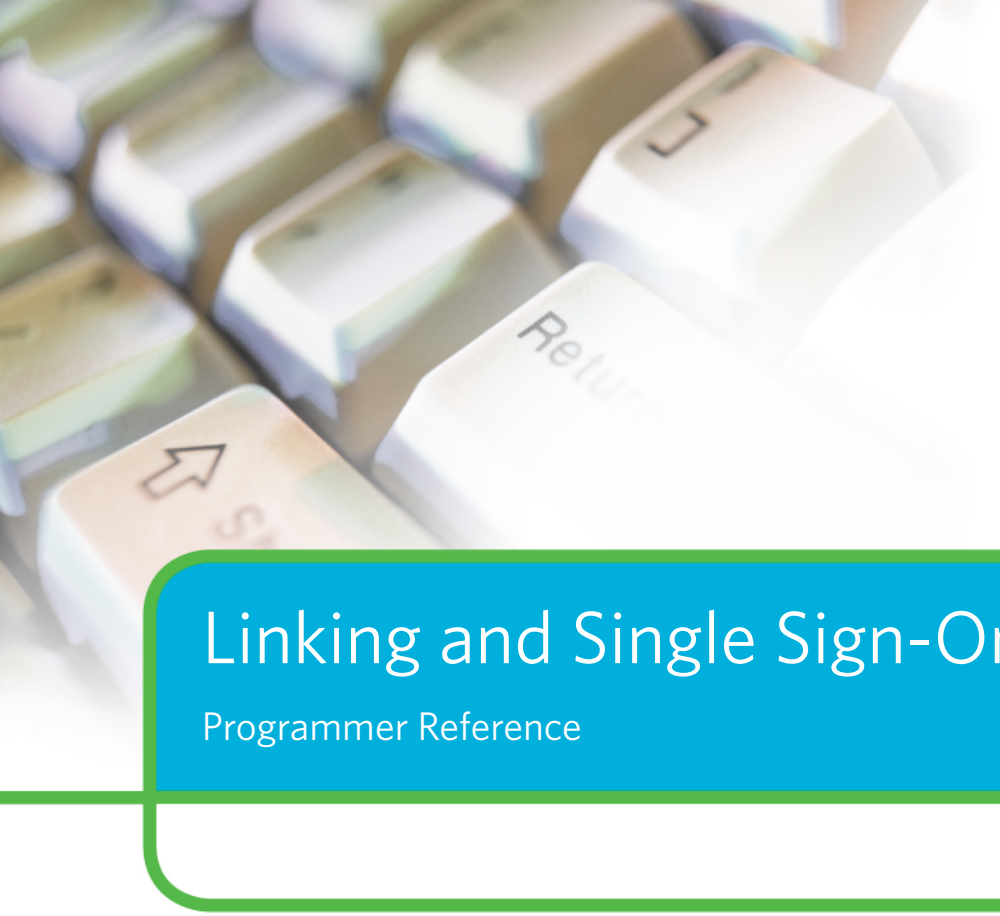

Care360®

Linking and Single Sign-On

Programmer Reference

Release 14.1

Quest Diagnostics®

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About This Manual

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Introduction

This *Care360® Linking and Single Sign-On (SSO) Programmer Reference* provides information on integrating a third-party electronic medical record (EMR) application into the Care360 Labs & Meds product suite. The linking and single sign-on features allow a third-party EMR to directly access specific functions of Care360 Labs & Meds via single sign-on (SSO).

Additional services available to a linked application include the following:

- **User summary services.** The ability to view Care360 Labs & Meds lab result and user message counts from within the linked application.
- **Care360 Labs & Meds user interface (UI) customization.** The ability to customize certain elements of the Care360 Labs & Meds 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 Care360 Labs & Meds within the linked application.
- **Patient demographic updates.** The ability for the linked application to synchronize patient demographic, scheduling, and/or billing data with Care360 Labs & Meds patient database (via Care360 Data Exchange). The linked application can submit patient add, update, merge, delete, and/or schedule updates to Care360 Labs & Meds. 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 Care360 Labs & Meds.

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 Care360 Data Exchange. 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 Quest Diagnostics.

What's New in This Release

Care360 Linking and Single Sign-On (SSO) provides no feature updates or enhancements for the 14.1 release.

Documentation Conventions

This manual 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 calls your attention to important information in several ways:

  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 special cases.

  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.

- This manual may contain cross-references to external documentation to which you may not currently have access. Please contact Quest Diagnostics to obtain a copy of any additional product documentation that you require.
- When viewing this manual using Adobe® Reader®, we recommend that you do the following to ensure optimal display:

  1. Click *Edit* > *Preferences*.

     The *Preferences* dialog box appears.

  2. In the *Categories* list, click *Page Display*.
  3. 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.
  4. 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
BU	(Quest Diagnostics) Business Unit
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
ICD9 or ICD-9	International Classification of Diseases (of the World Health Organization), 9th 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

Abbreviation/Acronym	Description
PPMS	Physician Practice Management System
SAML	Security Assertion Markup Language
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
UPIN	Universal Physician Identifier Number
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 Care360 Data Exchange:

- ***Care360 EHR Interfaces Programmer Reference.*** Provides information on integrating a non-Quest Diagnostics service provider (laboratory) and/or third-party electronic medical record (EMR) or electronic health record (EHR) application into the Care360 Labs & Meds 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 Care360 Labs & Meds, 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 Care360 Labs & Meds, or via a third-party EMR/EHR application.
- ***Care360 Labs & Meds User Manual.*** Provides information on accessing and using the Care360 Labs & Meds 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 Care360 Labs & Meds

In This Chapter:

- About Linking and Single Sign-On (SSO) 2
- Customizing the Care360 Labs & Meds User Interface 11
- About the Care360 SSO and Web Services Site 14
- About Lab Order Echo 17
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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 Care360 Labs & Meds. Application linking enables the partner application to directly access specific functions of Care360 Labs & Meds, from within the context of the partner application.

Linking to Care360 Labs & Meds enables a partner application to effectively offer lab order and result services through an existing EMR solution. Users can launch directly into a specific Care360 Labs & Meds function, using SSO and maintaining their current patient context. SSO access allows the user to transparently log in to Care360 Labs & Meds from within the partner application. (For more information about SSO, see "About Single Sign-On (SSO)" on page 4.)

A partner application that is linked to Care360 Labs & Meds can also take advantage of a number of related services, including the following:

- **Care360 Labs & Meds UI customization.** For more information, see "Customizing the Care360 Labs & Meds User Interface" on page 11.
- **Lab order echo.** For more information, see "About Lab Order Echo" on page 17.
- **Rx order echo.** For more information, see "About Rx Order Echo" on page 18.
- **User summary services.** For more information, see Chapter 3, "User Summary Web Service API Reference" beginning on page 31.
- **Patient demographic, scheduling, and/or billing services.** For more information, see Chapter 4, "Submit Patient Demographic Web Service API Reference" beginning on page 38 and Chapter 5, "Retrieve Patient Demographic Web Service API Reference" beginning on page 51.

Note: A partner application must allow users to view Care360 Labs & Meds in its native resolution (1024x768), displaying all existing menus, headers, and other navigation elements. In most cases, Care360 Labs & Meds will appear in a new browser window; otherwise, the partner application must display in a higher resolution so that Care360 Labs & Meds can appear in a separate frame within the application.

Care360 Labs & Meds Functions Available for Linking

A partner application can link directly to the following Care360 Labs & Meds functions (also referred to as the "landing" page):

- ***New Results.*** The EMR user can directly access the Care360 Labs & Meds *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 Care360 Labs & Meds users via user messaging or fax.
- ***Lab Orders.*** The EMR user can directly access the Care360 Labs & Meds *Lab Orders* page to create an electronic lab order for submission to either a Quest Diagnostics Business Unit (BU) or a third-party laboratory 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 Care360 Labs & Meds *Patient Summary* page. In Care360 Labs & Meds, 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 Care360 Labs & Meds function, the user can then access the entire application, limited only by their assigned access permissions. For information about using specific Care360 Labs & Meds functions, refer to the *Care360 Labs & Meds User Manual* or online help.

Formatting Requirements for Linking to Care360 Labs & Meds

When a partner enables users to link directly to Care360 Labs & Meds functions, the link that appears within the partner application must be formatted according to the following guidelines:

- The full Care360 Labs & Meds product name must be displayed whenever possible, and should appear as shown below:

  Care360® Labs & Meds
- The registered trademark symbol (®) must always follow Care360.
- If the partner application will display a Care360 logo, the following logo must be used:

> **Note:** You can obtain the Care360 logo from the Care360 Labs & Meds SSO and Web Services site. For more information, see "About the Care360 SSO and Web Services Site" on page 14.

Prior to appearing in a production environment, any links to Care360 Labs & Meds 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 Care360 Labs & Meds, the user of the partner application can transparently log in to Care360 Labs & Meds via the SSO capability. That is, the user is not required to log in separately to Care360 Labs & Meds 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 Care360 Labs & Meds 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 Care360 Labs & Meds function, and is immediately redirected to the appropriate area of Care360 Labs & Meds. If possible, the user's current patient context is maintained within the selected Care360 Labs & Meds function (see "Maintaining Patient Context", below).
3. The partner application performs user authentication (in the background) to Care360 Labs & Meds.

> **Note:** Authentication to Care360 Labs & Meds 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 Care360 Labs & Meds, see "About the Care360 SSO and Web Services Site" on page 14.

Maintaining Patient Context

A partner application can be can be configured so that when a user accesses a Care360 Labs & Meds 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 Care360 Labs & Meds 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 Care360 to populate the Care360 database with patient demographic information. The partner application can then pass their unique patient identifier (PID) to Care360 Labs & Meds, 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 Care360 Labs & Meds 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 Care360Transaction 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 Care360 Labs & Meds 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 Care360 Labs & Meds.

  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 Care360 Labs & Meds). The patient demographics part of the Care360Transaction XML is based on the HL7 A31 segment, defined by the xsd file http://custcenter.medplus.com/tech-support/portalcenter/docs/xsd/ADT_A31.xsd. The value of the Care360Transaction parameter must be base64 encoded by the partner application.

  When utilizing the Care360Transaction 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 Care360 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 care360Transaction HTTP parameter and a Care360 transaction example XML message can be accessed from the following URL: http://custcenter.medplus.com/tech-support/portalcenter/

				Bill Types - These are the required fields based on what is sent[a]			
Header	XML Main Tag	XML Sub Tag	Description	Client	Patient	Insurance	ePre
lab.Lab Order Info	dxCodes		Diagnosis Code (ICD9 Codes), 10 codes max	O	O	O	I
	testCodes		Order Code (Quest Diagnostics specific), 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*) **Note:** Pad the date with zeroes for the *hhmmss* timestamp, for example, 19901124000000.	R	R	R	R
	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

Header	XML Main Tag	XML Sub Tag	Description	Bill Types - These are the required fields based on what is sent[a] Client	Patient	Insurance	ePre
PID.Patient Information, *continued*	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*
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.6	Country	O	O	O	O
	GT1.06		Home Phone (1234567890, no hyphens or dashes allowed) **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.	O	O	O	O
	GT1.07		Work Phone (1234567890, no hyphens or dashes allowed)	O	O	O	O

Header	XML Main Tag	XML Sub Tag	Description	Bill Types - These are the required fields based on what is sent[a] Client	Patient	Insurance	ePre
GT1.Guarantor Information, *continued*	GT1.08		Birth Date (*mm/dd/yyyyhhmmss* or *mmddyyyyhhmmss*, no hyphens or dashes allowed) **Note:** Pad the date with zeroes for the *hhmmss* timestamp, for example, 19901124000000.	O	O	O	O
	GT1.09		Gender (M/m or F/f) **Note:** "Unknown" displays as blank.	O	O	O	O
	GT1.11		Relationship to patient 1 = Self 2 = Spouse 3 = Child	R	R	R	O
	GT1.12		SSN (9 digits, no hyphens or dashes allowed)	O	O	O	O
Employer Information	GT1.16		Employer Name	O	O	O	O
	GT1.17	AD.1	Address 1	O	O	O	O
		AD.2	Address 2	O	O	O	O
		AD.3	City	O	O	O	O
		AD.4	State (2-digit alpha)	O	O	O	O
		AD.5	Zip (5 or 9 digits, no hyphens or dashes allowed)	O	O	O	O
		AD.6	Country	O	O	O	O
IN1.Insurance Information	IN1.03		Insurance Company ID (Quest Diagnostics billing code) Valid insurance IDs appear in the order entry *Insurance ID* field in Lab Orders and Results.	I	O	R	O

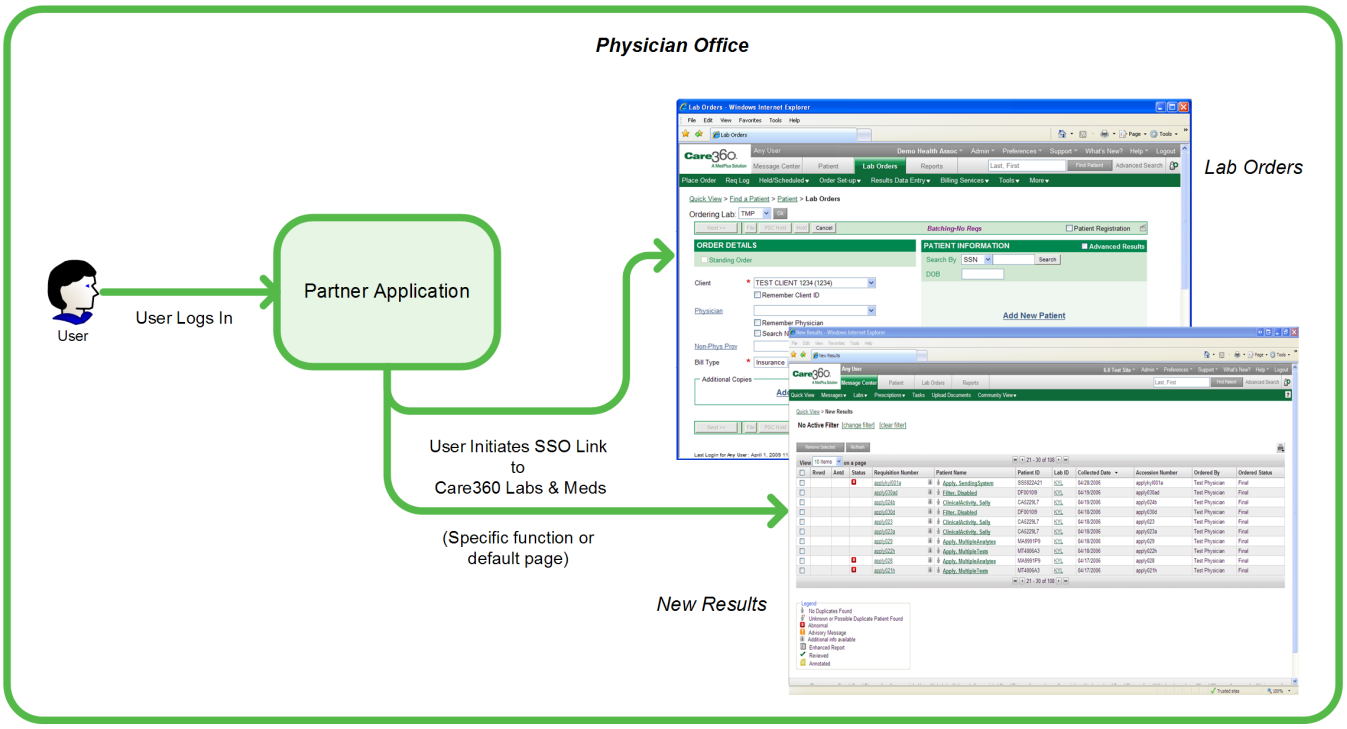
Header	XML Main Tag	XML Sub Tag	Description	Bill Types - These are the required fields based on what is sent[a] Client	Patient	Insurance	ePre
IN1.Insurance Information, *continued*	IN1.04		Insurance Name Valid insurance names appear in the *Select Carrier* drop-down list in Lab Orders and Results. **Note:** 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. If an invalid insurance name is provided, a valid insurance carrier will need to be selected from the carriers listed during order entry.	I	O	O	O
	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: P = Patient C = Client T = Insurance	R	R	R	O

a. R = Required, O = Optional, I = Ignored

Process Walkthrough: Linking and SSO

The diagram below illustrates (at a high level) the flow of information between Care360 Labs & Meds and a linked partner application. Following the diagram is a step-by-step walkthrough of the linking and SSO processes illustrated in the diagram.

Linking to Care360 Labs & Meds



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 Care360 Labs & Meds.

1. Quest Diagnostics issues a Care360 Labs & Meds 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 Care360 Labs & Meds from the partner application, a login page appears, prompting the user to enter their assigned Care360 Labs & Meds user ID and password.

   Note: The user is allowed five attempts to log in using their assigned Care360 Labs & Meds 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 Care360 Labs & Meds Customer Support in order to proceed.

4. When the user successfully logs in to Care360 Labs & Meds the first time, their user information and password are saved to a SAML user mapping table.
5. When the user subsequently links to Care360 Labs & Meds, the Care360 Labs & Meds login process is completed automatically based on their stored user credentials.

   When a user links to Care360 Labs & Meds via an SSO connection, they can then access *any* Care360 Labs & Meds functions that are enabled by their user credentials.

Accessing Care360 Labs & Meds via an Established SSO Link

The following steps outline the procedure—and associated systems—involved in accessing Care360 Labs & Meds from a partner application, after a user's SSO link has been initialized (outlined in "Initializing a User's SSO Connection" on page 9).

1. A user logs in to the partner application.
2. The partner application user initiates a link to Care360 Labs & Meds. A link to Care360 Labs & Meds can be established in one of the following ways:
   - The link can open Care360 Labs & Meds 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 care360Transaction field ID.
   - The link can open Care360 Labs & Meds with no specific function specified. In this case, the user's default page (as configured in the Care360 Labs & Meds) appears.
3. Care360 Labs & Meds 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* Care360 Labs & Meds functions that are enabled by their user credentials.

Accessing Care360 Labs & Meds Directly

Allowing a user direct access to Care360 Labs & Meds is optional. When a user accesses Care360 Labs & Meds directly, there is no connection established to a partner application, and Care360 Labs & Meds may appear in its default format (that is, with no custom UI branding).

The procedure for accessing Care360 Labs & Meds directly varies depending on the partner application's configuration. If the partner application's SSO credentials are configured for direct access to Care360 Labs & Meds, all of the partner application's users can log directly into Care360 Labs & Meds using their existing Care360 Labs & Meds user ID and password. If the partner application is not configured for direct access to Care360 Labs & Meds, direct access must be requested on a per user basis.

The following steps outline the procedure—and associated systems—involved in accessing Care360 Labs & Meds directly for partner applications that are **not** configured for direct access.

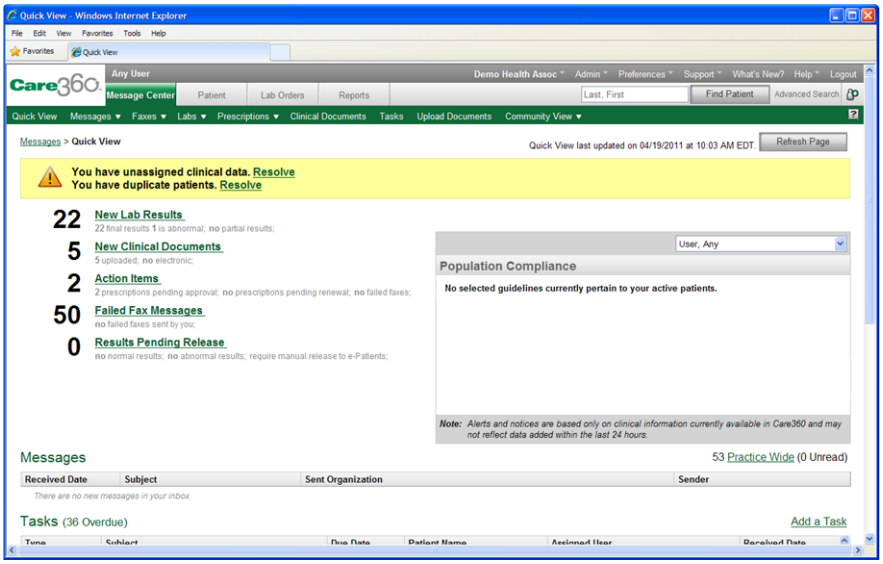
1. Quest Diagnostics issues a user a separate password, associated with either their existing Care360 Labs & Meds user ID, or a separate user ID.
2. The user logs in to Care360 Labs & Meds directly with their assigned user ID and password.

> **Note:** The Care360 Labs & Meds 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* Care360 Labs & Meds functions that are enabled by their user credentials.

Customizing the Care360 Labs & Meds User Interface

When Care360 Labs & Meds is linked to a partner application, it is possible to customize certain elements of the Care360 Labs & Meds user interface (UI) to provide a more seamless experience for users as they move between the two applications.



