Care360
A MedPlus Solution

Universal Lab Orders and Results

Programmer Reference

Version 2.0

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Foreword

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About This Manual

In This Section:

Introduction

This *Care360™ Universal Ordering and Resulting Programmer Reference* provides information on integrating a non-Quest Diagnostics® service provider (laboratory) and/or third-party electronic medical record (EMR) into the Physician Portal product suite. The integration of a third-party laboratory or EMR application involves the following primary services:

- **Universal Lab Orders.** The ability to submit lab orders to a third-party laboratory via Care360 Physician Portal, or via a third-party EMR application.
- **Universal Lab Results.** The ability to receive test results generated by a third-party laboratory via Physician Portal, or via a third-party EMR application.
- **EMR Linking/Single Sign-On.** The ability to directly access specific functions of Physician Portal from a partner application via single sign-on (SSO).

  Additional services available to a linked application include the following:

  - **User Summary Services.** The ability to view Physician Portal lab result and user message counts from within the linked application.
  - **Order Echo.** The ability to receive copies of orders placed using Physician Portal within the linked application.
  - **Patient Demographic Updates.** The ability for the linked application to submit patient add, update, delete, and merge messages to the Physician Portal patient database (via Care360 Hub Information Services).
  - **Physician Portal User Interface (UI) Customization.** The ability to customize certain elements of the Physician Portal user interface to more closely resemble partner applications or product branding.

For an overview of Care360 Integration Services, see Chapter 1, "Universal Ordering and Resulting" on page 3.

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 Integration Services. 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 MedPlus, Inc.

What's New in This Release

Care360 Integration Services 2.0 provides the following updates:

- **Outbound Patient Demographic Updates.** Patient demographic updates can now be received by partner applications from Physician Portal. Outbound patient demographic updates are communicated to the partner application through Care360 Hub Information Services, which maintains a record of all patient demographic transactions. Any errors that occur when the updates are communicated to the partner application are returned to the Hub.

  For more information, see "About Patient Demographic Services" on page 140.

- **Patient Demographic HL7 Specification.** The Care360 Patient Demographic HL7 Specification has been modified. The field lengths and/or comments have been changed in the following sections:

  - ADT A28 (Patient Add) Message Segment Hierarchy.
    - Updated Message Segment Specifications MSH, EVN, PID, GT1, and IN1.

  For more information, see "ADT A28 (Patient Add) Message Segment Specifications" on page 179.

  - ADT A29 (Patient Delete) Message Segment Hierarchy.
    - Updated Message Segment Specifications MSH, EVN, and PID.

  For more information, see "ADT A29 (Patient Delete) Message Segment Specifications" on page 195.

  - ADT A31 (Patient Update) Message Segment Hierarchy.
    - Updated Message Segment Specifications MSH, PID, GT1, and IN1.

  For more information, see "ADT A31 (Patient Update) Message Segment Specifications" on page 204.

  - ADT A39 (Patient Merge) Message Segment Hierarchy.
    - Updated Message Segment Specifications MSH, EVN, PID (Correct), MRG, and PID (Incorrect).

  For more information, see "ADT A39 (Patient Merge) Message Segment Specifications" on page 221.

Documentation Conventions

This manual uses the following conventions:

- Manual titles, special terms, Web page and dialog box titles, menu items, toolbar button names, labels that appear on Web pages and dialog boxes, and keyboard key names appear in *italic*.

  Italic is also used to indicate variables. For example, an e-mail 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.

Abbreviations and Acronyms

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

Abbreviation/Acronym	Description
ABN	Advance Beneficiary Notice
ADT	Admission Discharge Transfer
AMA	American Medical Association
AOE	Ask on Order Entry
API	Application Programming Interface
ASP	Application Service Provider
B2B	Business-to-Business
BIS	Billing Information System
BU	(Quest Diagnostics) Business Unit
CA	Certificate Authority
CAQH	Council for Affordable Quality Healthcare
CDC	Clinical Data Compendium
CLIA	Clinical Laboratory Information Act
COB	Coordination of Benefits
DOB	Date of Birth
DOS	Directory of Service
EAI	Enterprise Application Integration
EHR	Electronic Health Record
EJB	Enterprise JavaBeans™'
EMR	Electronic Medical Record
FTP	File Transfer Protocol
HIS	Hospital Information System
HL7	Health Level Seven
HTTP	Hypertext Transfer Protocol
HTTPS	Hypertext Transfer Protocol, Secure
ICD9	International Classification of Diseases (of the World Health Organization), 9th Revision
IDE	Interactive Development Environment

Abbreviation/Acronym	Description
IPA	Independent Physician Association
J2EE	Java™' 2 Platform, Enterprise Edition
J2SE	Java 2 Platform, Standard Edition
JAXP	Java API for XML Parsing
JCAPS	Java Composite Application Platform Suite
JMS	Java Message Services
JNDI	Java Naming and Directory Interface
LIS	Lab Information System
LOINC	Logical Observation Identifiers Names and Codes
MEDS	Medication and Eligibility Delivery Solution
MIS	Management Information System
MLLP	Minimal Lower Level Protocol
NPI	National Provider Identifier
ORM	(HL7) Order Message
ORU	(HL7) Observational Report—Unsolicited
PDF	Portable Document Format
PMS	Practice Management System
POC	Point-of-Care
PPMS	Physician Practice Management System
PRNE	Physicians Reducing Negative Events
PSC	(Quest Diagnostics) Patient Service Center
QLS	Quest Lab Systems
SAML	Security Assertion Markup Language
SCP	Secure Copy
SFTP	SSH File Transfer Protocol
SIG	Script Information Gateway
SOAP	Simple Object Access Protocol **Note:** As of SOAP v1.2, referred to only as an acronym.
SQL	Structured Query Language
SSH	Secure Shell

Abbreviation/Acronym	Description
SSL	Secure Sockets Layer
SSO	Single Sign-On
UDDI	Universal Description, Discovery, and Integration
UPIN	Universal Physician Identifier Number
URI	Uniform Resource Identifier
URL	Uniform Resource Locator
VPN	Virtual Private Network
W3C	World Wide Web Consortium
WebDAV	Web-based Distributed Authoring and Versioning
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 Integration Services:

- ***Care360 Hub Information Services Programmer Reference.*** Provides information on creating client applications that interact with Care360 Hub Information Services. It is intended for programmers who write client applications to communicate with Care360 Hub Information Services via the Orders, Lab Results, and/or Prescription Web services. Primarily intended for applications that interact with Quest Diagnostics laboratories.
- ***Care360 Hub Information Services Administrator Manual.*** Provides information on using Hub Information Services—Administration to configure and manage Hub accounts, providers, vendors, and users. It is intended for MedPlus Professional Services Group (PSG) personnel, or other designated administrative personnel, who are responsible for initial and ongoing Care360 Hub Information Services administration.
- ***Care360 Physician Portal User Manual.*** Provides information on accessing and using the Physician Portal 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/

Introduction

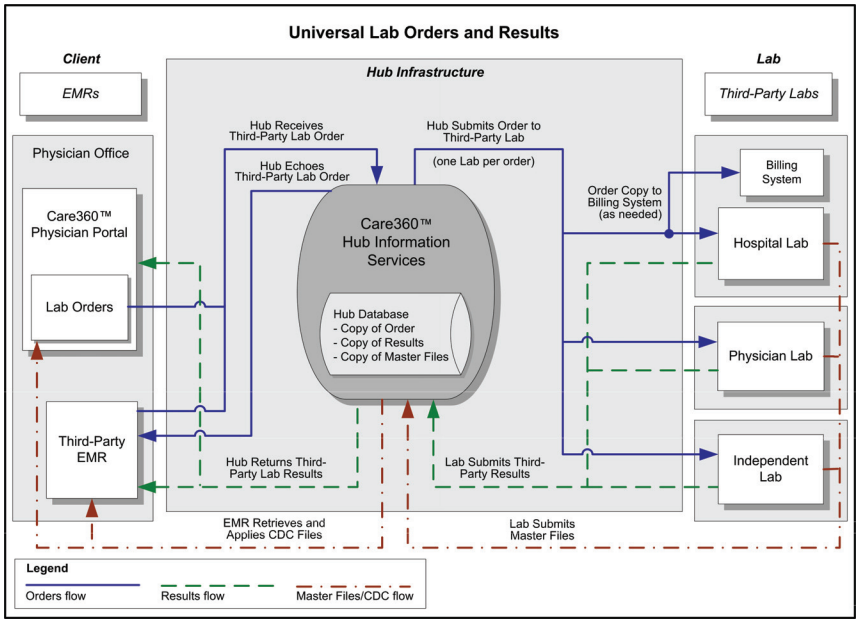
About This Section

This section provides an overview of Care360 Integration Services.

This section includes the following chapter(s):

- Chapter 1, "Universal Ordering and Resulting" on page 3.

Chapter 1
Universal Ordering and Resulting



In This Chapter:

About Universal Ordering and Resulting

Care360 Integration Services provides a framework for a third-party service provider (laboratory) or EMR application to integrate with the Physician Portal product suite. Integrating a third-party laboratory or EMR application into the Physician Portal product suite enables end users of Physician Portal or the third-party EMR application to place lab orders with a third-party laboratory, and to receive results from that laboratory.

This section provides an overview of Universal Ordering and Resulting, including a description of each of the primary components of the Physician Portal product suite.

Universal Ordering and Resulting Components

The Universal Ordering and Resulting product suite consists of the following primary applications:

- **Physician Portal.** Physician Portal is an Internet-based application that provides electronic lab test ordering and online delivery and viewing of the associated lab results, in addition to a number of other important patient care features. It includes a *Lab Orders* function, used for placing lab orders with either a Quest Diagnostics Business Unit (BU), or a third-party service provider (laboratory).
- **Care360 Hub Information Services.** Care360 Hub Information Services provides a standards-based platform for the submission of lab orders, and for the request and delivery of lab results data. The Care360 Hub Information Services platform also provides a framework for hosting a number of additional centralized healthcare-related services.

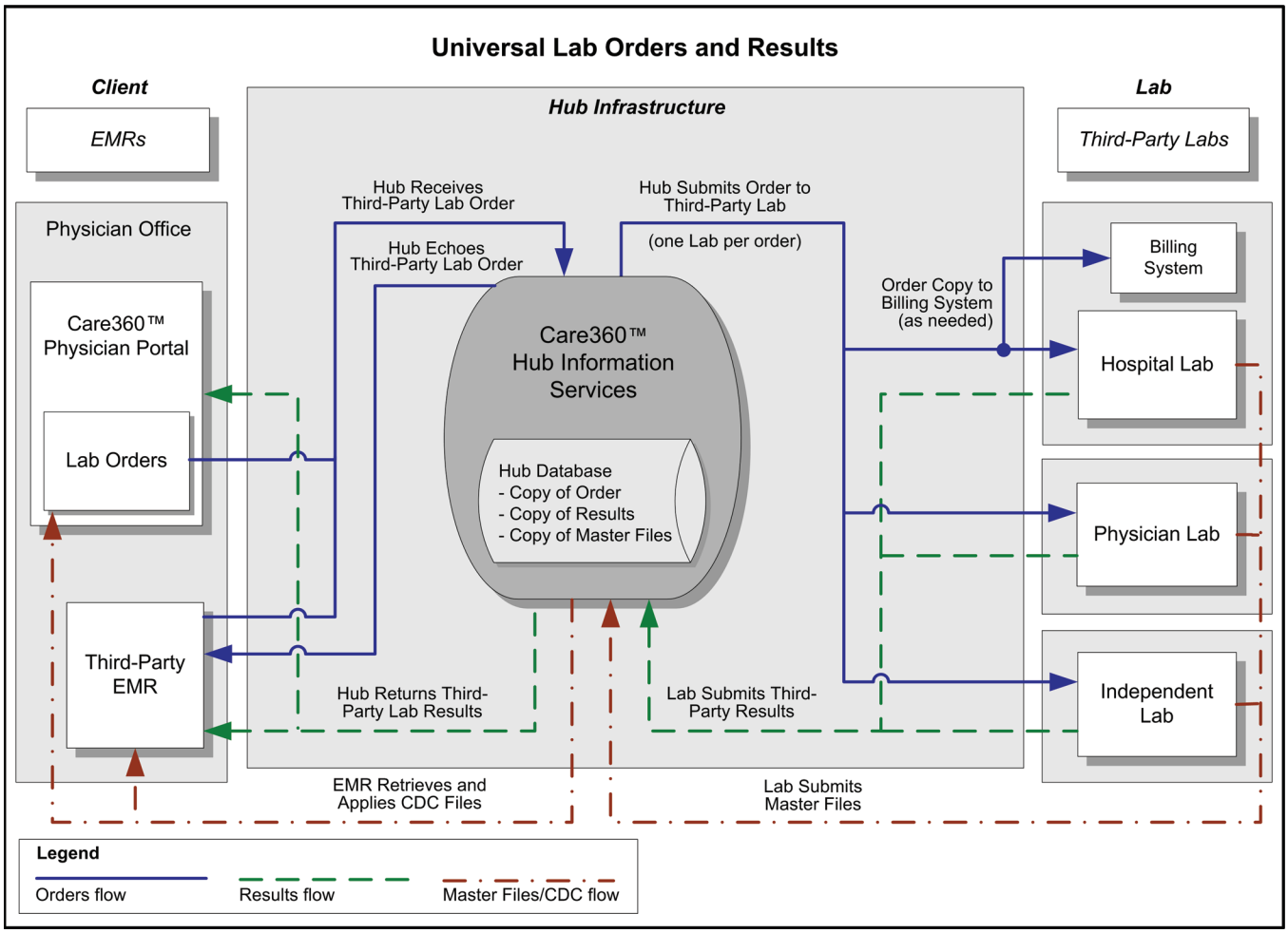
About the Universal Ordering and Resulting Data Flow

This section provides a high-level overview of the processes involved in sending orders to, and receiving results from, third-party (non-Quest Diagnostics) laboratories via Universal Ordering and Resulting.

A Physician Portal or third-party EMR user can submit a lab order to a third-party laboratory by specifying the desired laboratory when placing the order. Valid third-party laboratories can include hospital labs, physician office labs, or independent labs.

Process Walkthrough: Universal Ordering and Resulting

The diagram below illustrates (at a high level) the flow of orders and results to third-party laboratories. Following the diagram is a step-by-step walkthrough of each of the three major processes (Master Files, orders, and results) illustrated in the diagram.



Updating Master Files

The following steps outline the procedure—and associated systems—involved in updating the Master File data used by *Lab Orders* when placing an order to a third-party laboratory.

- ❑ The third-party laboratory copies updated Master Files to its file system.

  Note: Master Files submitted to the Hub must be formatted according to the specifications detailed in Chapter 2, "Care360 Master File Specification" on page 13.

- ❑ The Hub retrieves the Master Files from the laboratory file system, and verifies the file names of the Master Files.
- ❑ The Hub records the Master Files transaction, and stores a copy of the Master Files for a minimum of 90 days (or longer, as specified by the laboratory).
- ❑ The Hub copies the Master Files to the *Lab Orders* component of Physician Portal, and *Lab Orders* stores a copy of the Master Files to its file system.
- ❑ *Lab Orders* converts the Master Files to the Quest Diagnostics internal Clinical Data Compendium (CDC) format, and then copies the CDC files to its file system.
- ❑ The Hub retrieves the CDC files from the *Lab Orders* file system, and records the CDC file transaction.
- ❑ One of the following occurs:
  - ❑ If *Lab Orders* will be used for third-party lab orders, *Lab Orders* applies the updated CDC security and provisioning rules to the ordering process for the associated laboratory.
  - ❑ If an external EMR will be used for third-party lab orders, the EMR retrieves the CDC files from the Hub, and then applies the updated CDC security and provisioning rules to the ordering process for the associated laboratory.

Placing a Lab Order

The following steps outline the procedure—and associated systems—involved in placing an order with a third-party laboratory.

- ❑ A user logs in to Physician Portal or a third-party EMR, and searches for the desired patient.
  - ❑ For Physician Portal, the user can access the *Lab Orders* function either directly, or from within the context of a specific patient.
- ❑ The user creates an order, and selects the third-party laboratory (known in *Lab Orders* as the *Performing Lab*) to which the order will be submitted for processing.
- ❑ The user submits the order, and the order is created and stored in HL7 format.

  Note: Orders submitted to the Hub must be formatted according to the specifications detailed in Chapter 3, "Care360 Order HL7 Specification" on page 57.

  - ❑ If necessary, the order can be printed and delivered manually to the third-party laboratory, rather than being submitted electronically.

- ❑ At a predefined time interval, the Hub retrieves the HL7 order, and verifies the format and content of the order.
- ❑ The Hub records the order transaction, and stores a copy of the discrete content of the order for a minimum of 90 days (or longer, as specified by the laboratory).
  - ❑ For orders placed using *Lab Orders*, the Hub can "echo" (return) a copy of the order to a partner application.
- ❑ The Hub submits the order to the specified third-party laboratory file system for processing.

  Note: The order that is submitted to the laboratory is formatted according to the specifications detailed in Chapter 3, "Care360 Order HL7 Specification" on page 57.

  - ❑ If the third-party laboratory requires a separate billing feed, the Hub can deliver a copy of the order to the lab's billing system.
- ❑ The third-party laboratory retrieves the order from its file system, and processes the order.

Receiving Lab Results

The following steps outline the procedure—and associated systems—involved in accessing and viewing results received from a third-party laboratory.

- ❑ After the third-party laboratory has processed the order, it copies the results to its file system.

  Notes:

  - Results submitted to the Hub must be formatted according to the specifications detailed in Chapter 4, "Care360 Results HL7 Specification" on page 97.
  - The results returned by the third-party laboratory must be submitted in XML format, encapsulating the HL7 file and zero or more "report of record" (PDF) files (if the laboratory is configured to do so). The XML file must be formatted according to the schema detailed in "Receiving Third-Party Laboratory Results Files" on page 123.
- ❑ The Hub retrieves the results on a predefined schedule, and verifies the format and content of the results.
- ❑ The Hub records the results transaction, and stores a copy of the discrete content of the results for a minimum of 90 days (or longer, as specified by the laboratory).
- ❑ The Hub submits the results to either the *Lab Orders* function of Physician Portal, or to the third-party EMR file system.

  Note: If the third-party laboratory cannot provide a "report of record" (PDF version of the lab results), *Lab Orders* can generate a customized PDF from the HL7 file.

- ❑ The user logs in to Physician Portal or the third-party EMR to view results. In Physician Portal, the user can view results in one of the following ways:
  - ❑ To view new results received into Physician Portal for *all* patients, the user accesses the *New Results* page.

- To view results for a specific patient, the user searches for the desired patient, and then accesses the *Recent Tests* area of the *Patient Summary*.

  Note: All results are segregated—in the database, as well as in the Physician Portal user interface—according to the performing laboratory from which they are received.

- Results received from a third-party laboratory are stored permanently in the patient's chart. Third-party lab results can be manipulated within Physician Portal in the same manner as can Quest Diagnostics results (that is, they can be printed, attached to a user message, viewed in a graph or flowsheet, etc.).

Universal Ordering and Resulting Connectivity

The transfer of all data (Master Files, orders, and results) between Care360 Hub Information Services and a third-party laboratory will occur via one of the following encrypted data transfer protocols:

- **MLLP Socket over Virtual Private Network (VPN).** Permanent socket-based communication protocol that is used extensively in the healthcare industry for transporting HL7 messages.
- **FTP Over SSL.** Traditional port 21 FTP over an SSL-encrypted socket.

Additional connectivity solutions may be considered based upon cost, regulatory compliance, and the specific capabilities and needs of the laboratory.

Note: For more information on the Web services provided by Care360 Hub Information Services, refer to the *Care360 Hub Information Services Programmer Reference*.

Third-Party Laboratory Orders

About This Section

This section provides detailed information necessary for formatting laboratory test orders to be submitted to a third-party laboratory from Care360 Integration Services.

This section includes the following chapter(s):

- Chapter 2, “Care360 Master File Specification” on page 13.
- Chapter 3, “Care360 Order HL7 Specification” on page 57.

Chapter 2
Care360 Master File Specification

In This Chapter:

About the Care360 Master File Specification

This chapter provides an overview, as well as detailed specifications, of the Master Files that can be provided by a third-party laboratory. Master Files are a current collection of all reference data—for example, test codes, diagnostics codes, and Ask on Order Entry (AOE) questions—needed to create a complete and valid electronic order to be submitted to a third-party laboratory system for processing. Master Files help to improve overall patient care by avoiding potential testing delays and minimizing specimen recollection.

This chapter specifies the interface requirements for loading reference data into the *Lab Orders* component of Physician Portal. Third-party laboratory test orders are then created and submitted to the third-party laboratory for processing via Physician Portal.

About the Master File Datasets

A separate set of Master File dataset files must be provided for each third-party laboratory. The dataset files that comprise a laboratory's Master Files should be updated on a regular basis, and can be automatically retrieved and stored by Care360 Hub Information Services.

As the Hub retrieves and processes the latest data, the data is then integrated into the *Lab Orders* workflow within Physician Portal.

Dataset File List

The dataset files that the Master Files provide are listed in the following table. Each of these datasets is described in more detail in the sections that follow.

Dataset #	Dataset Name	Code	Table Name	Req'd[a]
1	Client	cf	TOPLAB_CLIENT	R
2	Client Bill-To	cb	CLIENT_BILL_TO_XREF	R
3	Bill-To	bt	BILL_TO	C
4	Bill-To Edit	be	BILLING_EDITS	O
5	Bill-To Edit List	bl	BILLING_EDIT_LISTS	O
6	Bill-To Eligibility	by	BILL_TO_ELIGIBILITY	NS
7	Order Code	oc	TEST_CODE_UNIT_CODE_XREF	R
8	Order Code AOE	oa	AOE	O
9	Order Code Component	op	PROFILE_COMPONENT_XREF	O
10	LCP/MN Service to CPT	lc	NBS_SERVICE_CPT_XREF	O
11	LCP/MN CPT to ICD9	li	MLCP_CPT_ICD9_XREF	O
12	DOS Billing Procedure Code	db	BILLING_PROCEDURE_CODE	O
13	DOS Container	dc	CONTAINER	O
14	DOS Methodology	dm	METHODOLOGY	O
15	DOS Minimum Volume	dv	MINIMUM_SPECIMEN_VOLUME	O
16	DOS Preferred Requirement	dp	PREFERRED_SPECIMEN_REQUIREMENT	O
17	DOS Reject Hemolysis	dh	SPECIMEN_REJECT_HEMOLYSIS	O
18	DOS Reject Lipemia	dl	SPECIMEN_REJECT_LIPEMIA	O
19	DOS Reject Thaw Other	dt	SPECIMEN_REJECT_THAW_OTHER	O
20	DOS Specimen Stability	ds	SPECIMEN_STABILITY	O

Dataset #	Dataset Name	Code	Table Name	Req'd[a]
21	DOS Transport Temperature	dx	TRANSPORT_TEMPERATURE	O
22	Client-Specific Order Code	cp	CUSTOM_PANELS	O
23	Performing Site Code	ps	PERFORMING_SITE	O
24	Analyte Details	ac	ANALYTE_CODE_XREF	NS
25	Client UPIN	up	CLIENT_UPIN	C
26	Worklist Components	wc	WORKLIST_COMPONENT_XREF	NS
27	Order Code Alias	da	UNIT_CODE_ALIAS	O
28	Temperatures	te	TEMPERATURES	NS
29	Client-Specific Code XREF	cc	N/A	O
30	Alternate Specimen Data	dn	ALTERNATE_SPECIMEN_DATA	O
31	Clinical Significance Data	dg	CLINICAL_SIGNIFICANCE_DATA	O
32	DOS Performing Site	df	DOS_PERFORMING_SITE	O
33	Reference Ranges	dr	REFERENCE_RANGES	O
34	Setup Days	dd	SETUP_DAYS	O
35	Setup Times	de	SETUP_TIMES	O
36	Turnaround Times	do	TURNAROUND_TIMES	O
37	Hand Written Order	ht	HOTT	O
38	Client NPP #	np	NPP	O
39	Medical Manager Updates	mm	MED_MGR_UPDATES	NS

a. R = Required, O = Optional, C = Conditional, NS = Not Supported.

Master File Dataset File Specifications

Master Files are a current collection of all reference data needed to create a complete and valid electronic order for a third-party laboratory system via the *Lab Orders* component of Physician Portal. This section summarizes the format and contents of the reference data that can be retrieved from the Hub for use in the vendor application.

Dataset files retrieved from the Master Files are caret-delimited (^) text files. Each file must be formatted according to the specifications described below.

Dataset Format Specifications

Incoming Master File dataset files must conform to the following conventions:

- Datasets must be provided as ASCII text files.
- Individual dataset files cannot exceed the maximum file size of 100 MB.
- Files must be named according to the following convention (all lowercase):

  <dataset code>_<date>_<time>.<lab identifier>

  where:

  - *<dataset code>* is the two-digit code specified in the "Dataset File List" on page 15.
  - *<date>* is the file creation date in `yyyymmdd` format.
  - *<time>* is the file creation time in `hhmmss` format.
  - *<lab identifier>* is the lab identifier (provided by MedPlus).

  File name example:

  `oc_20001022_181520.abc`

  In this example, the file is for the Order Code dataset (`oc`), the unique dataset file identifier is `20001022_181520`, and the data file is being created by the ABC lab (`abc`).

  It is expected that only one file per dataset will be provided, but in case multiple files are provided they must have unique file names.
- Files must have one entry (record) per line.

  Data for every column should be provided on each line, except when column values are blank in which case the delimiter should be sent.
- Column values must be delimited with the caret character (^).
- There cannot be any "double quotes" in the data.
- Following are the formats of the values allowed for the data types listed in the specific dataset formats.

Data Type	Format
bit	One character: `0` = False, `1` = True.
char(length)	A sequence of up to *length* number of ASCII characters, excluding the column delimiter (^) and "double quotes."
datetime	A date/time value in the format `mm/dd/ccyy hh:mm:ss`.
decimal(precision, scale)	A number with up to *precision* total number of digits with up to *scale* number of digits after the decimal point.

Data Type	Format
int	An integer without decimals (range is approximately -2 billion to 2 billion).
money	A number with two digits after the decimal point (range is approximately +/- 1 quadrillion).
numeric(precision, scale)	Same as data type decimal(precision, scale).
smallint	An integer without decimals in the range -32768 to 32767.
varchar(length)	Same as data type char(length).

Dataset File Details

This section provides the field-level details for each of the datasets listed in the "Dataset File List" on page 15. Datasets are listed numerically, and table name for each dataset is shown in the table heading.

Primary key columns are noted in the dataset structures, and usually only one or two keys are identified. "PK1" is noted for those dataset columns that are part of the first key, "PK2" is used for the second key, etc.

Dataset 1—Client

File Name: CLIENT.TXT

Description/Usage: Client file for *Lab Orders* order entry. Provides data about an ordering client. There is one entry per client per laboratory site.

