a specific transaction made by an EMR system and received by the [redacted]. This identifier is assigned to a request upon receipt of the request message. The Request ID is unique across all [redacted] accounts.

SAML Browser/Artifact

A data exchange model by which SAML messages are created by an issuer (EMR), and an artifact (small string token) is transmitted to the consumer ([redacted]). The consumer is then responsible for making a call back to the issuer site with the artifact, so that the issuer can retrieve the actual SAML message for processing.

SAML Browser/POST

A data exchange model by which SAML messages are digitally signed and transmitted from the issuer (EMR) to the consumer ([redacted]) via the user's web browser, or through some HTTP connection simulating a browser. The consumer does not make a callback request to the issuer, and is able to verify the SAML message using the provided signature.

Security Assertion Markup Language (SAML)

An XML standard for exchanging authentication and authorization data between security domains (that is, between an identity provider and a service provider). SAML is a product of the OASIS Security Services Technical Committee.

Single Sign-On (SSO)

The practice of facilitating user login to a single site or application, and then allowing that same user access to another site or application without requiring the user to enter a second set of user credentials (*User ID* and *Password*).

SOAP

An XML-based protocol for exchanging information in a decentralized, distributed environment. It provides an envelope that defines a framework for describing what is in a message and how to process it, encoding rules for expressing application-defined datatypes, and a convention for representing remote procedure calls and responses.

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