The elements of the Care360 Labs & Meds that can be customized include the following:

- **Logos and images.** The Care360 Labs & Meds logo (in the upper-left corner), as well as the Quest Diagnostics 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" on page 12.
- **Color palette.** The overall color scheme of the Care360 Labs & Meds user interface, including the navigational buttons, can be modified to reflect the partner organization or application. For details, see "Color Palette Specifications" on page 12.
- **Copyright and trademark text.** The Quest Diagnostics 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 page 12.
- **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 page 12.
- **Custom uniform resource locator (URL).** The web address (or *URL*) that is used to access Care360 Labs & Meds—and appears in the user's web browser while using the Care360 Labs & Meds—can be changed to include a domain name that reflects the partner organization or application. For details, see "Custom URL Specifications" on page 13.
- **User manual and help.** The *Care360 Labs & Meds User Manual* and online help can be replaced with a "generic" version (with Quest Diagnostics references and branding removed). For details, see "User Manual and Help Specifications" on page 13.

Custom UI Specifications

The following sections provide detailed specifications of the Care360 Labs & Meds UI elements that can be customized for use with a partner application.

Logo and Image Specifications

The following Care360 Labs & Meds logos and/or images can be replaced or removed:

Logo/Image	Location	File Type	Dimensions (Pixels)
Care360 Labs & Meds logo	Upper-left corner of application	.GIF	197 W x 70 H
Quest Diagnostics logo	Left-hand navigation pane of application	.GIF	125 W x 41 H
Care360 Labs & Meds logo	Upper-left corner of login page	.GIF	302 W x 99 H

Color Palette Specifications

The overall color scheme of the Care360 Labs & Meds 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 Quest Diagnostics copyright and trademark text that appears along the bottom of each Care360 Labs & Meds 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:

Care360 Labs & Meds Link	Location	Customization Options
About Care360	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.

Care360 Labs & Meds Link	Location	Customization Options
Feedback	Each portal page	Can change email recipient.
Quest Diagnostics 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 Care360 Labs & Meds internal destination).

Custom URL Specifications

In order for a partner application to link to a custom "branded" version of Care360 Labs & Meds, the partner application must connect via a custom URL that identifies the branded version of Care360 Labs & Meds 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 Care360 Labs & Meds directly (outside the context of the partner application).

The format of the custom URL is as follows:

`https://<portal server name>:<port>/care360.login?branduid=<brand uid>`

where:

- `<portal server name>:<port>` are the server name and (optional) port number associated with the Care360 Labs & Meds installation to which the partner application is connecting

  – and –

- `<brand uid>` is a random number that is generated by Quest Diagnostics to identify the branded Care360 Labs & Meds instance to display.

For example:

`https://portal.care360.com/care360/care360.login?branduid=12345`

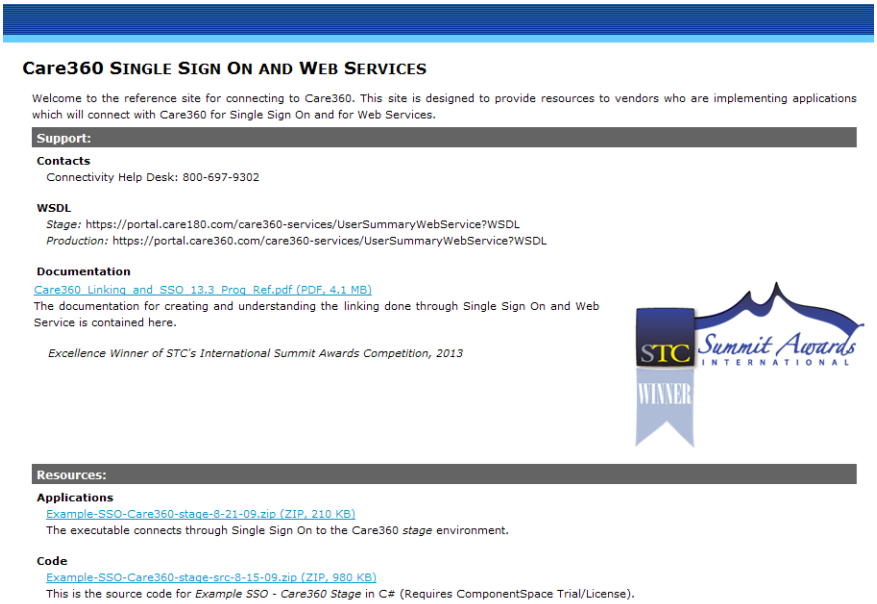
Partners that allow their users to access Care360 Labs & Meds directly (outside the context of the partner application) can either provide their users with the Quest Diagnostics-supplied URL, or they can create a custom URL by aliasing a more appropriate domain name.

User Manual and Help Specifications

The *Care360 Labs & Meds User Manual* and online help can be replaced with a generic user manual and help, which contain no references to Quest Diagnostics, and no Care360 Labs & Meds or Quest Diagnostics branding, such as logos or images.

About the Care360 SSO and Web Services Site

The Care360 Labs & Meds SSO and Web Services site is a companion to the *Care360 Linking and Single Sign-On (SSO) Programmer Reference* that provides additional support to vendors who are developing partner applications to interact with Care360 Labs & Meds. 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 Care360 Labs & Meds via SSO and web services.



This section provides an overview of each of the tools provided on the Care360 Labs & Meds SSO and Web Services site, as well information about accessing the site online.

Note: For information about linking a partner application to Care360 Labs & Meds, see Chapter 1, "Linking to Care360 Labs & Meds" beginning on page 1.

Accessing the Care360 SSO and Web Services Site

The *Example SSO - Care360 Stage* application—in addition to a number of other resources for partners who are developing applications to interact with Care360 Labs & Meds—is available for download from the Care360 Labs & Meds 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 Quest Diagnostics) for access.

In addition to providing access to the Example SSO application, the Care360 SSO and Web Services site provides additional Care360 Labs & Meds-related information and resources, such as the following:

- **Support.** Contact information for various members of the Care360 Labs & Meds 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 - Care360 Stage sample application and source code.

Download the Sample Application and Source Code

1. Access the Care360 SSO and Web Services site at the following URL:

   http://custcenter.medplus.com/tech-support/portalcenter/

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.

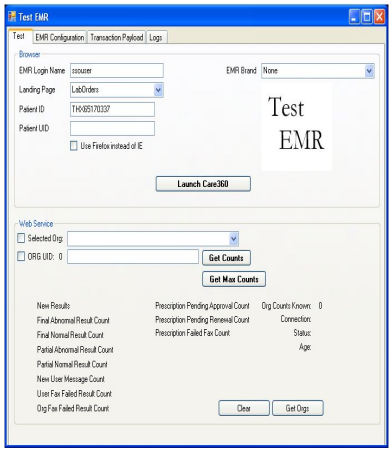
For an overview of the file contents, see "About the Sample Application" on page 15.

About the Sample Application

The Care360 Labs & Meds 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 Care360 Labs & Meds SSO and Web Services site provides the *Example SSO - Care360 Stage* executable client application (shown below), for linking to Care360 Labs & Meds via SSO in the Care360 Labs & Meds Staging environment. Once connected, the Example SSO - Care360 Stage application demonstrates the use of the User Summary web service for retrieving user data, and the Branding options for linking to Care360 Labs & Meds 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 Care360 Labs & Meds itself.

Sample Source Code

The Care360 Labs & Meds SSO and Web Services site also provides code samples and supporting project files (as applicable) to demonstrate the working Example SSO - Care360 Stage application. (For more information about the sample code, see "About the Sample Code" on page 16.)

About the Sample Code

The Care360 Labs & Meds 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 Care360 Labs & Meds. 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 Care360 Labs & Meds.

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.

Quest Diagnostics Disclaimer

All sample code referenced in this Programmer Reference and the Care360 Labs & Meds 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 Quest Diagnostics.

Third-Party Disclaimer

Quest Diagnostics 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

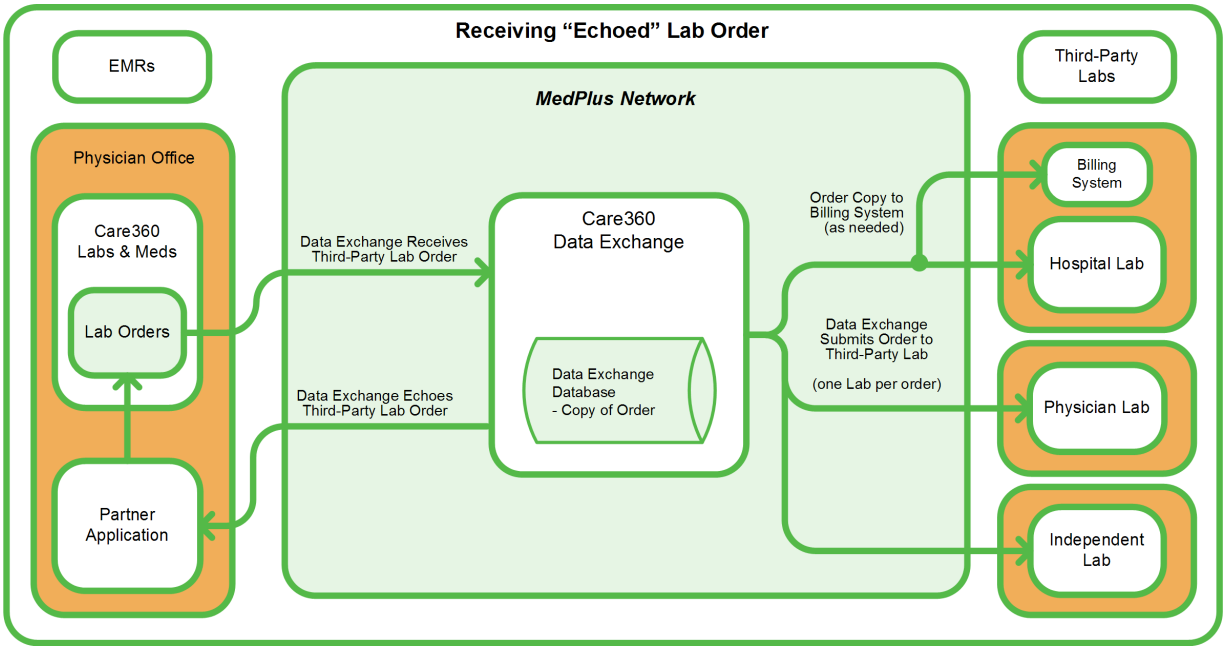
When the user of a partner application links to Care360 Labs & Meds to place a lab order, that order can be "echoed" back to the partner application. Order echo involves Care360 Labs & Meds sending a copy of the order back to the partner application, so that it can store a record of the order for the 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 Care360 Labs & Meds) 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 Care360 Labs & Meds and a linked partner application. Following the diagram is a step-by-step walkthrough of the order echo process illustrated in the diagram.



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 Care360 Labs & Meds.

   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 Quest Diagnostics lab or any lab that is in the Care360 system, or the user creates and prints / delivers a lab order for a generic lab (a lab that is not in the Care360 system).
4. The Data Exchange records the order transaction, and stores a copy of the discrete content of the order.
5. The Data Exchange "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 Care360 Labs & Meds to place a prescription order, that order can be "echoed" back to the partner application. Rx Order echo involves Care360 Labs & Meds 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:

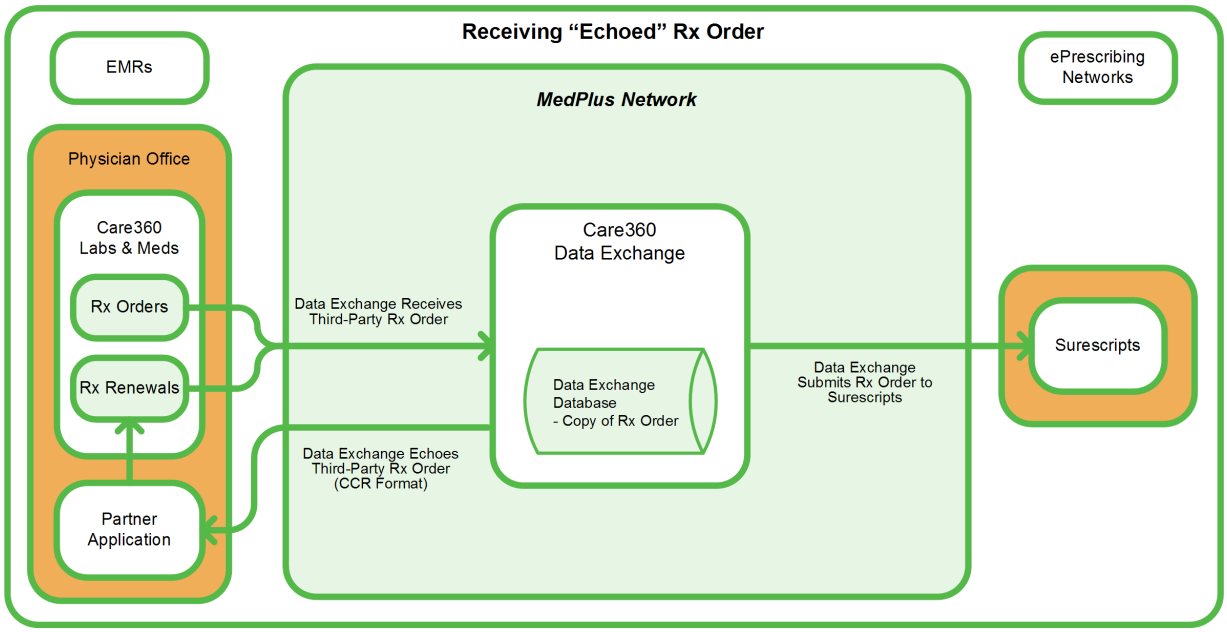
- Enables the partner application to store a copy of each prescription order (placed through the *Prescription Orders* function of Care360 Labs & Meds) to the patient's chart.
- Improves patient records management and office workflow.
- Eliminates the need for redundant data entry.

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 172.

Process Walkthrough: Rx Order Echo

The diagram below illustrates (at a high level) the flow of prescription order data between Care360 Labs & Meds and a linked partner application. Following the diagram is a step-by-step walkthrough of the Rx order echo process illustrated in the diagram.



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 Care360 Labs & Meds.

   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 Care360 Labs & Meds sends the prescription echo to the Data Exchange at the time the prescription is submitted.

5 The Data Exchange records the prescription order transaction, and stores a copy of the discrete content of the prescription order.

6 The Data Exchange "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: Care360 Labs & Meds SSO Specification

In This Chapter:

- About the Care360 Labs & Meds SSO Specification 21
- Establishing Organizational Trust 22
- Implementing SAML 23
- Scenario 1: Care360 Labs & Meds SSO for Interactive Users 26
- Scenario 2: Care360 Labs & Meds SSO for Web Services 28

About the Care360 Labs & Meds SSO Specification

Care360 Labs & Meds 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 Care360 Labs & Meds.

  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 Care360 Labs & Meds. Since password management is not required to access Care360 Labs & Meds, 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 Care360 Labs & Meds 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 Care360 Labs & Meds 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

Quest Diagnostics 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 Care360 Labs & Meds passwords.

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

- ❑ **Performing a security assessment.** Quest Diagnostics 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 Care360 Labs & Meds. 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 Quest Diagnostics.

- ❑ **Providing SAML credentials.** Your SAML implementation must employ a few key pieces of information that must be shared with Quest Diagnostics (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 Quest Diagnostics 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 Quest Diagnostics maintains for you, and is also included in all SAML assertions transmitted by your site to Care360 Labs & Meds.
  - *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 Care360 Labs & Meds 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 Care360 Labs & Meds 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 Care360 Labs & Meds using SAML 1.1:

1. The user is authenticated in the partner application. Before accessing a link to a Care360 Labs & Meds 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 Care360 Labs & Meds feature. The user takes some action (for example, clicking a button or submitting a form) that correlates to a feature hosted by Care360 Labs & Meds. This action triggers the SAML authentication process, and directs Care360 Labs & Meds 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 Care360 Labs & Meds via HTTP+SSL. The SAML response is POSTed to the following URL:

   https://portal.Care360.com/Care360/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				
`care360Transaction`	A Base64-encoded Care360 Transaction Document containing an A31 XML message.	[Base64-encoded `<c360:Care360Transaction>...</c360:Care360Transaction>` payload]	N	
`SAMLResponse`	A Base64-encoded copy of the SAML response XML message.	[Base64-encoded copy of the `<saml:Response>...</saml:Response>` payload]	Y	

Parameter	Description	Example Value	Req'd?	Default
`targetUri`	A Care360 Labs & Meds page identifier, indicating the preferred "landing page."	One of the following: • `NewResults` • `LabOrders` • `Home` • `BlankPage` • `PatientSummary` • `RxPad` • `ActionItems` • `ActionItemFailedFaxes` • `ActionItemsPendingRenewals` • `ActionItemsPendingApprovals` **Notes:** • `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	Care360 Labs & Meds default brand
`TARGET`	A SAML 1.1 parameter that identifies a target page. This parameter is not used by Care360 Labs & Meds 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 Care360 Labs & Meds patient identifier (PID). **Note:** Valid only for the LabOrders, PatientSummary, and RxPad landing pages.	23456	N	

❑ The SAML response is authenticated by Care360 Labs & Meds. Care360 Labs & Meds 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 Care360 Labs & Meds SSO keystore. If found, this step succeeds. This control prevents rogue third parties from forging the identities of Care360 Labs & Meds 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? Care360 Labs & Meds 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 Care360 Labs & Meds? Having verified the signature of the SAML response, Care360 Labs & Meds is assured that the *Issuer* value transmitted within the SAML assertion reflects your partner profile. When Care360 Labs & Meds SSO locates this value in its SAML partner configuration data, your site's identity is verified as a viable SAML asserter.
- Is the asserted partner application user recognized by Care360 Labs & Meds? The `NameIdentifier` value within the SAML assertion provides unique identification of the user, as recognized by the partner application. Care360 Labs & Meds SSO looks up this user identifier in its user mapping table to determine the correlating Care360 Labs & Meds user identity. If found, a Care360 Labs & Meds login session is established for the user. If not found, Care360 Labs & Meds SSO presumes the user is accessing Care360 Labs & Meds via SSO for the first time, and directs the user to a one-time Care360 Labs & Meds login page (for an overview of this process, see "Initializing a User's SSO Connection" on page 9).
- 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 Care360 Labs & Meds user identity, the partner application's *Issuer* is also recorded for that user. On subsequent requests to Care360 Labs & Meds, the SAML *Issuer* is compared to that stored in the user's mapping record. If they match, Care360 Labs & Meds 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 Care360 Labs & Meds to the partner application user/application within the HTTP Response. The returned page reflects the user's new Care360 Labs & Meds login session.

Scenario 1: Care360 Labs & Meds SSO for Interactive Users

In this scenario, SSO is used to establish a Care360 Labs & Meds 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 23, is manifested when the partner application launches the web browser. Doing so loads an HTML document containing a form that targets the Care360 Labs & Meds 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.Care360.com/Care360/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 Care360 Labs & Meds from the partner application link, the user may remain within Care360 Labs & Meds and perform any other tasks he/she is authorized to perform, based upon the Care360 Labs & Meds user access rights previously configured.

About Session Timeouts and Terminations

A user who connects to Care360 Labs & Meds via an SSO link is subject to the same timeout conditions as they would if they were to access Care360 Labs & Meds directly. When a directly-accessed session times out, Care360 Labs & Meds displays the login page. For an SSO-authenticated session, Care360 Labs & Meds 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 Care360 Labs & Meds 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 Care360 Labs & Meds link. Doing so results in a new SSO authentication request to Care360 Labs & Meds.

It is quite possible that users who interact with Care360 Labs & Meds 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.

Care360 Labs & Meds 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 Care360 Labs & Meds session has timed out.
3. A different user has authenticated to the running partner application since the Care360 Labs & Meds browser window was launched. This requires authentication to Care360 Labs & Meds as the "new" partner application user.

About SSO User Initialization

Before successful SSO authentication to Care360 Labs & Meds can occur, users of trusted partner applications must be mapped to Care360 Labs & Meds. This process includes verifying that the user knows his/her Care360 Labs & Meds credentials (*User ID* and *Password*) the first time the user accesses Care360 Labs & Meds via a link from the partner application.

The first time the user initiates SSO-based access to Care360 Labs & Meds, 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 Care360 Labs & Meds 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 Care360 Labs & Meds *User ID* and *Password*, a mapping record is stored within Care360 Labs & Meds that relates the Care360 Labs & Meds user identity to the partner application user identity passed within the SAML assertion.

At the same time, the user's Care360 Labs & Meds password is obfuscated, so the user will *only* be able to access Care360 Labs & Meds 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 Care360 Labs & Meds 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: Care360 Labs & Meds SSO for Web Services

A partner application can leverage SSO in the process of invoking Care360 Labs & Meds web services on behalf of a previously-mapped user (see "About SSO User Initialization" on page 27). Establishing a session using SSO enables the partner application to establish a user-specific context to Care360 Labs & Meds without having to know (or store) the user's Care360 Labs & Meds password. The only web service available for integration is the User Summary service, which is referenced in the following sections.