Required? This dataset is *required* for third-party laboratory implementations.

Conditions: None.

TOPLAB_CLIENT						
#	**Column Name**	**CDC Column Name**	**Key**	**Req'd[a]**	**Type(Length)**	**Valid Values/Notes**
1	Operation			R	char(1)	Valid values: 'A', 'C', 'D'.
2	Legal entity	LEGAL_ENTITY	PK1	R	char(4)	
3	Performing site	PERFORMING_TOPLAB	PK1	R	char(3)	
4	Client number	TOPLAB_CLIENT_NUMBER	PK1	R	char(15)	
5	Billing client number	NBS_CLIENT_NUMBER		R	char(15)	
6	Client mnemonic	CLIENT_MNEMONIC		R	char(26)	
7	Client name	CLIENT_NAME		R	char(30)	
8	Alpha name	ALPHA_NAME		R	char(25)	Client name, without spaces.
9	Address 1	ADDRESS_1		R	char(30)	
10	Address 2	ADDRESS_2		R	char(30)	
11	Address 3	ADDRESS_3		O	char(30)	
12	Address 4	ADDRESS_4		O	char(30)	
13	City	CITY		R	char(30)	
14	State	STATE		R	char(2)	
15	Zip code	ZIP		R	char(10)	
16	Country name	COUNTRY		O	char(50)	
17	Latitude	LATITUDE		O	numeric(7,4)	Of post office.

TOPLAB_CLIENT						
#	**Column Name**	**CDC Column Name**	**Key**	**Req'd[a]**	**Type(Length)**	**Valid Values/Notes**
18	Longitude	LONGITUDE		O	numeric(7,4)	Of post office.
19	Phone number	PHONE_NUMBER		O	char(20)	
20	After hours phone number	AFTER_HOURS		O	char(20)	
21	Contact name	CONTACT		O	char(25)	
22	Contact name 2	CONTACT2		O	char(25)	
23	Default physician	DEFAULT_PHYSICIAN		O	char(25)	
24	Fee schedule	FEE_SCHEDULE		O	char(10)	
25	Description	DESCRIPTION		O	char(10)	
26	Sales area	SALES_AREA		O	char(7)	
27	Master client	MASTER_CLIENT		O	char(15)	
28	PAP reminder reports	PAP_REMINDERS		O	char(2)	'N' = No, '6' = Every 6 months, '12' = Every 12 months.
29	Area route stop	AREA_ROUTE_STOP		O	char(7)	
30	Alternate route area stop	ALT_AREA_ROUTE_STOP		O	char(7)	
31	Autodial group	AUTODIAL_GROUP		O	char(10)	
32	Report-to client	REPORT_TO_CLIENT		O	char(10)	
33	Abnormals	ABNORMALS		R	char(1)	Valid values: 'Y', 'N'.
34	Partials	PARTIALS		R	char(1)	Valid values: 'Y', 'N'.
35	Re-report partials	RE_REPORT_PARTIALS		R	char(1)	Valid values: 'Y', 'N', 'F' = At final only, 'R' = List as "reported", 'A' = List as "reported" with comprehensive final.
36	Number of copies	OF_COPIES		R	char(1)	
37	Reporting routine	REPORT_ROUTINE		R	char(8)	
38	PAP summary report	PAP_SUMMARY_REPORT		R	char(1)	Valid values: 'Y', 'N'.
39	Default charge-to	DEFAULT_CHARGE_TO		R	char(8)	
40	Requisition edit	REQUISITION_EDIT		O	char(255)	
41	Toxicology report	TOX_REPORT		R	char(1)	Valid values: 'Y', 'N'.

TOPLAB_CLIENT						
#	**Column Name**	**CDC Column Name**	**Key**	**Req'd[a]**	**Type(Length)**	**Valid Values/Notes**
42	Confidential client results	CONFIDENTIAL_CLIENT		R	char(1)	Valid values: 'Y', 'N', 'U' = Unknown.
43	Registered patients	REGISTERED_PATIENTS		R	char(1)	Valid values: 'Y', 'N'.
44	Client type	CLIENT_TYPE		R	char(1)	Valid values: 'P' = Physician, 'H' = Hospital, 'I' = Industrial, 'V' = Veterinary.
45	Client activity report	CLIENT_ACTIVITY_REPORT		R	char(1)	Valid values: 'N', '1', '2', '3', '4', '5', '6'.
46	Billing sales location	NBS_SALES_LOCATION		R	char(3)	
47	NIDA flag	NIDA_FLAG		R	char(1)	Valid values: 'Y', 'N', 'U' = Unknown.
48	HMO flag	HMO_FLAG		R	char(1)	Valid values: 'Y', 'N', 'U' = Unknown.
49	National account code	NATIONAL_ACCOUNT_CODE		O	char(4)	
50	Epidemiology reports	EPIDEMIOLOGY_REPORTS		R	char(1)	Valid values: 'Y', 'N', 'U' = Unknown.
51	Report-only flag	REPORT_ONLY_FLAG		R	char(1)	Valid values: 'Y', 'N', 'U' = Unknown.
52	Fax group	FAX_GROUP		O	char(10)	
53	Govt agency city	GA_CITY		O	char(40)	
54	Govt agency county	GA_COUNTY		O	char(40)	
55	Govt agency zip	GA_ZIP_CODE		R	char(9)	
56	Client alert flag	CLIENT_ALERT_FLAG		R	char(1)	Valid values: 'R' = Regular, 'J' = Jeopardy, 'N' = New.
57	Require billing entry	REQUIRE_BILLING_ENTRY		R	char(1)	Valid values: 'Y', 'N', 'U' = Unknown.
58	HMO member number required	HMO_MEMBER_NUMBER_REQ		R	char(1)	Valid values: 'Y', 'N', 'U' = Unknown.
59	HMO physician required	HMO_PHYSICIAN_REQ		R	char(1)	Valid values: 'Y', 'N', 'U' = Unknown.
60	Copy-to required	COPY_TO_REQUIRED		R	char(1)	Valid values: 'Y', 'N', 'U' = Unknown.
61	Carbon send-out site	CARBON_SENDOUT_SITE		O	char(3)	

TOPLAB_CLIENT						
#	Column Name	CDC Column Name	Key	Req'd[a]	Type(Length)	Valid Values/Notes
62	Report department ID	REPORT_DID		R	char(1)	Valid values: 'Y', 'N', 'U' = Unknown.
63	PAF signature	PAF_SIGNATURE		R	char(2)	Valid values: 'Y', 'N', 'U' = Unknown.
64	PAF date	PAF_DATE		O	datetime	
65	SelecTest enabled	SELECTEST_ENABLED		R	char(1)	Valid values: 'Y', 'N', 'U' = Unknown.
66	SelecTest date	SELECTEST_DATE		R	datetime	
67	SelecTest by whom	SELECTEST_BY_WHOM		R	char(7)	
68	Display suffix table	DISPLAY_SUFFIX_TABLE		R	char(1)	Valid values: 'Y', 'N', 'U' = Unknown.
69	National billing mnemonic	NATIONAL_BILL_MNEMONIC		R	char(1)	Valid values: 'Y', 'N', 'U' = Unknown.
70	Valid charge-to	VALID_CHARGE_TO		R	char(255)	1 or more, separated with commas: 'C', 'P', 'T', Bill mnemonic.

a. R = Required, O = Optional, C = Conditional.

Dataset 2—Client Bill-To

File Name: CLBTX.TXT

Description/Usage: Identifies what types of billing and what specific bill-to's are valid for an ordering client. There is one entry per valid bill-to per client per site.

Required? This dataset is *required* for third-party laboratory implementations.

Conditions: There must be a parent entry in the Client dataset.

CLIENT_BILL_TO_XREF						
#	Column Name	CDC Column Name	Key	Req'd[a]	Type(Length)	Valid Values/Notes
1	Operation			R	char(1)	Valid values: 'A', 'C', 'D'.
2	Legal entity	LEGAL_ENTITY	PK1	R	char(4)	
3	Performing site	PERFORMING_TOPLAB	PK1	R	char(3)	
4	Client number	TOPLAB_CLIENT_NO	PK1	R	char(15)	
5	Bill-to ID	BILLING_ID	PK1	R	char(9)	Valid values: 'C' = Client, 'P' = Patient, 'T' = Third party, Bill-to ID, Client number.

CLIENT_BILL_TO_XREF						
#	**Column Name**	**CDC Column Name**	**Key**	**Req'd[a]**	**Type(Length)**	**Valid Values/Notes**
6	Client mnemonic	TOPLAB_CLIENT_MNEMONIC		R	char(8)	
7	Billing client number	NBS_CLIENT_NO		R	char(15)	

a. R = Required, O = Optional, C = Conditional.

Dataset 3—Bill-To

File Name: BILL_TO.TXT

Description/Usage: Provides data about insurance carriers/agencies and clients that can be billed as carriers. There is one entry per carrier and one per billable client. For each site there are also entries for 'C', 'P', and 'T'.

Required? This dataset is *conditional* for third-party laboratory implementations; it is *required* for Third-party bill, and *optional* for Client bill.

Conditions: None.

BILL_TO						
#	**Column Name**	**CDC Column Name**	**Key**	**Req'd[a]**	**Type(Length)**	**Valid Values/Notes**
1	Operation			R	char(1)	Valid values: 'A', 'C', 'D'.
2	Legal entity	LEGAL_ENTITY	PK1	R	char(4)	
3	Performing site	TOPLAB_PERFORMING_SITE	PK1	R	char(3)	
4	Bill-to ID	BILLING_ID	PK1	R	char(9)	Carrier/agency billing ID, or billable client number.
5	Billing client number	NBS_CLIENT_NO	PK1	C	char(15)	Client number, for billable clients.
6	Client mnemonic	TOPLAB_CLIENT_MNEMONIC		O	char(8)	Client mnemonic, for billable clients; otherwise blank.
7	Billing carrier ID	THIRD_PARTY_FORMS_CD	PK1	C	char(6)	Billing carrier ID, for carriers/agencies.
8	Name	NAME		C	char(50)	Required, except where billing_id is 'C', 'P', or 'T'.
9	Address 1	ADDR_LINE_1		C	char(30)	Required, except where billing_id is 'C', 'P', or 'T'.
10	Address 2	ADDR_LINE_2		O	char(30)	
11	City	CITY		O	char(30)	
12	State	STATE		O	char(2)	
13	Zip code	ZIP_CD		O	char(10)	

BILL_TO						
#	**Column Name**	**CDC Column Name**	**Key**	**Req'd[a]**	**Type(Length)**	**Valid Values/Notes**
14	Country name	COUNTRY		O	char(4)	
15	Phone number	PHONE_NO		O	char(16)	
16	Fax number	FAX_NO		O	char(16)	
17	HMO carrier flag	THIRD_PARTY_HMO_FLAG		O	char(1)	Valid values: 'Y', 'N'.
18	Carrier type	BILLING_TYPE		C	char(1)	Required only for carriers/agencies. Valid values: '2' = Patient, '3' = MediCare, '4' = MedicAid, '5' = Med/Med, '6' = Private.
19	Selectable flag	SELECTABLE_FLAG		R	char(1)	Valid values: 'Y' (for bill-to's that are selectable on electronic interfaces), 'N'.
20	Alternate bill-to ID	ORDER_BILLING_ID		O	char(9)	Bill-to, used for electronic orders; Cf. CCLink.
21	Alternate bill-to ID alias	ORDER_BILLING_ALIAS		O	char(3)	Bill-to alias, used for electronic orders; Cf. CCLink.

a. R = Required, O = Optional, C = Conditional.

Dataset 4—Bill-To Edit

File Name: BILLEDIT.TXT

Description/Usage: Specifies the billing data requirements for insurance carriers. There is one entry per carrier (as identified by the Billing Information System (BIS)) that has such edits.

Required? This dataset is *optional* (not recommended) for third-party laboratory implementations.

Conditions: There must be a valid carrier-type entry in the Bill-to dataset. Pattern lists referenced must be defined in the Bill-to edit list dataset.

Note: See "About the Carrier Edit Patterns" on page 55 for further explanation and examples of datasets 4 and 5. Also, the last six entries are each provided 16 times.

BILLING_EDITS						
#	**Column Name**	**CDC Column Name**	**Key**	**Req'd[a]**	**Type(Length)**	**Valid Values/Notes**
1	Operation			R	char(1)	Valid values: 'A', 'C', 'D'.
2	Legal entity	LEGAL_ENTITY	PK1	R	char(4)	

BILLING_EDITS						
#	**Column Name**	**CDC Column Name**	**Key**	**Req'd[a]**	**Type(Length)**	**Valid Values/Notes**
3	Billing carrier ID	THIRD_PARTY_FORMS_CD	PK1	R	char(6)	Must match dataset 10, field 3, and dataset 11, field 3.
4	Age required	AGE_REQ		R	bit	Valid values: 'Y', 'N'.
5	Birthdate required	BIRTHDATE_REQ		R	bit	Valid values: 'Y', 'N'.
6	Age or birthdate required	AGEBIRTHDATE_REQ		R	bit	Valid values: 'Y', 'N'.
7	Sex required	SEX_REQ		R	bit	Valid values: 'Y', 'N'.
8	Relationship code required	RELATIONSHIP_CD_REQ		R	bit	Valid values: 'Y', 'N'.
9	Patient signature required	SIGNATURE_REQ		R	bit	Valid values: 'Y', 'N'.
10	Written diagnosis required	WRITTEN_DIAG_REQ		R	bit	Valid values: 'Y', 'N'.
11	Service required	SERVICE_REQ		R	bit	Valid values: 'Y', 'N'.
12	Patient name required	PATIENT_NM_REQ		R	bit	Valid values: 'Y', 'N'.
13	Patient address required	PATIENT_ADDR_REQ		R	bit	Valid values: 'Y', 'N'.
14	Subscriber name required	SUBSCRIBER_NM_REQ		R	bit	Valid values: 'Y', 'N'.
15	Bill type required	BILL_TYPE_REQ		R	bit	Valid values: 'Y', 'N'.
16	Bill type value	BILL_TYPE_VALUE		R	char(1)	Valid values: '2' = Patient, '3' = MediCare, '4' = MedicAid, '5' = Med/Med, '6' = Private.
17	Required	REQUIRED		R	bit	Valid values: 'Y', 'N'.
18	Diagnosis code required	DIAG_CD_REQ		R	bit	Valid values: 'Y', 'N'.
19	Commercial carrier name and address required	COMM_INS_NAME_ADDR		R	bit	Valid values: 'Y', 'N'.
20	Medicare explosion required	MEDICARE_EXPLOSION_REQ		R	bit	Valid values: 'Y', 'N'.
21	Workman's comp indicator	WORKMAN_COMP_IND		R	bit	Valid values: 'Y', 'N'.

BILLING_EDITS						
#	**Column Name**	**CDC Column Name**	**Key**	**Req'd[a]**	**Type(Length)**	**Valid Values/Notes**
22–37	Policy number pattern	CERT_NO_PATTERN_1..16		O	char(28)	See "About the Carrier Edit Patterns" on page 55.
38–53	Policy number list	CERT_NO_PATTERN_LIST_1..16		O	char(10)	See "About the Carrier Edit Patterns" on page 55.
54–69	Group number pattern	GROUP_NO_PATTERN_1..16		O	char(28)	See "About the Carrier Edit Patterns" on page 55.
70–85	Group number list	GROUP_NO_PATTERN_LIST_1..16		O	char(10)	See "About the Carrier Edit Patterns" on page 55.
86–101	Referring physician pattern	REFER_DOC_PATTERN_1..16		O	char(28)	See "About the Carrier Edit Patterns" on page 55.
102–117	Referring physician list	REFER_DOC_PATTERN_LIST_1..16		O	char(10)	See "About the Carrier Edit Patterns" on page 55.

a. R = Required, O = Optional, C = Conditional.

Dataset 5—Bill-To Edit List

File Name: EDITLIST.TXT

Description/Usage: Specifies bill-to edit lists, which are unsequenced collections of string values. There is one entry per list value per list.

Required? This dataset is *optional* (not recommended) for third-party laboratory implementations.

Conditions: None.

Note: See "About the Carrier Edit Patterns" on page 55 for further explanation and examples of datasets 4 and 5.

BILLING_EDIT_LISTS						
#	**Column Name**	**CDC Column Name**	**Key**	**Req'd[a]**	**Type(Length)**	**Valid Values/Notes**
1	Operation			R	char(1)	Valid values: 'A', 'C', 'D'.
2	Laboratory Code	LABORATORY_CD	PK1	R	char(4)	Your performing site code.
3	List ID	LIST_ID	PK1	R	char(2)	Must be two-digit alphanumeric.
4	List value	LIST_VALUE	PK1	R	char(10)	

a. R = Required, O = Optional, C = Conditional.

Dataset 6—Bill-To Eligibility

File Name: N/A

Description/Usage: Identifies the insurance carriers that have eligibility contracts with the service provider (laboratory). There is one entry per carrier.

Required? This dataset is *not supported* for third-party laboratory implementations.

Conditions: There must be a valid carrier-type entry in the Bill-to dataset.

BILL_TO_ELIGIBILITY						
#	**Column Name**	**CDC Column Name**	**Key**	**Req'd[a]**	**Type(Length)**	**Valid Values/Notes**
1	Operation			R	char(1)	Valid values: 'A', 'C', 'D'.
2	Legal entity	LEGAL_ENTITY	PK1	R	char(4)	
3	Performing site	PERFORMING_TOPLAB	PK1	R	char(3)	
4	Bill-to ID	MC_MNEMONIC	PK1	R	char(25)	
5	Active date	MC_ACTIVE_DTE		R	datetime	
6	Name	MC_NM		O	char(30)	
7	Line_1_addr	LINE_1_ADDR		O	char(30)	

BILL_TO_ELIGIBILITY						
#	**Column Name**	**CDC Column Name**	**Key**	**Req'd[a]**	**Type(Length)**	**Valid Values/Notes**
8	Line_2_addr	LINE_2_ADDR		O	char(30)	
9	City Name	CITY_NM		O	char(25)	
10	State	STATE_CD		O	char(2)	
11	Zip code	ZIP_CD		O	char(12)	

a. R = Required, O = Optional, C = Conditional.

Dataset 7—Order Code

File Name: ORDCODE.TXT

Description/Usage: Provides data about orderable tests and codes (such as draw fees). There is one entry per orderable code per laboratory site.

Required? This dataset is *required* for third-party laboratory implementations.

Conditions: None.

Note: Sites that support SelecTest should provide either 'Y' or 'N' for column 12, and 'U' for column 18. Conversely, sites that support the conforming flag should provide either 'Y' or 'N' for column 18, and 'U' for column 12. One or the other of fields 12 and 18 should be supported.

TEST_CODE_UNIT_CODE_XREF						
#	**Column Name**	**CDC Column Name**	**Key**	**Req'd[a]**	**Type(Length)**	**Valid Values/Notes**
1	Operation			R	char(1)	Valid values: 'A', 'C', 'D'.
2	Legal entity	LEGAL_ENTITY	PK1 PK2	R	char(4)	
3	Performing site	TOPLAB_PERFORMING_SITE	PK1 PK2	R	char(3)	
4	Order code	TEST_CD	PK1	R	char(16)	
5	Unit code	UNIT_CD	PK2	R	char(10)	LIS code.
6	Order code suffix	SUFFIX		O	char(8)	
7	Title	DESCRIPTION		R	varchar(175)	
8	Profile indicator	PROFILE_IND		R	char(1)	Valid values: 'Y' = Profile, 'N'.
9	Specimen type	SPECIMEN_TYPE		O	char(30)	

TEST_CODE_UNIT_CODE_XREF						
#	**Column Name**	**CDC Column Name**	**Key**	**Req'd[a]**	**Type(Length)**	**Valid Values/Notes**
10	State/Specimen Condition	STATE		O	char(2)	Specimen condition of an order code. Example values: • FR/FZ/F = Frozen • RT/A = Room Temperature • RF/R = Refrigerated • S = Special • W = Wet Ice
11	Billing service code	NBS_SERVICE_CODE		R	char(10)	Must match dataset 10, field 4.
12	Select Test Indicator	SELECTEST_IND		R	char(1)	Valid values: 'Y' = Meets Select Test requirements, 'N', 'U' = Unknown.
13	Billing performing site	NBS_PERFORMING_SITE		O	char(4)	Where the test is performed. Must match dataset 23, field 3.
14	Special test flag	TEST_FLAG		O	char(1)	Valid values: 'P' (if test is a PAP), 'Q' (if test has AOE), null.
15	No-bill indicator	NO_BILL_INDICATOR		O	char(1)	Valid values: 'Y' = This code is not billed, 'N', Null.
16	Bill-only indicator	BILL_ONLY_INDICATOR		O	char(1)	Valid values: 'Y' = This code billed but is not a test, 'N', Null.
17	Send-out reflex count	SEND_OUT_REFLEX_COUNT		R	int	
18	Conforming indicator	CONFORMING_IND		R	char(1)	Valid values: 'Y', 'N', 'U' = Unknown.

TEST_CODE_UNIT_CODE_XREF						
#	Column Name	CDC Column Name	Key	Req'd[a]	Type(Length)	Valid Values/Notes
19	Selectable conditions	SELECTABLE_CONDITIONS		O	char(20)	Comma-delimited list of acceptable conditions. If present, the ordering user will be allowed to select from these multiple conditions prior to batching or requisition splitting, instead of the single entry in field 10. Only one single character temperature is allowed. Current codes in use are: • 'R' = Refrigerated • 'F' = Frozen • 'A' = Ambient (room temp) • 'S' = Special • 'W' = Wet ice

a. R = Required, O = Optional, C = Conditional.

Dataset 8—Order Code AOE

File Name: AOE.TXT

Description/Usage: Provides data about ask-at-order-entry (AOE) questions on order codes. There is one entry per AOE question.

Required? This dataset is *optional* (highly recommended) for third-party laboratory implementations.

Conditions: There must be a parent entry in the Order code dataset.

AOE						
#	Column Name	CDC Column Name	Key	Req'd[a]	Type(Length)	Valid Values/Notes
1	Operation			R	char(1)	Valid values: 'A', 'C', 'D'.
2	Legal entity	LEGAL_ENTITY	PK1 PK2	R	char(4)	
3	Performing site	TOPLAB_PERFORMING_SITE	PK1 PK2	R	char(4)	
4	Order code	TEST_CD	PK1	R	char(16)	
5	Unit code	UNIT_CD	PK2	R	char(10)	LIS code.
6	Analyte code	ANALYTE_CD	PK1 PK2	R	char(11)	
7	Component	PROFILE_COMPONENT	PK1 PK2	O	char(15)	Can be order code, or units that make up the profile.

AOE						
#	Column Name	CDC Column Name	Key	Req'd[a]	Type(Length)	Valid Values/Notes
8	AOE question	AOE_QUESTION		R	char(30)	
9	AOE question prompt	AOE_QUESTION_DESC		R	char(50)	
10	AOE question help	RESULT_FILTER		O	varchar(250)	
11	Order code suffix	SUFFIX		O	char(8)	
12	Order code with suffix	TEST_CD_MNEMONIC		R	char(16)	If suffix is not available, this will be the same as Order code.
13	Special test flag	TEST_FLAG		R	char(1)	Valid values: 'P' = Test is a PAP, 'Q' = Test has AOE, Null.

a. R = Required, O = Optional, C = Conditional.

Dataset 9—Order Code Component

File Name: PROFILE.TXT

Description/Usage: Identifies components of order codes that are profiles. There is one entry per profile component.

Required? This dataset is *optional* (recommended) for third-party laboratory implementations.

Conditions: Each order code must have a parent entry in the Order code dataset.

Note: Components do not need to be orderable; therefore, they do not need to be in the Order code dataset.

PROFILE_COMPONENT_XREF						
#	Column Name	CDC Column Name	Key	Req'd[a]	Type(Length)	Valid Values/Notes
1	Operation			R	char(1)	Valid values: 'A', 'C', 'D'.
2	Legal entity	LEGAL_ENTITY	PK1	R	char(4)	
3	Performing site	TOPLAB_PERFORMING_SITE	PK1	R	char(3)	
4	Order code	TEST_CD	PK1	R	char(16)	
5	Unit code	UNIT_CD		R	char(10)	LIS code.
6	Order code suffix	SUFFIX		O	char(8)	
7	Component	COMPONENT_TEST_CD	PK1	R	char(16)	
8	Component unit code	COMPONENT_UNIT_CD	PK1	R	char(10)	

PROFILE_COMPONENT_XREF						
#	Column Name	CDC Column Name	Key	Req'd[a]	Type(Length)	Valid Values/Notes
9	Component suffix	COMPONENT_SUFFIX		O	char(8)	
10	Component title	COMPONENT_DESCRIPTION		C	char(175)	Required, except for TOPLab (which sends this info separately in a reportable test code dataset).
11	Component specimen type	COMPONENT_SPECIMEN_TYPE		O	char(130)	
12	State/Specimen Condition of Component Unit Code	STATE		O	char(2)	Specimen condition of Component unit code (field #8). Example values: • FR/FZ/F = Frozen • RT/A = Room Temperature • RF/R = Refrigerated • S = Special • W = Wet Ice

a. R = Required, O = Optional, C = Conditional.

Dataset 10—LCP/MN Service To CPT

File Name: ORDERCPT.TXT

Description/Usage: Identifies CPT codes that are covered under Limited Coverage Policy/Medical Necessity or that are not FDA approved and the corresponding order codes. There is one entry per such CPT code per order code per carrier (as identified by the BIS).

Required? This dataset is *optional* for third-party laboratory implementations; required if billing Medicare (Advance Beneficiary Notice (ABN), limited coverage, frequency).

Conditions: There must be a parent entry in the Order code dataset.

NBS_SERVICE_CPT_XREF						
#	Column Name	CDC Column Name	Key	Req'd[a]	Type(Length)	Valid Values/Notes
1	Operation			R	char(1)	Valid values: 'A', 'C', 'D'.
2	Legal entity	LEGAL_ENTITY	PK1	R	char(4)	Your performing site code.
3	Billing carrier ID	THIRD_PARTY_ID	PK1	R	char(8)	Must match dataset 4, field 3, and dataset 11, field 3.
4	Billing service code	SERVICE_CD	PK1	R	char(10)	Must match dataset 7, field 11.
5	CPT code	CPT_CD	PK1	R	char(7)	

NBS_SERVICE_CPT_XREF						
#	Column Name	CDC Column Name	Key	Req'd[a]	Type(Length)	Valid Values/Notes
6	Type	MLCP_FDA		R	char(1)	Valid values: • L = Limited coverage policy • N = Non-FDA approved • F = Frequency-limited
7	Policy effective date	EFFECTIVE_DTE		R	datetime	
8	Policy expiration date	EXPIRATION_DTE		R	datetime	

a. R = Required, O = Optional, C = Conditional.