From the Care360 Labs & Meds 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 Care360 Labs & Meds server. It can then invoke a POST request to send the authentication information, and receive a landing page response along with the Care360 Labs & Meds session cookie.

Example 1: Traffic of HTTP+SSL Request to Care360SSOSecurityCheck

```
--- REQUEST ---
POST /care360/Care360SSOSecurityCheck HTTP/1.0
Host: Care360.dev.medplus.com
Content-Length: 6810
Content-Type: application/x-www-form-urlencoded
User-Agent: SOATest
X-Care360-SessionForWebService: true

SAMLResponse=PFJlc3BvbnNlIHhtbG5zPSJ1cm…

--- RESPONSE ---
HTTP/1.1 200 OK
Date: Mon, 19 Mar 2010 15:28:42 GMT
Pragma: no-cache
Content-Length: 350:
Content-Type: text/html
Expires: Thu, 01 Jan 2011 00:00:00 GMT
Last-Modified: Mon, 20 Nov 2009 16:23:24 GMT
Set-Cookie: JSESSIONID=F2sq7JLqQs19hkGfQf1v7qh1w2LrLgJT5NBz4HLYlYZybgPJr2y4!98796407;path=/
Set-Cookie: securityCheckUri=Care360SSOSecurityCheck
Set-Cookie: IsSSOClient=true
Set-Cookie: sso_lastKnownSessionId=F2sq7JLqQs19hkGfQf1v7qh1w2LrLgJT5NBz4HLYlYZybgPJr2y4!
    987964007!1174318122760; path=/
Accept-Ranges: bytes
Cache-Control: no-cache
Connection: Close

<html>
    <head>
        <meta http-equiv="Content-Type" content="text/html; charset=UTF-8"></meta>
        <title>Care360</title>
    </head>
    <body bgcolor="#FFFFFF"></body>
</html>
```

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

- A `User-Agent` header must be specified. Care360 Labs & Meds 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 Care360 Labs & Meds 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 Care360 Labs & Meds session cookies ('Set-Cookie' response headers) are important within an HTTP response indicating success.

The session cookies are passed back to the Care360 Labs & Meds server on a subsequent web service request.

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

```
--- REQUEST ---
POST /care360-services/UserSummaryWebService HTTP/1.0
Host: localhost:7001
Content-Type: text/xml; charset=UTF-8
Content-Length: 400
Connection: Keep-Alive
SOAPAction: ""
Cookie: JSESSIONID=F2sq7JLqQs19hkGfQf1v7qh1w2LrLgJT5NBz4HLYlYZybgPJr2y4!987964007;
    securityCheckUri=Care360SSOSecurityCheck; IsSSOClient=true;sso_lastKnownSessionId=
    F2sq7JLqQs19hkGfQf1v7qh1w2LrLgJT5NBz4HLYlYZybgPJr2y4!987964007!1174318122760

<SOAP-ENV:Envelope>
 <SOAP-ENV:Body>
  <ns1:getOrgs SOAP-ENV:encodingStyle="http://schemas.xmlsoap.org/soap/
    encoding/"></ns1:getOrgs>
 </SOAP-ENV:Body>
</SOAP-ENV:Envelope>

--- RESPONSE ---
HTTP/1.1 200 OK
Date: Mon, 19 Mar 2010 16:24:18 GMT
Content-Length: 938
Content-Type: text/xml; charset=UTF-8
Connection: Keep-Alive

<?xml version="1.0" encoding="UTF-8"?>
<env:Envelope xmlns:env="http://schemas.xmlsoap.org/soap/envelope/"
    xmlns:soapenc="http://schemas.xmlsoap.org/soap/encoding/"
    xmlns:xsd="http://www.w3.org/2001/XMLSchema"
    mlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
 <env:Body env:encodingStyle="http://schemas.xmlsoap.org/soap/encoding/">
  <m:getOrgsResponse xmlns:m="http://www.Care360.com/services">
   <result xmlns:n1="java:com.medplus.Care360.ws.org.model" xsi:type="n1:WSOrgData">
    <maxOrgs xsi:type="xsd:long">6</maxOrgs>
    <orgList soapenc:arrayType="n1:WSOrg[5]">
     <WSOrg xsi:type="n1:WSOrg">
      <orgName xsi:type="xsd:string">AUTO LNR US04</orgName>
      <orgUID xsi:type="xsd:string">2c928dc01195313601119a1d0bb700f5</orgUID>
     </WSOrg>
     <WSOrg xsi:type="n1:WSOrg">
      <orgName xsi:type="xsd:string">AUTO LNR US05</orgName>
      <orgUID xsi:type="xsd:string">
          2c928dc01195313601119a206c3700f6</orgUID>
```

```
      </WSOrg>
      <WSOrg xsi:type="n1:WSOrg">
        <orgName xsi:type="xsd:string">AUTO LNR US06</orgName>
        <orgUID xsi:type="xsd:string">2c928dc01195313601119a22079700f7</orgUID>
      </WSOrg>
      <WSOrg xsi:type="n1:WSOrg">
        <orgName xsi:type="xsd:string">AUTO LNR US07</orgName>
        <orgUID xsi:type="xsd:string">2c928dc01195313601119a24307c00f8</orgUID>
      </WSOrg>
      <WSOrg xsi:type="n1:WSOrg">
        <orgName xsi:type="xsd:string">AUTO LNR US08</orgName>
        <orgUID xsi:type="xsd:string">2c928dc01195313601119a25a3f200f9</orgUID>
      </WSOrg>
    </orgList>
   <timeStamp xsi:type="xsd:dateTime">2010-04-17T12:59:59.420Z</timeStamp>
   </result>
  </m:getOrgsResponse>
 </env:Body>
</env:Envelope>
```

For more information about the User Summary services, see Chapter 3, "User Summary Web Service API Reference" beginning on page 31.

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 Care360 Labs & Meds web service usage is impacted:

- Sessions established on behalf of Care360 Labs & Meds user for web service usage (as indicated by the X-Care360-IsForWebService header) are managed separately from sessions established for web browser usage. This means that user browser sessions to Care360 Labs & Meds 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 60 seconds (by default) in order to avoid the proliferation of abandoned non-interactive sessions on the Care360 Labs & Meds 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 Care360 Labs & Meds 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

In This Chapter:

- About the User Summary Web Service 32
- User Summary Web Service API Reference 33
- About the WSDL Interface Document 36

About the User Summary Web Service

When new lab results or user messages are received by Care360 Labs & Meds 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 Care360 Labs & Meds on a regular basis to view the information.

When the user summary notification indicates that new information is available within Care360 Labs & Meds, the user can access the desired Care360 Labs & Meds function to view the associated data. Specific data counts that can be communicated to the partner application include the following:

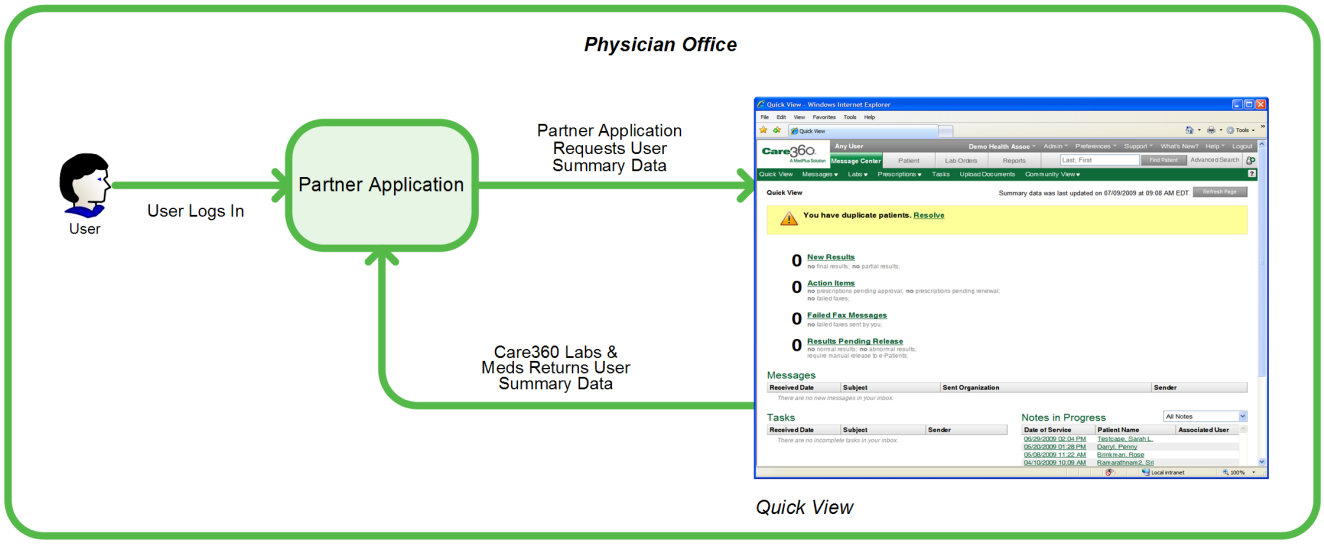
- New results (including Abnormals, Partials, Partials/Abnormals, and Finals)
- Message counts (including user messages and failed faxes)
- Action Items (including Failed Faxes, Pending Renewals, and Pending Approvals)

If a notification of new results is received, for example, the user can link directly to the Care360 Labs & Meds *New Results* page. New results can be viewed for all associated service providers, including Quest Diagnostics, 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 Care360 Labs & Meds and a linked partner application. Following the diagram is a step-by-step walkthrough of the user summary data retrieval illustrated in the diagram.

Retrieving User Summary Data from Care360 Labs & Meds



The following steps outline the procedure—and associated systems—involved in communicating user data (for example, result and user message counts) from Care360 Labs & Meds 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 Care360 Labs & Meds for associated user data.
3. Care360 Labs & Meds 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 web service calls provided by Care360 Labs & Meds. The User Summary component of Care360 Labs & Meds provides operations for receiving notification of the availability of user messages, new results, and pending prescriptions within Care360 Labs & Meds.

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 web service. (Usage details for each method are provided in the following section, "User Summary Web Service Method Details".)

- **getCounts.** Retrieves user summary data from Care360 Labs & Meds 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 Care360 Labs & Meds 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	**Summary** Retrieves user summary data from Care360 Labs & Meds for all organizations with which the current partner application user is associated (up to the maximum number of organizations allowed). **Usage** 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. **Method Signature** WSUserSummaryData getCounts( ) throws SOAPException
getCountsByOrg	**Summary** Retrieves user summary data from Care360 Labs & Meds for one or more specific organization(s) with which the current partner application user is associated. **Usage** The WSUserSummaryData object contains the user summary data that is returned. Throws a SOAPException for the following conditions: • 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
getCountsByOrg, *continued*	**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 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 Care360 Labs & Meds. Responses include:		
	• **counts.** An array of WSUserSummaryCounts objects, one for each organization.	WSUserSummaryCounts[ ]	O
	• **timeStamp.** The date and time at which the query was run.	DateTime	O
	• **warnMesage.** A message indicating an error condition (for example, the maximum number of organizations was exceeded).	String	O
WSUserSummaryCounts	Contains the individual data counts returned within the WSUserSummaryData object. Responses include:		
	• **newResultCount.** The number of new results for the organization.	Int	O
	• **finalAbnormalResultCount.** The number of final abnormal results for the organization.	Int	O
	• **finalNormalResultCount.** The number of final normal results for the organization.	Int	O
	• **ipAbnormalResultCount.** The number of abnormal results that are not yet final for the organization.	Int	O

Object	Description/Attributes	Data Type	Req'd?[a]
WSUserSummaryCounts, *continued*	• **ipNormalResultCount.** The number of normal results that are not final for the organization.	Int	O
	• **userFailedFaxCount.** The number of faxes that have failed for the user from the specified organization.	Int	O
	• **orgFailedFaxCount.** The number of faxes that have failed for the specified organization.	Int	O
	• **newUserMessageCount.** The number of user messages for the user from the specified organization.	Int	O
	• **prescripPendingApprovalCount.** The number of prescriptions for the user pending approval from the specified organization.	Int	O
	• **prescripPendingRenewalCount.** The number of prescriptions for the user pending renewal from the specified organization.	Int	O
	• **prescripFailedFaxCount.** The number of faxed prescriptions that have failed for the user from the specified organization.	Int	O
WSOrgData	Contains the organization data returned by the getOrgs method.		
	Responses include:		
	• **maxOrgs.** The maximum number of organizations that can be queried in a single call.	Long	O
	• **orgList.** An array of WSOrgs, one for each organization.	WSOrg[ ]	O
	• **timeStamp.** The date and time at which the query was run.	DateTime	O
WSOrg	Contains information returned about a particular organization.		
	Responses include:		
	• **orgName.** The common name of the organization.	String	O
	• **orgUID.** The UID with which the organization is associated.	String	R

a. R = 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 (issued by Quest Diagnostics) in order to access the WSDL interface document. For the Care360 Labs & Meds 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 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 Care360 Labs & Meds Staging environment, access the following link:

WSDL Document

https://portal.care180.com/Care360-services/UserSummaryWebService?WSDL

Endpoint

https://portal.care180.com/Care360-services/UserSummaryWebService

Production Environment

Once you have developed, tested, and certified your web service client application in the Care360 Labs & Meds Staging environment, you can then update the application to work in the Care360 Labs & Meds Production environment. Connecting a web service client to the Care360 Labs & Meds 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 Care360 Labs & Meds 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://portal.Care360.com/Care360-services/UserSummaryWebService?WSDL

Endpoint

https://portal.Care360.com/Care360-services/UserSummaryWebService

Chapter 4: Submit Patient Demographic Web Service API Reference

In This Chapter:

- About the Submit Patient Demographic Web Service 39
- Submit Patient Demographic Web Service API Reference 46
- About the WSDL Interface Document 49

About the Submit Patient Demographic Web Service

Patient demographics integration enables patient demographic changes that occur within either Care360 Labs & Meds 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 Data Exchange, which then forwards (pushes) the updates to the opposing application.

In addition, the Submit Patient Demographic web service enables a partner application to submit scheduling updates to Care360 Labs & Meds, and enable Care360 Labs & Meds to submit financial (billing) transactions to a partner application.

Note: The ability for Care360 Labs & Meds 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 Care360 Labs & Meds.

The types of 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 Data Exchange maintains a record of all patient demographic transactions that occur, whether they are initiated by Care360 Labs & Meds or by a partner application. Any errors that occur between the Data Exchange and Care360 Labs & Meds or a partner application are returned to the Data Exchange.

Notes:

- For detailed specifications on the HL7 demographic (ADT), scheduling (SIU), and billing (DFT) messages that are sent either to or from the Data Exchange, refer to Chapter 6, "Patient Demographic HL7 Specification" beginning on page 63.
- Outbound push services to a partner application (for demographic and/or billing updates) requires additional configuration. Contact Quest Diagnostics 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 Care360 Labs & Meds. For more information about the Retrieve Patient Demographic web service, refer to Chapter 5, "Retrieve Patient Demographic Web Service API Reference" beginning on page 51.

Submit Patient Demographic Web Service Connectivity

The transfer of all patient demographic updates between a partner application and the Data Exchange 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 46.

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 Care360 Labs & Meds.

Both update types are processed in the order in which they are received by Care360 Labs & Meds. To distinguish real-time and batch updates, each type is submitted to the Data Exchange 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 46.

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 Care360 Labs & Meds. 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 Care360 Labs & Meds).
- **"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. Care360 Labs & Meds 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 page 40 and ""Fuzzy" Matching Detail" on page 42.

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	• 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, Care360 Labs & Meds returns an error to the partner application.
Update Patient	• 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, Care360 Labs & Meds returns an error to the partner application.

PID-Only Matching Request	Potential Results
Delete Patient	• If the incoming PID matches no existing patient in the target organization, Care360 Labs & Meds 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, Care360 Labs & Meds returns an error to the partner application.
Merge Patients	• If the target organization contains no patient with the same PID for either the "correct" patient or the "incorrect" patient, Care360 Labs & Meds 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, Care360 Labs & Meds returns an error to the partner application.
Schedule Patient	• 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, Care360 Labs & Meds returns an error to the partner application.

a. You 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.

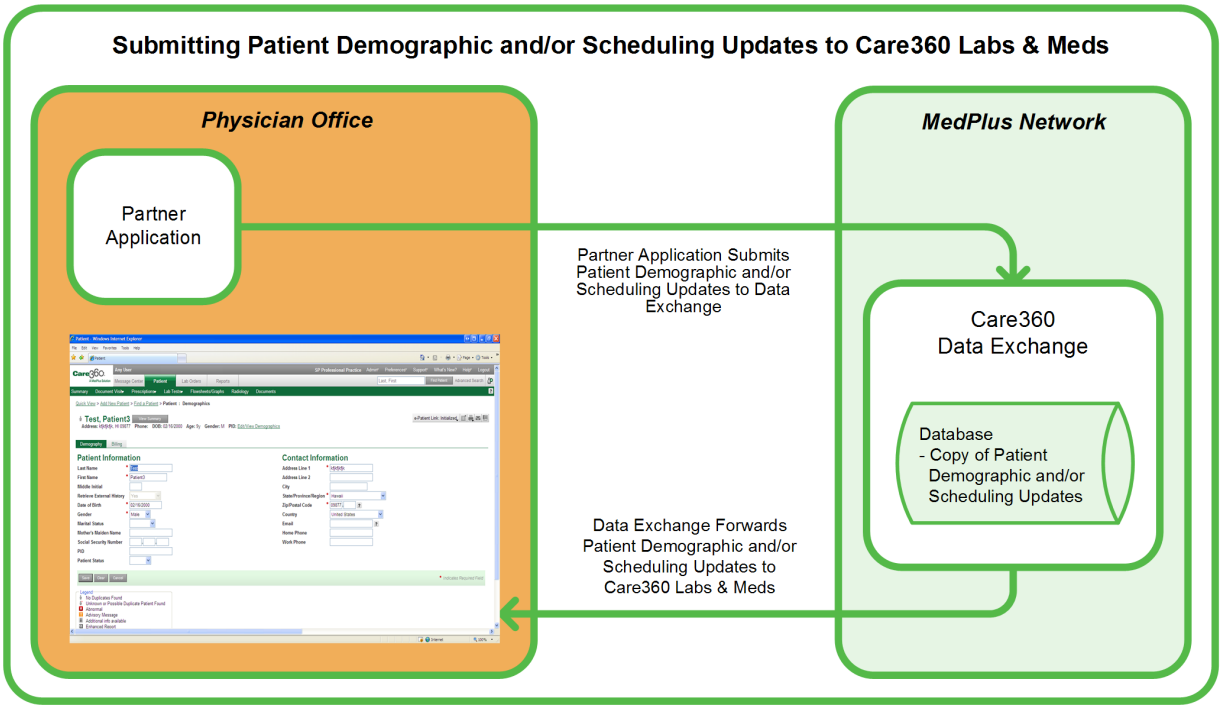
"Fuzzy" Matching Request	Potential Results
Add Patient	• If Care360 Labs & Meds finds no high-confidence match between existing patients in the target organization and the incoming patient demographics, the patient is added. • If Care360 Labs & Meds finds a high-confidence match between a single patient in the target organization and the incoming patient demographics, the matching patient is updated. • If Care360 Labs & Meds finds more than one existing patient that has a high-confidence or ambiguous match with the incoming patient demographics, Care360 Labs & Meds adds the patient, and marks the patient as a potential duplicate. • If Care360 Labs & Meds finds an ambiguous match between the incoming patient demographics and a single patient in the target organization, Care360 Labs & Meds adds the patient, and marks the patient as a potential duplicate.
Update Patient	• If Care360 Labs & Meds finds no high-confidence match between existing patients in the target organization and the incoming patient demographics, the patient is added. • If Care360 Labs & Meds finds a high-confidence match between a single patient in the target organization and the incoming patient demographics, the matching patient is updated. • If Care360 Labs & Meds finds more than one existing patient that has a high-confidence or ambiguous match with the incoming patient demographics, Care360 Labs & Meds adds the patient, and marks the patient as a potential duplicate. • If Care360 Labs & Meds finds an ambiguous match between the incoming patient demographics and a single patient in the target organization, Care360 Labs & Meds adds the patient, and marks the patient as a potential duplicate.
Delete Patient	• If Care360 Labs & Meds finds no high-confidence match between existing patients in the target organization and the incoming patient demographics, Care360 Labs & Meds returns an error to the partner application. • If Care360 Labs & Meds finds a high-confidence match between a single patient in the target organization and the incoming patient demographics, the matching patient is deleted.[a] • If Care360 Labs & Meds finds more than one high-confidence match between existing patients in the target Organization and the incoming patient demographics, Care360 Labs & Meds returns an error to the partner application.

"Fuzzy" Matching Request	Potential Results
Merge Patients	• If the target organization contains no match for either the "correct" patient or the "incorrect" patient, Care360 Labs & Meds 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, Care360 Labs & Meds returns an error to the partner application.
Schedule Patient	• 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, Care360 Labs & Meds returns an error to the partner application.

a. You 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.

Process Walkthrough: Submitting Patient Demographic Updates

The diagram below illustrates (at a high level) the flow of information between a partner application, the Data Exchange, and Care360 Labs & Meds. Following the diagram is a step-by-step walkthrough of the patient demographic processes illustrated in the diagram.



The following steps outline the process—and associated systems—involved in a partner application submitting patient demographic and/or scheduling updates to Care360 Labs & Meds.

1. The partner application submits patient demographic and/or scheduling update messages to the Data Exchange via the Submit Patient Demographic web service.

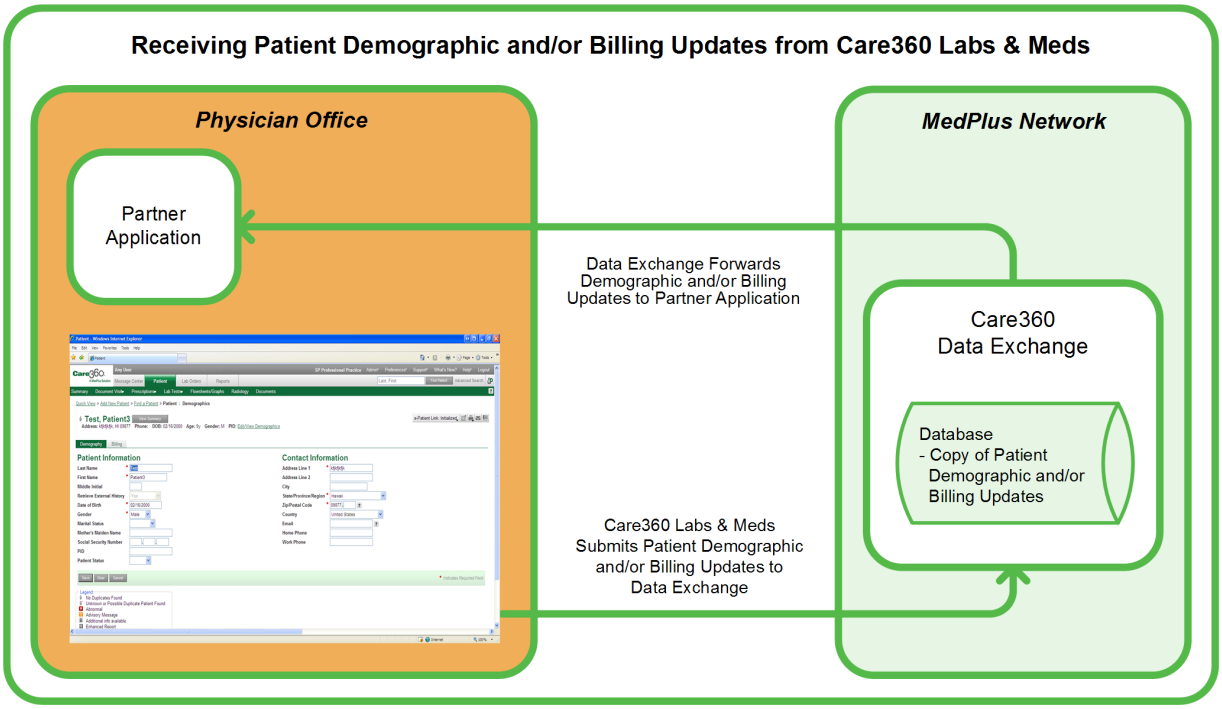
   Note: Patient demographic and/or scheduling update messages provided by the partner application must be formatted according to the specifications detailed in the Chapter 6, "Patient Demographic HL7 Specification" beginning on page 63.

2. The Data Exchange receives the patient demographic and/or scheduling messages from the partner application, and verifies the format and content of those messages.
3. The Data Exchange records the patient demographic transaction, and stores a copy of the discrete content of the messages for 90 days.
4. The Data Exchange converts the patient demographic (ADT) and/or scheduling (SIU) update messages to the Care360 Labs & Meds format, and then forwards the messages to Care360 Labs & Meds.
5. Care360 Labs & Meds applies the updates to its patient database and/or scheduling system.

   Any validation errors that occur within Care360 Labs & Meds are returned to the Data Exchange.

Process Walkthrough: Receiving Patient Demographic Updates

The diagram below illustrates (at a high level) the flow of information between Care360 Labs & Meds, the Data Exchange, and a partner application. Following the diagram is a step-by-step walkthrough of the patient demographic processes illustrated in the diagram.



The following steps outline the process—and associated systems—involved in a partner application receiving patient demographic and/or billing updates from Care360 Labs & Meds.

1 The Data Exchange receives the patient demographic and/or billing messages from Care360 Labs & Meds, and verifies the format and content of those messages.

2 The Data Exchange records the patient demographic transaction, and stores a copy of the discrete content of the messages for 90 days.

3 The Data Exchange converts the Care360 Labs & Meds 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 Quest Diagnostics 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 Data Exchange.

Submit Patient Demographic Web Service API Reference

This section provides details about the Submit Patient Demographic web service calls provided by the Data Exchange. The Submit Patient Demographic web service component of the Data Exchange provides operations for receiving and processing patient demographic updates from a partner application, and forwarding those updates to Care360 Labs & Meds. Demographic updates can be submitted either in real-time or batch mode.

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

Note: For detailed specifications on the HL7 demographic (ADT) and scheduling (SIU) messages that are sent to the Data Exchange for processing, see Chapter 6, "Patient Demographic HL7 Specification" beginning on page 63.

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 the following section, "Submit Patient Demographics Method Details".)

- **submitRealTimeADTMessage.** Submits a patient demographic update ADT message (in HL7 format) to the Data Exchange for real-time delivery to Care360 Labs & Meds.
- **submitBatchADTMessage.** Submits a patient demographic update ADT message (in HL7 format) to the Data Exchange in batch mode that places the message in a queue for later delivery to Care360 Labs & Meds.

Submit Patient Demographics Method Details

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

Method	Description
submitRealTimeADTMessage	**Summary** Submits a patient demographic update (in HL7 format) to the Data Exchange in real-time mode. This means that each HL7 message is delivered to Care360 Labs & Meds immediately. **Usage** The DemographicRequest object contains the inbound patient demographic update. **Notes:** • Even if an inbound patient demographic update is accepted by the Data Exchange, it still may ultimately be rejected by Care360 Labs & Meds. • For detailed specifications on formatting patient demographic update messages that are sent to the Data Exchange for processing, see Chapter 6, "Patient Demographic HL7 Specification" beginning on page 63. **Method Signature** DemographicResponse submitRealTimeADTMessage(DemographicRequest request) throws SOAPException

Method	Description
submitBatchADTMessage	**Summary** Submits a patient demographic update (in HL7 format) to the Data Exchange in batch mode. This means that each HL7 message will be placed in a queue for later delivery (for example, several hours) to Care360 Labs & Meds. **Note:** Only one HL7 message for one patient can be submitted per submitBatchADTMessage call. **Usage** The InboundPatientDemographicRequest object contains the inbound patient demographic update. **Notes:** • Even if an inbound patient demographic update is accepted by the Data Exchange, it still may ultimately be rejected by Care360 Labs & Meds. • For detailed specifications on formatting patient demographic update messages that are sent to the Data Exchange for processing, see Chapter 6, "Patient Demographic HL7 Specification" beginning on page 63. **Method Signature** DemographicResponse submitBatchADTMessage(DemographicRequest request) throws SOAPException

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	Contains the inbound patient demographic update. **Note:** For detailed specifications on formatting patient demographic updates that are sent to the Data Exchange for processing, see Chapter 6, "Patient Demographic HL7 Specification" beginning on page 63. Attributes that can be set for this object include: • **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. Responses include: • **messageControlUid.** The message control ID included in the patient demographic update message that was submitted to the Data Exchange.	String	O
	• **hubTransactionUid.** The transaction ID for the response.	String	O
	• **errors.** The array of validation and authorization errors returned, if the patient demographic update message is returned based on validation.	String[ ]	O
	• **status.** The status of the transaction response. Valid values: SUCCESS or FAILURE.	String	R

a. R = 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: You must have a valid user name and password (issued by Quest Diagnostics) in order to access the WSDL interface documents. For the Production environment, a user name and password will be 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 Data Exchange 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://shubservices.questemr.com/demographic/service?wsdl

Endpoint

https://shubservices.questemr.com/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://hubservices.medplus.com/demographic/service?wsdl

Endpoint

https://hubservices.medplus.com/demographic/service

Chapter 5: Retrieve Patient Demographic Web Service API Reference

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- Retrieve Patient Demographic Web Service XML Schema 58
- About the WSDL Interface Document 61

About the Retrieve Patient Demographic Web Service

Patient demographics integration enables patient demographic and billing updates that occur within Care360 Labs & Meds 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.

Care360 Labs & Meds submits demographic and/or billing updates to the Data Exchange, 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 Data Exchange 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 Data Exchange by Care360 Labs & Meds.

Note: Demographic and billing messages are stored in the Data Exchange 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)

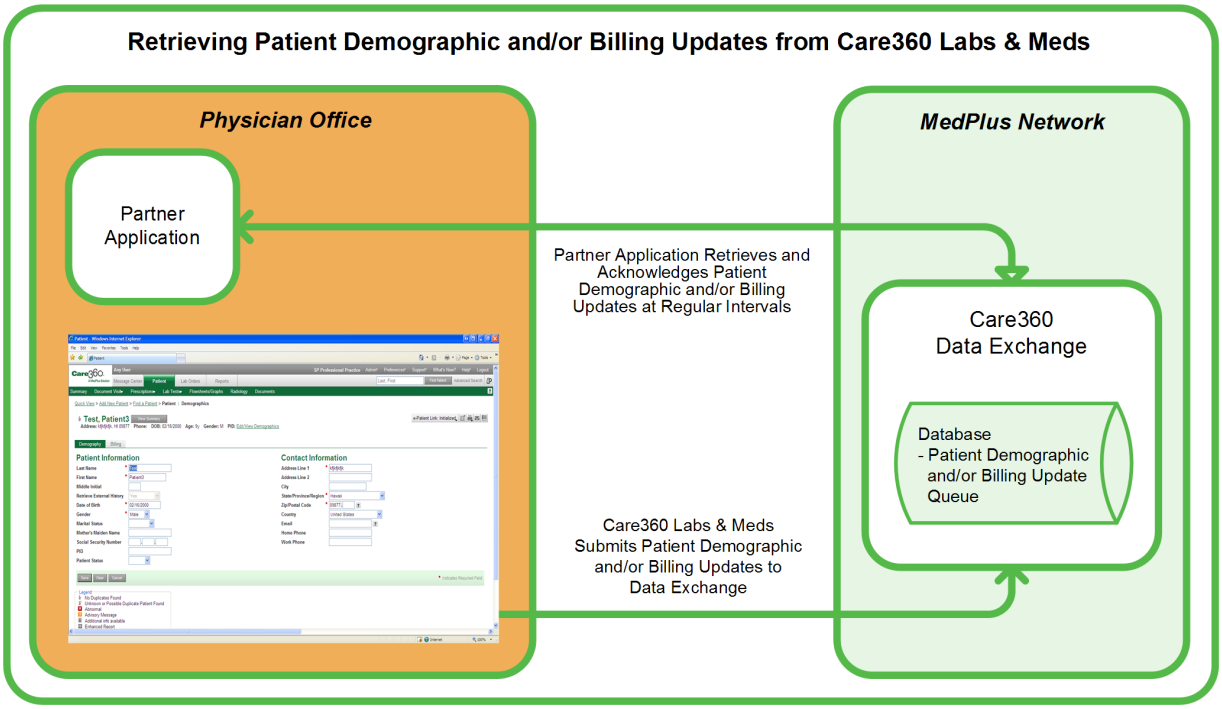
The Data Exchange maintains a record of all patient demographic transactions that occur, whether they are initiated by Care360 Labs & Meds or by a partner application.

Notes:

- For detailed specifications on the HL7 demographic (ADT) and billing (DFT) messages that are retrieved from the Data Exchange, refer to Chapter 6, "Patient Demographic HL7 Specification" beginning on page 63.
- A separate web service, the Submit Patient Demographic web service, enables a partner application to submit patient demographic and scheduling updates to the Data Exchange, which it then forwards to Care360 Labs & Meds. For more information about the Submit Patient Demographic web service, refer to Chapter 4, "Submit Patient Demographic Web Service API Reference" beginning on page 38.

Process Walkthrough: Retrieving Patient Demographic Updates

The diagram below illustrates (at a high level) the flow of information between Care360 Labs & Meds, the Data Exchange, and a partner application. Following the diagram is a step-by-step walkthrough of the patient demographic processes illustrated in the diagram.



The following steps outline the process—and associated systems—involved in a partner application retrieving (pulling) patient demographic and/or billing updates from Care360 Labs & Meds.

1. Care360 Labs & Meds submits patient demographic and/or billing messages to the Data Exchange, which verifies the format and content of those messages.
2. The Data Exchange 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 Data Exchange 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 Data Exchange, 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 Data Exchange. The Retrieve Patient Demographic web service provide operations that enable a partner application to retrieve and acknowledge patient demographic and billing updates submitted by Care360 Labs & Meds.

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

Note: For detailed specifications on the HL7 ADT and DFT messages that are retrieved from the Data Exchange, see Chapter 6, "Patient Demographic HL7 Specification" beginning on page 63.

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".)

- **retrieveDemographicMessages.** Retrieves demographic and/or billing messages (in HL7 format) that have been submitted by Care360 Labs & Meds for the associated hub account and stored in the Data Exchange 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	**Summary** Retrieves a batch of available ADT and/or DFT messages (in HL7 format) that have been submitted by Care360 Labs & Meds for the associated hub account and stored in the Data Exchange retrieval queue. Up to 50 messages can be retrieved at one time. **Usage** The RetrievalRequest object specifies the requested batch size (optional), as well as the message types to retrieve (ADT, DFT, or both). 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. **Notes:** • Demographic and billing messages are stored in the Data Exchange for 90 days, regardless of whether or not they have been retrieved and/or acknowledged. • For detailed specifications on the ADT and DFT messages that are retrieved from the Data Exchange, see the Chapter 6, "Patient Demographic HL7 Specification" beginning on page 63. **Method Signature** RetrievalResult retrieveDemographicMessages(RetrievalRequest request) throws SOAPException

Method	Description
ackDemographicMessages	**Summary** 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. A NAK is returned for any messages that resulted in an error. **Note:** Demographic and billing messages are stored in the Data Exchange for 90 days, regardless of whether or not they have been retrieved and/or acknowledged. **Usage** 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. **Method Signature** AckResult ackDemographicMessages(AckRequest acks) throws SOAP exception

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	Sets parameters to confine the retrieve transaction. **Note:** For detailed specifications on the ADT and DFT messages that are retrieved from the Data Exchange, see Chapter 6, "Patient Demographic HL7 Specification" beginning on page 63. Attributes that can be set for this object include:		
	• **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.	Integer	O
	• **RequestType.** The type(s) of messages to retrieve. Valid values: ADT and/or DFT. If no value is specified, both message types are retrieved.	String	O
RetrievalResult	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. Responses include:		
	• **RetrievalId.** The transaction ID for the retrieval response (used to acknowledge retrieved messages).	String	R
	• **RequestedBatchSize.** The number of messages that were requested in the retrieve transaction.	Integer	R
	• **ActualBatchSize.** The actual number of messages that were retrieved by the transaction.	Integer	R
	• **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).	Boolean	R
	• **Status.** The status of the transaction response. Valid values: SUCCESS or FAILURE.	String	R
	• **ErrorDescription.** A description of the error that occurred, if the status is FAILURE.	String	O
	• **RetrievalResultItem.** The array of retrieved RetrievalResultItem objects returned.	String[ ]	R

Object	Description/Attributes	Data Type	Req'd?[a]
RetrievalResultItem	The content of the retrieved ADT or DFT message. Includes the message control ID, as well as the Base64-encoded message content. Responses include:		
	• **MessageId.** The message control ID included in the ADT or DFT message that was retrieved from the Data Exchange. This ID is used for acknowledging retrieved demographic or billing messages.	String	R
	• **Hl7AsBase64Encoded.** The Base64-encoded HL7 (ADT or DFT) message content.	base64Binary	R
AckRequest	Represents the retrieval transaction being acknowledged. Attributes that can be set for this object include:		
	• **RetrievalId.** The transaction ID that has been associated with this retrieval request. This is used to acknowledge the retrieved messages.	String	R
	• **AckRequestItem.** The array of AckRequestItem objects indicating the demographic and/or billing messages that are being acknowledged.	AckRequest Item[ ]	O
AckRequestItem	Represents the demographic and/or billing messages being acknowledged. Attributes that can be set for this object include:		
	• **messageID.** The message control ID that identifies the demographic and/or billing messages being acknowledged. (provided in the RetrievalResultItem object of the RetrievalResult).	String	R

	• **ackCode.** Identifies whether or not the message was acknowledged. Valid values:
	  • **ACK.** The message was successfully retrieved and removed from the queue.
	  • **NAK.** The message was rejected by the retrieving system, but is still removed from the queue.
		String	R

AckResult	Represents the response elements for the acknowledgement. This includes the status and any error conditions. Responses include:		
	• **Status.** The status of the acknowledgement. Valid values: SUCCESS or FAILURE.	String	R
	• **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).	String	O

a. R = 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:

```
<?xml version="1.0" encoding="UTF-8" ?>
<!--  Published by JAX-WS RI at http://jax-ws.dev.java.net. RI's version is Oracle JAX-WS 2.1.4.
  -->
<xs:schema xmlns:tns="http://www.medplus.com/hub/mpi/retrieve"
  xmlns:xs="http://www.w3.org/2001/XMLSchema" elementFormDefault="qualified" version="1.0"
  targetNamespace="http://www.medplus.com/hub/mpi/retrieve">
  <xs:element name="AckRequest">
    <xs:complexType>
      <xs:sequence>
        <xs:element name="RetrievalId" type="xs:string" />
        <xs:element name="AckRequestItem" type="tns:ackRequestItemType" minOccurs="0"
          maxOccurs="unbounded" />
      </xs:sequence>
    </xs:complexType>
  </xs:element>
  <xs:element name="AckResult">
    <xs:complexType>
      <xs:sequence>
        <xs:element name="Status" type="tns:statusType" />
        <xs:element name="ErrorDescription" type="xs:string" minOccurs="0" />
      </xs:sequence>
    </xs:complexType>
  </xs:element>
  <xs:element name="RetrievalRequest">
    <xs:complexType>
      <xs:sequence>
        <xs:element name="RequestedBatchSize" type="xs:int" minOccurs="0" />
        <xs:element name="RequestType" type="xs:string" minOccurs="0" />
      </xs:sequence>
    </xs:complexType>
  </xs:element>
  <xs:element name="RetrievalResult">
    <xs:complexType>
      <xs:sequence>
        <xs:element name="RetrievalId" type="xs:string" />
        <xs:element name="RequestedBatchSize" type="xs:int" />
        <xs:element name="ActualBatchSize" type="xs:int" />
        <xs:element name="isMore" type="xs:boolean" />
        <xs:element name="Status" type="tns:statusType" />
        <xs:element name="ErrorDescription" type="xs:string" minOccurs="0" />
        <xs:element name="RetrievalResultItem" type="tns:retrievalResultItemType"
          minOccurs="0" maxOccurs="unbounded" />
      </xs:sequence>
    </xs:complexType>
  </xs:element>

  <xs:element name="ackDemographicMessages" type="tns:ackDemographicMessages" />
  <xs:element name="ackDemographicMessagesResponse"
    type="tns:ackDemographicMessagesResponse" />
  <xs:element name="retrieveDemographicMessages" type="tns:retrieveDemographicMessages" />
  <xs:element name="retrieveDemographicMessagesResponse"
    type="tns:retrieveDemographicMessagesResponse" />
```

```
<xs:complexType name="retrieveDemographicMessages">
  <xs:sequence>
    <xs:element name="RetrievalRequest" form="unqualified" minOccurs="0">
      <xs:complexType>
        <xs:sequence>
          <xs:element name="RequestedBatchSize" type="xs:int" minOccurs="0" />
          <xs:element name="RequestType" type="xs:string" minOccurs="0" />
        </xs:sequence>
      </xs:complexType>
    </xs:element>
  </xs:sequence>
</xs:complexType>
<xs:complexType name="retrieveDemographicMessagesResponse">
  <xs:sequence>
    <xs:element name="RetrievalResult" form="unqualified" minOccurs="0">
      <xs:complexType>
        <xs:sequence>
          <xs:element name="RetrievalId" type="xs:string" />
          <xs:element name="RequestedBatchSize" type="xs:int" />
          <xs:element name="ActualBatchSize" type="xs:int" />
          <xs:element name="isMore" type="xs:boolean" />
          <xs:element name="Status" type="tns:statusType" />
          <xs:element name="ErrorDescription" type="xs:string" minOccurs="0" />
          <xs:element name="RetrievalResultItem" type="tns:retrievalResultItemType"
            minOccurs="0" maxOccurs="unbounded" />
        </xs:sequence>
      </xs:complexType>
    </xs:element>
  </xs:sequence>
</xs:complexType>
<xs:complexType name="retrievalResultItemType">
  <xs:sequence>
    <xs:element name="MessageId" type="xs:string" />
    <xs:element name="Hl7AsBase64Encoded" type="xs:base64Binary" />
  </xs:sequence>
</xs:complexType>

<xs:complexType name="ackDemographicMessages">
  <xs:sequence>
    <xs:element name="AckRequest" form="unqualified" minOccurs="0">
      <xs:complexType>
        <xs:sequence>
          <xs:element name="RetrievalId" type="xs:string" />
          <xs:element name="AckRequestItem" type="tns:ackRequestItemType" minOccurs="0"
            maxOccurs="unbounded" />
        </xs:sequence>
      </xs:complexType>
    </xs:element>
  </xs:sequence>
</xs:complexType>
<xs:complexType name="ackRequestItemType">
  <xs:sequence>
    <xs:element name="MessageId" type="xs:string" />
    <xs:element name="AckCode" type="tns:ackCodeType" />
  </xs:sequence>
</xs:complexType>
<xs:complexType name="ackDemographicMessagesResponse">
  <xs:sequence>
    <xs:element name="AckResult" form="unqualified" minOccurs="0">
      <xs:complexType>
```

```
          <xs:sequence>
            <xs:element name="Status" type="tns:statusType" />
            <xs:element name="ErrorDescription" type="xs:string" minOccurs="0" />
          </xs:sequence>
        </xs:complexType>
      </xs:element>
    </xs:sequence>
  </xs:complexType>

  <xs:simpleType name="statusType">
    <xs:restriction base="xs:string">
      <xs:enumeration value="SUCCESS" />
      <xs:enumeration value="FAILURE" />
    </xs:restriction>
  </xs:simpleType>
  <xs:simpleType name="ackCodeType">
    <xs:restriction base="xs:string">
      <xs:enumeration value="ACK" />
      <xs:enumeration value="NAK" />
    </xs:restriction>
  </xs:simpleType>
</xs:schema>
```