Dataset 11—LCP/MN CPT To ICD9

File Name: CPTICD9.TXT

Description/Usage: Identifies the diagnosis codes that are acceptable for CPT codes covered under Limited Coverage Policy/Medical Necessity policies. There is one entry per diagnosis code per CPT code per carrier (as identified by the BIS).

Required? This dataset is *optional* for third-party laboratory implementations; required if billing Medicare (ABN, limited coverage, frequency).

Conditions: None.

MLCP_CPT_ICD9_XREF						
#	Column Name	CDC Column Name	Key	Req'd[a]	Type(Length)	Valid Values/Notes
1	Operation			R	char(1)	Valid values: 'A', 'C', 'D'.
2	Legal entity	LEGAL_ENTITY	PK1	R	char(4)	Your performing site code.
3	Billing carrier ID	CARRIER_CD	PK1	R	char(6)	Must match dataset 4, field 3, and dataset 10, field 3.
4	CPT code	CPT_CD	PK1	R	char(5)	
5	ICD9 code	ICD9_NO_PERIOD	PK1	R	char(6)	The code should not include a decimal point.
6	Policy effective date	EFFECTIVE_DTE		R	datetime	
7	Policy expiration date	EXPIRATION_DTE		R	datetime	

a. R = Required, O = Optional, C = Conditional.

Dataset 12—DOS Billing Procedure Code

File Name: CPTCODES.TXT

Description/Usage: Provides Directory of Service (DOS) information for what CPT codes are assigned to service codes. (The rows of data obtained from NBS are not unique.)

Required? This dataset is *optional* for third-party laboratory implementations.

Conditions: None.

BILLING_PROCEDURE_CODE						
#	**Column Name**	**CDC Column Name**	**Key**	**Req'd[a]**	**Type(Length)**	**Valid Values/Notes**
1	Operation			R	char(1)	Valid values: 'A', 'C', 'D'.
2	Legal entity	LEGAL_ENTITY	PK1	R	char(4)	Your performing site code.
3	Performing site	LABORATORY_CD	PK1	R	char(4)	
4	CPT schedule	CPT_SCHEDULE	PK1	R	char(8)	
5	Request date	REQUEST_DTE	PK1	R	datetime	
6	Billing service code	SERVICE_CD	PK1	R	char(7)	Must match dataset 7, field 11.
7	CPT code	CPT_CD	PK1	R	char(5)	
8	CPT code modifier	CPT_CD_MODIFIER	PK1	R	char(2)	
9	CPT service units count	CPT_SERVICE_UNITS_CNT		R	smallint	
10	CPT name	CPT_NM		R	char(80)	
11	Reimbursement amount	REIMBURSEMENT_AMT		O	money	
12	Allocation percent	ALLOCATION_PCT		O	decimal(7,4)	

a. R = Required, O = Optional, C = Conditional.

Dataset 13—DOS Container

File Name: CONTAINER.TXT

Description/Usage: Provides DOS information for specimen container requirements. There is one row per line of text per unit code.

Required? This dataset is *optional* for third-party laboratory implementations.

Conditions: None.

CONTAINER						
#	**Column Name**	**CDC Column Name**	**Key**	**Req'd[a]**	**Type(Length)**	**Valid Values/Notes**
1	Operation			R	char(1)	Valid values: 'A', 'C', 'D'.
2	Performing site	LABORATORY_CD	PK1	R	char(3)	Your performing site code.
3	Unit code	UNIT_CD	PK1	R	char(10)	LIS code.
4	Sequence number	SEQUENCE_NO	PK1	R	smallint	
5	Text	COMMENT_TXT		O	char(60)	

a. R = Required, O = Optional, C = Conditional.

Dataset 14—DOS Methodology

File Name: METHODOLOGY.TXT

Description/Usage: Provides DOS information for testing methodology. There is one row per line of text per unit code.

Required? This dataset is *optional* for third-party laboratory implementations.

Conditions: None.

METHODOLOGY						
#	**Column Name**	**CDC Column Name**	**Key**	**Req'd[a]**	**Type(Length)**	**Valid Values/Notes**
1	Operation			R	char(1)	Valid values: 'A', 'C', 'D'.
2	Performing site	LABORATORY_CD	PK1	R	char(3)	Your performing site code.
3	Unit code	UNIT_CD	PK1	R	char(10)	LIS code.
4	Sequence number	SEQUENCE_NO	PK1	R	smallint	
5	Text	COMMENT_TXT		O	char(60)	

a. R = Required, O = Optional, C = Conditional.

Dataset 15—DOS Minimum Volume

File Name: SPECIMENVOL.TXT

Description/Usage: Provides DOS information for the minimum volume of specimen required to perform the test once. There is one row per line of text per unit code.

Required? This dataset is *optional* for third-party laboratory implementations.

Conditions: None.

MINIMUM_SPECIMEN_VOLUME						
#	**Column Name**	**CDC Column Name**	**Key**	**Req'd[a]**	**Type(Length)**	**Valid Values/Notes**
1	Operation			R	char(1)	Valid values: 'A', 'C', 'D'.
2	Performing site	LABORATORY_CD	PK1	R	char(3)	Your performing site code.
3	Unit code	UNIT_CD	PK1	R	char(10)	LIS code.
4	Sequence number	SEQUENCE_NO	PK1	R	smallint	
5	Text	COMMENT_TXT		O	char(60)	

a. R = Required, O = Optional, C = Conditional.

Dataset 16—DOS Preferred Requirement

File Name: SPECIMENREQ.TXT

Description/Usage: Provides DOS information for preferred specimen requirements. There is one row per line of text per unit code.

Required? This dataset is *optional* for third-party laboratory implementations.

Conditions: None.

PREFERRED_SPECIMEN_REQUIREMENT						
#	**Column Name**	**CDC Column Name**	**Key**	**Req'd[a]**	**Type(Length)**	**Valid Values/Notes**
1	Operation			R	char(1)	Valid values: 'A', 'C', 'D'.
2	Performing site	LABORATORY_CD	PK1	R	char(3)	Your performing site code.
3	Unit code	UNIT_CD	PK1	R	char(10)	LIS code.
4	Sequence number	SEQUENCE_NO	PK1	R	smallint	
5	Text	COMMENT_TXT		O	char(60)	

a. R = Required, O = Optional, C = Conditional.

Dataset 17—DOS Reject Hemolysis

File Name: HEMOLYSIS.TXT

Description/Usage: Provides DOS information for rejection criteria for hemolized specimens. There is one row per line of text per unit code.

Required? This dataset is *optional* for third-party laboratory implementations.

Conditions: None.

SPECIMEN_REJECT_HEMOLYSIS						
#	**Column Name**	**CDC Column Name**	**Key**	**Req'd[a]**	**Type(Length)**	**Valid Values/Notes**
1	Operation			R	char(1)	Valid values: 'A', 'C', 'D'.
2	Performing site	LABORATORY_CD	PK1	R	char(3)	Your performing site code.
3	Unit code	UNIT_CD	PK1	R	char(10)	LIS code.
4	Sequence number	SEQUENCE_NO	PK1	R	smallint	
5	Text	COMMENT_TXT		O	char(60)	

a. R = Required, O = Optional, C = Conditional.

Dataset 18—DOS Reject Lipemia

File Name: LIPEMIA.TXT

Description/Usage: Provides DOS information for rejection criteria for lipemic specimens. There is one row per line of text per unit code.

Required? This dataset is *optional* for third-party laboratory implementations.

Conditions: None.

SPECIMEN_REJECT_LIPEMIA						
#	**Column Name**	**CDC Column Name**	**Key**	**Req'd[a]**	**Type(Length)**	**Valid Values/Notes**
1	Operation			R	char(1)	Valid values: 'A', 'C', 'D'.
2	Performing site	LABORATORY_CD	PK1	R	char(3)	Your performing site code.
3	Unit code	UNIT_CD	PK1	R	char(10)	LIS code.
4	Sequence number	SEQUENCE_NO	PK1	R	smallint	
5	Text	COMMENT_TXT		O	char(60)	

a. R = Required, O = Optional, C = Conditional.

Dataset 19—DOS Reject Thaw Other

File Name: THAWOTHER.TXT

Description/Usage: Provides DOS information for rejection for thaw cycles and other criteria. There is one row per line of text per unit code.

Required? This dataset is *optional* for third-party laboratory implementations.

Conditions: None.

SPECIMEN_REJECT_THAW_OTHER						
#	**Column Name**	**CDC Column Name**	**Key**	**Req'd[a]**	**Type(Length)**	**Valid Values/Notes**
1	Operation			R	char(1)	Valid values: 'A', 'C', 'D'.
2	Performing site	LABORATORY_CD	PK1	R	char(3)	Your performing site code.
3	Unit code	UNIT_CD	PK1	R	char(10)	LIS code.
4	Sequence number	SEQUENCE_NO	PK1	R	smallint	
5	Text	COMMENT_TXT		O	char(60)	

a. R = Required, O = Optional, C = Conditional.

Dataset 20—DOS Specimen Stability

File Name: SPECIMENSTAB.TXT

Description/Usage: Provides DOS information for the length of time a specimen can remain at given temperatures and still produce accurate results. There is one row per line of text per unit code.

Required? This dataset is *optional* for third-party laboratory implementations.

Conditions: None.

SPECIMEN_STABILITY						
#	**Column Name**	**CDC Column Name**	**Key**	**Req'd[a]**	**Type(Length)**	**Valid Values/Notes**
1	Operation			R	char(1)	Valid values: 'A', 'C', 'D'.
2	Performing site	LABORATORY_CD	PK1	R	char(3)	Your performing site code.
3	Unit code	UNIT_CD	PK1	R	char(10)	LIS code.
4	Sequence number	SEQUENCE_NO	PK1	R	smallint	
5	Text	COMMENT_TXT		O	char(60)	

a. R = Required, O = Optional, C = Conditional.

Dataset 21—DOS Transport Temperature

File Name: TRANSPORT.TXT

Description/Usage: Provides DOS information for the temperature requirements for specimen storage and transport. There is one row per line of text per unit code.

Required? This dataset is *optional* for third-party laboratory implementations.

Conditions: None.

TRANSPORT_TEMPERATURE						
#	**Column Name**	**CDC Column Name**	**Key**	**Req'd[a]**	**Type(Length)**	**Valid Values/Notes**
1	Operation			R	char(1)	Valid values: 'A', 'C', 'D'.
2	Performing site	LABORATORY_CD	PK1	R	char(3)	Your performing site code.
3	Unit code	UNIT_CD	PK1	R	char(10)	LIS code.
4	Sequence number	SEQUENCE_NO	PK1	R	smallint	
5	Text	COMMENT_TXT		O	char(60)	

a. R = Required, O = Optional, C = Conditional.

Dataset 22—Client-Specific Order Code

File Name: CUSTOMP.TXT

Description/Usage: Defines client-specific order codes created for ordering convenience. (In TOPLab these are called custom panels.) There is one row per client per order code component.

Required? This dataset is *optional* for third-party laboratory implementations.

Conditions: Client order codes can be in the Order code dataset. (The existence of a test code in this dataset makes it a custom profile.)

Notes:

- *Note 1*: Columns 10–13 are required, except for TOPLab feeds. (TOPLab sends this information separately.)
- *Note 2*: Components do not need to be orderable. That is, they do not have to be in the Order code dataset (but they can be).
- *Note 3*: A minus sign ("-") in front of the Client number (field 7) indicates that this client can not order the test.

CUSTOM_PANELS						
#	**Column Name**	**CDC Column Name**	**Key**	**Req'd[a]**	**Type(Length)**	**Valid Values/Notes**
1	Operation			R	char(1)	Valid values: 'A', 'C', 'D'.
2	Legal entity	LEGAL_ENTITY	PK1 PK2	R	char(4)	Your performing site code.

CUSTOM_PANELS						
#	**Column Name**	**CDC Column Name**	**Key**	**Req'd[a]**	**Type(Length)**	**Valid Values/Notes**
3	Performing site	TOPLAB_PERFORMING_SITE	PK1 PK2	R	char(3)	Your performing site code.
4	Client order code	SCAN_ID	PK1	R	char(16)	
5	Title	CUSTOM_PANEL_NAME	PK2	R	char(175)	
6	Component	TEST_CD	PK1 PK2	R	char(16)	Order code—component.
7	Client number	TOPLAB_CLIENT_NO	PK1 PK2	R	char(15)	
8	Billing client number	NBS_CLIENT_NO		R	char(15)	
9	Group practice	GROUP_PRACTICE		O	char(15)	
10	Component title	TEST_CD_DESCRIPTION		C	char(175)	See note 1.
11	Component specimen type	TEST_CD_SPECIMEN_TYPE		C	char(60)	See note 1.
12	Component service code	TEST_CD_SERVICE_CODE		C	char(10)	See note 1.
13	Component unit code	TEST_CD_UNIT_CD		C	char(10)	See note 1. LIS code—component.
14	Unit Code	UNIT_CD	PK1	R	char(10)	LIS code.
15	State/Specimen Condition	STATE		O	char(2)	Specimen condition of a component code (field #13). Example values: • FR/FZ/F = Frozen • RT/A = Room Temperature • RF/R = Refrigerated • W = Wet Ice • S = Special

a. R = Required, O = Optional, C = Conditional.

Dataset 23—Performing Site Code

File Name: SITES.TXT

Description/Usage: Defines service provider (laboratory) facilities and send-out testing site codes.

Required? This dataset is *optional* (highly recommended if using laboratory reporting) for third-party laboratory implementations.

Conditions: None.

PERFORMING_SITE						
#	**Column Name**	**CDC Column Name**	**Key**	**Req'd[a]**	**Type(Length)**	**Valid Values/Notes**
1	Operation			R	char(1)	Valid values: 'A', 'C', 'D'.
2	Performing site	LABORATORY_CD	PK1	R	char(3)	Your performing site code.
3	Facility site code	FACILITY_CD	PK1	R	char(5)	Where the test is performed.
4	Country name	COUNTRY		O	char(4)	Valid values: 'US', blank.
5	Active Flag	ACTIVE_FLAG		R	char(1)	Valid values: '1' = Active, '0' = Inactive.
6	Inhouse Flag	INHOUSE_FLAG		R	char(1)	Valid values: '1' = Lab facility, '0' = Vendor facility.
7	Facility Name	FACILITY_NAME		R	char(50)	
8	Address 1	ADDR_LINE_1		R	char(50)	
9	Address 2	ADDR_LINE_2		R	char(50)	
10	City	CITY		R	char(30)	
11	State	STATE		R	char(2)	
12	Zip Code	ZIP_CD		R	char(10)	
13	Phone number	PHONE_NO		R	char(16)	
14	PC/MES Flag	PC_MES_FLAG		O	char(1)	
15	Specimen Grouping	SPECIMEN_GROUP		O	char(16)	
16	Requisition Label format	REQ_LABEL		O	char(20)	
17	Specimen Label format	SPECIMEN_LABEL		O	char(20)	
18	Send-In Label format	SEND_IN_LABEL		O	char(20)	
19	Send-Out Label format	SEND_OUT_LABEL		O	char(20)	
20	Combo Label format	COMBO_LABEL		O	char(20)	
21	Sortation Device	SORT_DEVICE		O	char(5)	
22	Aliquoter Label format	ALIQUOTER_LABEL		O	char(20)	

PERFORMING_SITE						
#	**Column Name**	**CDC Column Name**	**Key**	**Req'd[a]**	**Type(Length)**	**Valid Values/Notes**
23	Medical Director	MEDICAL_DIRECTOR		R	char(25)	

a. R = Required, O = Optional, C = Conditional.

Dataset 24—Analyte Details

File Name: N/A

Description/Usage: Provides analyte details.

Required? This dataset is *not supported* for third-party laboratory implementations.

Conditions: None.

ANALYTE_CODE_XREF						
#	**Column Name**	**CDC Column Name**	**Key**	**Req'd[a]**	**Type(Length)**	**Valid Values/Notes**
1	Operation			R	char(1)	Valid values: 'A', 'C', 'D'.
2	Performing site	LABORATORY_CD	PK1	R	char(4)	Your performing site code.
3	Analyte Code	ANALYTE_CD	PK1	R	char(11)	Must match dataset 26, field 4.
4	Analyte	ANALYTE_MNEMONIC		R	char(25)	Can be the same as field 3.
5	Analyte_Line_1_Desc	ANALYTE_LINE_1_DESC		R	char(50)	
6	Analyte_Line_2_Desc	ANALYTE_LINE_2_DESC		O	char(25)	

a. R = Required, O = Optional, C = Conditional.

Dataset 25—Client UPIN

File Name: UPIN.TXT

Description/Usage: Provides UPIN and/or NPI numbers for clients.

Required? This dataset is *conditional* for third-party laboratory implementations; *required* if billing Medicare.

Conditions: None.

CLIENT_UPIN						
#	**Column Name**	**CDC Column Name**	**Key**	**Req'd[a]**	**Type(Length)**	**Valid Values/Notes**
1	Operation			R	char(1)	Valid values: 'A', 'C', 'D'.
2	Performing site	LABORATORY_CD	PK1	R	char(3)	Your performing site code.
3	Client number	CLIENT_NO	PK1	R	char(6)	Client number, for billable clients.

CLIENT_UPIN						
#	**Column Name**	**CDC Column Name**	**Key**	**Req'd[a]**	**Type(Length)**	**Valid Values/Notes**
4	UPIN number	UPIN	PK1	R	char(6)	
5	Name	NAME		R	char(50)	

a. R = Required, O = Optional, C = Conditional.

Dataset 26—Worklist Components

File Name: N/A

Description/Usage: Provides a cross-reference between the "Dataset 7—Order Code" and the "Dataset 24—Analyte Details".

Required? This dataset is *not supported* for third-party laboratory implementations.

Conditions: None.

WORKLIST_COMPONENT_XREF						
#	**Column Name**	**CDC Column Name**	**Key**	**Req'd[a]**	**Type(Length)**	**Valid Values/Notes**
1	Operation			R	char(1)	Valid values: 'A', 'C', 'D'.
2	Performing site	LABORATORY_CD	PK1	R	char(4)	Your performing site code.
3	Test Code	TEST_CD	PK1	R	char(16)	
4	Analyte Code	ANALYTE_CD	PK1	R	char(11)	Must match dataset 24, field 3.
5	Unit Code	UNIT_CD		R	char(10)	LIS code.

a. R = Required, O = Optional, C = Conditional.

Dataset 27—Order Code Alias

File Name: ALIAS.TXT

Description/Usage: Provides various alias name by which an order code is recognized by clients. (If not provided, order codes will only be searchable by the *Title* field provided in "Dataset 7—Order Code".)

Required? This dataset is *optional* for third-party laboratory implementations.

Conditions: None.

UNIT_CODE_ALIAS						
#	**Column Name**	**CDC Column Name**	**Key**	**Req'd[a]**	**Type(Length)**	**Valid Values/Notes**
1	Operation			R	char(1)	Valid values: 'A', 'C', 'D'.
2	Performing site	LABORATORY_CD	PK1	R	char(3)	Your performing site code.

UNIT_CODE_ALIAS						
#	**Column Name**	**CDC Column Name**	**Key**	**Req'd[a]**	**Type(Length)**	**Valid Values/Notes**
3	Order code	TEST_CD	PK1	R	char(16)	
4	Sequence number	SEQUENCE_NO	PK1	R	smallint	
5	Alias Name	ALIAS_NAME		O	char(175)	

a. R = Required, O = Optional, C = Conditional.

Dataset 28—Temperatures

File Name: TEMPERATURES.TXT

Description/Usage: Provides preferred and acceptable temperatures by test code as well as comments associated with each temperature.

Required? This dataset is *not supported* for third-party laboratory implementations (information from this dataset is included in "Dataset 7—Order Code").

Conditions: None.

Note: This dataset is no longer required; the information is in "Dataset 7—Order Code".

TEMPERATURES						
#	**Column Name**	**CDC Column Name**	**Key**	**Req'd[a]**	**Type(Length)**	**Valid Values/Notes**
1	Operation			R	char(1)	Valid values: 'A', 'C', 'D'.
2	Performing site	LABORATORY_CD	PK1	R	char(4)	Your performing site code.
3	Order code	TEST_CD	PK1	R	char(16)	
4	Preferred Temperatures	PTEMP		O	char(5)	Only one single-character preferred temperature is allowed. Current codes in use include: • 'R' = Refrigerated • 'F' = Frozen • 'A' = Ambient (room temp) • 'S' = Special • 'W' = Wet ice
5	Preferred Temperatures Comments	PTEMP_COMMENTS		O	char(30)	

TEMPERATURES						
#	Column Name	CDC Column Name	Key	Req'd[a]	Type(Length)	Valid Values/Notes
6	Acceptable Temperatures	ATEMP		O	char(5)	This field can hold up to 5 single-character temperature codes. Current codes in use include: • 'R' = Refrigerated • 'F' = Frozen • 'A' = Ambient (room temp) • 'S' = Special • 'W' = Wet ice
7	Acceptable Temperatures Comments	ATEMP_COMMENTS		O	char(30)	

a. R = Required, O = Optional, C = Conditional.

Dataset 29—Client-Specific Code XREF

File Name: CUSTOMC.TXT

Description/Usage: Defines the list of clients allowed to order client-specific order codes created for ordering convenience. (In TOPLab these are called custom panels.) There is one row per client.

Required? This dataset is *optional* for third-party laboratory implementations.

Conditions: Client order codes should be in "Dataset 22—Client-Specific Order Code".

Note: The clients indicated for each order code in this optional file will be added to the list of clients indicated in "Dataset 22—Client-Specific Order Code".

N/A						
#	Column Name	CDC Column Name	Key	Req'd[a]	Type(Length)	Valid Values/Notes
1	Operation			R	char(1)	Valid values: 'A', 'C', 'D'.
2	Legal entity	LEGAL_ENTITY	PK1 PK2	R	char(4)	
3	Performing site	TOPLAB_PERFORMING_SITE	PK1 PK2	R	char(3)	
4	Client order code	SCAN_ID	PK1	R	char(16)	
5	Billing client number	NBS_CLIENT_NO		R	char(15)	

a. R = Required, O = Optional, C = Conditional.

Dataset 30—Alternate Specimen Data

File Name: ALTSPEC.TXT

Description/Usage: Provides DOS alternate specimen data for each test. There is one row per line of text per unit code.

Required? This dataset is *optional* for third-party laboratory implementations.

Conditions: None.

ALTERNATE_SPECIMEN_DATA						
#	**Column Name**	**CDC Column Name**	**Key**	**Req'd[a]**	**Type(Length)**	**Valid Values/Notes**
1	Operation			R	char(1)	Valid values: 'A', 'C', 'D'.
2	Performing site	LABORATORY_CD	PK1	R	char(3)	
3	Unit code	UNIT_CD	PK1	R	char(10)	
4	Sequence number	SEQUENCE_NO	PK1	R	smallint	
5	Text	COMMENT_TXT		O	char(60)	

a. R = Required, O = Optional, C = Conditional.

Dataset 31—Clinical Significance Data

File Name: CLINSIG.TXT

Description/Usage: Provides DOS information for each test's clinical significance. There is one row per line of text per unit code.

Required? This dataset is *optional* for third-party laboratory implementations.

Conditions: None.

CLINICAL_SIGNIFICANCE_DATA						
#	**Column Name**	**CDC Column Name**	**Key**	**Req'd[a]**	**Type(Length)**	**Valid Values/Notes**
1	Operation			R	char(1)	Valid values: 'A', 'C', 'D'.
2	Performing site	LABORATORY_CD	PK1	R	char(3)	
3	Unit code	UNIT_CD	PK1	R	char(10)	
4	Sequence number	SEQUENCE_NO	PK1	R	smallint	
5	Text	COMMENT_TXT		O	char(60)	

a. R = Required, O = Optional, C = Conditional.

Dataset 32—DOS Performing Site

File Name: PERFLAB.TXT

Description/Usage: Provides DOS information for the test performing sites. There is one row per line of text per unit code.

Required? This dataset is *optional* for third-party laboratory implementations.

Conditions: None.

DOS_PERFORMING_SITE						
#	**Column Name**	**CDC Column Name**	**Key**	**Req'd[a]**	**Type(Length)**	**Valid Values/Notes**
1	Operation			R	char(1)	Valid values: 'A', 'C', 'D'.
2	Performing site	LABORATORY_CD	PK1	R	char(3)	
3	Unit code	UNIT_CD	PK1	R	char(10)	
4	Sequence number	SEQUENCE_NO	PK1	R	smallint	
5	Text	COMMENT_TXT		O	char(60)	

a. R = Required, O = Optional, C = Conditional.

Dataset 33—Reference Ranges

File Name: REFRANGES.TXT

Description/Usage: Provides DOS reference range data for the tests. There is one row per line of text per unit code.

Required? This dataset is *optional* for third-party laboratory implementations.

Conditions: None.

REFERENCE_RANGES						
#	**Column Name**	**CDC Column Name**	**Key**	**Req'd[a]**	**Type(Length)**	**Valid Values/Notes**
1	Operation			R	char(1)	Valid values: 'A', 'C', 'D'.
2	Performing site	LABORATORY_CD	PK1	R	char(3)	
3	Unit code	UNIT_CD	PK1	R	char(10)	
4	Sequence number	SEQUENCE_NO	PK1	R	smallint	
5	Text	COMMENT_TXT		O	char(60)	

a. R = Required, O = Optional, C = Conditional.

Dataset 34—Setup Days

File Name: SETUPDAYS.TXT

Description/Usage: Provides DOS setup days of the week for the tests. There is one row per line of text per unit code.

Required? This dataset is *optional* for third-party laboratory implementations.

Conditions: None.

SETUP_DAYS						
#	**Column Name**	**CDC Column Name**	**Key**	**Req'd[a]**	**Type(Length)**	**Valid Values/Notes**
1	Operation			R	char(1)	Valid values: 'A', 'C', 'D'.
2	Performing site	LABORATORY_CD	PK1	R	char(3)	
3	Unit code	UNIT_CD	PK1	R	char(10)	
4	Sequence number	SEQUENCE_NO	PK1	R	smallint	
5	Text	COMMENT_TXT		O	char(60)	

a. R = Required, O = Optional, C = Conditional.

Dataset 35—Setup Times

File Name: SETUPTIMES.TXT

Description/Usage: Provides DOS setup times for the tests. There is one row per line of text per unit code.

Required? This dataset is *optional* for third-party laboratory implementations.

Conditions: None.

SETUP_TIMES						
#	**Column Name**	**CDC Column Name**	**Key**	**Req'd[a]**	**Type(Length)**	**Valid Values/Notes**
1	Operation			R	char(1)	Valid values: 'A', 'C', 'D'.
2	Performing site	LABORATORY_CD	PK1	R	char(3)	
3	Unit code	UNIT_CD	PK1	R	char(10)	
4	Sequence number	SEQUENCE_NO	PK1	R	smallint	
5	Text	COMMENT_TXT		O	char(60)	

a. R = Required, O = Optional, C = Conditional.

Dataset 36—Turnaround Times

File Name: TAT.TXT

Description/Usage: Provides DOS turnaround times for the tests. There is one row per line of text per unit code.

Required? This dataset is *optional* for third-party laboratory implementations.

Conditions: None.

TURNAROUND_TIMES						
#	**Column Name**	**CDC Column Name**	**Key**	**Req'd[a]**	**Type(Length)**	**Valid Values/Notes**
1	Operation			R	char(1)	Valid values: 'A', 'C', 'D'.
2	Performing site	LABORATORY_CD	PK1	R	char(3)	
3	Unit code	UNIT_CD	PK1	R	char(10)	
4	Sequence number	SEQUENCE_NO	PK1	R	smallint	
5	Text	COMMENT_TXT		O	char(60)	

a. R = Required, O = Optional, C = Conditional.

Dataset 37—Hand Written Order

File Name: HOTT.TXT

Description/Usage: Provides DOS handwritten order data for the tests. There is one row per line of text per test code.

Required? This dataset is *optional* for third-party laboratory implementations.

Conditions: None.

HOTT						
#	**Column Name**	**CDC Column Name**	**Key**	**Req'd[a]**	**Type(Length)**	**Valid Values/Notes**
1	Operation			R	char(1)	Valid values: 'A', 'C', 'D'.
2	Performing site	TOPLAB_PERFORMING_SITE	PK1	R	char(3)	National Standard DB (NSD).
3	Test code	TEST_CD	PK1	R	char(16)	
4	Handwritten text	HANDWRITTEN_TEXT		R	char(100)	
5	Comment text	COMMENT_TXT		O	char(200)	

a. R = Required, O = Optional, C = Conditional.

Dataset 38—Client NPP

File Name: CLIENTNPP.TXT

Description/Usage: Provides NPP numbers for clients.

Required? This dataset is *optional* for third-party laboratory implementations.

Conditions: None.

NPP						
#	**Column Name**	**CDC Column Name**	**Key**	**Req'd[a]**	**Type(Length)**	**Valid Values/Notes**
1	Operation			R	char(1)	Valid values: 'A', 'C', 'D'.
2	Performing site	TOPLAB_PERFORMING_SITE	PK1	R	char(3)	Your performing site code.
3	Client number	CLIENT_NO	PK1	R	char(10)	Client number, for billable clients.
4	NPP	NPP	PK1	R	char(10)	
5	Name	NAME		R	char(30)	

a. R = Required, O = Optional, C = Conditional.

Dataset 39—Medical Manager Updates

File Name: N/A

Description/Usage: Provides an audit for the changes in QLS.

Required? This dataset is *not supported* for third-party laboratory implementations.

Conditions: None.

MED_MGR_UPDATES						
#	**Column Name**	**CDC Column Name**	**Key**	**Req'd[a]**	**Type(Length)**	**Valid Values/Notes**
1	Operation			R	char(1)	Valid values: 'A', 'C', 'D'.
2	Performing site	TOPLAB_PERFORMING_SITE	PK1	R	char(3)	Your performing site code.
3	Test code	TEST_CD	PK1	R	char(16)	Updated test code.
4	Change type	ACTION	PK1	R	char(1)	Type of update to code. Valid values: 'A', 'C', 'D'.

a. R = Required, O = Optional, C = Conditional.

Sample Master File Dataset Files

Following are several sample Master File dataset files. (Note that only the top portion of each file is shown, since the typical file is too large to include here in total.)

Sample One—Bill-To Edit List

```
A^QTE^00^R
A^QTE^01^TPA
A^QTE^02^TPA
A^QTE^03^TPA
A^QTE^04^7
A^QTE^05^007
A^QTE^06^001
A^QTE^07^T
A^QTE^08^0
A^QTE^09^0000
A^QTE^0A^060000
A^QTE^0B^NYG
A^QTE^0C^CE
A^QTE^0D^NA
A^QTE^0E^NA
A^QTE^0F^NA
A^QTE^0G^NA
A^QTE^0H^C
A^QTE^0I^M
A^QTE^0J^YLA
A^QTE^0K^5
A^QTE^0L^2
A^QTE^0M^Y
A^QTE^0N^P
A^QTE^0O^N
A^QTE^0P^A
A^QTE^0Q^UL
A^QTE^0R^MID
A^QTE^0S^R
A^QTE^0T^GO
A^QTE^0U^F
A^QTE^0V^A
A^QTE^0W^999999
A^QTE^0X^0000
A^QTE^0Y^8
A^QTE^0Z^0000
A^QTE^10^0000
A^QTE^11^0000
A^QTE^12^0000
```

Sample Two—Order Code Alias

```
A^QTE^59T^1^Actinomyces, Genital, Cytology^
A^QTE^59T^2^Cervical Cytology Smear^
A^QTE^59T^3^Genital Cytology, Female^
A^QTE^59T^4^PAP Smear^
A^QTE^59T^5^Papanicolaou Smear, Genital, Female^
A^QTE^5538T^1^PAP^
A^QTE^5538T^2^CYTOLOGY^
A^QTE^5538T^3^THINPREP^
A^QTE^83337T^1^PAP^
A^QTE^83337T^2^CYTOLOGY^
A^QTE^83337T^3^THINPREP^
A^QTE^87122A^1^Breast Discharge^
A^QTE^87122A^2^Breast FNA or Nipple Discharge^
A^QTE^89953A^1^Cytology, Prostatic Smear^
A^QTE^89953A^2^Endometrial Smear, Cytology^
A^QTE^89953A^3^Fine Needle Aspiration, Cytology^
A^QTE^89953A^4^Prostatic Smear, Cytology^
A^QTE^105262E^1^Sputum Cytology^
A^QTE^110684R^1^Ascitic Fluid, Cytology^
A^QTE^110684R^2^Cytology, Gastrointestinal^
A^QTE^110684R^3^Cytology, Genital, Male^
A^QTE^110684R^4^Fluid, Cytology^
A^QTE^110684R^5^Pericardial Fluid, Cytology^
A^QTE^110684R^6^Peritoneal Fluid, Cytology^
A^QTE^110684R^7^Pleural Fluid, Cytology^
A^QTE^110684R^8^Spinal Fluid Cytology^
A^QTE^110684R^9^Spinal Fluid, Cytology^
A^QTE^110684R^10^Synovial Fluid, Cytology^
A^QTE^110684R^11^Thoracic Fluid, Cytology^
A^QTE^110700E^1^Urine, Cytology^
A^QTE^15003X^1^THINPREP WITH HPV HIGH RISK^
A^QTE^15003X^2^THINPREP AND HPV HIGH RISK^
A^QTE^125F^1^Cell Block and Smears^
A^QTE^125F^2^Bone Marrow Aspirate^
A^QTE^4861A^1^Pemphigoid, Tissue^
A^QTE^4812A^1^Immunohistochemistry^
A^QTE^4812A^2^Immunohistology^
A^QTE^4812A^3^Immunoperoxidase^
A^QTE^66472A^1^Pneumocystis Carinii Stain^
A^QTE^66472A^2^Silver methenamine Stain^
A^QTE^66472A^3^Special Stains, for Histopathology^
A^QTE^66472A^4^Stain, Special for Tissue Pathology^
A^QTE^P1568^1^ABO Rh and antibody screen^
A^QTE^P1568^2^Type and hold^
A^QTE^P1568^3^Type and screen^
A^QTE^P2261^1^987Z^
A^QTE^P2707^1^HYPOTHYROID PROF^
A^QTE^P2752^1^Celiac Panel^
A^QTE^935F^1^935F^
A^QTE^P6581^1^7017X^
A^QTE^7039W^1^4580^
A^QTE^7039W^2^BASO STIPPLING^
```

Sample Three—Setup Days

```
A^QTE^10^1^Weekdays
A^QTE^12^1^Weekdays
A^QTE^14^1^Weekdays
A^QTE^16^1^Weekdays
A^QTE^17^1^Tuesday-Saturday
A^QTE^50^1^Weekdays
A^QTE^51^1^Weekdays
A^QTE^52^1^Weekdays
A^QTE^53^1^Weekdays
A^QTE^61^1^Weekdays
A^QTE^62^1^Weekdays
A^QTE^64^1^Weekdays
A^QTE^72^1^Weekdays
A^QTE^73^1^Weekdays
A^QTE^99^1^Weekdays
A^QTE^145^1^Weekdays
A^QTE^187^1^Monday and Thursday
A^QTE^199^1^Weekdays
A^QTE^239^1^Weekdays
A^QTE^282^1^Weekdays
A^QTE^7039^1^Monday - Saturday
A^QTE^7187^1^Monday - Saturday
A^QTE^7773^1^Monday - Saturday
A^QTE^7781^1^Monday - Saturday
A^QTE^10090^1^Monday to Sunday
A^QTE^15040^1^Days:  Sunday
A^QTE^15040^2^Nights:  Monday-Friday
A^QTE^15180^1^Monday-Saturday
A^QTE^15214^1^Days:  Sunday
A^QTE^15214^2^Nights:  Monday-Friday
A^QTE^15701^1^Monday-Saturday
A^QTE^17426^1^Monday-Saturday
A^QTE^17517^1^Monday-Saturday
A^QTE^17615^1^Mon - Fri
A^QTE^17617^1^Mon - Fri
A^QTE^17988^1^Monday - Saturday
A^QTE^18572^1^Tuesday-Saturday
A^QTE^18846^1^Sunday-Friday
A^QTE^19208^1^Monday-Saturday
A^QTE^19521^1^Days: Monday-Saturday
A^QTE^19687^1^Monday-Saturday
A^QTE^19752^1^Nights: Monday-Saturday or performed on a STAT basis.
A^QTE^19885^1^Sunday-Friday
A^QTE^19950^1^Tuesday-Saturday
A^QTE^20008^1^Days:  Sunday
A^QTE^20008^2^Nights:  Monday-Friday
A^QTE^20099^1^Monday-Saturday
A^QTE^20123^1^Monday-Saturday
A^QTE^20289^1^Monday-Saturday
A^QTE^20321^1^Nights: Monday-Friday  OR can be performed on a STAT basis.
A^QTE^20396^1^Monday-Saturday
A^QTE^20644^1^Tuesday-Saturday
A^QTE^20750^1^Monday-Saturday
A^QTE^20867^1^Days:  Sunday
A^QTE^20867^2^Nights:  Monday-Friday
A^QTE^20867^3^Also stat
A^QTE^20908^1^Monday-Saturday
```

Submitting Third-Party Master Files

In order to ensure that the most current Master File data is available within the *Lab Orders* component of Physician Portal, Care360 Hub Information Services initiates a secure connection to a third-party laboratory on a predefined schedule (for example, weekly) to retrieve and process the latest dataset files.

The secure transfer of Master File data between the Hub and a third-party laboratory can be accomplished by a number of different methods; for example, via SSH File Transfer Protocol (SFTP). For more information on possible connectivity methods, see "Universal Ordering and Resulting Connectivity" on page 9.

About the Carrier Edit Patterns

This section provides an explanation of the carrier edit patterns that are included in "Dataset 4—Bill-To Edit" and "Dataset 5—Bill-To Edit List". Carrier edit patterns include the following:

- *Edit patterns*, which are a sequence of the characters 'A' for alpha, 'N' for numeric, 'X' for alphanumeric, 'B' for blank, '*' for wildcard, and the digits '1' through '5'. Digits positionally refer to the two-character edit pattern list in the corresponding list field.
- *Edit pattern lists*, which are a sequence of zero to five two-character alphanumeric identifiers.

Example 1:

Dataset 4, column 24, is `NNNNNBBBBB`

In this example, the guarantor's insurance group number must be a five-digit numeric value. Additionally, the trailing blanks are optional in this example.

Example 2:

Dataset 4, column 22, is `XNNNNNNNNA*`

In this example, the guarantor's insurance policy number must be ten or eleven characters. Additionally, the first character must be a letter or a digit, characters two through nine must be digits, character ten must be a letter, and character eleven can be any character—alpha, numeric, blank (omitted), or other.

Example 3:

Dataset 4, column 22, is `111NNNNNNN2`

Dataset 4, column 23, is `08C4`

Dataset 5 includes the following rows:

List ID	List Value
08	WDX
08	PRX
C4	1
C4	2
C4	3
C4	A

In this example, the guarantor's insurance policy number must be eleven characters. The first three characters must be either "WDX" or "PRX", characters four through ten must be digits, and character eleven must be either '1', '2', '3', or 'A'.

Chapter 3
Care360 Order HL7 Specification

In This Chapter:

About the Care360 Order HL7 Specification

This chapter provides detailed format specifications for lab orders that are submitted via Care360 Hub Information Services to a Quest Diagnostics or third-party laboratory for processing. Orders must be formatted according to the HL7 2.3 Specification, with any exceptions noted in this chapter. Supported messages for orders produced by Physician Portal include:

ORM^O01—General Order Message

This chapter includes the following sections:

- **Order message format requirements.** For information on the message format requirements, see "Care360 Order Message Format Requirements" on page 59.
- **Order message segment specifications.** Each order message submitted to the Hub must contain a number of standard sections. For requirements on the standard segments of an order message, see "Care360 Order Message Segment Specifications" on page 67.
- **Sample Order messages.** For samples of the various order message types, see "Sample Care360 Order Messages" on page 94.

Note: For a detailed specification of Quest Diagnostics or third-party lab results that are received by Care360 Hub Information Services, see Chapter 4, "Care360 Results HL7 Specification" on page 97.

Care360 Order Message Format Requirements

In addition to the field-level validation detailed in "Care360 Order Message Segment Specifications", each inbound ORM message is validated by the Hub to ensure compliance with the rules outlined in this section.

Message Segment Hierarchy

ORM messages must follow the message segment hierarchy, as specified below:

```
MSH                     Message Header(Required)
    PID                 Patient Identification(Required)
        {[NTE]}         Notes and Comments(Optional)
         [PV1]          Patient Visit Data(Optional)
         {IN1}          Insurance Information(Required)
         [GT1]          Guarantor Information(Conditional)
        {
         ORC            Common Order(Required)
            OBR         Observation Request(Required)
            {[NTE]}     Notes and Comments(Optional)
            {[DG1]}     Diagnosis      (Optional)
                {[OBX]} Observation Result(Conditional)

    }
```

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

Message Segment Requirements

The following table classifies the various ORM message segments based on their requirement status of *Required* (R), *Optional* (O), or *Conditional* (C) as defined below:

- ***Required.*** The segment must be present in the ORM message. If it is not present, the message is rejected by the Hub.
- ***Optional.*** The segment is not required. The ORM message is accepted by the Hub whether or not this segment is present. If the segment is present, the Hub validates the associated field requirements.
- ***Conditional.*** The segment may or may not be required, depending on certain conditions. Conditions are stipulated in the *Comments/Conditions* column of the table below. If the segment is present, the Hub validates the associated field requirements.

Note: This table is only meant to communicate segment requirements; that is, whether or not a segment in the ORM message must be present, and, if present, how many of these segments can occur. The requirements listed in the table are over and above the field requirements detailed in "Care360 Order Message Segment Specifications" on page 67. For example, if an ORM passes the segment level rules detailed in the following table, the message can still fail the field-level rules for any of the existing segments.

Segment	Required?[a]	Comments/Conditions
MSH: Message Header	R	The Hub verifies that this segment is present in the ORM message.
PID: Patient Identifier	R	The Hub verifies the following: • This segment is present in the ORM message. • There is only one PID in the ORM message.
PV1: Patient Visit Data	O	If present, the Hub passes the PV1 segments through, validating the field lengths only (not the field values).
IN1: Insurance	R	The Hub verifies the following: • This segment is present in the ORM message. • No more than two IN1 segments exist in the ORM message.
GT1: Guarantor	C	The Hub verifies that this segment is present if required by the bill type, as outlined below: • Patient Bill = Required • Client Bill = Optional • Third-Party Bill = Required If present, the Hub also verifies that there is only one GT1 segment in the ORM message. **Note:** Bill type is established using IN1.47.
ORC: Common Order	R	The Hub verifies the following: • This segment is present in the ORM message. • There are no more than 35 ORC segments in an ORM message. • For each ORC segment, there is one—and only one—OBR segment in the ORM message.
OBR: Observation Request	R	The Hub verifies the following: • This segment is present in the ORM message. • There are no more than 35 OBR segments in the ORM. • Each OBR segment is paired with an ORC segment. • Only *one* OBR is associated with an ORC segment. **Note:** The Hub does not check the content of the OBR to verify if the Order Codes are duplicated in the ORM message.
DG1: Diagnosis	O	Downstream clinical and administrative systems may not be able to successfully process the order if the content of this segment exceeds a total of 10 unique ICD-9 codes. Therefore, it is recommended that the sending system not exceed this limit. If present, the Hub verifies that all of the required data in this segment is present and in compliance with the format rules. **Note:** The Hub does not check the content of the fields, and does not perform business logic checks across multiple DG1 segments.
OBX: Observation Result Detail	C	AOEs associated with the Order are captured as one-to-many OBX segments. If present, the Hub passes the segment through, if the data in the segment complies with the field-level rules detailed in "Care360 Order Message Segment Specifications" on page 67.

Segment	Required?[a]	Comments/Conditions
NTE: Notes and Comments	O	If present, the rules for an ORM message include the following: • **Internal comments** (NTE.02 is set to `I`). Internal comments are comments that provide additional information helpful in the proper testing or reporting of the patient's report. Internal comments will not appear on the report. The limit is five NTE segments of 60 characters each (NTE.03 field width). The Hub verifies that there are no more than five NTE segments in the ORM with NTE.02 set to `I`. • **Report Comments** (NTE.02 is set to `R`). Report comments are sent to the laboratory to be placed on the report. The limit is two NTE segments of 60 characters each (NTE.03 field width). The Hub verifies that there are no more than two NTE segments in the ORM with NTE.02 set to `R`. NTE segments can follow PID and OBR segments in the order message. The Hub verifies that the rules stated above are complied with in the ORM message. **Note:** The Hub only checks the total number of the Internal (5 maximum) and Report (2 maximum) NTE segments. Internal and report comments can occur either after the PID or OBR segments.

a. R = Required, O = Optional, C = Conditional.

Additional segment requirements include the following:

- Each ORM message sent can contain only one PID, and the associated sets of Order segments.
- OBR.18 and OBR.19 are used as "store and forward" fields by the Hub. The Hub extracts and stores the data sent in these fields, and verifies that the fields are blank when it passes them through.
  - The Hub matches the result to the corresponding Order message and inserts the extracted data into the result.
  - Internally, the Hub matches the result to the inbound order using the key fields of PID.02 + OBR.02 + MSH.06 in the ORU message to PID.02 + OBR.02 + MSH.04 of the ORM message.
  - If a result cannot be matched to an order using the method described above, the "store and forward" fields will be blank in the outbound result.
- The inbound order message can have five NTE internal comment segments of 60 characters each. NTE segments can follow PID and OBR segments.
- A maximum of 10 unique ICD-9 codes are permitted in an ORM message.
- A maximum of two IN1 segments are permitted an ORM message. While two are accepted, in the short-term only the first IN1 will be processed for billing; therefore the primary insurance information must be in the first IN1 segment. The Hub passes through two IN1 segments, if two are received. If only one IN1 is received, only one IN1 is passed through.

- ORC and OBR segments should be paired as follows. A maximum of 35 ORC-OBR pairs are permitted.
  - `MSH`
  - `PID`
  - `ORC`
  - `OBR|1|`
  - `ORC`
  - `OBR|1|`
  - `ORC`
  - `OBR|1|`

Newline Characters

Order HL7 messages must use the carriage return (CR) character (ASCII `0x0D`) to indicate a newline. Order 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 any given HL7 message is always defined in the MSH segment of the message, as the first character following the segment identifier (MSH.00). See the message segment descriptions for more detail. Standard HL7 delimiters are used.

Note: The standard HL7 delimiters (`|^~\&`) are not accepted as valid data in any field, except MSH.02.

Field Specifications

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

Parameter	Description
Type	For a description of the data types, see "Data Type Specifications" on page 64.
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* (NS) as defined below: • ***Required.*** If the corresponding segment is present, the field must also be present within the segment, and the Hub validates it against any stated requirements. If the field is not present, the message is rejected by the Hub. • ***Optional.*** The field is not required; the segment is accepted by the Hub whether or not this field is present. If the field is present, the Hub validates it against any stated requirements. (The contents of this field will not be reflected in the result.) • ***Conditional.*** The field may or may not be required, depending on certain conditions (stipulated in the *Comments* column of each segment table). If the stated conditions are not met, the message is rejected by the Hub. If the field is present, the Hub validates it against any stated requirements. (The contents of this field may or may not be reflected in the result.) • ***Not Supported.*** If a field is described as *Not Supported* by the Hub (the corresponding row appears grayed in the table), the content of the field is not used by the Hub, 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 by the Hub.

Data Type Specifications

The following table describes the data types that may appear in the message segments.

Note: Brackets (**[]**) indicate that the enclosed data is optional.

Data Type Category/ Data Type	Data Type Name	Notes/Format
Alphanumeric		
ST	String	Any ACSII printable characters (ASCII decimal values between 32 and 126) with the exception of the defined delimiter characters. Left justified with optional trailing spaces.
FT	Formatted text	String data with embedded formatting instructions.
Numerical		
CQ	Composite quantity with units	<quantity (NM)> ^ <units (CE)>
NM	Numeric	Any of the ASCII numeric characters with an optional leading sign (+ or -) and/or an optional decimal point.
SI	Sequence ID	A non-negative integer in the form of a NM data type.
Identifier		
ID	Coded values for HL7 tables	String data drawn from an HL7-defined table of legal values (see Appendix A of HL7 2.3).
IS	Coded values for user-defined tables	String data drawn from a site-defined table of legal values.
HD	Hierarchic designator	<namespace ID (IS)> ^ <universal ID (ST)> ^ <universal ID type (ID)> Used only as part of EI and other data types.
EI	Entity identifier	<entity identifier (ST)> ^ <namespace ID (IS)> ^ <universal ID (ST)> ^<universal ID type (ID)>
PL	Person location	<point of care (IS)> ^ <room (IS)> ^ <bed (IS)> ^ <facility (HD)> ^ <location status (IS)> ^ <person location type (IS)> ^ <building (IS)> ^<floor (IS)> ^ <location description (ST)>
PT	Processing type	<processing ID (ID)> ^ <processing mode (ID)>
Date/Time		
DT	Date	YYYY[MM[DD]]
TM	Time	HH[MM[SS[.S[S[S[S]]]]]][+/-ZZZZ]
TS	Time stamp	YYYY[MM[DD[HHMM[SS[.S[S[S[S]]]]]]]][+/ -ZZZZ]^<degree of precision>

Data Type Category/ Data Type	Data Type Name	Notes/Format
Code Values		
CE	Coded element	<identifier (ST)> ^ <text (ST)> ^ <name of coding system (ST)> ^<alternate identifier (ST)> ^ <alternate text (ST)> ^ <name of alternate coding system (ST)>
CK	Composite ID with check digit	<ID number (NM)> ^ <check digit (NM)> ^ <code identifying the check digit scheme employed (ID)> ^ <assigning authority (HD)>
CX	Extended composite ID with check digit	<ID (ST)> ^ <check digit (ST)> ^ <code identifying the check digit scheme employed (ID)> ^ <assigning authority (HD)> ^ <identifier type code (IS)> ^ <assigning facility (HD)>
XCN	Extended composite ID number and name	In Version 2.3, replaces the CN data type. <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 code (ID)> ^ <identifier check digit (ST)> ^ <code identifying the check digit scheme employed (ID)> ^ <identifier type code (IS)> ^ <assigning facility (HD)>
Generic		
CM	Composite	No new CMs are allowed after HL7 Version 2.2. Hence there are no new CMs in Version 2.3.
Demographics		
XAD	Extended address	In Version 2.3, replaces the AD data type. <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)>
XPN	Extended person name	In Version 2.3, replaces the PN data type. <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)> ^ <name type code (ID)>

Data Type Category/ Data Type	Data Type Name	Notes/Format
XON	Extended composite name and ID number for organizations	<organization name (ST)> ^ <organization name type code (IS)> ^ <ID number (NM)> ^ <check digit (NM)> ^ <code identifying the check digit scheme employed (ID)> ^ <assigning authority (HD)> ^ <identifier type code (IS)> ^ <assigning facility ID (HD)>
XTN	Extended telecommunications number	In Version 2.3, replaces the TN data type. [NNN] [(999)]999-9999 [X99999] [B99999] [C any text]^<telecommunication use code (ID)> ^ <telecommunication equipment type (ID)> ^ <email address (ST)> ^ <country code (NM)> ^ <area/city code (NM)> ^ <phone number (NM)> ^ <extension (NM)> ^ <any text (ST)>
Time Series		
TQ	Timing/quantity	For timing/quantity specifications for orders, see Chapter 4 of the HL7 Standard, Section 4.4. <quantity (CQ)> ^ <interval (*)> ^ <duration (*)> ^ <start date/time (TS)> ^ <end date/time (TS)> ^ <priority (ID)> ^ <condition (ST)> ^ <text (TX)> ^ <conjunction (ID)> ^ <order sequencing (*)>

Care360 Order Message Segment Specifications

This section provides detailed specifications for each segment of an HL7 order message. Message segments include the following:

MSH—Message Header Segment

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

Segment ID	Element Name	Type[a]	Length	Comments	Req'd[b]
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 sub-component separator. Format: ^~\& These values are recommended by HL7, and are the only values supported by the Hub.	R
MSH.03	Sending Application	EI	180	The name of the sending application. The Hub verifies that this field is populated.	R
MSH.04	Sending Facility	EI	180	The sending facility. This is the account number(s) defined for the placer. The Hub verifies that this field is populated.	R

Segment ID	Element Name	Type[a]	Length	Comments	Req'd[b]
MSH.05	Receiving Application	EI	180	The receiving application identifier. For Basic Lab Orders, the Hub verifies that this field is blank. For PSC Hold Orders, this field must be populated with `PSC`.	C
MSH.06	Receiving Facility	EI	180	The receiving facility. The three-letter ID of the facility that performs the test. The Hub verifies that this 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` The Hub verifies that this field is populated, and that the value complies with the format above.	R
MSH.08	Security	ST	40		NS
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: `ORM^O01` (order messages). The Hub verifies that the field is populated with the accepted value (`ORM^O01`).	R
MSH.10	Message Control ID	ST	20	A number or other data that uniquely identifies the message in its transmission to the lab system. If not provided, the Hub populates with a unique identifier (date/time stamp followed by a 4-digit random number).	R
MSH.11	Processing ID	PT	3	The placer system's intent for the message. Valid values include: • `P` = Production • `T` = Training • `D` = Debug (Development) The Hub verifies that the value in this field is `P`, `T`, or `D`.	R
MSH.12	Version ID	ID	8	The value for this field is `2.3`.	R
MSH.13	Sequence Number	NM	15		NS
MSH.14	Continuation Pointer	ST	180		NS

Segment ID	Element Name	Type[a]	Length	Comments	Req'd[b]
MSH.15	Accept Acknowledgment Type	ID	2	For valid values, refer to *HL7 table 0155—Accept/application acknowledgment conditions.*	NS
MSH.16	Application Acknowledgment Type	ID	2	For valid values, refer to *HL7 table 0155—Accept/application acknowledgment conditions.*	NS
MSH.17	Country Code	ID	2		NS
MSH.18	Character Set	ID	6	For valid values, refer to *HL7 table 0211—Alternate character sets.*	NS
MSH.19	Principal Language of Message	CE	60		NS

a. For a description of the HL7 data types, see "Data Type Specifications" on page 64.

b. R = Required, O = Optional, C = Conditional, NS = Not Supported.