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: You must have a valid user name and password (issued by Quest Diagnostics) in order to access the WSDL interface documents. For the Production environment, a user name and password will be 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 Data Exchange environments:

- **Staging environment.** Use this Data Exchange 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 Data Exchange 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://shubservices.questemr.com/demographic/retrieval/service?wsdl

Endpoint

https://shubservices.questemr.com/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://hubservices.medplus.com/demographic/retrieval/service?wsdl

Endpoint

https://hubservices.medplus.com/demographic/retrieval/service

Chapter 6: Patient Demographic HL7 Specification

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- ADT A28 (Patient Add) and ADT A31 (Patient Update) Message Segment Specifications 66
- ADT A29 (Patient Delete) Message Segment Specifications 93
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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 the partner application to Care360 Labs & Meds and vice versa. This exchange of messages allows Care360 Labs & Meds and the partner application to synchronize their patient databases. In addition, this chapter provides detailed format specifications for scheduling messages, which are sent from the partner application to Care360 Labs & Meds, and for financial transaction (billing) messages, which are sent from Care360 Labs & Meds to the partner application.

All of the demographic messages submitted to Care360 Labs & Meds 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, Care360 Labs & Meds 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 Care360 Labs & Meds) and **outbound** (Care360 Labs & Meds to partner application) 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 page 65.
- **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 66.
  - "ADT A29 (Patient Delete) Message Segment Specifications" on page 93.
  - "ADT A39 (Patient Merge) Message Segment Specifications" on page 104.
  - "SIU (Schedule Information Unsolicited) Message Segment Specifications" on page 116.
  - "DFT^P03 (Detail Financial Transaction) Message Segment Specifications" on page 138.
- **Sample patient demographic messages.** For samples of the various patient demographic messages, see "Sample Patient Demographic Messages" on page 163.

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	The fields within each segment are classified based on their requirement status of *Required* (R), *Optional* (O), *Conditional* (C), or *Not Supported* (X) in the context of an inbound (partner application to Care360 Labs & Meds) or outbound (Care360 Labs & Meds to partner application) message:
	• ***Required.*** If the corresponding segment is present, the field must also be present within the segment.
	  • For **inbound** feeds, *Required* indicates that the field must be present or the message will be rejected.
	  • For **outbound** feeds, *Required* indicates that the field will always be present in the message.
	• ***Optional.*** The field is not required.
	  • For **inbound** feeds, *Optional* 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, *Optional* 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 *Comments* column of each segment table).
	  • For **inbound** feeds, *Conditional* indicates that if the stated conditions are not met, the message is rejected. If present, the field is validated against any stated requirements.
	  • For **outbound** feeds, *Conditional* 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 gray text in the table).
	  • For **inbound** feeds, *Not Supported* 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, *Not Supported* 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 Care360 Labs & Meds).** For the partner application to add new patients to Care360 Labs & Meds, the ADT A28 messages must be written to the specifications in this chapter.
- **Outbound (Care360 Labs & Meds to partner application).** For Care360 Labs & Meds to update the partner application with patients that were added to Care360 Labs & Meds, Care360 Labs & Meds 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 163.

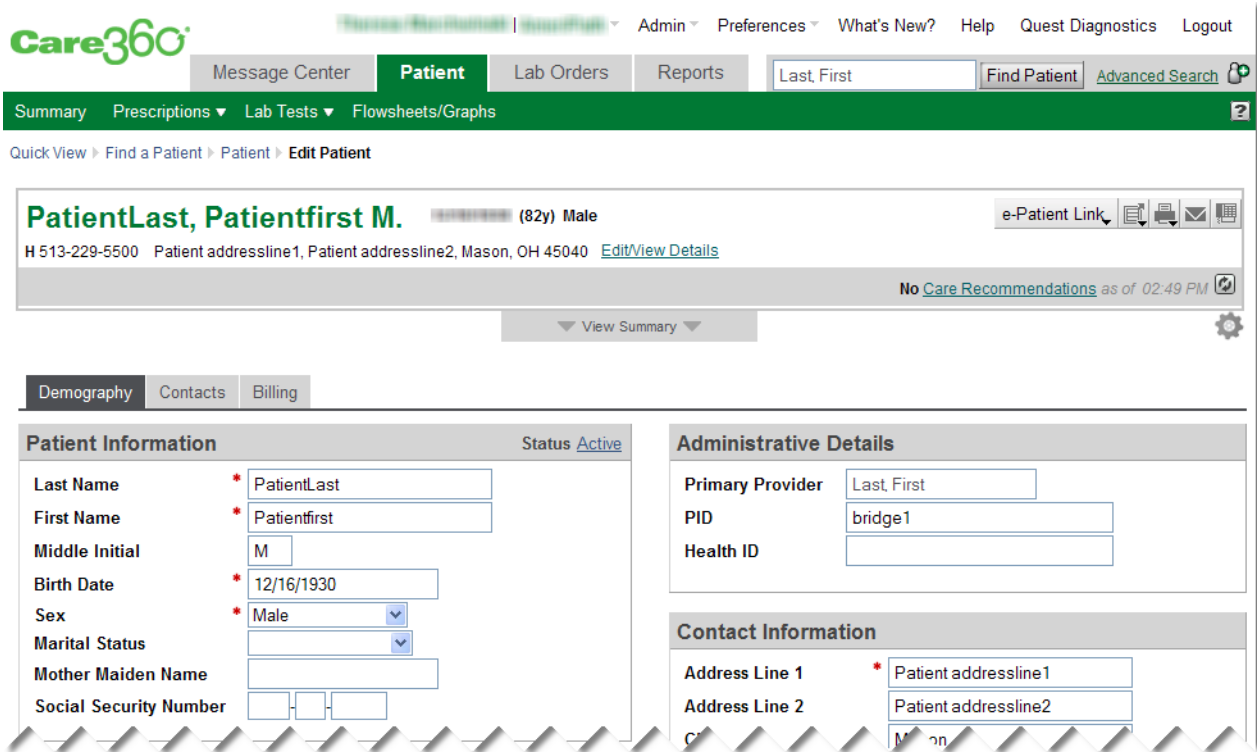
The ADT A31 (Patient Update) message is used as follows:

- **Inbound (partner application to Care360 Labs & Meds).** For the partner application to update existing patients in Care360 Labs & Meds, the ADT A31 messages must be written to the specifications in this chapter.
- **Outbound (Care360 Labs & Meds to partner application).** For Care360 Labs & Meds to update the partner application with changed patient information, Care360 Labs & Meds adheres to the ADT A31 message specification in this chapter.

  For a sample ADT A31 message, see "Sample 3—Update Patient" on page 163.

Several of the inbound fields for the ADT 28 and ADT A31 messages populate the Care360 Labs & Meds 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 Care360 Labs & Meds 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 Care360 Labs & Meds 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 (Required; one per file)
EVN                 Event Type (Required)
PID                 Patient Identification (Required)
[PD1]               Additional Demographics (Optional)
[{NK1}]             Next of Kin /Associated Parties (Optional)
PV1                 Patient Visit Data (Required)
[PV2]               Patient Visit—Additional Info. (Optional; not supported)
[{DB1}]             Disability Information (Optional; not supported)
[{OBX}]             Observation/Result (Optional; not supported)
[{AL1}]             Allergy Information (Optional; not supported)
[{DG1}]             Diagnosis Information (Optional)
[DRG]               Diagnosis Related Group (Optional; not supported)
  [{PR1             Procedures  (Optional; not supported)
    [{ROL}]         Role (Optional; not supported)
  }]
[{GT1}]             Guarantor     (Optional; forwarded to Care360 Labs & Meds if provided. The system can only handle
                                  one GT1. There can be one Guarantor with two insurances but not two Guarantors.)
[
  {IN1              Insurance     (Optional; forwarded to Care360 Labs & Meds if provided. The first IN1=Primary
                                  Insurance is for Guarantor. The second IN1=Secondary Insurance is for Guarantor (if
                                  provided). In order for the IN1 information to be stored by Care360 Labs & Meds, the
                                  IN1.47 field must be populated with a T or a P.)
  [IN2]             Insurance Additional Info. (Optional; not supported)
  [IN3]             Insurance Additional Info. (Optional; not supported)
  }
]
[ACC]               Accident Information (Optional; not supported)
[UB1]               Universal Bill Information (Optional; not supported)
[UB2]               Universal Bill 92 Information (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 A28 (Patient Add) and ADT A21 message. Supported message segments include the following:

- "MSH—Message Header Segment" on page 68.
- "EVN—Event Type Segment" on page 69.
- "PID—Patient Identification Segment" on page 70.
- "PD1—Patient Additional Demographic Segment" on page 76.
- "NK1—Next of Kin Segment" on page 78.
- "PV1—Patient Visit Data Segment" on page 80.
- "DG1—Diagnosis Segment" on page 83.
- "GT1—Guarantor Segment" on page 84.
- "IN1—Insurance Segment" on page 89.

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	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. This value will be provided by Quest Diagnostics. The Data Exchange 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 and Quest Diagnostics. The Data Exchange 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:** *yyyymmddhhmmss* **Note:** All date timestamps are set to Coordinated Universal Time (UTC). The Data Exchange 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. Valid values: • A28 = Add Person Information • A31 = Update Person Information	R

Field	Name	Type	Length	Comments	Req'd
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 Data Exchange verifies that this field is populated.	R
MSH.11	Processing ID	PT	3	The placer system's intent for the message. Valid values include: • P = Production • T = Testing The Data Exchange 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 (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: • A28 = Add Person Information • A31 = Update Person Information **Note:** This field has been retained for backward compatibility only.	R
EVN.02	Recorded Date/Time				X

Field	Name	Type	Length	Comments	Req'd
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	Care360 patient identifier (PID) used to uniquely identify a patient within Care360. The PID.02 value appears in the Care360 Labs & Meds 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 *Demography* tab > *Administrative Details* section. **Example:** BB1123	R
PID.03	Patient ID	CX	40	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.). This is the patient identifier associated with the non-Care360 system, and it is not always available within Care360.	O
PID.04	Alternate Patient ID (PID)				X

Field	Name	Type	Length	Comments	Req'd
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 Data Exchange verifies that the field length complies with the rules above. The patient name appears in the Care360 Labs & Meds patient chart and several other places throughout Labs & Meds. After submitting an add or update, it can be verified on the *Demography* tab > *Patient Information* section.	R
PID.06	Mother's Maiden Name	XPN	48	Patient's mother's maiden name. Only the first subfield (Family Name) is passed to/from Care360 Labs & Meds. The mother's maiden name appears on the *Demography* tab > *Patient Information* section.	O
PID.07	Date of Birth	TS	26	Patient date of birth (DOB) in the following format: • **Inbound:** *yyyymmdd* or *yyyymmddhhmmss.* The Data Exchange accepts the timestamp (*hhmmss*) but forwards only the date (*yyyymmdd)* to Care360 Labs & Meds. The Data Exchange verifies that the date is in one of these formats. • **Outbound:** *yyyymmdd* The patient's DOB appears along with the patient name throughout Care360 Labs & Meds, specifically on the *Demography* tab > *Patient Information* section.	O
PID.08	Sex	IS	1	Possible values are listed below. • M = Male • F = Female • O = Other • U = Unknown • A = Ambiguous • N = Not applicable • Z = Undifferentiated The patient's gender appears on the *Demography* tab > *Patient Information* section.	O
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 Care360 Labs & Meds.	O

Field	Name	Type	Length	Comments	Req'd
PID.10	Race	CE	250	Repeating field with a maximum of three instances allowed. This field supports both HL7 2.3 and HL7 3.0 values. For HL7 2.3, values supported by Care360 Labs & Meds are listed below. • W = White • B = Black • A = Asian • I = American Indian or Alaskan • O = Other For HL7 3.0, values supported by Care360 Labs & Meds 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. 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: `1010-8^2106-3^2028-9` This value appears on the *Demography* tab > *Ethnicity/ Race/Language* section.	O
PID.11	Patient 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)>` The Data Exchange verifies that the field length complies with the rules above. The patient address appears on the *Demography* tab > *Contact Information* section.	O
PID.12	County Code				X

Field	Name	Type	Length	Comments	Req'd

PID.13	Phone Number - Home	XTN	40	Repeating field that can accept Home phone number, Cell/Mobile phone number, and email address:
				• 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.
				Example with home and cell phone (extension and country code omitted) and email:
				`^^^^^333^4445555~^NET^^ example@email.com~^^CP^^^777^8889999`
				Example with home and cell phone (including country code):
				`^^^^1^333^4445555^~^^CP^^1^777^8889999^`
				The Data Exchange verifies that the value complies with the rules above.
				The home number, mobile number, and email address appear on the *Demography* tab > *Contact Information* section.
					O

PID.14	Phone Number - Business	XTN	40	Accepted length of this field is 20 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^`
				The Data Exchange verifies that the value complies with the rules above.
				Only the first phone number is passed to Care360 Labs & Meds; any other fields are ignored.
				The work number appears on the *Demography* tab > *Contact Information* section.
					O

Field	Name	Type	Length	Comments	Req'd
PID.15	Language - Patient	CE	250	Values supported by Care360 Labs & Meds are listed in "Patient Language (PID.15)" on page 165. This field uses the HL7 3.0 field length of 250 rather than the HL7 2.3 field length of 60. **Note:** This value populates the language field in Care360 Labs & Meds only if the field is empty or if it contains an invalid value. If the language field is already populated with a valid value, it is never updated. The language value appears on the *Demography* tab > *Ethnicity/Race/Language* section.	O
PID.16	Marital Status	IS	1	Values supported by Care360 Labs & Meds: • P = Polygamous • W = Widowed • D = Divorced • M = Married • A = Annulled • S = Never Married • L = Legally Separated • I = Interlocutory • T = Domestic Partner The patient's marital status appears on the *Demography* tab > *Patient Information* section.	O
PID.17	Religion	IS	3	Patient religion	O
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/from Care360 Labs & Meds.	O
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 Data Exchange verifies that the value complies with the rules above. The patient's SSN appears on the *Demography* tab > *Patient Information* section.	O

Field	Name	Type	Length	Comments	Req'd
PID.20	Driver's Lic Num - Patient	DLN	25	DLN format: `<license number (ST)> ^ <issuing state, province, country (IS)> ^ <expiration date (DT)>` Only the first subfield (License Number) is passed to/from Care360 Labs & Meds.	O
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/from Care360 Labs & Meds.	O
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 Care360 Labs & Meds are listed below. • H = Hispanic • N = Non-Hispanic • U = Unknown For HL7 3.0, values supported by Care360 Labs & Meds 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`. This value appears on the *Demography* tab > *Ethnicity/ Race/Language* section.	O
PID.23	Birth Place	ST	60	Indicates the location of the patient's birth.	O
PID.24	Multiple Birth Indicator	ID	2	Indicates whether or not the patient was part of a multiple birth (Yes/No indicator). Valid values: • Y = Yes • N = No • blank The Data Exchange validates this field.	O
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.	O
PID.26	Citizenship	IS	4	Contains the patient's country of citizenship.	O

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/from Care360 Labs & Meds.	O
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 Care360 Labs & Meds.	O
PID.29	Patient Death Date & Time	TS	26	Contains the date and time at which the patient death occurred in the following format: • **Inbound:** *yyyymmdd* or *yyyymmddhhmmss.* The Data Exchange accepts the timestamp (*hhmmss*) but forwards only the date (*yyyymmdd)* to Care360 Labs & Meds. The Data Exchange verifies that the date is in one of these formats. • **Outbound:** *yyyymmdd*	O
PID.30	Patient Death Indicator	ID	1	Indicates whether or not the patient is deceased (Yes/No indicator). Valid values: • Y = Yes • N = No • blank The Data Exchange 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	Must be PD1.	R
PD1.01	Living Dependency	IS	2		O
PD1.02	Living Arrangement	IS	2		O
PD1.03	Patient Primary Facility	XON	90		O
PD1.04	Patient Primary Care Provider Name & ID No.	XON	90		O

Field	Name	Type	Length	Comments	Req'd
PD1.05	Student Indicator	IS	2		O
PD1.06	Handicap	IS	2		O
PD1.07	Living Will	IS	2		O
PD1.08	Organ Donor	IS	2		O
PD1.09	Separate Bill	ID	2		O
PD1.10	Duplicate Patient	CX	2		O
PD1.11	Publicity Indicator	CE	1	Represents the value for *Consent given to share clinical documentation* in *Demography* tab > *Administrative Details* section. **Format:** `<identifier (ST)> ^ <text (ST)> ^ <name of coding system (ST)> ^ <alternate identifier (ST)> ^ <alternate text (ST)> ^ <name of alternate coding system (ST)>` Inbound valid values for PD1.11.01: • Y = Yes, which overrides the existing setting in Care360 Labs & Meds • N = No, which overrides the existing setting in Care360 Labs & Meds • blank, which retains the existing setting in Care360 Labs & Meds **Note:** Data Exchange will not edit to ensure valid values. Outbound valid values: • Y = Yes • N = No • P = Pending • blank	O

Field	Name	Type	Length	Comments	Req'd
PD1.12	Protection Indicator	ID	1	Care360 Labs & Meds ignores the value for this field. Instead, PD1.11 (Publicity Indicator) sets the value for *Consent given to share clinical documentation*. Inbound valid values: • Y = Yes • N = No • blank **Note:** Data Exchange will not edit to ensure valid values. Outbound valid values: • Y = Yes • N = No • P = Pending • blank	O

NK1—Next of Kin Segment

The Next of Kin (NK1) segment is used by all applications as the primary means of contacting the patient when the patient is not available. The NK1 segment is supported on outbound (Care360 to partner application) messages to supply next of kin information for immunization records.