PID—Patient Identifier Segment

The Patient Identifier (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.

Segment ID	Element Name	Type[a]	Length	Comments	Req'd[b]
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 (External ID)	CX	20	The placer's patient ID assigned to this order. If present, the Hub verifies that this field is at a maximum 20 characters wide. The Hub also verifies that no reserved characters (^~\&|) are present.	R
PID.03	Patient ID (Internal ID)	CX	20		NS
PID.04	Alternate Patient ID	CX	20		NS

Segment ID	Element Name	Type[a]	Length	Comments	Req'd[b]
PID.05	Patient Name	XPN	24	Must be no more than 24 characters wide, excluding any delimiters (for example, between last and first name). Must include at least one character for first and last name. A numeric value cannot be used as the first character of the last name. The Hub verifies that the value in this field complies with the above conditions, and that no reserved characters (~\&|) are present.	R
PID.06	Mother's Maiden Name	XPN	48		NS
PID.07	Date of Birth	TS	26	Date of birth (DOB), in `YYYYMMDD` format. The Hub verifies that the DOB is in this format.	R
PID.08	Sex	IS	1	Valid values for this field include: • `M` = Male • `F` = Female The Hub verifies that one of these values is present in this field.	R
PID.09	Patient Alias	XPN	48		NS
PID.10	Race	IS	1		NS
PID.11	Patient Address	XAD	106		NS
PID.12	County Code	IS	4		NS

Segment ID	Element Name	Type[a]	Length	Comments	Req'd[b]

PID.13	Phone Number - Home	XTN	250	PID.13 (and GT1.6) will use data type 250 XTN and be sub-delimited in pieces 6 and 7 (area code and phone number, respectively).
				The XTN data type reads as follows:
				Components:
				`[NNN] [(999)]999-9999 [X99999] [B99999] [C any text] ^ <telecommunication use code (ID)> ^ <telecommunication equipment type (ID)> ^ <e-mail address (ST)> ^ <country code (NM)> ^ <area/city code (NM)> ^ <phone number (NM)> ^ <extension (NM)> ^ <any text (ST)>`
				For backward compatibility phone numbers sent in the 10 NM format: (e.g, |3148721727|or any of the following variations for sending data in the XTN data format will also be accepted:
				`|3148727127^^^^^^^^|`
				or
				`|3148727127^^^^^314^8727127^^|`
				or
				`^^^^^314^8727127^^|`
				or
				`|3148727127|`
				The Hub verifies that the value complies with rules above.
					O

PID.14	Phone Number - Business	XTN	40		NS
PID.15	Language - Patient	CE	60		NS
PID.16	Marital Status	IS	1	For suggested values, refer to *user-defined table 0002—Marital status.*	NS
PID.17	Religion	IS	3		NS
PID.18	Patient Account Number	CX	20		NS
PID.19	SSN Number - Patient	ST	9	Must contain 9 digits. Numeric only; no space or punctuation. If present, the Hub verifies that the value complies with rules above.	O

Segment ID	Element Name	Type[a]	Length	Comments	Req'd[b]
PID.20	Driver's Lic Num - Patient	DLN	25		NS
PID.21	Mother's Identifier	CX	20		NS
PID.22	Ethnic Group	IS	3		NS
PID.23	Birth Place	ST	60		NS
PID.24	Multiple Birth Indicator	ID	2	For valid values, refer to *HL7 table 0136—Yes/no indicator.*	NS
PID.25	Birth Order	NM	2		NS
PID.26	Citizenship	IS	4		NS
PID.27	Veterans Military Status	CE	60		NS
PID.28	Nationality	CE	80		NS
PID.29	Patient Death Date & Time	TS	26		NS
PID.30	Patient Death Indicator	ID	1	For valid values, refer to *HL7 table 0136—Yes/no indicator.*	NS

a. For a description of the HL7 data types, see "Data Type Specifications" on page 64.

b. R = Required, O = Optional, C = Conditional, NS = Not Supported.

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.

Segment ID	Element Name	Type[a]	Length	Comments	Req'd[b]
PV1.00	Segment Type ID	ST	4	Must be **PV1**.	R
PV1.01	Set ID	SI	4	Will always be 1.	R
PV1.02	Patient Class	IS	1		NS
PV1.03	Assigned Patient Location	PL	80		NS
PV1.04	Admission Type	IS	2		NS
PV1.05	Preadmit Number	CX	20		NS
PV1.06	Prior Patient Location	PL	80		NS

Segment ID	Element Name	Type[a]	Length	Comments	Req'd[b]
PV1.07	Attending Doctor	XCN	60		NS
PV1.08	Referring Doctor	XCN	60		NS
PV1.09	Consulting Doctor	XCN	60		NS
PV1.10	Hospital Service	IS	3		NS
PV1.11	Temporary Location	PL	80		NS
PV1.12	Preadmit Test Indicator	IS	2		NS
PV1.13	Readmission Indicator	IS	2		NS
PV1.14	Admit Source	IS	3		NS
PV1.15	Ambulatory Status	IS	2		NS
PV1.16	VIP Indicator	IS	2		NS
PV1.17	Admitting Doctor	XCN	60		NS
PV1.18	Patient Type	IS	2		NS
PV1.19	Visit Number	CX	20		NS
PV1.20	Financial Class	FC	50		NS
PV1.21	Charge Price Indicator	IS	2		NS
PV1.22	Courtesy Code	IS	2		NS
PV1.23	Credit Rating	IS	2		NS
PV1.24	Contract Code	IS	2		NS
PV1.25	Contract Effective Date	DT	8		NS
PV1.26	Contract Amount	NM	12		NS
PV1.27	Contract Period	NM	3		NS
PV1.28	Interest Code	IS	2		NS
PV1.29	Transfer to Bad Debt Code	IS	1		NS
PV1.30	Transfer to Bad Debt Date	DT	8		NS

Segment ID	Element Name	Type[a]	Length	Comments	Req'd[b]
PV1.31	Bad Debt Agency Code	IS	10		NS
PV1.32	Bad Debt Transfer Amount	NM	12		NS
PV1.33	Bad Debt Recovery Amount	NM	12		NS
PV1.34	Delete Account Indicator	IS	1		NS
PV1.35	Delete Account Date	DT	8		NS
PV1.36	Discharge Disposition	IS	3		NS
PV1.37	Discharged to Location	CM	25		NS
PV1.38	Diet Type	IS	2		NS
PV1.39	Servicing Facility	IS	2		NS
PV1.40	Bed Status	IS	1		NS
PV1.41	Account Status	IS	2		NS
PV1.42	Pending Location	PL	80		NS
PV1.43	Prior Temporary Location	PL	80		NS
PV1.44	Admit Date/Time	TS	26		NS
PV1.45	Discharge Date/Time	TS	26		NS
PV1.46	Current Patient Balance	NM	12		NS
PV1.47	Total Charges	NM	12		NS
PV1.48	Total Adjustments	NM	12		NS
PV1.49	Total Payments	NM	12		NS
PV1.50	Alternate Visit ID	CX	20		NS
PV1.51	Visit Indicator	IS	1		NS

Segment ID	Element Name	Type[a]	Length	Comments	Req'd[b]
PV1.52	Other Healthcare Provider	XCN	60		NS

a. For a description of the HL7 data types, see "Data Type Specifications" on page 64.
b. R = Required, O = Optional, C = Conditional, NS = Not Supported.

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 to the inbound order for insurance billing. The Hub verifies that all data fields are in uppercase.

Segment ID	Element Name	Type[a]	Length	Comments	Req'd[b]
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	CD	60		NS
IN1.03	Insurance Company ID	CX	15	This is the QDI Bill mnemonic. Required only if IN1.47 = `T` (Third-Party Bill). The Hub verifies that this value is present, and passes the value through (with no validation).	C
IN1.04	Insurance Company Name	XON	25		O
IN1.05	Insurance Company Address	XAD	106	No more than 106 characters wide. Add1 30 ^ add2 30 ^ city 25 ^ state 2 ^ Zip 10 A–Z 0–9 only in these fields. Alphanumeric data only. Valid Zip formats: `NNNNN-NNNN`, `5N`, or `9N` (no hyphen). If present, the Hub verifies that the value complies with rules above.	O
IN1.06	Insurance Co. Contact Person	XPN	48		NS
IN1.07	Insurance Co Phone Number	XTN	40		NS
IN1.08	Group Number	ST	10	Characters permitted include: `A–Z` and `1–0`.	O
IN1.09	Group Name	XON	130		NS

Segment ID	Element Name	Type[a]	Length	Comments	Req'd[b]
IN1.10	Insured's Group Emp ID	CX	12		NS
IN1.11	Insured's Group Emp Name	XON	18	If present, the Hub passes the value through (with no validation).	O
IN1.12	Plan Effective Date	DT	8		NS
IN1.13	Plan Expiration Date	DT	8		NS
IN1.14	Authorization Information	CM	55		NS
IN1.15	Plan Type	IS	3		NS
IN1.16	Name Of Insured	XPN	24	Should be at most 24 characters wide including the delimiter between the last and first names. At least one character for first and last name. A numeric value cannot be used as the first character of the last name. The Hub verifies that the value complies with rules above. Required only if IN1.47 = `T` (Third-Party Bill).	C
IN1.17	Insured's Relationship To Patient	IS	2	Valid values for this field include: • `1` = Self • `2` = Spouse • `8` = Dependent The Hub verifies that this value is present. Required only if IN1.47 = `T` (Third-Party Bill).	C
IN1.18	Insured's Date Of Birth	TS	26		NS
IN1.19	Insured's Address	XAD	106	No more than 106 characters wide. Add1 30 ^ add2 30 ^ city 25 ^ state 2 ^ Zip 10 A–Z 0–9 only in these fields. Alphanumeric data only. Valid Zip formats: `NNNNN-NNNN`, `5N`, or `9N` (no hyphen). The Hub verifies that the value complies with rules above.	O
IN1.20	Assignment Of Benefits	IS	2	For suggested values, refer to *user-defined table 0135—Assignment of benefits.*	NS
IN1.21	Coordination Of Benefits	IS	2	For suggested values, refer to *user-defined table 0173—Coordination of benefits.*	NS

Segment ID	Element Name	Type[a]	Length	Comments	Req'd[b]
IN1.22	Coord Of Ben. Priority	ST	2		NS
IN1.23	Notice Of Admission Flag	ID	2	For valid values, refer to *HL7 table 0136—Yes/no indicator.*	NS
IN1.24	Notice Of Admission Date	DT	8		NS
IN1.25	Report Of Eligibility Flag	ID	2	For valid values, refer to *HL7 table 0136—Yes/no indicator.*	NS
IN1.26	Report Of Eligibility Date	DT	8		NS
IN1.27	Release Information Code	IS	2	For suggested values, refer to *user-defined table 0093—Release information code.*	NS
IN1.28	Pre-Admit Cert (PAC)	ST	15		NS
IN1.29	Verification Date/Time	TS	26		NS
IN1.30	Verification By	XCN	60		NS
IN1.31	Type Of Agreement Code	IS	2	For suggested values, refer to *user-defined table 0098—Type of agreement.*	NS
IN1.32	Billing Status	IS	2		NS
IN1.33	Lifetime Reserve Days	NM	4		NS
IN1.34	Delay Before L.R. Day	NM	4		NS
IN1.35	Company Plan Code	IS	8	Further identifies an insurance plan.	O
IN1.36	Policy Number	ST	20	Individual policy number of the insured. Required for Medicare submissions. Required only if IN1.47 = `T` (Third-Party Bill).	C
IN1.37	Policy Deductible	CP	12		NS
IN1.38	Policy Limit - Amount	CP	12		NS
IN1.39	Policy Limit - Days	NM	4		NS

Segment ID	Element Name	Type[a]	Length	Comments	Req'd[b]
IN1.40	Room Rate - Semi-Private	CP	12		NS
IN1.41	Room Rate - Private	CP	12		NS
IN1.42	Insured's Employment Status	CE	60		NS
IN1.43	Insured's Sex	IS	1	For suggested values, refer to *user-defined table 0001—Sex*.	NS
IN1.44	Insured's Employer Address	XAD	106		NS
IN1.45	Verification Status	ST	2		NS
IN1.46	Prior Insurance Plan ID	IS	8		NS
IN1.47	Coverage Type	IS	3	Rules for requirement of the IN1/GT1 segment are addressed in "Care360 Order Message Format Requirements" on page 59. Valid values include: • T = Third-party bill • P = Patient bill • C = Client bill If this segment is present, the Hub verifies that this field is populated with one of these values.	R
IN1.48	Handicap	IS	2		NS
IN1.49	Insured's ID Number	CX	12		NS

a. For a description of the HL7 data types, see "Data Type Specifications" on page 64.
b. R = Required, O = Optional, C = Conditional, NS = Not Supported.

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 to the inbound order for patient and insurance billing. The Hub verifies that all data fields are in uppercase.

Segment ID	Element Name	Type[a]	Length	Comments	Req'd[b]
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	CX	59		NS
GT1.03	Guarantor Name	XPN	24	No more than 24 characters wide, including the delimiter between the last and first names. At least one character for first and last name. A numeric value cannot be used as the first character of the last name. The Hub verifies that the value complies with rules above.	R
GT1.04	Guarantor Spouse Name	XPN	48		NS
GT1.05	Guarantor Address	XAD	97	No more than 97 characters wide. Add1 30 ^ add2 30 ^ city 25 ^ state 2 ^ Zip 10 A–Z 0–9 only in these fields. Alphanumeric data only. Valid Zip formats: `NNNNN-NNNN`, `5N`, or `9N` (no hyphen). The Hub verifies that the value complies with rules above.	R

Segment ID	Element Name	Type[a]	Length	Comments	Req'd[b]

GT1.06	Guarantor Ph Num-Home	XTN	250	GT1.6 (and PID.13) will use data type 250 XTN and be sub-delimited in pieces 6 and 7 (area code and phone number, respectively).
				The XTN data type reads as follows:
				Components:
				`[NNN] [(999)]999-9999 [X99999] [B99999] [C any text] ^ <telecommunication use code (ID)> ^ <telecommunication equipment type (ID)> ^ <e-mail address (ST)> ^ <country code (NM)> ^ <area/city code (NM)> ^ <phone number (NM)> ^ <extension (NM)> ^ <any text (ST)>`
				For backward compatibility phone numbers sent in the 10 NM format: (e.g, |3148721727|or any of the following variations for sending data in the XTN data format will also be accepted:
				`|3148727127^^^^^^^^|`
				or
				`|3148727127^^^^^314^8727127^^|`
				or
				`^^^^^314^8727127^^|`
				or
				`|3148727127|`
				The Hub verifies that the value complies with rules above.
					O

GT1.07	Guarantor Ph Num-Business	XTN	40		NS
GT1.08	Guarantor Date/Time Of Birth	TS	26	The date and time of the guarantor's birth. Format: `YYYYMMDDHHMMSS` The Hub verifies that the date/time is in this format.	O
GT1.09	Guarantor Sex	IS	1	Valid values for this field include: • `M` = Male • `F` = Female The Hub verifies that one of these values is present in this field.	O
GT1.10	Guarantor Type	IS	2		NS
GT1.11	Guarantor Relationship	IS	2		NS

Segment ID	Element Name	Type[a]	Length	Comments	Req'd[b]
GT1.12	Guarantor SSN	ST	11		NS
GT1.13	Guarantor Date - Begin	DT	8		NS
GT1.14	Guarantor Date - End	DT	8		NS
GT1.15	Guarantor Priority	NM	2		NS
GT1.16	Guarantor Employer Name	XPN	130		NS
GT1.17	Guarantor Employer Address	XAD	106		NS
GT1.18	Guarantor Employer Phone Number	XTN	40		NS
GT1.19	Guarantor Employee ID Number	CX	20		NS
GT1.20	Guarantor Employment Status	IS	2		NS
GT1.21	Guarantor Organization Name	XON	130		NS
GT1.22	Guarantor Billing Hold Flag	ID	1	For valid values, refer to *HL7 table 0136—Yes/no indicator.*	NS
GT1.23	Guarantor Credit Rating Code	CE	80		NS
GT1.24	Guarantor Death Date And Time	TS	26		NS
GT1.25	Guarantor Death Flag	ID	1	For valid values, refer to *HL7 table 0136—Yes/no indicator.*	NS
GT1.26	Guarantor Charge Adjustment Code	CE	80		NS
GT1.27	Guarantor Household Annual Income	CP	10		NS

Segment ID	Element Name	Type[a]	Length	Comments	Req'd[b]
GT1.28	Guarantor Household Size	NM	3		NS
GT1.29	Guarantor Employer ID Number	CX	20		NS
GT1.30	Guarantor Marital Status Code	IS	1	For suggested values, refer to *user-defined table 0002—Marital status*.	NS
GT1.31	Guarantor Hire Effective Date	DT	8		NS
GT1.32	Employment Stop Date	DT	8		NS
GT1.33	Living Dependency	IS	2	For suggested values, refer to *user-defined table 0223—Living dependency.*	NS
GT1.34	Ambulatory Status	IS	2	For suggested values, refer to *user-defined table 0009—Ambulatory status*.	NS
GT1.35	Citizenship	IS	4		NS
GT1.36	Primary Language	CE	60		NS
GT1.37	Living Arrangement	IS	2	For suggested values, refer to *user-defined table 0220—Living arrangement*.	NS
GT1.38	Publicity Indicator	CE	80		NS
GT1.39	Protection Indicator	ID	1	For valid values, refer to *HL7 table 0136—Yes/no indicator.*	NS
GT1.40	Student Indicator	IS	2	For suggested values, refer to *user-defined table 0231—Student status*.	NS
GT1.41	Religion	IS	3		NS
GT1.42	Mother's Maiden Name	XPN	48		NS
GT1.43	Nationality	CE	80		NS
GT1.44	Ethnic Group	IS	3		NS
GT1.45	Contact Person's Name	XPN	48		NS

Segment ID	Element Name	Type[a]	Length	Comments	Req'd[b]
GT1.46	Contact Person's Telephone Number	XTN	40		NS
GT1.47	Contact Reason	CE	80		NS
GT1.48	Contact Relationship	IS	2		NS
GT1.49	Job Title	ST	20		NS
GT1.50	Job Code/Class	JCC	20		NS
GT1.51	Guarantor Employer's Organ. Name	XON	130		NS
GT1.52	Handicap	IS	2		NS
GT1.53	Job Status	IS	2		NS
GT1.54	Guarantor Financial Class	FC	50		NS
GT1.55	Guarantor Race	IS	1		NS

a. For a description of the HL7 data types, see "Data Type Specifications" on page 64.

b. R = Required, O = Optional, C = Conditional, NS = Not Supported.

ORC—Common Order Segment

The Common Order (ORC) segment is used to transmit fields that are common to all orders (all types of services that are requested). The ORC segment is required in the ORM message.

Segment ID	Element Name	Type[a]	Length	Comments	Req'd[b]
ORC.00	Segment Type ID	ST	4	Must be **ORC**.	R
ORC.01	Order Control	ID	2	Valid value for this field is `NW` (New Order). Used for new orders with a new specimen. ORM messages with an NW control code should originate at the ordering facility.	R
ORC.02	Placer Order Number	EI	20	The placer application's order number (same as OBR.02). All OBRs in the ORM must contain the same value. The Hub verifies that this field is present. The Hub also verifies that the values for this field in all ORC segments are identical. **Note:** The Hub does not require unique order numbers. The service provider is responsible for handling any duplicate order numbers that are received.	R
ORC.03	Filler Order Number	EI	22		NS
ORC.04	Placer Group Number	EI	22		NS
ORC.05	Order Status	ID	2	For valid values, refer to *HL7 table 0038—Order status.*	NS
ORC.06	Response Flag	ID	1	For valid values, refer to *HL7 table 0121—Response flag.*	NS
ORC.07	Quantity/Timing	TQ	200		NS
ORC.08	Parent	CM	200		NS
ORC.09	Date/Time of Transaction	TS	26		NS
ORC.10	Entered By	XCN	120		NS
ORC.11 11.1 11.2	Verified By NPP ID NPP Name	XCN	250	Identifies the person who verified the accuracy of the entered request. Format: `NPP ID^NPP Name`	O

Segment ID	Element Name	Type[a]	Length	Comments	Req'd[b]
ORC.12	Ordering Provider	XCN	120	Identifies the provider who ordered the test (same as OBR.16). • Format for UPIN Only: *UPIN Number^LastName^ FirstName^Middle^^^^^*UPIN • Format for NPI Only: *NPI Number^LastName^ FirstName^Middle^^^^^*NPI • Format for UPIN and NPI: *UPIN Number^LastName^ FirstName^Middle^^^^^*UPIN~ *NPI Number^LastName^ FirstName^Middle^^^^^*NPI If present, the Hub passes the value through (with no validation). Required only if IN1.47 = T (Third-Party Bill).	C
ORC.13	Enterer's Location	PL	80		NS
ORC.14	Call Back Phone Number	XTN	40		NS
ORC.15	Order Effective Date/Time	TS	26		NS
ORC.16	Order Control Code Reason	CE	200		NS
ORC.17	Entering Organization	CE	60		NS
ORC.18	Entering Device	CE	60		NS
ORC.19	Action By	XCN	120		NS

a. For a description of the HL7 data types, see "Data Type Specifications" on page 64.

b. R = Required, O = Optional, C = Conditional, NS = Not Supported.

OBR—Observation Request Segment

One OBR segment must be transmitted for each Order Code associated with any PID segment. This segment is mandatory in ORM messages.

Segment ID	Element Name	Type[a]	Length	Comments	Req'd[b]
OBR.00	Segment Type ID	ST	4	Must be **OBR**.	R
OBR.01	Set ID	SI	4	OBR segments are paired with an ORC segment.	R
OBR.02	Placer Order Number	EI	20	The placer application's order number (same as ORC.02). All OBRs in the ORM must contain the same value. The Hub verifies that this field is present. **Note:** The Hub does not require unique order numbers. The service provider is responsible for handling any duplicate order numbers that are received.	R
OBR.03	Filler Order Number	EI	22		NS
OBR.04	Universal Service ID	CE	200	Identification code for the ordered test. One order code per OBR segment. Format: `^^^Local Order Code^ Description` **Note:** Preserve Incoming Order Data for subsequent inclusion in matching result messages.Constraints/Rules: For each unique occurrence of OBR.4, preserve that OBR.4 value and the corresponding set of OBR.18 and OBR.19 values that are received in an order message. The Hub verifies that this value is present, and that it contains data only in the 4th and 5th sub-fields. The 4th sub-field must also be unique within the ORM.	R
OBR.05	Priority (OBR.27)	ID	2		NS
OBR.06	Requested Date/time	TS	26		NS

Segment ID	Element Name	Type[a]	Length	Comments	Req'd[b]
OBR.07	Observation Date/Time	TS	26	The specimen collection date and time. This field is required on ORM messages originating at the ordering facility. Format: `YYYYMMDDHHMM` The Hub verifies that the data complies with this format, and passes the value through.	R
OBR.08	Observation End Date/Time	TS	26		NS
OBR.09	Collection Volume	CQ	20		NS
OBR.10	Collector Identifier	XCN	60		NS
OBR.11	Specimen Action Code	ID	1	The action to be taken with respect to the specimens that accompany or precede this order.	O
OBR.12	Danger Code	CE	60		NS
OBR.13	Relevant Clinical Info.	ST	300		NS
OBR.14	Specimen Received Date/Time	TS	26		NS
OBR.15	Specimen Source	CM	300	For valid values, refer to *HL7 table 0070—Source of specimen.*	NS

OBR.16	Ordering Provider	XCN	120	Identifies the provider who ordered the test (same as ORC.12).
				• Format for UPIN Only:
				`UPIN Number^LastName^ FirstName^Middle^^^^^UPIN`
				• Format for NPI Only:
				`NPI Number^LastName^ FirstName^Middle^^^^^NPI`
				• Format for UPIN and NPI:
				`UPIN Number^LastName^ FirstName^Middle^^^^^UPIN~ NPI Number^LastName^ FirstName^Middle^^^^^NPI`
				If present, the Hub passes the value through (with no validation).
				Required only if IN1.47 = `T` (Third-Party Bill).
					C

OBR.17	Order Callback Phone Number	XTN	40		NS

Segment ID	Element Name	Type[a]	Length	Comments	Req'd[b]
OBR.18	Placer field 1	ST	60	If present, the Hub stores this information and returns it (as received) with the associated results. **Notes:** • For each unique occurrence of OBR.4, the OBR.4 value is to be preserved as is the corresponding set of OBR.18 and OBR.19 values that are received in the order message. • Outgoing orders from the HUB to IMPACT are to exclude values in OBR.18 and OBR.19.	O
OBR.19	Placer field 2	ST	60	If present, the Hub stores this information and returns it (as received) with the associated results. **Notes:** • For each unique occurrence of OBR.4, the OBR.4 value is to be preserved as is the corresponding set of OBR.18 and OBR.19 values that are received in the order message. • Outgoing orders from the HUB to IMPACT are to exclude values in OBR.18 and OBR.19.	O
OBR.20	Filler Field 1	ST	60		NS
OBR.21	Filler Field 2	ST	60		NS
OBR.22	Results Rpt/Status Chng - Date/Time	TS	26		NS
OBR.23	Charge to Practice	CM	40		NS
OBR.24	Diagnostic Serv Sect ID	ID	10	For valid values, refer to *HL7 table 0074—Diagnostic service section ID.*	NS
OBR.25	Result Status	ID	1	For valid values, refer to *HL7 table 0123—Result status.*	NS
OBR.26	Parent Result	CM	400		NS
OBR.27	Quantity/Timing	TQ	200	This is OBR.27.6. Values for this field include: • `S` = Stat • `C` = Call • `R` = Routine	O
OBR.28	Result Copies To	XCN	150		NS
OBR.29	Parent	CM	150		NS

Segment ID	Element Name	Type[a]	Length	Comments	Req'd[b]
OBR.30	Transportation Mode	ID	20	For valid values, refer to *HL7 table 0124—Transportation mode.*	NS
OBR.31	Reason for Study	CE	300		NS
OBR.32	Principal Result Interpreter	CM	200		NS
OBR.33	Assistant Result Interpreter	CM	200		NS
OBR.34	Technician	CM	200		NS
OBR.35	Transcriptionist	CM	200		NS
OBR.36	Scheduled Date/Time	TS	26		NS
OBR.37	Number of Sample Containers	NM	4		NS
OBR.38	Transport Logistics of Collected Sample	CD	60		NS
OBR.39	Collector's Comment	CE	200		NS
OBR.40	Transport Arrangement Responsibility	CE	60		NS
OBR.41	Transport Arranged	ID	30	For valid values, refer to *HL7 table 0224—Transport arranged.*	NS
OBR.42	Escort Required	ID	1	For valid values, refer to *HL7 table 0225—Escort required.*	NS
OBR.43	Planned Patient Transport Comment	CE	200		NS

a. For a description of the HL7 data types, see "Data Type Specifications" on page 64.

b. R = Required, O = Optional, C = Conditional, NS = Not Supported.

OBX—Observation/Result Segment

This segment is optional. AOEs in the order are typically captured as OBX segments.

Segment ID	Element Name	Type[a]	Length	Comments	Req'd[b]
OBX.00	Segment Type ID	ST	10	Must be **OBX**.	R
OBX.01	Set ID	SI	10	Sequence number for OBX segments grouped beneath the same OBR segment.	R
OBX.02	Value Type	ID	2	Defines the structure of the observation value (OBX.05). Valid values include: • `ST` = String data • `NM` = Numeric data • `CE` = Coding elements • `TX` = Text data If this segment is present, the Hub verifies that this field is populated with one of the above values.	O
OBX.03	Observation Identifier	CE	590	Contains a value that reports the results for an AOE. Required if this segment is present in the ORM. Data layout: `^^^Local Code^ description^` If this segment is present, the Hub verifies that this field is present.	R
OBX.04	Observation Sub-ID	ST	20		NS
OBX.05	Observation Value	ID	72	Contains an answer to an AOE question.	R
OBX.06	Units	CE	60		NS
OBX.07	References Range	ST	10		NS
OBX.08	Abnormal Flags	ID	5	For valid values, refer to *HL7 table 0078—Abnormal flags.*	NS
OBX.09	Probability	NM	5		NS
OBX.10	Nature of Abnormal Test	ID	2	For valid values, refer to *HL7 table 0080—Nature of abnormal testing.*	NS
OBX.11	Observ Result Status	ID	1	For valid values, refer to *HL7 table 0085—Observation result status.*	NS
OBX.12	Date Last Obs Normal Values	TS	26		NS
OBX.13	User Defined Access Checks	ST	20		NS

Segment ID	Element Name	Type[a]	Length	Comments	Req'd[b]
OBX.14	Date/Time of the Observation	TS	26		NS
OBX.15	Producer's ID	CE	60		NS
OBX.16	Responsible Observer	XCN	80		NS
OBX.17	Observation Method	CE	60		NS

a. For a description of the HL7 data types, see "Data Type Specifications" on page 64.

b. R = Required, O = Optional, C = Conditional, NS = Not Supported.

DG1—Diagnosis Segment

The Diagnosis (DG1) segment contains patient diagnosis information.

Segment ID	Element Name	Type[a]	Length	Comments	Req'd[b]
DG1.00	Segment Type ID	ST	4	Must be **DG1**.	R
DG1.01	Set ID	SI	4	Allows identification of multiple diagnosis segments grouped beneath a single OBR segment. Usually a sequential number beginning with 1.	R
DG1.02	Diagnosis Coding Method	ID	3	Literal "ICD". The Hub verifies that this value is populated with the ICD.	R
DG1.03	Diagnosis Code	CE	60	Contains the diagnosis code and diagnosis description. This is an ICD-9 diagnostic code. No decimal places are allowed.	R
DG1.04	Diagnosis Description	ST	140	Diagnosis name and description.	O
DG1.05	Diagnosis Date/Time	TS	26		NS
DG1.06	Diagnosis Type	IS	2	For suggested values, refer to *user-defined table 0052—Diagnosis type.*	NS
DG1.07	Major Diagnostic Category	CE	60		NS
DG1.08	Diagnostic Related Group	CE	60		NS
DG1.09	DRG Approval Indicator	ID	2	For valid values, refer to *HL7 table 0136—Yes/no indicator.*	NS

Segment ID	Element Name	Type[a]	Length	Comments	Req'd[b]
DG1.10	DRG Grouper Review Code	IS	2		NS
DG1.11	Outlier Type	CE	60		NS
DG1.12	Outlier Days	NM	3		NS
DG1.13	Outlier Cost	CP	12		NS
DG1.14	GrouperVersion and Type	ST	4		NS
DG1.15	Diagnosis Priority	NM	2		NS
DG1.16	Diagnosing Clinician	XCN	60		NS
DG1.17	Diagnosis Classification	IS	3	For suggested values, refer to *user-defined table 0228—Diagnosis classification.*	NS
DG1.18	Confidential Indicator	ID	1	For valid values, refer to *HL7 table 0136—Yes/no indicator.*	NS
DG1.19	Attestation Date/Time	TS	26		NS

a. For a description of the HL7 data types, see "Data Type Specifications" on page 64.

b. R = Required, O = Optional, C = Conditional, NS = Not Supported.

NTE—Notes and Comments Segment

The Notes and Comments (NTE) segment contains notes and comments for ORM messages, and is optional.

Segment ID	Element Name	Type[a]	Length	Comments	Req'd[b]
NTE.00	Segment Type ID	ST	4	Must be **NTE**.	R
NTE.01	Set ID	SI	4	May be used to group multiple NTE segments in a message.	R
NTE.02	Source of Comment	ID	1	Valid values include: • `I` = Implies the data in NTE.03 will be considered internal comments and not returned with the results. (Limit is 5 lines of 60 characters each.) • `R` = Implies report comments and will be returned with results. (Limit is 2 lines of 60 characters each.)	R
NTE.03	Comment	ST	60	Comments must not have embedded control characters. Each new line must be defined in a unique NTE segment.	R

a. For a description of the HL7 data types, see "Data Type Specifications" on page 64.

b. R = Required, O = Optional, C = Conditional, NS = Not Supported.

Sample Care360 Order Messages

Following are several sample General Order (ORM) messages, formatted according to the "Care360 Order Message Format Requirements" on page 59 and "Care360 Order Message Segment Specifications" on page 67.

Sample One—Patient Bill

```
MSH|^~\&|CTFW|ORDR_PVDR_ACCT||ORDR_PVDR|20040714080935||ORM^O01|123456789
AaBbCcDdEe|D|2.3
PID|1|12345678912345|||Abcdef^Ghijklmnop||20040131|M|||||4323334832
NTE|1|R|Comment Comment Comment
IN1|1|||||||||||||||||||||||||||||||||||||||||||||||||P
GT1|1||TESTER^KID||1905 MAIN STREET^^Klamath Falls^OR^97601|5418824691
ORC|NW|33336|||||||||A52352^Machado^Randal
OBR|1|33336||^^^10124^CARDIO
CRP|||20040708164727|||||||||A52352^Machado^Randal||||||||||^^^^^R
```

Sample Two—Patient Bill

```
MSH|^~\&|CTFW|ORDR_PVDR_ACCT|PSC|ORDR_PVDR|20040714080935||ORM^O01|123456
789AaBbCcDdEe|D|2.3
PID|1|1234567891234567|||Abcdef^Ghijklmnopwwwwwww||20040131|M|||1905 MAIN
STREET SUITE 1234567^SUITE 30 CHARACTERS LONG TODAY^Klamathaa Falls City
Name^OR^97601-1234||4323334832||||||123456789
NTE|1|R|Comment Comment Comment
IN1|1|||||||||||||||||||||||||||||||||||||||||||||||||P
GT1|1||TESTER^KID||1905 MAIN STREET^^Klamath Falls^OR^97601|5418824691
ORC|NW|633060062520160341|||||||||A52352^Machado^Randal
OBR|1|633060062520160341||^^^10124^CARDIO
CRP|||20040708164727|||||||||A52352^Machado^Randal||||||||||^^^^^R
```

Third-Party Laboratory Results

About This Section

This section provides detailed information necessary for formatting laboratory test results to be retrieved from a third-party laboratory by Care360 Integration Services.

This section includes the following chapter(s):

- Chapter 4, “Care360 Results HL7 Specification” on page 97.

Chapter 4
Care360 Results HL7 Specification

In This Chapter:

About the Care360 Results HL7 Specification

This chapter provides detailed format specifications for laboratory results that are received by Care360 Hub Information Services from a Quest Diagnostics BU, or from a third-party laboratory. Results may be formatted according to the HL7 2.3 Specification, or the HL7 2.3.1 Specification, with any exceptions noted in this chapter.

Note: The tables shown in the "Care360 Result Message Segment Specifications"contain both the HL7 2.3 and HL7 2.3.1 Specifications. In cases where these specifications are identical, only one specification is shown. In cases where there are differences, both the HL7 2.3 and HL7 2.3.1 Specification are shown in order to highlight these differences.

Supported messages for results include:

ORU^R01—Observational Report—Unsolicited Message

This chapter includes the following sections:

- **Result message format requirements.** For information on the message format requirements, see "Care360 Result Message Format Requirements" on page 99.
- **Result message segment specifications.** Each result message received by the Hub contains a number of standard sections. For requirements on the standard segments of a result message, see "Care360 Result Message Segment Specifications" on page 103.
- **Sample Result messages.** For samples of the various result messages, see "Sample Care360 Result Messages" on page 120.
- **Receiving third-party results files.** For information about transferring results data between the Hub and a third-party laboratory, see "Receiving Third-Party Laboratory Results Files" on page 123.

Care360 Result Message Format Requirements

In addition to the field-level validation detailed in "Care360 Result Message Segment Specifications", each Observational Report—Unsolicited (ORU) message is validated by the Hub to ensure compliance with rules outlined in this section.

Note: For a detailed specification of lab orders that are sent to Care360 Hub Information Services for processing, see Chapter 3, "Care360 Order HL7 Specification" on page 57.

Message Segment Hierarchy

ORU messages must follow the message segment hierarchy, as specified below:

```
MSH                     Message Header
    PID                 Patient Identification
        {[NTE]}         Notes and Comments
         ORC            Common Order
         {
          OBR           Observation Request
             {[
              OBX       Observation Result
              {[NTE]}   Notes and Comments
             ]}
         }
```

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

Newline Characters

Result HL7 messages must use the carriage return (CR) character (ASCII `0x0D`) to indicate a newline. Result 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 any given HL7 message is always defined in the MSH segment of the message, as the first character following the segment identifier (MSH.00). See the message segment descriptions 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	For a description of the data types, see "Data Type Specifications" on page 100.
Length	The maximum allowed length for the field.

Parameter	Description
Required	The fields within each segment are classified based on their support status of *Always* (A), *Conditional* (C), *Never* (N), or *Pass Through* (PT) as defined below: • ***Always.*** If the corresponding segment is present, the field will also be present within the segment. • ***Conditional.*** The field may or may not be present, depending on certain conditions (stipulated in the *Comments* column of each segment table). If the field is present, the Hub validates it against any stated requirements. • ***Pass Through.*** The information in the field is passed through from the original inbound order (ORM) message. • ***Never.*** The field is not supported in result (ORU) messages. If a field is described as *Never* by the Hub (the corresponding row appears grayed in the table), the field must not be present within the segment. If the field is present, the message is rejected by the Hub.

Data Type Specifications

The following table describes the data types that may appear in the message segments.

Note: Brackets (`[]`) indicate that the enclosed data is optional.

Data Type/ Category	Data Type Name	Notes/Format
Alphanumeric		
ST	String	Any ACSII printable characters (ASCII decimal values between 32 and 126) with the exception of the defined delimiter characters. Left justified with optional trailing spaces.
FT	Formatted text	String data with embedded formatting instructions.
Numerical		
CQ	Composite quantity with units	`<quantity (NM)> ^ <units (CE)>`
NM	Numeric	Any of the ASCII numeric characters with an optional leading sign (+ or -) and/or an optional decimal point.
SI	Sequence ID	A non-negative integer in the form of a NM data type.
Identifier		
ID	Coded values for HL7 tables	String data drawn from an HL7-defined table of legal values (see Appendix A of HL7 2.3).
IS	Coded values for user-defined tables	String data drawn from a site-defined table of legal values.
HD	Hierarchic designator	`<namespace ID (IS)> ^ <universal ID (ST)> ^ <universal ID type (ID)>` Used only as part of EI and other data types.

Data Type/ Category	Data Type Name	Notes/Format
EI	Entity identifier	<entity identifier (ST)> ^ <namespace ID (IS)> ^ <universal ID (ST)> ^<universal ID type (ID)>
PL	Person location	<point of care (IS)> ^ <room (IS)> ^ <bed (IS)> ^ <facility (HD)> ^ <location status (IS)> ^ <person location type (IS)> ^ <building (IS)> ^<floor (IS)> ^ <location description (ST)>
PT	Processing type	<processing ID (ID)> ^ <processing mode (ID)>
Date/Time		
DT	Date	YYYY[MM[DD]]
TM	Time	HH[MM[SS[.S[S[S[S]]]]]][+/-ZZZZ]
TS	Time stamp	YYYY[MM[DD[HHMM[SS[.S[S[S[S]]]]]]]][+/ -ZZZZ]^<degree of precision>
Code Values		
CE	Coded element	<identifier (ST)> ^ <text (ST)> ^ <name of coding system (ST)> ^<alternate identifier (ST)> ^ <alternate text (ST)> ^ <name of alternate coding system (ST)>
CK	Composite ID with check digit	<ID number (NM)> ^ <check digit (NM)> ^ <code identifying the check digit scheme employed (ID)> ^ <assigning authority (HD)>
CX	Extended composite ID with check digit	<ID (ST)> ^ <check digit (ST)> ^ <code identifying the check digit scheme employed (ID)> ^ <assigning authority (HD)> ^ <identifier type code (IS)> ^ <assigning facility (HD)>
XCN	Extended composite ID number and name	In Version 2.3, replaces the CN data type. <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 code (ID)> ^ <identifier check digit (ST)> ^ <code identifying the check digit scheme employed (ID)> ^ <identifier type code (IS)> ^ <assigning facility (HD)>
Generic		
CM	Composite	No new CMs are allowed after HL7 Version 2.2. Hence there are no new CMs in Version 2.3.

Data Type/ Category	Data Type Name	Notes/Format
Demographics		
XAD	Extended address	In Version 2.3, replaces the AD data type. <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)>
XPN	Extended person name	In Version 2.3, replaces the PN data type. <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)> ^ <name type code (ID)>
XON	Extended composite name and ID number for organizations	<organization name (ST)> ^ <organization name type code (IS)> ^ <ID number (NM)> ^ <check digit (NM)> ^ <code identifying the check digit scheme employed (ID)> ^ <assigning authority (HD)> ^ <identifier type code (IS)> ^ <assigning facility ID (HD)>
XTN	Extended telecommunications number	In Version 2.3, replaces the TN data type. [NNN] [(999)]999-9999 [X99999] [B99999] [C any text]^<telecommunication use code (ID)> ^ <telecommunication equipment type (ID)> ^ <email address (ST)> ^ <country code (NM)> ^ <area/city code (NM)> ^ <phone number (NM)> ^ <extension (NM)> ^ <any text (ST)>
Time Series		
TQ	Timing/quantity	For timing/quantity specifications for orders, see Chapter 4 of the HL7 Standard, Section 4.4. <quantity (CQ)> ^ <interval (*)> ^ <duration (*)> ^ <start date/time (TS)> ^ <end date/time (TS)> ^ <priority (ID)> ^ <condition (ST)> ^ <text (TX)> ^ <conjunction (ID)> ^ <order sequencing (*)>

Care360 Result Message Segment Specifications

This section provides detailed specifications for each segment of an HL7 result message. Message segments include the following:

Note: The tables shown below contain both the HL7 2.3 and HL7 2.3.1 Specifications. In cases where these specifications are identical, only one specification is shown. In cases where there are differences, both the HL7 2.3 and HL7 2.3.1 Specification are shown in order to highlight these differences.

MSH—Message Header Segment

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

Segment ID	Element Name	Type[a]	Length	Comments	Supported[b]
MSH.00	Segment Type ID	ST	4	Must be **MSH**.	A
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 (|).	A
MSH.02	Encoding Characters	ST	4	Four characters that are used in the following order: component separator, repetition separator, escape character, and sub-component separator. Format: `^~\&` These values are recommended by HL7, and are the only values supported by the Hub.	A
MSH.03	Sending Application	EI	180	The outbound result feed. This field is populated with `LAB`. **Note:** While HL7 allows for a length of 180, this is currently populated only with `LAB`.	A

Segment ID	Element Name	Type[a]	Length	Comments	Supported[b]
MSH.04	Sending Facility	EI	180	The performing facility. The three-letter ID of the facility that performed the test. **Note:** While HL7 allows for a length of 180, this is currently populated only with the three-letter ID.	A
MSH.05	Receiving Application	HD	180		N
MSH.06	Receiving Facility	EI	180	The receiving facility. The account number defined for the placer (same as MSH.04 in the ORM).	A
MSH.07	Date/Time of Message	TS	14	The date and time that the sending system created the message. Format: `YYYYMMDDHHMMSS`	A
MSH.08	Security	ST	40		N
MSH.09	Message Type	CM	7	The type of message being transmitted, and the event leading to the creation of the message. Outbound value for this field: `ORU^R01` (results messages).	A
MSH.10	Message Control ID	ST	20	Populated by the Sending Facility with a unique message identifier. The Hub checks for the presence of this segment, but does perform any validation on the value.	A
MSH.11	Processing ID	PT	3	The placer system's intent for the message. Valid values include: • `P` = Production • `T` = Training • `D` = Debug (Development) Live messages are populated with `P`.	A
MSH.12	Version ID	ID	8	The value for this field is `2.3`.	A
MSH.13	Sequence Number	NM	15		N
MSH.14	Continuation Pointer	ST	180		N

Segment ID	Element Name	Type[a]	Length	Comments	Supported[b]
MSH.15	Accept Acknowledgment Type	ID	2		N
MSH.16	Application Acknowledgment Type	ID	2		N
MSH.17	Country Code	ID	2		N
MSH.18	Character Set	ID	6		N
MSH.19	Principal Language of Message	CE	60		N

a. For a description of the HL7 data types, see "Data Type Specifications" on page 100.

b. A = Always, C = Conditional, PT = Pass Through, N = Never.

PID—Patient Identifier Segment

The Patient Identifier (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.

Segment ID	Element Name	Type[a]	Length	Comments	Supported[b]
PID.00	Segment Type ID	ST	4	Must be **PID**.	A
PID.01	Set ID	SI	4	Allows identification of multiple PID segments within a message. Usually a sequential number beginning with 1.	C
PID.02	Patient ID (External ID)	CX	20	The same value that was included in the inbound order. If data is available in the inbound order message, the same data is passed through to the result message.	C
PID.03	Patient ID (Internal ID)	CX	16	The unique identifier (for example, accession number) assigned by the Sending Facility for this request.	A
PID.04	Alternate Patient ID	CX	20	The Lab reference number. Same as ORC.02 and OBR.02.	PT
PID.05	Patient Name	XPN	24	Must be no more than 24 characters wide, including the delimiter between the last and first names. Anything above 24 characters is truncated at the LIS.	A

Segment ID	Element Name	Type[a]	Length	Comments	Supported[b]
PID.06	Mother's Maiden Name	XPN	48		N
PID.07	Date of Birth	TS	26	Date of birth (DOB), in `YYYYMMDD` format. Conditional based on availability of information (may return age, rather than DOB).	C
PID.08	Sex	IS	1	Valid values for this field include: • `M` = Male • `F` = Female	A
PID.09	Patient Alias	XPN	48		N
PID.10	Race	IS	1		N
PID.11	Patient Address	XAD	106		N
PID.12	County Code	IS	4		N
PID.13	Phone Number - Home	XTN	40		N
PID.14	Phone Number - Business	XTN	40		N
PID.15	Language - Patient	CE	60		N
PID.16	Marital Status	IS	1		N
PID.17	Religion	IS	3		N
PID.18	Patient Account Number	CX	20	The requisition number, generated by the LIS. Conditional based on where the order was generated.	C
PID.19	SSN Number - Patient	ST	9	Numeric only; no space or punctuation. If the inbound order contains this value, this field is populated with the same value.	C
PID.20	Driver's Lic Num - Patient	DLN	25		N
PID.21	Mother's Identifier	CX	20		N
PID.22	Ethnic Group	IS	3		N
PID.23	Birth Place	ST	60		N
PID.24	Multiple Birth Indicator	ID	2		N

Segment ID	Element Name	Type[a]	Length	Comments	Supported[b]
PID.25	Birth Order	NM	2		N
PID.26	Citizenship	IS	4		N
PID.27	Veterans Military Status	CE	60		N
PID.28	Nationality	CE	80		N
PID.29	Patient Death Date & Time	TS	26		N
PID.30	Patient Death Indicator	ID	1		N

a. For a description of the HL7 data types, see "Data Type Specifications" on page 100.

b. A = Always, C = Conditional, PT = Pass Through, N = Never.

ORC—Common Order Segment

The Common Order (ORC) segment is used to transmit fields that are common to all orders (all types of services that are requested). The ORC segment is required in the ORM message.

Segment ID	Element Name	Type[a]	Length	Comments	Supported[b]
ORC.00	Segment Type ID	ST	4	Must be **ORC**.	A
ORC.01	Order Control	ID	2	Valid value for this field is `RE` (Results).	A
ORC.02	Placer Order Number	EI	20	Always contains the placer application's order number. Should be the same as OBR.02. This value is passed through from the inbound order to the LIS to the result.	PT
ORC.03	Filler Order Number	EI	22	The order number associated with the filler's application. The same as OBR.03. The lab accession number, populated by the LIS after receipt of the order.	A
ORC.04	Placer Group Number	EI	22		N
ORC.05	Order Status	ID	2	Indicates whether the result is partial or final. Valid values for this field include: • `CM` = Order complete • `IP` = Order incomplete, or contains pending items	A
ORC.06	Response Flag	ID	1		N

Segment ID	Element Name	Type[a]	Length	Comments	Supported[b]
ORC.07	Quantity/Timing	TQ	200		N
ORC.08	Parent	CM	200		N
ORC.09	Date/Time of Transaction	TS	26		N
ORC.10	Entered By	XCN	120		N
ORC.11	Verify By	XCN	120		N

Segment ID	Element Name	Type[a]	Length	Comments	Supported[b]

ORC 12	Ordering Provider	XCN	120	Identifies the provider that ordered the test. If present in the inbound order, the result echoes this value.
				Version 2.3:
				• Format for UPIN Only:
				UPIN Number^LastName^ FirstName^Middle^^^^^ UPIN
				• Format for NPI Only:
				NPI Number^LastName^ FirstName^Middle^^^^^ NPI
				• Format for UPIN and NPI:
				UPIN Number^LastName^ FirstName^Middle^^^^^ UPIN-NPINumber^ LastName^Middle ^^^^^NPI
				Version 2.3.1:
				Literal UPIN or NPI moved from subfield 9 to subfield 13.
				Example: 2.3:
				`ORC|RE|0001|SL123456A|| CM|||||||P12203^BOWKER^ DAWN^^^^^^UPIN||||||||`
				Example: 2.3.1:
				`ORC|RE|0001|SL123456A|| CM|||||||P12203^BOWKER^ DAWN^^^^^^^^^^UPIN||||| |||`
				If the *Send Provider Identifier* option for a Hub account is set to either *UPIN* or *NPI*, the Hub removes the opposing identifier (if present). For example, if *UPIN* is selected, the Hub will remove the *NPI* if it is returned.
				If the option is set to *Both*, then the Hub passes it through with no modification.
					C

ORC.13	Enterer's Location	PL	80		N
ORC.14	Call Back Phone Number	XTN	40		N
ORC.15	Order Effective Date/Time	TS	26		N

Segment ID	Element Name	Type[a]	Length	Comments	Supported[b]
ORC.16	Order Control Code Reason	CE	200	Version 2.3.1 **only**: ORC.16 valid data for a reprinted report.: `Id^text^assigning authority^alterId^text^ 'null' when original report R^REPRINT`	N
ORC.17	Entering Organization	CE	60		N
ORC.18	Entering Device	CE	60		N
ORC.19	Action By	XCN	120		N

a. For a description of the HL7 data types, see "Data Type Specifications" on page 100.

b. A = Always, C = Conditional, PT = Pass Through, N = Never.

OBR—Observation Request Segment

One OBR segment must be transmitted for each Order Code associated with any PID segment. This segment is mandatory in ORU messages.