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	XPN	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. `<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)>` **Note:** If the patient is under 18 years old, the first name and last name is supplied for at least one contact.	O
NK1.03	Relationship	CE	60	Values supported by Care360 Labs & Meds are the same as the HL7 values for Family Relation Type Value Set (http://www.hl7.org/memonly/downloads/v3edition.cfm#V32008). **Note:** For patients under 18 years old, the relationship value will be for father, mother, guardian, or parent.	O

Field	Name	Type	Length	Comments	Req'd
NK1.04	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)>` **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.	O
NK1.05	Phone Number	XTN	40	Repeating field that holds all of the phone numbers for the next of kin. All unique instances within NK1.05 are separated by a tilde (~). • 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. The accepted length for each phone number is 20 numeric characters. No dashes or other separating characters are allowed. **Example with just cell/mobile phone:** `~ | CP^^^^^777^8889999^`	O

NK1.06	Business Phone Number	XTN	40	Accepted length of this field is 20 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

Field	Name	Type	Length	Comments	Req'd
NK1.07	Contact Role	CE	60	Values supported by Care360 Labs & Meds are below. The default is PRS. • AGNT = Agent • CAREGIVER = Caregiver • ECON = Emergency Contact • GUARD = Guardian • NOK = Next of Kin • PRS = Personal **Note:** When the value for NK1.07 is guardian, the value for NK1.03 (Relationship) is also guardian.	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	For inbound messages, Data Exchange verifies that this field is populated. Example values include: • E = Emergency • I = Inpatient • O = Outpatient 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

Field	Name	Type	Length	Comments	Req'd
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
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

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)>` DG1.03.01 = ICD-9 code DG1.03.03 = "I9" This value appears on the *External Diagnoses* tab.	O
DG1.04	Diagnosis Description	ST	40	Diagnosis name and description. This value appears on the *External Diagnoses* tab.	O
DG1.05	Diagnosis Date/Time	TS	26	Date/Time that the diagnosis was determined. **Format:** *yyyymmddhhmmss* This value appears on the *External Diagnoses* tab.	O
DG1.06	Diagnosis Type	IS	2	Valid values: • A = Admitting • W = Working • F = Final This value appears on the *External Diagnoses* tab.	R
DG1.07	Major Diagnostic Category	CE	60		O
DG1.08	Diagnostic Related Group	CE	60		O
DG1.09	DRG Approval Indicator	ID	2		O
DG1.10	DRG Grouper Review Code	IS	2		O
DG1.11	Outlier Type	CE	60		O
DG1.12	Outlier Days	NM	3		O
DG1.13	Outlier Cost	CP	12		O

Field	Name	Type	Length	Comments	Req'd
DG1.14	Grouper Version and Type	ST	4		O
DG1.15	Diagnosis Priority	NM	2		O
DG1.16	Diagnosing Clinician	XCN	60	This value appears on the *External Diagnoses* tab.	O
DG1.17	Diagnosis Classification	IS	3	Valid values: • 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.) This value appears on the *External Diagnoses* tab.	O
DG1.18	Confidential Indicator	ID	1	Valid values for this field include: • Y = Yes • N = No This value appears on the *External Diagnoses* tab.	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 Care360 Labs & Meds, 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

Field	Name	Type	Length	Comments	Req'd
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. `<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 Data Exchange verifies that the value complies with the rules above. This value appears on the *Billing* tab > *Guarantor Information* section.	R
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)>` If present, the Data Exchange verifies that the value complies with the rules above. This value appears on the *Billing* tab > *Contact Information* section.	O

GT1.06	Guarantor Ph Num-Home	XTN	40	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`
				If present, the Data Exchange verifies that the value complies with the rules above.
				This value appears on the *Billing* tab > *Guarantor Information* section.
					O

Field	Name	Type	Length	Comments	Req'd

GT1.07	Guarantor Ph Num-Business	XTN	40	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^`
				If present, the Data Exchange verifies that the value complies with the rules above.
				This value appears on the *Billing* tab > *Guarantor Information* section.
					O

GT1.08	Guarantor Date/Time of Birth	TS	26	Guarantor DOB in the following format: • **Inbound:** *yyyymmdd* or *yyyymmddhhmmss.* The Data Exchange accepts the timestamp (*hhmmss*) but forwards only the date (*yyyymmdd)* to Care360 Labs & Meds. The Data Exchange verifies that the DOB is in one of these formats. • **Outbound:** *yyyymmdd* This value appears on the *Billing* tab > *Guarantor Information* section.	O
GT1.09	Guarantor Sex	IS	1	Valid values for this field include: • M = Male • F = Female • blank The Data Exchange verifies that one of these values is present in this field. This value appears on the *Billing* tab > *Guarantor Information* section.	O
GT1.10	Guarantor Type				X
GT1.11	Guarantor Relationship	IS	2	Describes relations to patient. Valid values: • 1 = Self • 2 = Spouse • 8 = Dependent • blank This value appears on the *Billing* tab > *Guarantor Information* section.	O

Field	Name	Type	Length	Comments	Req'd
GT1.12	Guarantor SSN	ST	11	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 Data Exchange verifies that the value complies with the rules above. This value appears on the *Billing* tab > *Guarantor Information* section.	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	Employer name. No more than 130 characters. Alphanumeric data only. This value appears on the *Billing* tab > *Employer Information* section.	O
GT1.17	Guarantor Employer 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)>` The Data Exchange verifies that the value complies with the rules above. This value appears on the *Billing* tab > *Employer Information* section.	O
GT1.18	Guarantor Employer Phone Number				X
GT1.19	Guarantor Employee ID Number				X
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

Field	Name	Type	Length	Comments	Req'd
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
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

Field	Name	Type	Length	Comments	Req'd
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 Care360 Labs & Meds. In inbound messages, the Data Exchange 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 *Billing* tab > *Primary Insurance Information* section.	C
IN1.04	Insurance Company Name	XON	130	This value appears on the *Billing* tab > *Primary Insurance Information* section.	O

Field	Name	Type	Length	Comments	Req'd
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 Data Exchange verifies that the value complies with the rules above. This value appears on the *Billing* tab > *Primary Insurance Information* section.	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
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

Field	Name	Type	Length	Comments	Req'd
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
IN1.35	Company Plan Code				X
IN1.36	Policy Number	ST	50	This value appears on the *Billing* tab > *Primary Insurance Information* 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

Field	Name	Type	Length	Comments	Req'd
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: • T = Third-party bill • P = Patient bill • C = Client bill If present, the Data Exchange verifies that the value complies with the rules above. This value appears on the *Billing* tab.	O
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 Care360 Labs & Meds).** For the partner application to delete patients from Care360 Labs & Meds, the ADT A29 messages must be written to the specifications in this chapter.

  Note: You cannot delete a patient from Care360 Labs & Meds 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 Care360 Labs & Meds. Otherwise, the error message is logged.

- **Outbound (Care360 Labs & Meds to partner application).** For Care360 Labs & Meds to update the partner application with patients that were deleted from Care360 Labs & Meds, Care360 Labs & Meds 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 Care360 Labs & Meds.

For a sample message, see "Sample 2—Delete Patient" on page 163.

Message Segment Hierarchy

The ADT A29 message segment hierarchy is specified below:

`MSH`	Message Header (*Required*; one per file)
`EVN`	Event Type (*Required*)
`PID`	Patient Identification (*Required*)
`[PD1]`	Additional Demographics (*Optional*; not supported)
`PV1`	Patient Visit Data (*Required*)
`[PV2]`	Patient Visit—Additional Info. (*Optional*; not supported)
`[{DB1}]`	Disability Information (*Optional*; not supported)
`[{OBX}]`	Observation/Result (*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 A29 (Patient Delete) message. Supported message segments include the following:

- "MSH—Message Header Segment" on page 94.
- "EVN—Event Type Segment" on page 95.
- "PID—Patient Identification Segment" on page 96.
- "PV1—Patient Visit Data Segment" on page 101.

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. This value will be provided by Quest Diagnostics. The Data Exchange 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 and Quest Diagnostics. The Data Exchange 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:** *yyyymmddhhmmss* **Note:** All date timestamps are set to Coordinated Universal Time (UTC). The Data Exchange 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. Valid value: A29 (Delete 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 Data Exchange verifies that this field is populated.	R

Field	Name	Type	Length	Comments	Req'd
MSH.11	Processing ID	PT	3	The placer system's intent for the message. Valid values include: • P = Production • T = Testing The Data Exchange 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 (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. The Data Exchange verifies that this field is populated with A29. **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

Field	Name	Type	Length	Comments	Req'd
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	Care360 patient identifier used to uniquely identify a patient within Care360. 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. **Example:** BB1123	R
PID.03	Patient ID	CX	40	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.). This is the patient identifier associated with the non-Care360 system, and it is not always available within Care360.	O
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 Data Exchange verifies that the value complies with the rules above.	R

Field	Name	Type	Length	Comments	Req'd
PID.06	Mother's Maiden Name	XPN	48	Patient's mother's maiden name. Only the first subfield (Family Name) is passed to/from Care360 Labs & Meds.	O
PID.07	Date/Time of Birth	TS	26	Patient DOB in the following format: • **Inbound:** *yyyymmdd* or *yyyymmddhhmmss.* The Data Exchange accepts the timestamp (*hhmmss*) but forwards only the date (*yyyymmdd)* to Care360 Labs & Meds. The Data Exchange verifies that the date is in one of these formats. • **Outbound:** *yyyymmdd*	O
PID.08	Sex	IS	1	Possible values are listed below. • M = Male • F = Female • O = Other • U = Unknown • A = Ambiguous • N = Not applicable • Z = Undifferentiated	O
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 Care360 Labs & Meds.	O
PID.10	Race	CE	250	Repeating field with a maximum of three instances allowed. This field supports both HL7 2.3 and HL7 3.0 values. For HL7 2.3, values supported by Care360 Labs & Meds are listed below. • W = White • B = Black • A = Asian • I = American Indian or Alaskan • O = Other For HL7 3.0, values supported by Care360 Labs & Meds 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. 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: `1010-8^2106-3^2028-9`	O

Field	Name	Type	Length	Comments	Req'd
PID.11	Patient 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)>` The Data Exchange verifies that the value complies with the rules above.	O
PID.12	County Code				X

PID.13	Phone Number - Home	XTN	40	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^`
				The Data Exchange verifies that the value complies with the rules above.
					O

PID.14	Phone Number - Business	XTN	40	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^`
				The Data Exchange verifies that the value complies with the rules above.
					O

PID.15	Language - Patient	CE	250	Values supported by Care360 Labs & Meds are listed in "Patient Language (PID.15)" on page 165. This field uses the HL7 3.0 field length of 250 rather than the HL7 2.3 field length of 60.	O

Field	Name	Type	Length	Comments	Req'd
PID.16	Marital Status	IS	1	Values supported by Care360 Labs & Meds are listed below. • P = Polygamous • W = Widowed • D = Divorced • M = Married • A = Annulled • S = Never Married • L = Legally Separated • I = Interlocutory • T = Domestic Partner	O
PID.17	Religion	IS	3	Patient religion	O
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/from Care360 Labs & Meds.	O
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 Data Exchange verifies that the value complies with the rules above.	O
PID.20	Driver's Lic Num - Patient	DLN	25	DLN format: `<license number (ST)> ^ <issuing state, province, country (IS)> ^ <expiration date (DT)>` Only the first subfield (License Number) is passed to/from Care360 Labs & Meds.	O
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/from Care360 Labs & Meds.	O

Field	Name	Type	Length	Comments	Req'd
PID.22	Ethnic Group	IS	3	This field supports both HL7 2.3 and HL7 3.0 values. For HL7 2.3, values supported by Care360 Labs & Meds are listed below. • H = Hispanic • N = Non-Hispanic • U = Unknown For HL7 3.0, values supported by Care360 Labs & Meds 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`.	O
PID.23	Birth Place	ST	60	Indicates the location of the patient's birth.	O
PID.24	Multiple Birth Indicator	ID	2	Indicates whether or not the patient was part of a multiple birth (Yes/No indicator). Valid values: • Y = Yes • N = No • blank This field is validated.	O
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.	O
PID.26	Citizenship	IS	4	Contains the patient's country of citizenship.	O
PID.27	Veterans Military Status	CE	60	Contains the military status assigned to a veteran. Only the first subfield (Identifier) is passed to/from Care360 Labs & Meds.	O
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 Care360 Labs & Meds.	O

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 in the following format: • **Inbound:** *yyyymmdd* or *yyyymmddhhmmss.* The Data Exchange accepts the timestamp (*hhmmss*) but forwards only the date (*yyyymmdd)* to Care360 Labs & Meds. The Data Exchange verifies that the date is in one of these formats. • **Outbound:** *yyyymmdd*	O
PID.30	Patient Death Indicator	ID	1	Indicates whether or not the patient is deceased (Yes/No indicator). Valid values: • Y = Yes • N = No • blank The Data Exchange validates this field.	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 inbound messages, Data Exchange verifies that this field is populated. Example values include: • E = Emergency • I = Inpatient • O = Outpatient 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

Field	Name	Type	Length	Comments	Req'd
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
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

Field	Name	Type	Length	Comments	Req'd
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 Care360 Labs & Meds).** For the partner application to merge two patient records in Care360 Labs & Meds, the ADT A39 messages must be written to the specifications in this chapter.
- **Outbound (Care360 Labs & Meds to partner application).** For Care360 Labs & Meds to update the partner application with patient records that were merged in Care360 Labs & Meds, Care360 Labs & Meds 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 164.

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 page 105.
- "EVN—Event Type Segment" on page 106.
- "PID—Patient Identification Segment—Correct" on page 107.
- "PD1—Patient Additional Demographic Segment" on page 110.
- "MRG—Merge Patient Information Segment" on page 112.
- "PID—Patient Identification Segment—Incorrect" on page 113.

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. This value will be provided by Quest Diagnostics. The Data Exchange 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 and Quest Diagnostics. The Data Exchange 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:** *yyyymmddhhmmss* **Note:** All date timestamps are set to Coordinated Universal Time (UTC). The Data Exchange 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. 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 Data Exchange verifies that this field is populated.	R

Field	Name	Type	Length	Comments	Req'd
MSH.11	Processing ID	PT	3	The placer system's intent for the message. Valid values include: • P = Production • T = Testing The Data Exchange 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 (*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 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

Field	Name	Type	Length	Comments	Req'd
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	Care360 patient identifier used to uniquely identify a patient within Care360. 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. **Example:** BB1123	R
PID.03	Patient ID	CX	40	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.). This is the patient identifier associated with the non-Care360 system, and it is not always available within Care360.	O
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 Data Exchange 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	Patient DOB in the following format: • **Inbound:** *yyyymmdd* or *yyyymmddhhmmss.* The Data Exchange accepts the timestamp (*hhmmss*) but forwards only the date (*yyyymmdd)* to Care360 Labs & Meds. The Data Exchange verifies that the date is in one of these formats. • **Outbound:** *yyyymmdd*	O
PID.08	Sex	IS	1	Possible values are listed below. • M = Male • F = Female • O = Other • U = Unknown • A = Ambiguous • N = Not applicable • Z = Undifferentiated • blank **Note:** If Care360 Labs & Meds does not support a value that is submitted on inbound feeds, that value appears as a blank in the user interface.	O
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 Care360 Labs & Meds.	O
PID.10	Race				X
PID.11	Patient 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)>` The Data Exchange verifies that the field length complies with the rules above.	O
PID.12	County Code				X

Field	Name	Type	Length	Comments	Req'd

PID.13	Phone Number - Home	XTN	40	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	40	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 Data Exchange 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

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

Field	Name	Type	Length	Comments	Req'd
PD1.11	Publicity Indicator	CE	1	Represents the value for *Consent given to share clinical documentation* in Care360 Labs & Meds. **Format:** `<identifier (ST)> ^ <text (ST)> ^ <name of coding system (ST)> ^ <alternate identifier (ST)> ^ <alternate text (ST)> ^ <name of alternate coding system (ST)>` Inbound valid values for PD1.11.01: • Y = Yes, which overrides the existing setting in Care360 Labs & Meds • N = No, which overrides the existing setting in Care360 Labs & Meds • blank, which retains the existing setting in Care360 Labs & Meds **Note:** Data Exchange will not edit to ensure valid values. Outbound valid values: • Y = Yes • N = No • P = Pending • blank	O
PD1.12	Protection Indicator	ID	1	Care360 Labs & Meds ignores the value for this field. Instead, PD1.11 (Publicity Indicator) sets the value for *Consent given to share clinical documentation*. Inbound valid values: • Y = Yes • N = No • blank **Note:** Data Exchange will not edit to ensure valid values. Outbound valid values: • Y = Yes • N = No • P = Pending • blank	O

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	The prior name of the patient. This field is not used to change a patient name. 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 Data Exchange verifies that the value complies with the rules above.	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 Data Exchange verifies that the value complies with the rules above.	R
PID.02	Patient ID				X
PID.03	Patient ID				X
PID.04	Alternate Patient ID (PID)				X
PID.05	Patient Name				X
PID.06	Mother's Maiden Name				X
PID.07	Date/Time of Birth	TS	26	Patient DOB. **Format:** *yyyymmdd* or *yyyymmddhhmmss* The Data Exchange accepts the timestamp (*hhmmss*) but forwards only the date (*yyyymmdd)* to Care360 Labs & Meds. The Data Exchange verifies that the date is in one of these formats.	O
PID.08	Sex	IS	1	Possible values are listed below. • M = Male • F = Female • O = Other • U = Unknown • A = Ambiguous • N = Not applicable • Z = Undifferentiated • blank **Note:** If Care360 Labs & Meds does not support a value that is submitted on inbound feeds, that value appears as a blank in the user interface.	O

Field	Name	Type	Length	Comments	Req'd
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 Care360 Labs & Meds.	O
PID.10	Race				X
PID.11	Patient 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)>` The Data Exchange verifies that the field length complies with the rules above.	O
PID.12	County Code				X

PID.13	Phone Number - Home	XTN	40	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	40	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 Data Exchange verifies that the value complies with the rules above.	O
PID.20	Driver's Lic Num - Patient				X

Field	Name	Type	Length	Comments	Req'd
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

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 Care360 Labs & Meds. 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 Care360 Labs & Meds). 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, Care360 Labs & Meds will only process the first appointment.
- For scheduling information, the AIP (Appointment Information–Personnel Resource) segment is the only one used by Care360 Labs & Meds. 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 164.

Message Segment Hierarchy

The SIU message segment hierarchy is specified below:

`MSH`	Message Header (*Required*; one per file)
`SCH`	Schedule Activity Information (*Required*; one per file)
`[{NTE}]`	Notes (*Optional*; multiple per SCH)
`[{PID}]`	Patient Identification (*Required*; one per file)
`[PV1]`	Patient Visit Data (*Optional*; one per PID)
`[PV2]`	Patient Visit Data - Additional Information (*Optional*; one per PID)
`[{OBX}]`	Observation Result (*Optional*; multiple per PID)
`[{DG1}]`	Diagnosis (*Optional*; multiple per PID)
`{RGS`	Resource Group Segment (*Required*; multiple per file. Only the first segment sent is used.)
`[{AIS}]`	Appt info - Services (*Optional*; multiple per RGS)
`[{NTE}]`	Notes (*Optional*; multiple per AIS)
`[{AIG}]`	Appt info - General resources (*Optional*; multiple per RGS)
`[{NTE}]`	Notes (*Optional*; multiple per AIG)
`[{AIL}]`	Appt info - Location (*Optional*; not supported)
`[{NTE}]`	Notes (*Optional*; multiple per AIL)
`[{AIP}]`	Appt info - Personnel Resource (*Optional*; multiple per RGS. Only the first segment sent is used.)
`[{NTE}]`	Notes (*Optional*; 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" on page 117.
- "SCH—Schedule Activity Information Segment" on page 119.
- "PID—Patient Identification Segment" on page 123.
- "PV1—Patient Visit Data Segment" on page 129.
- "DG1—Diagnosis Segment" on page 131.
- "RGS—Resource Group Segment" on page 133.
- "AIS—Appointment Information–Services Segment" on page 133.
- "AIG—Appointment Information–General Resources Segment" on page 134.
- "AIL—Appointment Information–Location Segment" on page 135.
- "AIP—Appointment Information–Personnel Resource Segment" on page 136.

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
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. This value will be provided by Quest Diagnostics. The Data Exchange 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	The receiving facility. The account number defined for the requester. This value will be determined by the Client team and Quest Diagnostics. The Data Exchange 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:** *yyyymmddhhmmss* **Note:** All date timestamps are set to Coordinated Universal Time (UTC). The Data Exchange 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: • 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: • P = Production • T = Testing The Data Exchange 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

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	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. **Format:** `<entity identifier (ST)> ^ <namespace ID (IS)> ^ <universal ID (ST)> ^ <universal ID type (ID)>` **Notes:** • This is the 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.	R
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

Field	Name	Type	Length	Comments	Req'd
SCH.05	Schedule ID	CE	200	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. **Format:** `<identifier (ST)> ^ <text (ST)> ^ <name of coding system (ST)> ^ <alternate identifier (ST)> ^ <alternate text (ST)> ^ <name of alternate coding system (ST)>`	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. **Format:** `<identifier (ST)> ^ <text (ST)> ^ <name of coding system (ST)> ^ <alternate identifier (ST)> ^ <alternate text (ST)> ^ <name of alternate coding system (ST)>` The event reason is displayed in Care360 Labs & Meds on the main page, *Today's Patients* section. The event reason itself does not trigger any action.	R

Field	Name	Type	Length	Comments	Req'd
SCH.07	Appointment Reason	CE	200	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. **Format:** `<identifier (ST)> ^ <text (ST)> ^ <name of coding system (ST)> ^ <alternate identifier (ST)> ^ <alternate text (ST)> ^ <name of alternate coding system (ST)>` The following identifier codes are valid: • ROUTINE = Routine appointment - default if not valued. • WALKIN = A previously unscheduled walk-in visit. • CHECKUP = A routine check-up, such as an annual physical. • FOLLOWUP = A follow up visit from a previous appointment. • EMERGENCY = Emergency appointment.	O
SCH.08	Appointment Type	CE	200	Contains the identifier code for the type of appointment. **Format:** `<identifier (ST)> ^ <text (ST)> ^ <name of coding system (ST)> ^ <alternate identifier (ST)> ^ <alternate text (ST)> ^ <name of alternate coding system (ST)>` The following identifier codes are valid: • 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.).	O
SCH.09	Appointment Duration	NM	20		O
SCH.10	Appointment Duration Units	CE	200		O

Field	Name	Type	Length	Comments	Req'd
SCH.11	Appointment Timing Quantity	TQ	200	Contains the scheduled appointment's timing and quantity, as scheduled by the filler application. Used on the Care360 Labs & Meds main page in the *Today's Patients* section to group appointments by date and time.	R
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	40		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	40		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	40		O
SCH.22	Entered by Location	PL	80		O
SCH.23	Parent Placer Appointment ID	EI	75		O

Field	Name	Type	Length	Comments	Req'd
SCH.24	Parent Filler Appointment ID	EI	75		O
SCH.25	Filler Status Code	CE	200	Contains a code describing the status of the appointment with respect to the filler application. Valid values: • PENDING • WAITLIST • BOOKED • STARTED • COMPLETE • DELETED • BLOCKED • OVERBOOK **Note:** Values **must** be submitted in uppercase. If this field is populated, the Data Exchange validates it for one of the above values. Note, however, that Care360 Labs & Meds does not currently use this appointment status.	O

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.	O
PID.02	Patient ID	CX	40	Care360 patient identifier used to uniquely identify a patient within Care360. 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. **Example:** BB1123	R
PID.03	Patient ID	CX	40	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.). This is the patient identifier associated with the non-Care360 system, and it is not always available within Care360.	O

Field	Name	Type	Length	Comments	Req'd
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 Data Exchange verifies that the field length complies with the rules above.	R
PID.06	Mother's Maiden Name	XPN	48	Patient's mother's maiden name. Only the first subfield (Family Name) is passed to Care360 Labs & Meds.	O
PID.07	Date/Time of Birth	TS	26	Patient DOB. **Format:** *yyyymmdd* or *yyyymmddhhmmss* The Data Exchange accepts the timestamp (*hhmmss*) but forwards only the date (*yyyymmdd)* to Care360 Labs & Meds. The Data Exchange verifies that the date is in one of these formats.	O
PID.08	Sex	IS	1	Possible values are listed below. • M = Male • F = Female • O = Other • U = Unknown • A = Ambiguous • N = Not applicable • Z = Undifferentiated • blank **Note:** If Care360 Labs & Meds does not support a value that is submitted on inbound feeds, that value appears as a blank in the user interface.	O
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 Care360 Labs & Meds.	O

Field	Name	Type	Length	Comments	Req'd
PID.10	Race	CE	250	Repeating field with a maximum of three instances allowed. This field supports both HL7 2.3 and HL7 3.0 values. For HL7 2.3, values supported by Care360 Labs & Meds are listed below. • W = White • B = Black • A = Asian • I = American Indian or Alaskan • O = Other For HL7 3.0, values supported by Care360 Labs & Meds 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. 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: `1010-8^2106-3^2028-9` 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 Care360 Labs & Meds user interface.	O
PID.11	Patient 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)>` The Data Exchange verifies that the field length complies with the rules above.	O
PID.12	County Code				X

Field	Name	Type	Length	Comments	Req'd

PID.13	Phone Number - Home	XTN	40	Repeating field that can accept Home phone number, Cell/Mobile phone number, and email address. Note the following:
				• 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.
				Example with home and cell phone (extension and country code omitted) and email:
				`^^^^^333^4445555~^NET^^ example@email.com~^^CP^^^777^8889999`
				Example with home and cell phone (including country code):
				`^^^^1^333^4445555^~ ^^CP^^1^777^8889999^`
				The Data Exchange verifies that the value complies with the rules above.
					O

PID.14	Phone Number - Business	XTN	40	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	CE	250	Values supported by Care360 Labs & Meds are listed in "Patient Language (PID.15)" on page 165. This field uses the HL7 3.0 field length of 250 rather than the HL7 2.3 field length of 60.	O

Field	Name	Type	Length	Comments	Req'd
PID.16	Marital Status	IS	1	Values supported by Care360 Labs & Meds are listed below. • P = Polygamous • W = Widowed • D = Divorced • M = Married • A = Annulled • S = Never Married • L = Legally Separated • I = Interlocutory • T = Domestic Partner If a value other than those listed is sent, the patient's marital status will not appear in the Care360 Labs & Meds user interface.	O
PID.17	Religion	IS	3	Patient religion	O
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 Care360 Labs & Meds.	O
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 Data Exchange verifies that the value complies with the rules above.	O
PID.20	Driver's Lic Num - Patient	DLN	25	DLN format: `<license number (ST)> ^ <issuing state, province, country (IS)> ^ <expiration date (DT)>` Only the first subfield (License Number) is passed to Care360 Labs & Meds.	O
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 Care360 Labs & Meds.	O

Field	Name	Type	Length	Comments	Req'd
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 Care360 Labs & Meds are listed below. • H = Hispanic • N = Non-Hispanic • U = Unknown For HL7 3.0, values supported by Care360 Labs & Meds 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 Care360 Labs & Meds user interface.	O
PID.23	Birth Place	ST	60	Indicates the location of the patient's birth.	O
PID.24	Multiple Birth Indicator	ID	2	Indicates whether or not the patient was part of a multiple birth (Yes/No indicator). Valid values: • Y = Yes • N = No • blank The Data Exchange validates this field.	O
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.	O
PID.26	Citizenship	IS	4	Contains the patient's country of citizenship.	O
PID.27	Veterans Military Status	CE	60	Contains the military status assigned to a veteran. Only the first subfield (Identifier) is passed to Care360 Labs & Meds.	O
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 Care360 Labs & Meds.	O

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* or *yyyymmddhhmmss* The Data Exchange accepts the timestamp (*hhmmss*) but forwards only the date (*yyyymmdd)* to Care360 Labs & Meds.	O
PID.30	Patient Death Indicator	ID	1	Indicates whether or not the patient is deceased (Yes/No indicator). Valid values: • Y = Yes • N = No • blank The Data Exchange validates this field.	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 - PV1	SI	4	This field is used to number PV1 message segments sequentially starting with 1.	O
PV1.02	Patient Class	IS	1	For inbound messages, Data Exchange verifies that this field is populated. Example values include: • E = Emergency • I = Inpatient • O = Outpatient	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

Field	Name	Type	Length	Comments	Req'd
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
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

Field	Name	Type	Length	Comments	Req'd
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

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

Field	Name	Type	Length	Comments	Req'd
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)>` subfield1 = ICD-9 code subfield3 = "I9"	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:** *yyyymmddhhmmss*	O
DG1.06	Diagnosis Type	IS	2	Valid values: • A = Admitting • W = Working • F = Final	R
DG1.07	Major Diagnostic Category	CE	60		O
DG1.08	Diagnostic Related Group	CE	60		O
DG1.09	DRG Approval Indicator	ID	2		O
DG1.10	DRG Grouper Review Code	IS	2		O
DG1.11	Outlier Type	CE	60		O
DG1.12	Outlier Days	NM	3		O
DG1.13	Outlier Cost	CP	12		O
DG1.14	Grouper Version and Type	ST	4		O
DG1.15	Diagnosis Priority	NM	2		O
DG1.16	Diagnosing Clinician	XCN	60		O

Field	Name	Type	Length	Comments	Req'd
DG1.17	Diagnosis Classification	IS	3	Valid values: • 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		O
DG1.19	Attestation Date/Time	TS	26		O

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, Care360 Labs & Meds 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
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 Care360 Labs & Meds.

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

Field	Name	Type	Length	Comments	Req'd
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 Care360 Labs & Meds.

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

Field	Name	Type	Length	Comments	Req'd
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 Care360 Labs & Meds.

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
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 Care360 Labs & Meds. 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
AIP.03	Personnel Resource ID	XCN	80	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. **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)>` Subcomponents of assigning authority: `<namespace ID (IS)> & <universal ID (ST)> & <universal ID type (ID)>` Subcomponents of assigning facility ID: `<namespace ID (IS)> & <universal ID (ST)> & <universal ID type (ID)>` **Notes:** • This field is required if the AIP segment is present. • Valid values for source table: NPI, UPIN.	R

Field	Name	Type	Length	Comments	Req'd
AIP.04	Resource Role	CE	200	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. **Format:** `<identifier (ST)> ^ <text (ST)> ^ <name of coding system (ST)> ^ <alternate identifier (ST)> ^ <alternate text (ST)> ^ <name of alternate coding system (ST)>`	R
AIP.05	Resource Group				X
AIP.06	Start Date/Time			**Note:** The value for SCH.11 (Appointment Timing Quantity) is used for the appointment date and time instead of AIP.06 through AIP.10.	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 Care360 Labs & Meds 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 Care360 Labs & Meds.

The DFT message is outbound only (Care360 Labs & Meds 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 164.

Message Segment Hierarchy

The DFT^P03 message submitted from Care360 Labs & Meds will follow the message segment hierarchy specified below:

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

Note: If no procedure codes are available in the billing data, Care360 Labs & Meds 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 Care360 Labs & Meds. Supported message segments include the following:

- "MSH—Message Header Segment" on page 139.
- "EVN—Event Type Segment" on page 141.
- "PID—Patient Identification Segment" on page 141.
- "PD1—Patient Additional Demographic Segment" on page 147.
- "PV1—Patient Visit Data Segment" on page 148.
- "FT1—Financial Transaction Segment" on page 150.
- "PR1—Procedure Segment" on page 154.
- "DG1—Diagnosis Segment" on page 155.
- "GT1—Guarantor Segment" on page 156.
- "IN1—Insurance Segment" on page 160.

Notes:

- DFT^P03 message segments that are not submitted by Care360 Labs & Meds 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			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

Field	Name	Type	Length	Comments	Req'd
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: • 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
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	Care360 patient identifier used to uniquely identify a patient within Care360. 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. **Example:** BB1123	R
PID.03	Patient ID	CX	40	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.). This is the patient identifier associated with the non-Care360 system, and it is not always available within Care360.	O

Field	Name	Type	Length	Comments	Req'd
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 Data Exchange verifies that the field length complies with the rules above.	R
PID.06	Mother's Maiden Name	XPN	48	Patient's mother's maiden name. Only the first subfield (Family Name) is passed from Care360 Labs & Meds.	O
PID.07	Date/Time of Birth	TS	26	Patient DOB. **Format:** *yyyymmdd*	O
PID.08	Sex	IS	1	Possible values are listed below. • M = Male • F = Female • O = Other • U = Unknown • A = Ambiguous • N = Not applicable • Z = Undifferentiated • blank	O
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 from Care360 Labs & Meds.	O

Field	Name	Type	Length	Comments	Req'd
PID.10	Race	CE	250	Repeating field with a maximum of three instances allowed. This field supports both HL7 2.3 and HL7 3.0 values. For HL7 2.3, values supported by Care360 Labs & Meds are listed below. • W = White • B = Black • A = Asian • I = American Indian or Alaskan • O = Other For HL7 3.0, values supported by Care360 Labs & Meds 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. **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: `1010-8^2106-3^2028-9`	O
PID.11	Patient 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
PID.12	County Code				X

Field	Name	Type	Length	Comments	Req'd
PID.13	Phone Number - Home	XTN	40	Repeating field that can included Home phone number, Cell/Mobile phone number, and email address. Note the following: • If the Home phone number is sent, it will be the first occurrence. • If the Cell/Mobile phone number is sent, then <telecommunication equipment type (ID)> 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. **Example with home and cell phone (extension and country code omitted) and email:** ^^^^^333^4445555~^NET^^ example@email.com~^^CP^^^777^8889999 **Example with home and cell phone (including country code):** ^^^^1^333^4445555^~ ^^CP^^1^777^8889999^	O
PID.14	Phone Number - Business	XTN	40	Length of this field is 20 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	CE	250	Values supported by Care360 Labs & Meds are listed in "Patient Language (PID.15)" on page 165. This field uses the HL7 3.0 field length of 250 rather than the HL7 2.3 field length of 60.	O

Field	Name	Type	Length	Comments	Req'd
PID.16	Marital Status	IS	1	Values supported by Care360 Labs & Meds are listed below. • P = Polygamous • W = Widowed • D = Divorced • M = Married • A = Annulled • S = Never Married • L = Legally Separated • I = Interlocutory • T = Domestic Partner	O
PID.17	Religion	IS	3	Patient religion	O
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 from Care360 Labs & Meds.	O
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.	O
PID.20	Driver's Lic Num - Patient	DLN	25	DLN format: `<license number (ST)> ^ <issuing state, province, country (IS)> ^ <expiration date (DT)>` Only the first subfield (License Number) is passed from Care360 Labs & Meds.	O
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 from Care360 Labs & Meds.	O

Field	Name	Type	Length	Comments	Req'd
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 Care360 Labs & Meds are listed below. • H = Hispanic • N = Non-Hispanic • U = Unknown For HL7 3.0, values supported by Care360 Labs & Meds 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.	O
PID.23	Birth Place	ST	60	Indicates the location of the patient's birth.	O
PID.24	Multiple Birth Indicator	ID	2	Indicates whether or not the patient was part of a multiple birth (Yes/No indicator). Valid values: • Y = Yes • N = No • blank The Data Exchange validates this field.	O
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.	O
PID.26	Citizenship	IS	4	Contains the patient's country of citizenship.	O
PID.27	Veterans Military Status	CE	60	Contains the military status assigned to a veteran. Only the first subfield (Identifier) is passed from Care360 Labs & Meds.	O
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 from Care360 Labs & Meds.	O

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: • Y = Yes • N = No • blank The Data Exchange 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

Field	Name	Type	Length	Comments	Req'd
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: • Y = Yes • N = No • P = Pending • blank	O
PD1.12	Protection Indicator	ID	1	Valid outbound values: • 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

Field	Name	Type	Length	Comments	Req'd
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	CX	20	**Format:** `<ID (ST)> ^ <check digit (ST)> ^ <code identifying the check digit scheme employed (ID)> ^ <assigning authority (HD)> ^ <identifier type code (IS)> ^ <assigning facility (HD)>` Subfields sent by Care360 Labs & Meds: • PV1.19.01 = Appointment ID • PV1.19.04 = Appointment namespace	O
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
PV1.33	Bad Debt Recovery Amount				X

Field	Name	Type	Length	Comments	Req'd
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

Field	Name	Type	Length	Comments	Req'd
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 Care360 Labs & Meds 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: • CG = Charge • CD = Credit • PY = Payment • AJ = Adjustment	R
FT1.07	Transaction Code	CE	80	Contains the ID assigned by Care360 Labs & Meds 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
FT1.16	Assigned Patient Location	PL	80	Contains the current patient location. This can be the location of the patient when the charge item was ordered or when the charged service was rendered.	O
FT1.17	Fee Schedule				X
FT1.18	Patient Type				X

Field	Name	Type	Length	Comments	Req'd
FT1.19	Diagnosis Code	CE	60	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). ICD9-CM is assumed for all diagnosis codes, but ICD10 can also be used. **Format:** `<identifier (ST)> ^ <text (ST)> ^ <name of coding system (ST)> ^ <alternate identifier (ST)> ^ <alternate text (ST)> ^ <name of alternate coding system (ST)>` Subfields sent by Care360 Labs & Meds: • FT1.19.01 = Diagnosis code • FT1.19.02 = Diagnosis text • FT1.19.03 = Coding system: `I9`	O
FT1.20	Performed By Code	XCN	120	Contains the composite number/name of the person/group that performed the test/procedure/transaction, etc. 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. **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)>`	O
FT1.21	Ordered By Code	XCN	120	Contains the composite number/name of the person/group that ordered the test/ procedure/transaction, etc. 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.	O
FT1.22	Unit Cost				X

Field	Name	Type	Length	Comments	Req'd
FT1.23	Filler Order Number				X
FT1.24	Entered By Code				X
FT1.25	Procedure Code	CE	80	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. **Format:** `<identifier (ST)> ^ <text (ST)> ^ <name of coding system (ST)> ^ <alternate identifier (ST)> ^ <alternate text (ST)> ^ <name of alternate coding system (ST)>` Subfields sent by Care360 Labs & Meds: • FT1.25.01 = PC (Procedure Code) • FT1.25.02 = PC description • FT1.25.03 = PC coding system: CPT or HCPCS	O
FT1.26	Procedure Code Modifier	CE	80	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. This is a repeating field with each instance delimited by ~ (tilde). **Format:** `<identifier (ST)> ^ <text (ST)> ^ <name of coding system (ST)> ^ <alternate identifier (ST)> ^ <alternate text (ST)> ^ <name of alternate coding system (ST)>` Subfields sent by Care360 Labs & Meds: • FT1.26.01 = PMC (Procedure Modifier Code) • FT1.26.02 = PMC description • FT1.26.03 = PMC coding system: `MOD` **Note:** This is an HL7 2.4 field.	O

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 Care360 Labs & Meds encounter note. **Format:** *yyyymmdd*	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
PR1.14	Procedure Priority				X
PR1.15	Associated Diagnosis Code	CE	80	Contains the diagnosis that is the primary reason this procedure was performed. **Note:** This is a non-repeating field in HL7 2.3, but this Care360 specification uses the HL7 2.5.1 definition, which allows the field to repeat.	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	**Format:** `<identifier (ST)> ^ <text (ST)> ^ <name of coding system (ST)> ^ <alternate identifier (ST)> ^ <alternate text (ST)> ^ <name of alternate coding system (ST)>` • DG1.03.01 = ICD-9 code • DG1.03.03 = "I9"	O
DG1.04	Diagnosis Description				X
DG1.05	Diagnosis Date/Time	TS	26	Date/Time that the diagnosis was determined. **Format:** *yyyymmddhhmmss* **Note:** All date timestamps are set to Coordinated Universal Time (UTC).	O
DG1.06	Diagnosis Type	IS	2	Valid values: • 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

Field	Name	Type	Length	Comments	Req'd
DG1.14	Grouper Version and Type	ST	4		X
DG1.15	Diagnosis Priority	NM	2		X
DG1.16	Diagnosing Clinician	XCN	60		O
DG1.17	Diagnosis Classification	IS	3	Valid values: • 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: • 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 Care360 Labs & Meds, 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

Field	Name	Type	Length	Comments	Req'd
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. `<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)>`	R
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	40	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	40	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: • M = Male • F = Female • blank	O
GT1.10	Guarantor Type				X

Field	Name	Type	Length	Comments	Req'd
GT1.11	Guarantor Relationship	IS	2	Describes relations to patient. Valid values: • 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	XPN	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
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

Field	Name	Type	Length	Comments	Req'd
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
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

Field	Name	Type	Length	Comments	Req'd
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 Care360 Labs & Meds.	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

Field	Name	Type	Length	Comments	Req'd
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
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