Segment ID	Element Name	Type[a]	Length	Comments	Supported[b]
OBR.00	Segment Type ID	ST	4	Must be **OBR**.	A
OBR.01	Set ID	SI	4	OBR segments grouped under a PID are numbered sequentially beginning with `1`.	A
OBR.02	Placer Order Number	EI	22	The placer application's order number. Same as ORM. If different values are present in the ORM in ORC.02 and OBR.02, then all values are rolled into a single value.	PT
OBR.03	Filler Order Number	EI	22	The order number associated with the filler's application. Same as ORC.03.	A

Segment ID	Element Name	Type[a]	Length	Comments	Supported[b]

OBR.04	Universal Service ID	CE	200	Identification code for the ordered test. One order code per OBR segment.
				Version 2.3:
				Format:
				`Local Order Code^ Description ^^Local Order Code^ Description`
				Version 2.3.1:
				OBR.4.1 subpart will now include the order code without a suffix. Suffix codes will be retained (if sent) in subpart: OBR 4.4.
				Example:
				`OBR.4 |7600^LIPID PROFILE^^7600SB=^LIPID PANEL|`
				Note: Content other than that noted might appear in these fields if NMS Mapping has been imposed.
				Some lab systems add a suffix to the lab order code in the result messages; for example: `10165SB=`, where `SB=` is added by the lab system.
				Order code will always be present, but description may not be included in some cases.
					A

OBR.05	Priority (OBR.27)	ID	2		N
OBR.06	Requested Date/time	TS	26		N
OBR.07	Observation Date/Time	TS	26	The specimen collection date and time. If present in the inbound order, the result echoes this value. Format: `YYYYMMDDHHMMSS` Seconds are always `00`.	PT
OBR.08	Observation End Date/Time	TS	26		N
OBR.09	Collection Volume	CQ	20		N
OBR.10	Collector Identifier	XCN	60		N

Segment ID	Element Name	Type[a]	Length	Comments	Supported[b]
OBR 11	Specimen Action Code	ID	1	Version 2.3.1 **only**: Typical values are G, A or null: • G = test was reflexed • A = add-on	O
OBR.12	Danger Code	CE	60		N
OBR.13	Relevant Clinical Info.	ST	300		N
OBR.14	Specimen Received Date/Time	TS	26	For observations requiring a specimen, this is the actual login time at the diagnostic service. This field must contain a value when the order is accompanied by a specimen, or when the observation requires a specimen and the message is a report.	R
OBR.15	Specimen Source	CM	300		N

Segment ID	Element Name	Type[a]	Length	Comments	Supported[b]

OBR.16	Ordering Provider	XCN	120	Identifies the provider that ordered the test. If present in the inbound order, the result echoes this value.
				Version 2.3:
				• Format for UPIN Only:
				UPIN Number^LastName^FirstName^Middle^^^^^UPIN
				• Format for NPI Only:
				NPI Number^LastName^FirstName^Middle^^^^^NPI
				• Format for UPIN and NPI:
				UPIN Number^LastName^FirstName^Middle^^^^^UPIN-NPINumber^LastName^Middle^^^^^NPI
				Version 2.3.1:
				Literal UPIN or NPI moved from subfield 9 to subfield 13.
				Example: 2.3:
				`ORC|RE|0001|SL123456A||CM|||||||P12203^BOWKER^DAWN^^^^^^UPIN||||||||`
				Example: 2.3.1:
				`ORC|RE|0001|SL123456A||CM|||||||P12203^BOWKER^DAWN^^^^^^^^^^UPIN||||||||`
				If the *Send Provider Identifier* option for a Hub account is set to either *UPIN* or *NPI*, the Hub removes the opposing identifier (if present). For example, if *UPIN* is selected, the Hub will remove the *NPI* if it is returned.
				If the option is set to *Both*, then the Hub passes it through with no modification.
					C

OBR.17	Order Callback Phone Number	XTN	40		N
OBR.18	Placer field 1	ST	60	Used as a "store and forward" field. Not supported for results-only interfaces.	PT
OBR.19	Placer field 2	ST	60	Used as a "store and forward" field. Not supported for results-only interfaces.	PT

Segment ID	Element Name	Type[a]	Length	Comments	Supported[b]

OBR.20	Filler Field 1	ST	60	The component code, for profiles only. Includes the component order code in sub-field 4, and the component order name in sub-field 5.
				Version 2.3:
				Format:
				`Component Code(without Suffix)^Description^^ Component Code(with Suffix (if sent))^Description`
				Version 2.3.1:
				Some lab systems add a suffix to the component code in the result message; for example: 10165SB=, where SB= is added by the lab system.
				Example:
				`OBR.20 |896^TRIGLICERIDES^^896SB=^TRIGLYCERIDES|`
				Note: Content other than that noted might appear in these fields if NMS Mapping has been imposed.
					C

OBR.21	Filler Field 2	ST	200	Site ID as defined in the database. Format: `SiteID^Lab Name^Lab Address^City^State^Zip` **Note:** Sub-field 1 is the same identifier found in OBX.15, sub-field 1.	A
OBR.22	Results Rpt/Status Chng - Date/Time	TS	26	The date and time that the observation was reported. Communicates when the result file was created in the lab system. Format: `YYYYMMDDHHMMSS` Seconds are always `00`.	A
OBR.23	Charge to Practice	CM	40		N
OBR.24	Diagnostic Serv Sect ID	ID	10	Version 2.3.1 **only**: Possible values include, but are not limited to: MC, MS, AP and the AL sequences (e.g., AL1A).	O

Segment ID	Element Name	Type[a]	Length	Comments	Supported[b]
OBR.25	Result Status	ID	1	Valid values for this field include: Version 2.3: • C = Correction to results • F = Final results • P = Preliminary results • X = Test canceled Typical values for this field include: Version 2.3.1: • P = Preliminary results • I = Pending results Other data supported: • C = Correction to results • F = Final results • X = Test canceled Data also passed in OBX.11 **Note:** A status of X indicates that all observations for the test identified have been canceled.	A
OBR.26	Parent Result	CM	400	Version 2.3.1 **only**: Contains order code that caused reflex test to be performed.	O
OBR.27	Quantity/Timing	TQ	200		N
OBR.28	Result Copies To	XCN	150		N
OBR.29	Parent	CM	150		N
OBR.30	Transportation Mode	ID	20		N
OBR.31	Reason for Study	CE	300		N
OBR.32	Principal Result Interpreter	CM	200		N
OBR.33	Assistant Result Interpreter	CM	200		N
OBR.34	Technician	CM	200		N
OBR.35	Transcriptionist	CM	200		N
OBR.36	Scheduled Date/Time	TS	26		N
OBR.37	Number of Sample Containers	NM	4		N

Segment ID	Element Name	Type[a]	Length	Comments	Supported[b]
OBR.38	Transport Logistics of Collected Sample	CE	60		N
OBR.39	Collector's Comment	CE	200		N
OBR.40	Transport Arrangement Responsibility	CE	60		N
OBR.41	Transport Arranged	ID	30		N
OBR.42	Escort Required	ID	1		N
OBR.43	Planned Patient Transport Comment	CE	200		N

a. For a description of the HL7 data types, see "Data Type Specifications" on page 100.
b. A = Always, C = Conditional, PT = Pass Through, N = Never.

OBX—Observation/Result Segment

This segment is optional. AOEs in the order are typically captured as OBX segments.

Segment ID	Element Name	Type[a]	Length	Comments	Supported[b]
OBX.00	Segment Type ID	ST	10	Must be **OBX**.	A
OBX.01	Set ID	SI	10	Sequence number for OBX segments grouped beneath the same OBR segment.	A
OBX.02	Value Type	ID	2	Defines the structure of the observation value (OBX.05). Valid values include: • `ST` = String data • `NM` = Numeric data • `CE` = Coding element • `TX` = Text data	A

Segment ID	Element Name	Type [a]	Length	Comments	Supported [b]
OBX.03	Observation Identifier	CE	590	Contains the analyte number and analyte name. Data layout: `LOINC Code^Description ^Coding System^ Local Code^Description ^Coding System` The Local Code (03.4) must always be present, but all other sub-fields are optional. If the *Send LOINC Data* option is selected for a Hub account, or if it is *not* selected and 03.1 = 03.4, the Hub passes all sub-fields through. If it is *not* selected and 03.1 ≠ 03.4, the Hub performs the following transformations: • Sets 03.1 to value of 03.4 • Sets 03.2 to value of 03.5 • Sets 03.3 to value of NULL (The Hub passes 03.4, 03.5, and 03.6 through unchanged.)	A
03.1	LOINC Code				O
03.2	LOINC Description				O
03.3	Coding System Name				O
03.4	Local Code				A
03.5	Local Description				O
03.6	Coding System Name				O
OBX.04	Observation Sub-ID	ST	20		N
OBX.05	Observation Value	ID	72	This field either contains the result, or the field is blank and accompanying NT segments contain the result.	A
OBX.06	Units	CE	15	Units of measure in which the result is reported.	C
OBX.07	References Range	ST	24	The range in which a reported result would be considered as normal for the age and sex of the patient. May be expressed as a numeric value, such as: • Range 3.5–4.5 • Lower Limit > 10 • Upper Limit < 15 May also be expressed as an alpha value, such as: • Negative • Non-reactive	C

Segment ID	Element Name	Type [a]	Length	Comments	Supported [b]
OBX.08	Abnormal Flags	ID	5	Contains the normalcy status of the result being reported. Valid values include: • L = Below low normal • H = Above high normal • A = Alpha abnormal • N = Normal • Blank = No comment	C
OBX.09	Probability	NM	5		N
OBX.10	Nature of Abnormal Test	ID	2		N
OBX.11	Observ Result Status	ID	1	Valid values include: Version 2.3: • F = Final • P = Preliminary • C = Correction to a previously reported final result • X = Result cannot be obtained Typical values for this field include: Version 2.3.1: • P = Preliminary results • I = Pending results Other data supported: • C = Correction to results • F = Final results • X = Test canceled Data also passed in OBR.25	A
OBX.12	Date Last Obs Normal Values	TS	26		N
OBX.13	User Defined Access Checks	ST	20		N
OBX.14	Date/Time of the Observation	TS	26	The date and time that the observation was reported. Format: YYYYMMDDHHMMSS Seconds are always 00.	C

Segment ID	Element Name	Type [a]	Length	Comments	Supported [b]
OBX.15	Producer's ID	CE	60	The unique identifier of the responsible filler. Version 2.3: Format: `AT^^L` Version 2.3.1: Format: AT Only sub-piece one will be passed. **Note:** This is the same identifier found in OBR.21, sub-field 1.	C
OBX.16	Responsible Observer	XCN	80		N
OBX.17	Observation Method	CE	60		N

a. For a description of the HL7 data types, see "Data Type Specifications" on page 100.
b. A = Always, C = Conditional, PT = Pass Through, N = Never.

NTE—Notes and Comments Segment

The Notes and Comments (NTE) segment contains notes and comments for ORU messages, and is optional.

Segment ID	Element Name	Type [a]	Length	Comments	Supported [b]
NTE.00	Segment Type ID	ST	4	Must be **NTE**.	A
NTE.01	Set ID	SI	4	May be used to group multiple NTE segments in a message.	C
NTE.02	Source of Comment	ID	2	This field is conditional.	C
NTE.03	Comment	ST	72	Each new line is sent in a new NTE segment. Blank lines and leading spaces are retained for correct data representation.	A

a. For a description of the HL7 data types, see "Data Type Specifications" on page 100.
b. A = Always, C = Conditional, PT = Pass Through, N = Never.

Sample Care360 Result Messages

Following are several sample Observational Report—Unsolicited (ORU) messages, formatted according to the "Care360 Result Message Format Requirements" on page 99 and "Care360 Result Message Segment Specifications" on page 103.

Sample 1—Result Message

```
MSH|^~\&|LAB|DAL||HUBARTEST|20030802230021||ORU^R01|20040908144133784500|
P|2.3|||||||
PID|1|808|WD376535M|9646179|DOE^JANIS||19510924|F||||||||||555667777||||
||||||||
NTE|1|TX|THINPREP|
ORC|RE|9646179|WD376535M||CM|||||||C91458^Novak^James|||||||
OBR|1|9646179|WD376535M|35455YUIP=^CYTOLOGY, THINPREP
PAP^^35455YUIP=^CYTOLOGY, THINPREP
PAP|||20030730101400|||||||20030730105500||JAP^^^|||||UIP^UNILAB
INSTITUTE OF PATHOLOGY^18700 OXNARD
STREET^TARZANA^CA^91356|20030731192600|||F|||||||||||||||||||
OBX|1|TX|60000000^CYTOPATHOLOGY NUMBER:^^60000000^CYTOPATHOLOGY
NUMBER:^|||||||||F|||20030731192600|UIP^^L|||
NTE|1||ZP03030749   |
OBX|2|ST|60000100^SOURCE:^^60000100^SOURCE:^||VAGINAL||||||F|||2003073119
2600|UIP^^L|||
OBX|3|TX|60000200^SPECIMEN ADEQUACY:^^60000200^SPECIMEN
ADEQUACY:^|||||||||F|||20030731192600|UIP^^L|||
NTE|1||SATISFACTORY FOR EVALUATION,|
NTE|2||ENDOCERVICAL/TRANSFORMATION ZONE|
NTE|3||COMPONENT ABSENT.|
NTE|4||  |
OBX|4|TX|60000300^GENERAL CATEGORY:^^60000300^GENERAL
CATEGORY:^|||||||||F|||20030731192600|UIP^^L|||
NTE|1||NEGATIVE FOR INTRAEPITHELIAL LESION|
NTE|2||OR MALIGNANCY.|
OBX|5|TX|60000400^NARRATIVE DESCRIPTION:^^60000400^NARRATIVE
DESCRIPTION:^|||||||||F|||20030731192600|UIP^^L|||
NTE|1||NEGATIVE FOR INTRAEPITHELIAL LESION|
NTE|2||OR MALIGNANCY.|
OBX|6|ST|60000500^ADDITIONAL FINDINGS:^^60000500^ADDITIONAL
FINDINGS:^||DNR||||||X|||20030731192600|UIP^^L|||
OBX|7|ST|60001100^COMMENTS:^^60001100^COMMENTS:^||DNR||||||X|||2003073119
2600|UIP^^L|||
OBX|8|ST|60001200^RECOMMENDATIONS:^^60001200^RECOMMENDATIONS:^||DNR||||||
X|||20030731192600|UIP^^L|||
OBX|9|ST|60001300^CYTOTECHNOLOGIST:^^60001300^CYTOTECHNOLOGIST:^||CTUAYY
||||||F|||20030731192600|UIP^^L|||
OBX|10|ST|60001400^REV CYTOTECHNOLOGIST:^^60001400^REV
CYTOTECHNOLOGIST:^||DNR||||||X|||20030731192600|UIP^^L|||
OBX|11|ST|60001500^PATHOLOGIST:^^60001500^PATHOLOGIST:^||DNR||||||X|||200
30731192600|UIP^^L|||
OBX|12|ST|60001600^PERFORMING SITE:^^60001600^PERFORMING
SITE:^||DNR||||||X|||20030731192600|UIP^^L|||
OBX|13|TX|10000043^ ^^10000043^ ^|||||||||F|||20030731192600|UIP^^L|||
NTE|1||GYNECOLOGICAL CYTOLOGY IS A SCREENING PROCEDURE |
NTE|2||SUBJECT TO BOTH FALSE NEGATIVE AND FALSE POSITIVE |
NTE|3||RESULTS. IT IS MOST RELIABLE WHEN A SATISFACTORY |
NTE|4||SAMPLE IS OBTAINED ON A REGULAR REPETITIVE BASIS.|
```

```
NTE|5||RESULTS MUST BE INTERPRETED IN THE CONTEXT OF|
NTE|6||HISTORIC AND CURRENT CLINICAL INFORMATION.|
```

Sample 2—Result Message

```
MSH|^~\&|LAB|TMP||98015|20030603151327||ORU^R01|20030603692073360000|P|2.
3|||||||
PID|1||TP362228T||TEST^JACK|||M|||||||||||||||||||||
ORC|RE|3812197|TP362228T||CM|||||||C91458^Doe^James|||||||
OBR|1|3812197|TP362228T|10165SB=^BASIC METABOLIC PANEL^^10165SB=^BASIC
METABOLIC PANEL|||||||||20030523105800||^^^|||||TP^QUEST DIAGNOSTICS-
TAMPA^4225 E. FOWLER
AVE^TAMPA^FL^33617|20030523110900|||F|||||||||||||||||
OBX|1|NM|25000000^GLUCOSE^^25000000^GLUCOSE^||105|MG/DL|65-
109|N|||F|||20030523110900|TP^^L|||
NTE|1||            FASTING REFERENCE INTERVAL|
OBX|2|NM|25000100^UREA NITROGEN (BUN)^^25000100^UREA NITROGEN
(BUN)^||15|MG/DL|7-25|N|||F|||20030523110900|TP^^L|||
OBX|3|NM|25000200^CREATININE^^25000200^CREATININE^||1.6|MG/DL|0.5-
1.4|H|||F|||20030523110900|TP^^L|||
OBX|4|NM|25000300^BUN/CREATININE RATIO^^25000300^BUN/CREATININE
RATIO^||9|(CALC)|6-25|N|||F|||20030523110900|TP^^L|||
OBX|5|NM|25000400^SODIUM^^25000400^SODIUM^||150|MMOL/L|135-
146|H|||F|||20030523110900|TP^^L|||
OBX|6|NM|25000500^POTASSIUM^^25000500^POTASSIUM^||5.1|MMOL/L|3.5-
5.3|N|||F|||20030523110900|TP^^L|||
OBX|7|NM|25000600^CHLORIDE^^25000600^CHLORIDE^||102|MMOL/L|98-
110|N|||F|||20030523110900|TP^^L|||
OBX|8|NM|25000700^CARBON DIOXIDE^^25000700^CARBON DIOXIDE^||24|MMOL/L|21-
33|N|||F|||20030523110900|TP^^L|||
OBX|9|NM|25001000^CALCIUM^^25001000^CALCIUM^||9.8|MG/DL|8.5-
10.4|N|||F|||20030523110900|TP^^L|||
OBR|2|3812197|TP362228T|8847SB=^PROTHROMBIN TIME WITH
INR^^8847SB=^PROTHROMBIN TIME WITH
INR|||||||||20030523105800||^^^|||||TP^QUEST DIAGNOSTICS-TAMPA^4225 E.
FOWLER AVE^TAMPA^FL^33617|20030523110900|||F|||||||||||||||||
OBX|1|NM|30040200^INTERNATIONAL NORMALIZED RATIO
(INR)^^30040200^INTERNATIONAL NORMALIZED RATIO
(INR)^||1.5|||N|||F|||20030523110900|TP^^L|||
NTE|1||          INR REFERENCE INTERVAL APPLIES TO PATIENTS|
NTE|2||         NOT ON ANTICOAGULANT THERAPY:                  0.9- 1.1|
NTE|3|| |
NTE|4||          SUGGESTED INR THERAPEUTIC RANGE FOR ORAL|
NTE|5||          ANTICOAGULANT THERAPY (STABLY ANTICOAGULATED|
NTE|6||          PATIENTS)|
NTE|7|| |
NTE|8||                   ROUTINE THERAPY:                     2.0- 3.0|
NTE|9|| |
NTE|10||                    RECURRENT MYOCARDIAL INFARCTION|
NTE|11||                   OR MECHANICAL PROSTHETIC VALVES:     2.5- 3.5|
NTE|12|| |
NTE|13|| |
OBX|2|NM|30039900^PROTHROMBIN TIME^^30039900^PROTHROMBIN
TIME^||14.6|SECONDS|9.0-11.5|H|||F|||20030523110900|TP^^L|||
OBR|3|3812197|TP362228T|861SB=^T-3 UPTAKE^^861SB=^T-3
UPTAKE|||||||||20030523105800||^^^|||||TP^QUEST DIAGNOSTICS-TAMPA^4225
E. FOWLER AVE^TAMPA^FL^33617|20030523110900|||F|||||||||||||||||
OBX|1|NM|55075100^T-3 UPTAKE^^55075100^T-3 UPTAKE^||45|%|22-
35|H|||F|||20030523110900|TP^^L|||
```

```
OBR|4|3812197|TP362228T|867SB=^T-4 (THYROXINE), TOTAL^^867SB=^T-4
(THYROXINE), TOTAL|||||||||||20030523105800||^^^|||||TP^QUEST DIAGNOSTICS-
TAMPA^4225 E. FOWLER
AVE^TAMPA^FL^33617|20030523110900|||F||||||||||||||||||
OBX|1|NM|55075200^T-4 (THYROXINE), TOTAL^^55075200^T-4 (THYROXINE),
TOTAL^||15.2|MCG/DL|4.5-12.5|H|||F|||20030523110900|TP^^L|||
OBX|2|NM|55075300^FREE T4 INDEX (T7)^^55075300^FREE T4 INDEX
(T7)^||6.8||1.4-3.8|H|||F|||20030523110900|TP^^L|||
OBR|5|3812197|TP362228T|899SB=^TSH^^899SB=^TSH|||||||||||20030523105800||^
^^|||||TP^QUEST DIAGNOSTICS-TAMPA^4225 E. FOWLER
AVE^TAMPA^FL^33617|20030523110900|||F||||||||||||||||||
OBX|1|NM|55080400^TSH^^55080400^TSH^||5|MIU/L|0.40-
5.50|N|||F|||20030523110900|TP^^L|||
```

Receiving Third-Party Laboratory Results Files

In order to receive third-party laboratory results, Care360 Hub Information Services initiates a secure connection to the laboratory's file server on a predefined schedule (for example, every 3–5 minutes) to retrieve and process the available results files.

The secure transfer of results data between the Hub and a third-party laboratory can be accomplished by a number of different methods; for example, via SSH File Transfer Protocol (SFTP). For more information on possible connectivity methods, see "Universal Ordering and Resulting Connectivity" on page 9.

Results Formatting Requirements

Results files that are retrieved by Care360 Hub Information Services from a third-party laboratory must meet the following requirements:

- The provider and/or provider accounts referenced in the HL7 result message must be valid and active in the Hub.
- The result (HL7) file, and any associated "report of record" (PDF) files, must be submitted as a single XML file.
- The incoming result XML file must conform to the Hub XML schema (see "Hub XML Schema", below).
- The result HL7 content must conform to the Physician Portal Results HL7 Specification as outlined in "Care360 Result Message Format Requirements" on page 99 and "Care360 Result Message Segment Specifications" on page 103.
- If the provider is configured to send a report of record (PDF) file together with the HL7 message, then a primary report (PDF file) must be present. Additionally, one or more secondary reports can be provided as needed. If the provider is configured to **not** send a PDF file, then the report of record will be generated automatically for the provider (and the provider *cannot* include a PDF file with the HL7 message).

Hub XML Schema

The third-party laboratory must provide individual results as XML files on a file server, with each XML file containing one HL7, and one or more reports (PDF documents). The laboratory may also optionally include result discrete data. The XML file created by the laboratory for each result must conform to the following format:

```
<?xml version="1.0" encoding="UTF-8" ?>
<schema targetNamespace="http://hub.care360.com/5.0/result"
       xmlns:tns="http://hub.care360.com/5.0/result"
       xmlns="http://www.w3.org/2001/XMLSchema">
   <element name="result">
      <complexType>
         <sequence>
            <element name="resultDate" type="string" nillable="true" />
            <element name="sendingFacility" type="string"
               nillable="true" />
            <element name="receivingFacility" type="string"
               nillable="true" />
            <element name="accessionNumber" type="string"
               nillable="true" />
            <element name="messageControlId" type="string"
               nillable="true" />
```

```
            <element name="hl7" type="base64Binary" />
            <element name="primaryReport" type="base64Binary"
               nillable="true" />
            <element name="additionalReports">
               <complexType>
                  <sequence>
                     <element name="report" type="base64Binary"
                        nillable="true" minOccurs="0"
                        maxOccurs="unbounded" />
                  </sequence>
               </complexType>
            </element>
         </sequence>
      </complexType>
   </element>
</schema>
```

All discrete fields are optional, where *sendingFacility* is the provider, and *receivingFacility* is the provider account as defined in the Hub. These discrete fields are optional because the Hub obtains them directly from the HL7 message content. (The optional discrete fields may be helpful for troubleshooting purposes, however, as the HL7 message fields are encoded.)

Sample XML Result Files

Following are several sample third-party result (XML) messages, formatted according to the "Results Formatting Requirements" on page 123.

Note: The `<hl7>`, `<primaryReport>`, and `<additionalReports>` segments in the following samples are truncated for the sake of brevity.

Sample 1—HL7 Message with No Primary Report

```
<?xml version="1.0" encoding="UTF-8" ?>
<tns:result xmlns:tns="http://hub.care360.com/5.0/result"
   xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
   <resultDate>20070209101449</resultDate>
   <sendingFacility>ORDR_PVDR</sendingFacility>
   <receivingFacility>ORDR_PVDR_ACCT</receivingFacility>
   <accessionNumber>1570043</accessionNumber>
   <messageControlId>8565093</messageControlId>
      <hl7>TVNIfF5+XCZ8TEFCfE9SRFJfUFZEUnxURVNUSUR8T1JEUl9QVkRSX0FDQ1R
      MDE0NDl8fE9SVV5SMDF8ODU2NTA5M3xQfDIuMyANUElEfDF8MTIzNDU2g5MTI
      V8MTU3MDA0M3x8QWJjZGVmXkdoaWprbG1ub3BeQXx8MjAwNDAxMzF8TX…</hl7>
      <primaryReport />
   <additionalReports />
</tns:result>
```

Sample 2—HL7 Message with a Primary (Only) Report File

```
<?xml version="1.0" encoding="UTF-8" ?>
<tns:result xmlns:tns="http://hub.care360.com/5.0/result"
    xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
    <resultDate>20070209101449</resultDate>
    <sendingFacility>NOR</sendingFacility>
    <receivingFacility>1746</receivingFacility>
    <accessionNumber>2523807</accessionNumber>
    <messageControlId>5674841</messageControlId>
        <hl7>TVNIfF5+XCZ8TEFCfE5PUnxURVNUSUR8MTc0NnwyMDA3MDIwOTEwMTQ0OXx
        JVXlIwMXw1Njc0ODQxfFB8Mi4zIA1QSUR8MXwxMjM0NTY3ODkxMjM0NXwyNTI
        3fHxBYmNkZWZeR2hpamtsbW5vcF5BfHwyMDA0MDEzMXxNfHx8fHx8fHx…</hl7>
        <primaryReport>JVBERi0xLjMNJeLjz9MNMSAwIG9iago8PAovUGFnZUxheW91d
        AvU2luZ2xlUGFnZQovUGFnZU1vZGUgL1VzZU5vbmUKL1BhZ2VzIDIgMCBSCi9
        lIC9DYXRhbG9nCj4+CmVuZG9iag01IDAgb2JqCjw8Ci9CY…</primaryReport>
    <additionalReports />
</tns:result>
```

Sample 3—HL7 Message with Primary and Secondary Report Files

```
<?xml version="1.0" encoding="UTF-8" ?>
<tns:result xmlns:tns="http://hub.care360.com/5.0/result"
    xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
    <resultDate>20070209101449</resultDate>
    <sendingFacility>NOR</sendingFacility>
    <receivingFacility>1746</receivingFacility>
    <accessionNumber>2523807</accessionNumber>
    <messageControlId>5674841</messageControlId>
        <hl7>TVNIfF5+XCZ8TEFCfE5PUnxURVNUSUR8MTc0NnwyMDA3MDIwOTEwMTQ0OXx
        JVXlIwMXw1Njc0ODQxfFB8Mi4zIA1QSUR8MXwxMjM0NTY3ODkxMjM0NXwyNTI
        3fHxBYmNkZWZeR2hpamtsbW5vcF5BfHwyMDA0MDEzMXxNfHx8fHx8fHx…</hl7>
        <primaryReport>JVBERi0xLjMNJeLjz9MNMSAwIG9iago8PAovUGFnZUxheW91d
        AvU2luZ2xlUGFnZQovUGFnZU1vZGUgL1VzZU5vbmUKL1BhZ2VzIDIgMCBSCi9
        lIC9DYXRhbG9nCj4+CmVuZG9iag01IDAgb2JqCjw8Ci9CY…</primaryReport>
    <additionalReports>
        <report>JVBERi0xLjMKJf////8KCjEgMCBvYmoKPDwKL1BhZ2VMYXlvdXQgL1Np
        bmdsZVBhZ2UKL1BhZ2VNb2RlIC9Vc2VOb25lCi9QYWdlcyAyIDAgUgovVHlwZ
        Q2F0YWxvZwo+PgplbmRvYmoKCjIgMCBvYmoKPDwKL0NvdW50IDEKL…</report>
        <report>JVBERi0xLjMKJf////8KCjEgMCBvYmoKPDwKL1BhZ2VMYXlvdXQgL1Np
        bmdsZVBhZ2UKL1BhZ2VNb2RlIC9Vc2VOb25lCi9QYWdlcyAyIDAgUgovVHlwZ
        Q2F0YWxvZwo+PgplbmRvYmoKCjIgMCBvYmoKPDwKL0NvdW50IDEKL…</report>
    </additionalReports>
</tns:result>
```

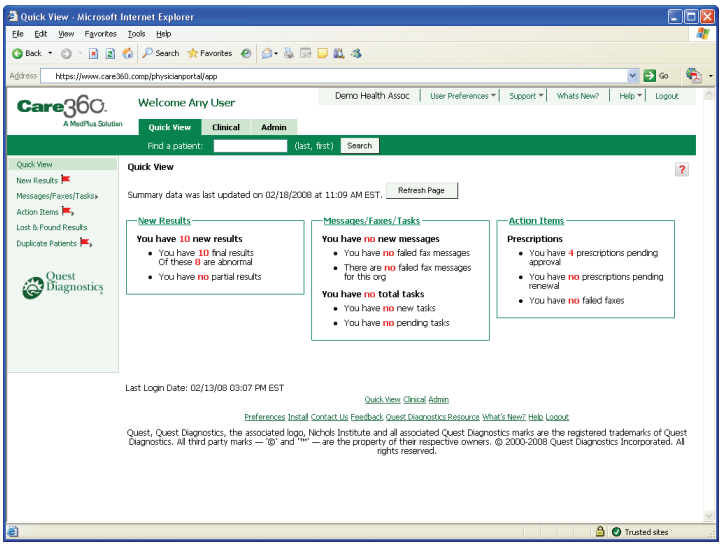
Linking and Single Sign-On

About This Section

This section provides detailed information necessary for linking a partner application (for example, a third-party EMR, EHR, or PMS application) to Physician Portal.