Field	Name	Type	Length	Comments	Req'd
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		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: • 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 65 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^ALI
AS_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^1^2|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^ALI
AS_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^I9|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|D|ID345^RESOURCE^FIRSTNAME^LASTNAME^^DR^MD^UPIN|ROLE|7
```

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|||||||||||||||||123
FT1|1|||20120207112233|20120401182956|CG|4007|||1|||||10|||PC1DC1^PC1DC1Text^I9~PC1DC2^PC1DC
2Text^I9|738492^PATIENT^NAME^^^^^NPI|738492^PATIENT^NAME^^^^^NPI||||PC1^PC1DESC^CPT|PC1M1^PC1
M1DESC^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^PC1DC
2Text^I9|738492^PATIENT^NAME^^^^^NPI|738492^PATIENT^NAME^^^^^NPI||||PC1^PC1DESC^CPT|PC1M1^PC1
M1DESC^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 Care360 Labs & Meds 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 66.

For patient language (PID.15), Care360 Labs & Meds supports a subset of the ISO 639-2 languages. For more information, see "Patient Language (PID.15)" on page 165.

Patient Language (PID.15)

The patient languages supported by Care360 Labs & Meds 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
eng	English
spa	Spanish
ara	Arabic
chi	Chinese
fre	French
cpf	French Creole
ger	German
gre	Greek
hin	Hindi
ita	Italian
jpn	Japanese
kor	Korean
per	Persian
pol	Polish
por	Portuguese
rus	Russian
sgn	Sign Language
tgl	Tagalog
arw	Arawak

ISO 639-2 Code	English Name
urd	Urdu
vie	Vietnamese
abk	Abkhazian
ace	Achinese
ach	Acoli
ada	Adangme
ady	Adygei
aar	Afar
afr	Afrikaans
ain	Ainu
aka	Akan
alb	Albanian
gsw	Alemannic
ale	Aleut
amh	Amharic
anp	Angika
arg	Aragonese
arp	Arapaho
bua	Buriat

ISO 639-2 Code	English Name
arm	Armenian
rup	Aromanian
asm	Assamese
ava	Avaric
awa	Awadhi
aym	Aymara
aze	Azerbaijani
ast	Bable
ban	Balinese
bal	Baluchi
bam	Bambara
bas	Basa
bak	Bashkir
baq	Basque
bej	Beja
bel	Belarusian
bem	Bemba
ben	Bengali
bho	Bhojpuri
bik	Bikol
bis	Bislama
byn	Blin
nob	Bokmål, Norwegian
bos	Bosnian
bra	Braj
bre	Breton
bug	Buginese
bul	Bulgarian

ISO 639-2 Code	English Name
bur	Burmese
cad	Caddo
cat	Catalan
ceb	Cebuano
khm	Central Khmer
cha	Chamorro
che	Chechen
chr	Cherokee
chy	Cheyenne
nya	Chichewa
chn	Chinook jargon
cho	Choctaw
chk	Chuukese
chv	Chuvash
rar	Cook Islands Maori
cop	Coptic
cor	Cornish
cos	Corsican
cre	Cree
mus	Creek
crp	Creoles and pidgins
cpe	Creoles and pidgins, English-based
cpp	Creoles and pidgins, Portuguese-based
crh	Crimean Turkish
hrv	Croatian
cze	Czech
dak	Dakota
dan	Danish

ISO 639-2 Code	English Name
del	Delaware
dar	Dargwa
chp	Dene Suline
din	Dinka
div	Divehi
doi	Dogri
dgr	Dogrib
dua	Duala
dut	Dutch
dyu	Dyula
dzo	Dzongkha
frs	Eastern Frisian
bin	Edo
efi	Efik
eka	Ekajuk
myv	Erzya
epo	Esperanto
est	Estonian
ewe	Ewe
ewo	Ewondo
fan	Fang
fat	Fanti
fao	Faroese
fij	Fijian
fil	Filipino
fin	Finnish
fon	Fon
fur	Friulian
ful	Fulah

ISO 639-2 Code	English Name
gla	Gaelic
car	Galibi Carib
glg	Galician
lug	Ganda
gay	Gayo
gba	Gbaya
geo	Georgian
gil	Gilbertese
gon	Gondi
gor	Gorontalo
grb	Grebo
kal	Greenlandic
grn	Guarani
guj	Gujarati
gwi	Gwich'in
hai	Haida
hat	Haitian Creole
hau	Hausa
haw	Hawaiian
heb	Hebrew
her	Herero
hil	Hiligaynon
hmo	Hiri Motu
hmn	Hmong
hun	Hungarian
hup	Hupa
iba	Iban
ice	Icelandic
ibo	Igbo

ISO 639-2 Code	English Name
gaa	Ga
smn	Inari Sami
ind	Indonesian
inh	Ingush
iku	Inuktitut
ipk	Inupiaq
gle	Irish
jav	Javanese
kac	Jingpho
jrb	Judeo-Arabic
jpr	Judeo-Persian
kbd	Kabardian
kab	Kabyle
xal	Kalmyk
kam	Kamba
kan	Kannada
kau	Kanuri
pam	Kapampangan
kaa	Kara-Kalpak
krc	Karachay-Balkar
krl	Karelian
kas	Kashmiri
csb	Kashubian
kaz	Kazakh
kha	Khasi
kik	Kikuyu
kmb	Kimbundu
kin	Kinyarwanda
kom	Komi

ISO 639-2 Code	English Name
ilo	Iloko
kos	Kosraean
kpe	Kpelle
kum	Kumyk
kur	Kurdish
kru	Kurukh
kut	Kutenai
kua	Kwanyama
kir	Kyrgyz
lad	Ladino
lah	Lahnda
lam	Lamba
lao	Lao
lav	Latvian
lez	Lezghian
lim	Limburgish
lin	Lingala
lit	Lithuanian
nds	Low German
dsb	Lower Sorbian
loz	Lozi
lub	Luba-Katanga
lua	Luba-Lulua
lui	Luiseno
smj	Lule Sami
lun	Lunda
luo	Luo (Kenya and Tanzania)
lus	Lushai
ltz	Luxembourgish

ISO 639-2 Code	English Name
kon	Kongo
kok	Konkani
mag	Magahi
mai	Maithili
mak	Makasar
mlg	Malagasy
may	Malay
mal	Malayalam
mlt	Maltese
mnc	Manchu
mdr	Mandar
man	Mandingo
mni	Manipuri
glv	Manx
mao	Maori
arn	Mapuche
mar	Marathi
chm	Mari
mah	Marshallese
mwr	Marwari
mas	Masai
men	Mende
mic	Micmac
min	Minangkabau
mwl	Mirandese
moh	Mohawk
mdf	Moksha
lol	Mongo
mon	Mongolian

ISO 639-2 Code	English Name
mac	Macedonian
mad	Madurese
nav	Navajo
ndo	Ndonga
nap	Neapolitan
new	Nepal Bhasa
nep	Nepali
nia	Nias
niu	Niuean
nog	Nogai
nde	North Ndebele
frr	Northern Frisian
sme	Northern Sami
nso	Northern Sotho
nor	Norwegian
nno	Norwegian Nynorsk
iii	Nuosu
nym	Nyamwezi
nyn	Nyankole
nyo	Nyoro
nzi	Nzima
oji	Ojibwa
ori	Oriya
orm	Oromo
osa	Osage
oss	Ossetian
pau	Palauan
pag	Pangasinan
pap	Papiamento

ISO 639-2 Code	English Name
mos	Mossi
nqo	N'Ko
nau	Nauru
que	Quechua
raj	Rajasthani
rap	Rapanui
rum	Romanian
roh	Romansh
rom	Romany
run	Rundi
smo	Samoan
sad	Sandawe
sag	Sango
san	Sanskrit
sat	Santali
srd	Sardinian
sas	Sasak
sco	Scots
sel	Selkup
srp	Serbian
srr	Serer
shn	Shan
sna	Shona
scn	Sicilian
sid	Sidamo
bla	Siksika
snd	Sindhi
sin	Sinhala
sms	Skolt Sami

ISO 639-2 Code	English Name
pus	Pashto
pon	Pohnpeian
pan	Punjabi
snk	Soninke
sot	Sotho, Southern
nbl	South Ndebele
alt	Southern Altai
sma	Southern Sami
srn	Sranan Tongo
suk	Sukuma
sun	Sundanese
sus	Susu
swa	Swahili
ssw	Swati
swe	Swedish
syr	Syriac
tah	Tahitian
tgk	Tajik
tmh	Tamashek
tam	Tamil
tat	Tatar
tel	Telugu
ter	Tereno
tet	Tetum
tha	Thai
tib	Tibetan
tig	Tigre
tir	Tigrinya
tem	Timne

ISO 639-2 Code	English Name
den	Slave (Athapascan)
slo	Slovak
slv	Slovenian
som	Somali
tog	Tonga (Nyasa)
ton	Tonga (Tonga Islands)
tsi	Tsimshian
tso	Tsonga
tsn	Tswana
tum	Tumbuka
tur	Turkish
tuk	Turkmen
tvl	Tuvalu
tyv	Tuvinian
twi	Twi
udm	Udmurt
ukr	Ukrainian
umb	Umbundu
und	Undetermined
hsb	Upper Sorbian
uig	Uyghur
uzb	Uzbek
vai	Vai
ven	Venda

ISO 639-2 Code	English Name
tiv	Tiv
tli	Tlingit
tpi	Tok Pisin
tkl	Tokelau
vot	Votic
wln	Walloon
war	Waray
was	Washo
wel	Welsh
fry	Western Frisian
wal	Wolaytta
wol	Wolof
xho	Xhosa
sah	Yakut
yao	Yao
yap	Yapese
yid	Yiddish
yor	Yoruba
zap	Zapotec
zza	Zazaki
zen	Zenaga
zha	Zhuang
zul	Zulu
zun	Zuni

Chapter 7: CCR Message Specification

In This Chapter:

- About the CCR Message Specification 173
- CCR Message Specification 174
- Sample CCR Message 185

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 Data Exchange translates the Rx Order Echo message into the standard CCR Prescription message format. For more information, see "CCR Message Specification" on page 174.
- **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 185.

CCR Message Specification

The CCR Message Specification defines the intent, source, destination, and some specifics of the syntax of a message. The Data Exchange 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		Care360 Labs & Meds will now only send one header at a time, but the CCR can support multiple headers (no limit).	
CCR Unique Identifier	`<CCRDocumentObjectID>`	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>0c3299677f00010104507926bfbd a468</ActorID>`
		`</Patient>`
			R

Attributes / Data Objects	XML Tag	Comments	Req'd[a]
From	<From>	Identifies who created the prescription. An Actor and its Role must be specified under From. Should equal an <ActorId> (xs:string) defined in <Actors> and <ActorRole> with the <Text>Primary Care Provider</Text> (xs:string). **Example:** <From> <ActorLink> <ActorID>0c32996a7f00010104507926d8e440fc</ActorID> <ActorRole> <Text>Primary Care Provider</Text> </ActorRole> </ActorLink> </From>	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
	<CCRDataObjectID>	Must be a unique Object ID to identify this specific instance of a Medication for this CCR document. Type: xs:string, should be a UUID or OID.	R

Attributes / Data Objects	XML Tag	Comments	Req'd[a]

Medications, *continued*	`<DateTime>`	Medication start date.
		`<Type><Text>Start Date</Text></Type>`
		Date format is:
		yyyy-mm-ddThh:mm:ss+00:00
		The ExactDateTime element is defined as xs:string type.
		Example:
		`<DateTime>`
		`  <Type>`
		`  <Text>StartDate</Text>`
		`  </Type>`
		`  <ExactDateTime>`
		`  2010-03-12T12:00:00+00:00`
		`  </ExactDateTime>`
		`</DateTime>`
			O

	`<DateTime>`	Medication stop date. Using the Date Issued field and the Days Supply, calculate the Stop Date by Date Issued + Days Supply.
		`<Type><Text>Stop Date</Text></Type>`
		Date format is:
		yyyy-mm-ddThh:mm:ss+00:00
		The ExactDateTime element is defined as xs:string type.
		Example:
		`<DateTime>`
		`  <Type>`
		`  <Text>StopDate</Text>`
		`  </Type>`
		`  <ExactDateTime>`
		`  2010-04-16T12:00:00+00:00`
		`  </ExactDateTime>`
		`</DateTime>`
			O

	`<IDs>`	Not currently used.	NS

	`<Type>`	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.
		The Type element is defined as xs:string type.
		Example:
		`<Type>`
		`  <Text>Medication</Text>`
		`</Type>`
			O

Attributes / Data Objects	XML Tag	Comments	Req'd[a]
Medications, *continued*	<Status>	Always set to "Active". The Status element is defined as xs:string type. **Example:** <Status> <Text>Active</Text> </Status>	O
	<Source>	This is an Actor tag with the ActorID of the Physician Actor in the Actor section. The ActorID and ActorRole elements are all defined as xs:string type. **Example:** <Source> <Actor> <ActorID> 0C329aef7f0001010450792624f1f5cd </ActorID> <ActorRole> <Text>Primary Care Provider</Text> </ActorRole> </Actor> </Source>	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. The ProductName Text element and the Value and Coding System are all defined as xs:string types. **Example:** <ProductName> <Text>fluocinolone topical</Text> Code> <Value>99220750917</Value> <CodingSystem>NDC</CodingSystem> /Code> </ProductName>	R
	<Code>	The Code tag will have the <Value> set to the NDC DrugNumber and the <Coding> set to NDC as in the <ProductName> example above.	O

Attributes / Data Objects	XML Tag	Comments	Req'd[a]
Medications, *continued*	<BrandName>	Call to Multim database to retrieve brand name using NDC. The BrandName Text element is defined as xs:string type. **Example:** <BrandName> <Text>Synemol</Text> </BrandName>	O
	<Manufacturer>	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. **Example:** <Manufacturer> <ActorID>0c329b267f00010104507926758f 725e</ActorID> </Manufacturer>	O
	<Strength>	Call to Multim database to retrieve strength using NDC. The Strength element is defined as xs:string type. **Example:** <Strength> <Text>0.025%</Text> </Strength>	C
	<Form>	Call to Multim database to retrieve dose form using NDC. The Form element is defined as xs:string type. **Example:** <Form> <Text>cream</Text> </Form>	C
	<Concentration>	Not currently used.	NS
	<Size>	Not currently used.	NS
	<Quantity>	The amount of the medication to be given. The Quantity element is defined as xs:string type. **Example:** <Quantity> <Value>2</Value> </Quantity>	R

Attributes / Data Objects	XML Tag	Comments	Req'd[a]

Medications, *continued*	<Directions>	The directions given by the physician on the order. The directions from Care360 Labs & Meds are placed in their entirety in the <Dose> XML tag. The <Frequency> XML tag is not used.
		Example:
		`<Directions>`
		`  <Direction>`
		`  <Route>`
		`  <Text>topical</Text>`
		`  </Route>`
		`  <Duration>`
		`  <Description>`
		`  <Text>35</Text>`
		`  </Description>`
		`  </Duration>`
		`  </Direction>`
		`</Directions>`
			C

	<DoseIndicator>	Not currently used.	NS
	<DeliveryMethod>	Not currently used.	NS
	<Dose>	Contains the drug directions from Care360 Labs & Meds.	C
	<DoseCalculation>	Not currently used.	NS
	<Vehicle>	Not currently used.	NS

	<Route>	Call to Multim database to retrieve route using NDC.
		The Route element is defined as xs:string type.
		Example:
		`<Route>`
		`  <Text>topical</Text>`
		`</Route>`
			C

	<Site>	Not currently used.	NS
	<AdministrationTiming>	Not currently used.	NS
	<Frequency>	Not currently used.	NS
	<Interval>	Not currently used.	NS

Attributes / Data Objects	XML Tag	Comments	Req'd[a]
Medications, *continued*	<Duration>	The duration is set as the Days Supply from the order. The Duration element is defined as xs:string type. **Example:** <Duration> <Description> <Text>35</Text> </Description> </Duration>	O
	<DoseRestrictions>	Not currently used.	NS
	<Indication>	Not currently used.	NS
	<StopIndicator>	Not currently used.	NS
	<DirectionSequencePosition>	Not currently used.	NS
	<MultipleDirectionModifier>	Not currently used.	NS
	<PatientInstructions>	Set to the Comments to the Pharmacist. The Patient Instructions element is defined as xs:string type.	O
	<FulfillmentInstructions>	Not currently used.	NS
	<Refill>	Set to the Refill Quantity from the order. The Refill element is defined as xs:string type. **Example:** <Refills> <Refill> <Quantity> <Value>1</Value> </Quantity> </Refill> </Refills>	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

Attributes / Data Objects	XML Tag	Comments	Req'd[a]
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
Healthcare Providers	<HealthCareProviders>	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:** <CurrentName> <Given>Minnie</Given> <Family>Mouse</Family> </CurrentName>	O
	<DisplayName>	Not currently used.	NS
	<DateOfBirth>	The DateOfBirth element is defined as xs:string type. DateOfBirth format is: yyyy-mm-dd **Example:** <DateOfBirth> <ExactDateTime>1951-06-18 </ExactDateTime> </DateOfBirth>	O

Attributes / Data Objects	XML Tag	Comments	Req'd[a]
Actors, *continued*	<Gender>	Male, Female, Unknown The Gender element is defined as xs:string type. **Example:** <Gender> <Text>Female</Text> </Gender>	O
	<Organization>	Not currently used.	NS
	<InformationSystem>	Not currently used.	NS
	<IDs>	All patient IDs sent from Care360 Labs & Meds will be in the CCR. This information is sent over in the patientReferenceNumber field. **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 Care360 Labs & Meds. 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. The <ID> tag will contain the patientReferenceNumber that has a patientReferenceNbrQualifier or "SY" or "ZZ". Each patientReferenceNumber sent from Care360 Labs & Meds is sent in a different <Ids> element. **Example:** <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>	O
	<Relation>	Not currently used.	NS
	<Specialty>	Not currently used.	NS

Attributes / Data Objects	XML Tag	Comments	Req'd[a]

Actors, *continued*	`<Address>`	All of the Address elements are defined as xs:string type.
		Example:
		`<Address>`
		`  <Line1>1234 Mulberry Lane</Line1>`
		`  <Line2>additional address</Line2>`
		`  <City>Toledo</City>`
		`  <State>OH</State>`
		`  <PostalCode>54360</PostalCode>`
		`  <Country>USA</Country>`
		`</Address>`
			O

	`<Telephone>`	Can be more than one depending on what Care360 Labs & Meds sends. A separate telephone instance is created for each. The Value and Type elements are all defined as xs:string type.
		Example:
		`<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>`
		Values from Care360 Labs & Meds:
		`PAGE` = "BN"
		`CELLULAR` = "CP"
		`FAX` = "FX"
		`HOME` = "HP"
		`NIGHT` = "NP"
		`TELEPHONE` = "TE"
		`WORK` = "WP"
		`EMAIL` = "EM"
			O

Attributes / Data Objects	XML Tag	Comments	Req'd[a]
Actors, *continued*	<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 Care360 Labs & Meds: 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 Hub Account. All of the elements in the Source element are defined as xs:string type. **Example:** <Source> <Actor> <ActorID> 0c32996a7f00010104507926d8e440fc </ActorID> <ActorRole> <Text>Primary Care Provider</Text> </ActorRole> </Actor> </Source>	R
	<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

a. R = 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 174.

```
<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<ContinuityOfCareRecord xmlns="urn:astm-org:CCR">
<CCRDocumentObjectID>0c3299627f0001010450792695a0fd38</CCRDocumentObjectID>
<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>
            <CCRDataObjectID>
            0c329ae17f00010104507926a3f3bb06
            </CCRDataObjectID>
            <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>
   <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>

    <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>Care360 Labs & Meds</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.

Detail Financial Transaction (DFT)

A type of HL7 message used to describe a financial transaction transmitted between systems, that is, to the billing system for ancillary charges, ADT to billing system for patient deposits, etc.

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, point-of-care devices, 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.

Hub Account

A unique account that enables an authorized external system (for example, EMR vendor) to interact with the Data Exchange.

Interface

The code written and the specifications and protocols used for the transmission of electronic data between the Data Exchange 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 (either a Quest Diagnostics laboratory or a third-party laboratory). Master files are converted to the Quest Diagnostics 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 Data Exchange. 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.

Request ID

A unique identifier that references a specific transaction made by an EMR system and received by the Hub. This identifier is assigned to a request upon receipt of the request message. The Request ID is unique across all Hub 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 (Care360). 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 (Care360) 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*).

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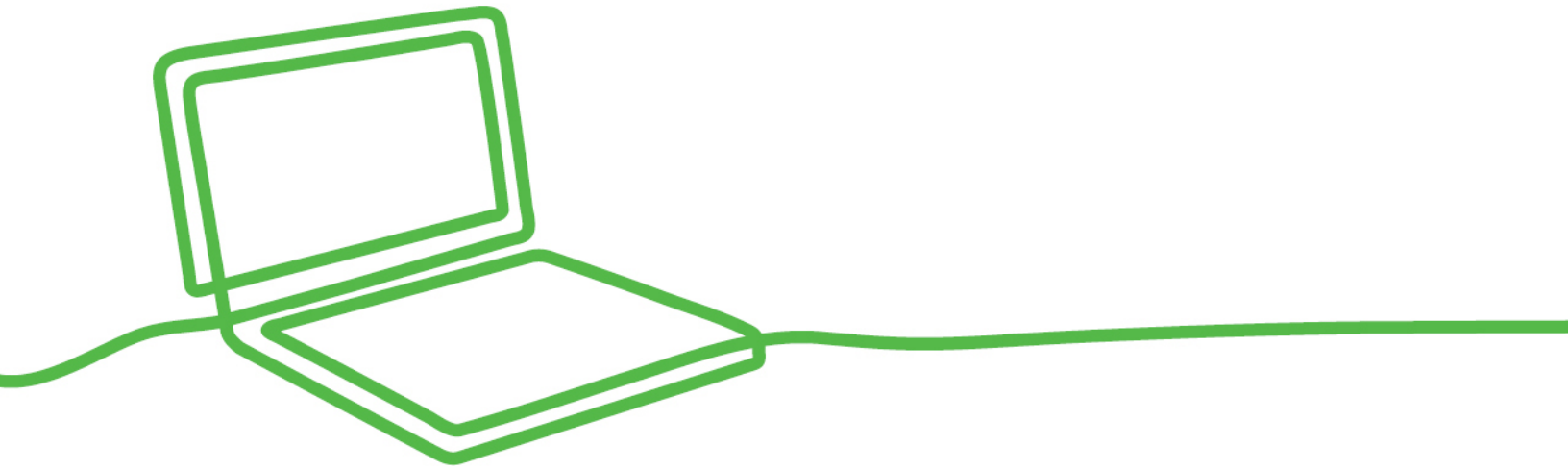

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