This section includes the following chapter(s):

Chapter 5
Linking to Physician Portal



In This Chapter:

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 Physician Portal. Application linking enables the partner application to directly access specific functions of Physician Portal, from within the context of the partner application.

Linking to Physician Portal enables a partner application to effectively offer lab order and result services through an existing EMR solution. Users can launch directly into a specific Physician Portal function, using SSO and maintaining their current patient context. SSO access allows the user to transparently log in to Physician Portal from within the partner application. (For more information about SSO, see "About Single Sign-On (SSO)" on page 131.)

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

- User Summary services
- Order echo
- Patient demographic services (Inbound and Outbound)
- Physician Portal UI customization

Each of these services is described in more detail later in this chapter.

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

Physician Portal Functions Available for Linking

A partner application can link directly to the following Physician Portal functions (also referred to as the "landing" page):

- ***New Results.*** The EMR user can directly access Physician Portal's *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 Physician Portal users via user messaging or fax.
- ***Lab Orders.*** The EMR user can directly access Physician Portal's *Lab Orders* page to create an electronic lab order for submission to either a Quest Diagnostics 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 Physician Portal's *Patient Summary* page. In the Physician Portal, 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 Physician Portal function, the user can then access the entire Physician Portal application, limited only by their assigned access permissions. For information about using specific Physician Portal functions, refer to the *Care360 Physician Portal User Manual* or online help.

Formatting Requirements for Linking to Care360 Physician Portal

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

- The full Physician Portal product name must be displayed whenever possible, and should appear as shown below:

  Care360™ Physician Portal

- The 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 Physician Portal SSO and Web Services site. For more information, see Chapter 10, "Care360 SSO and Web Services Site" on page 233.

Prior to appearing in a production environment, any links to Physician Portal 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 Physician Portal, the user of the partner application can transparently log in to Physician Portal via the SSO capability. That is, the user is not required to log in separately to Physician Portal 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 Physician Portal are as follows:

- ❑ An authorized user logs in to the partner application.
- ❑ The partner application performs user authentication (in the background) to Physician Portal.
- ❑ Within the partner application, the user activates a link to the desired Physician Portal function, and is immediately redirected to the appropriate area of Physician Portal. If possible, the user's current patient context is maintained within the selected Physician Portal function (see "Maintaining Patient Context", below).

Note: Authentication to Physician Portal 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 Physician Portal, see Chapter 6, "Physician Portal SSO Specification" on page 149.

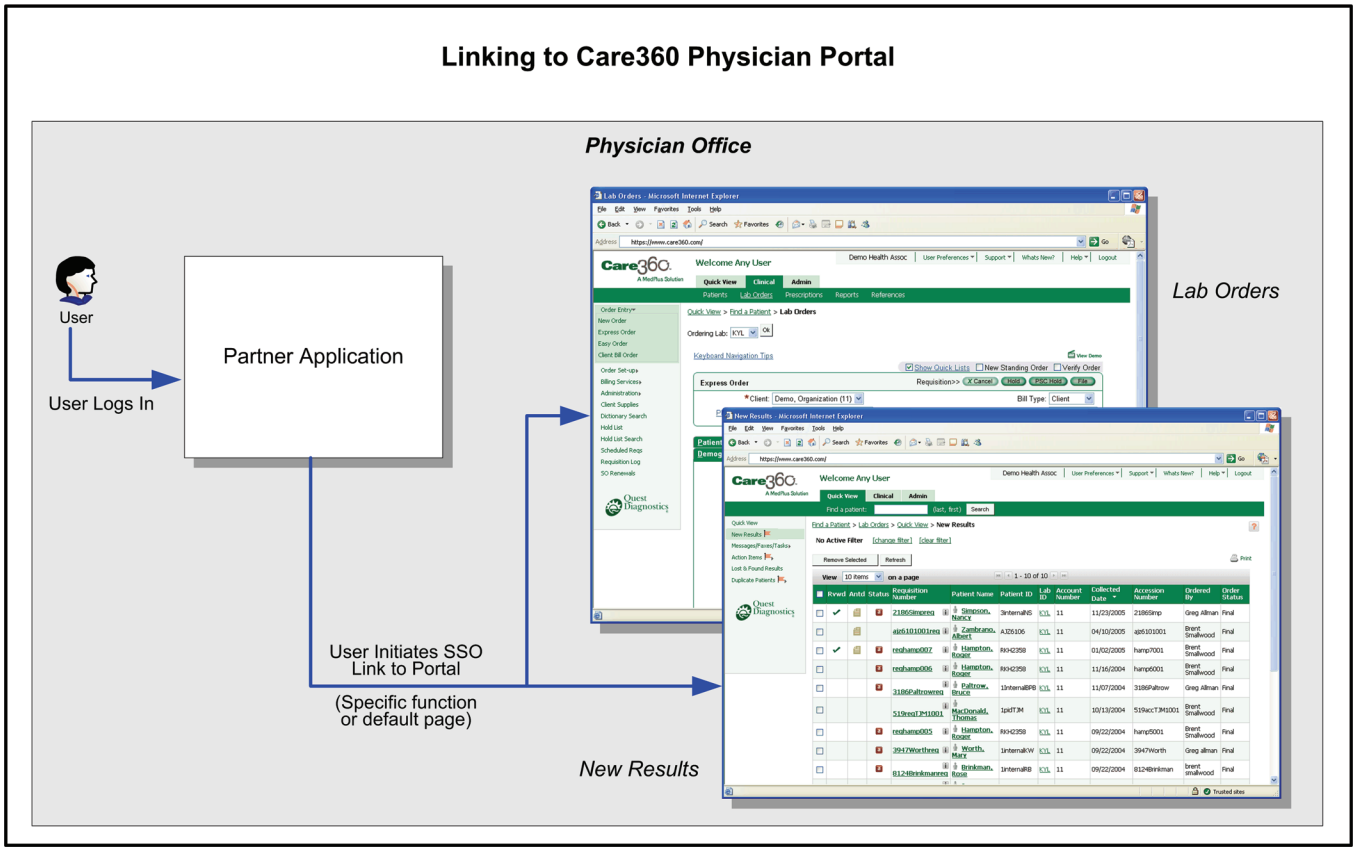
Maintaining Patient Context

When a user accesses a Physician Portal 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 Physician Portal opens to the *Lab Orders* function, with the same patient preselected.

In order to maintain the patient context, the partner application passes a unique patient identifier (PID) to Physician Portal, 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 Physician Portal function, but will need to manually search for the desired patient.

Process Walkthrough: Linking and SSO

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



Initializing a User's SSO Connection

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

- ❑ MedPlus issues a Physician Portal *User ID* and (temporary) *Password* to the partner application user.
- ❑ The user logs in to the partner application as before (using their existing partner application username and password).
- ❑ The first time the user attempts to link to Physician Portal from the partner application, a login page appears, prompting the user to enter their assigned Physician Portal *User ID* and *Password*.

> **Note:** The user is allowed five attempts to log in using their assigned Physician Portal 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 Physician Portal Customer Support in order to proceed.

- When the user successfully logs in to Physician Portal the first time, their user information and (obfuscated) password are saved to a SAML user mapping table.
  - After the user's information has been successfully saved to the mapping table, the password is disabled.
- When the user subsequently links to Physician Portal, the Physician Portal login process is completed automatically based on their stored user credentials.
  - When a user links to Physician Portal via an SSO connection, they can then access *any* Physician Portal functions that are enabled by their user credentials.

Accessing Physician Portal via An Established SSO Link

The following steps outline the procedure—and associated systems—involved in accessing Physician Portal from a partner application, after a user's SSO link has been initialized (outlined in "Initializing a User's SSO Connection" on page 133).

- A user logs in to the partner application.
- The partner application user initiates a link to Physician Portal. A link to Physician Portal can be established in one of the following ways:
  - The link can open Physician Portal 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).
  - The link can open Physician Portal with no specific function specified. In this case, the user's default page (as configured in the Physician Portal) appears.
- Physician Portal opens either in a separate browser window, or framed within the context of the partner application (if the required 1024x768 resolution can be maintained).
- The user can then access *any* Physician Portal functions that are enabled by their user credentials.

Accessing Physician Portal Directly

The following steps outline the procedure—and associated systems—involved in accessing Physician Portal directly, outside the context of a linked application.

- ❑ MedPlus issues a user a separate *Password*, associated with either their existing Physician Portal *User ID*, or a separate *User ID*.
- ❑ The user logs in to Physician Portal directly with their assigned *User ID* and *Password*.

  Note: The Physician Portal 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.

  Allowing a user direct access to Physician Portal is optional. When a user accesses directly, there is no connection established to a partner application, and Physician Portal may appear in its default format (that is, with no custom UI branding).
- ❑ The user can access *any* Physician Portal functions that are enabled by their user credentials.

About User Summary Services

When new lab results or user messages are received by Physician Portal 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 Physician Portal on a regular basis to view the information.

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

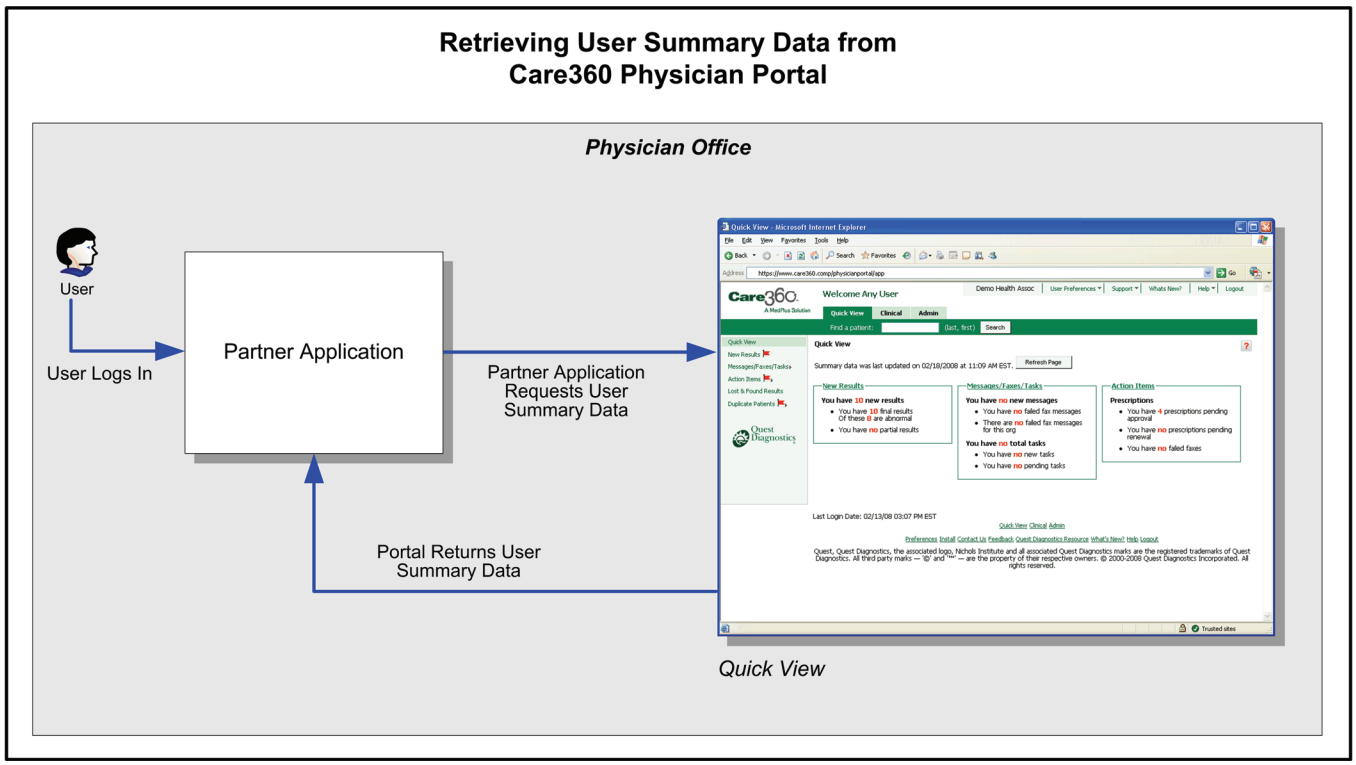
- New results (including Abnormals, Partials, Partials/Abnormals, and Finals)
- Message counts (including user messages and failed faxes)
- Action Items (including Failed Faxes, Pending Renewals, and Pending Approvals)

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

For detailed specifications of the User Summary Services, see Chapter 7, "User Summary Services API Reference" on page 161.

Process Walkthrough: Retrieving User Summary Data

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



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

- ❑ A user (with an established SSO connection) logs in to a partner application.
- ❑ The partner application sends a request to Physician Portal for associated user data.
- ❑ Physician Portal returns the requested user data to the partner application.
- ❑ 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.

About Order Echo

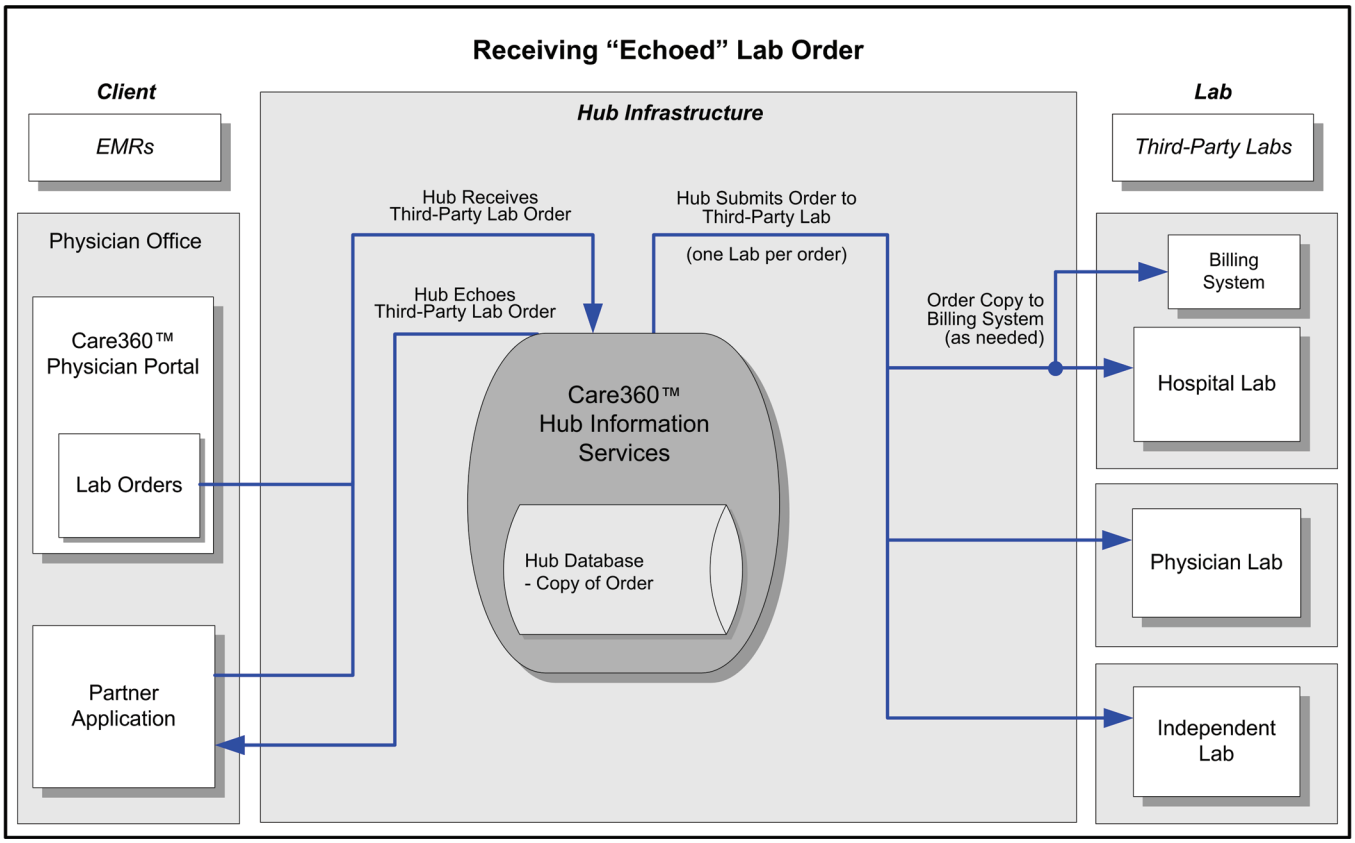
When the user of a partner application links to Physician Portal to place a lab order, that order can be "echoed" back to the partner application. Order echo involves Physician Portal sending a copy of the order back to the partner application, so that it can store a record of the order for the associated 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 Physician Portal) 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 Chapter 3, "Care360 Order HL7 Specification" on page 57.

Process Walkthrough: Order Echo

The diagram below illustrates (at a high level) the flow of order data between Physician Portal 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 procedure—and associated systems—involved in placing an order and having the order echoed back to the partner application.

- ❑ A user logs in to the partner application.
- ❑ The partner application user initiates a link to the *Lab Orders* function of Physician Portal.
  - ❑ When linking to *Lab Orders*, the current patient context may be maintained if an appropriate match can be determined, based on the supplied PID.
- ❑ The user creates and submits a lab order.
- ❑ At a predefined time interval, the Hub retrieves the order from Physician Portal.
- ❑ The Hub records the order transaction, and stores a copy of the discrete content of the order.
- ❑ The Hub "echoes" (returns) a copy of the order back to the partner application.

About Patient Demographic Services

Patient demographic integration enables patient demographic data changes that occur within a partner application to be forwarded to Physician Portal, in order to maintain the integrity of patient demographic data between the two applications. The types of patient demographic changes that can be submitted include the following:

- Add Patient
- Update Patient
- Delete Patient
- Merge Patients

Patient demographic updates are communicated to Physician Portal through Care360 Hub Information Services, which maintains a record of all patient demographic transactions. Any errors that occur when the updates are communicated to Physician Portal are returned to the Hub.

Patient demographic update messages submitted by the partner application must be formatted according to the specifications detailed in Chapter 9, "Care360 Patient Demographic HL7 Specification" on page 173.

Outbound patient demographic updates are communicated to the partner application through Care360 Hub Information Services, which maintains a record of all patient demographic transactions. Any errors that occur when the updates are communicated to the partner application are returned to the Hub.

Patient Demographic Services Connectivity

The transfer of all Patient Demographic updates between a partner application and Care360 Hub Information Services will occur via the Hub Patient Demographic Services (HTTP Over SSL, or HTTPS).

Note: For details of the Patient Demographic Services, see Chapter 8, "Patient Demographic Services API Reference" on page 167.

Real-Time vs. Batch Processing

Patient demographic update messages can either be submitted individually—as *real-time* updates—or *batched* together as a group of related updates. Real-time updates can be used for submitting individual patient demographic updates as they occur. Batch updates can be used for normal patient updates, and they can also be used to process the initial patient demographic data load between a partner application and Physician Portal.

All updates, whether real-time or batch, are processed in the order in which they are received by Physician Portal. In order to distinguish real-time and batch updates, each type is submitted separately to Care360 Hub Information Services via the Patient Demographic Services.

PID-Only vs. "Fuzzy" Matching

There are two methods available for processing patient demographic merge requests. The partner must specify their preferred method during the initial integration process with Physician Portal. 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 Physician Portal).
- **"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. Physician Portal 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 141 and ""Fuzzy" Matching Detail" on page 142.

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, Physician Portal 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, Physician Portal returns an error to the partner application.
Delete Patient	If the incoming PID matches no existing patient in the target organization, Physician Portal 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, Physician Portal returns an error to the partner application.

PID-Only Matching Request	Potential Results
Merge Patients	If the target organization contains no patient with the same PID for either the "correct" patient or the "incorrect" patient, Physician Portal 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, Physician Portal 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.

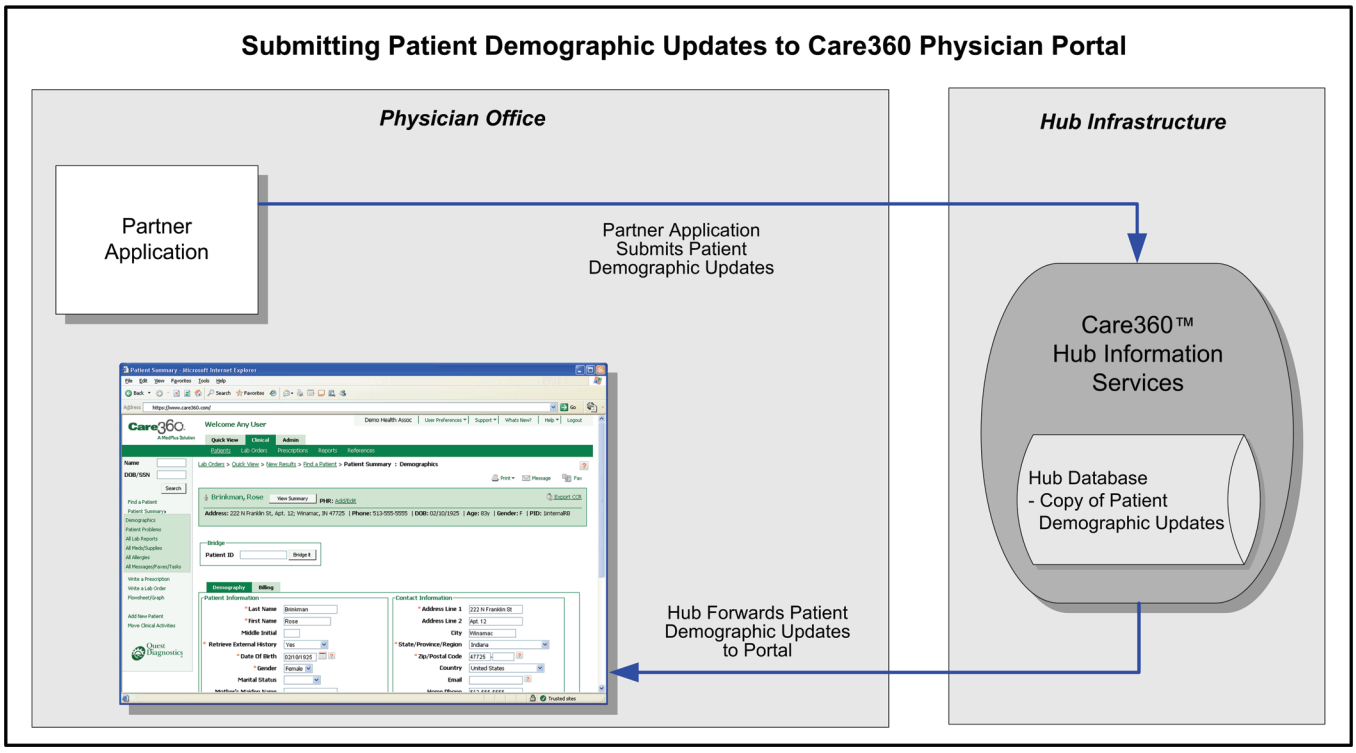
"Fuzzy" Matching Request	Potential Results
Add Patient	If Physician Portal finds no high-confidence match between existing patients in the target organization and the incoming patient demographics, the patient is added. If Physician Portal finds a high-confidence match between a single patient in the target organization and the incoming patient demographics, the matching patient is updated. If Physician Portal finds more than one existing patient that has a high-confidence or ambiguous match with the incoming patient demographics, Physician Portal adds the patient, and marks the patient as a potential duplicate. If Physician Portal finds an ambiguous match between the incoming patient demographics and a single patient in the target organization, Physician Portal adds the patient, and marks the patient as a potential duplicate.
Update Patient	If Physician Portal finds no high-confidence match between existing patients in the target organization and the incoming patient demographics, the patient is added. If Physician Portal finds a high-confidence match between a single patient in the target organization and the incoming patient demographics, the matching patient is updated. If Physician Portal finds more than one existing patient that has a high-confidence or ambiguous match with the incoming patient demographics, Physician Portal adds the patient, and marks the patient as a potential duplicate. If Physician Portal finds an ambiguous match between the incoming patient demographics and a single patient in the target organization, Physician Portal adds the patient, and marks the patient as a potential duplicate.

"Fuzzy" Matching Request	Potential Results
Delete Patient	If Physician Portal finds no high-confidence match between existing patients in the target organization and the incoming patient demographics, Physician Portal returns an error to the partner application. If Physician Portal 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 Physician Portal finds more than one high-confidence match between existing patients in the target Organization and the incoming patient demographics, Physician Portal returns an error to the partner application.
Merge Patients	If the target organization contains no match for either the "correct" patient or the "incorrect" patient, Physician Portal 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, Physician Portal 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 a Patient Demographic Update

The diagram below illustrates (at a high level) the flow of information between a partner application, Care360 Hub Information Services, and Physician Portal. Following the diagram is a step-by-step walkthrough of the patient demographic processes illustrated in the diagram.



The following steps outline the procedure—and associated systems—involved in a partner application submitting patient demographic update requests to Physician Portal.

- ❑ The partner application submits patient demographic update messages to the Hub via the Inbound Patient Demographic Services.

  Note: Patient demographic update messages provided by the partner application must be formatted according to the specifications detailed in Chapter 9, "Care360 Patient Demographic HL7 Specification" on page 173.

- ❑ The Hub receives the patient demographic messages from the partner application, and verifies the format and content of the patient demographic messages.

- ❑ The Hub records the patient demographic transaction, and stores a copy of the discrete content of the patient demographic messages for a minimum of 90 days (or longer, as specified by the partner).

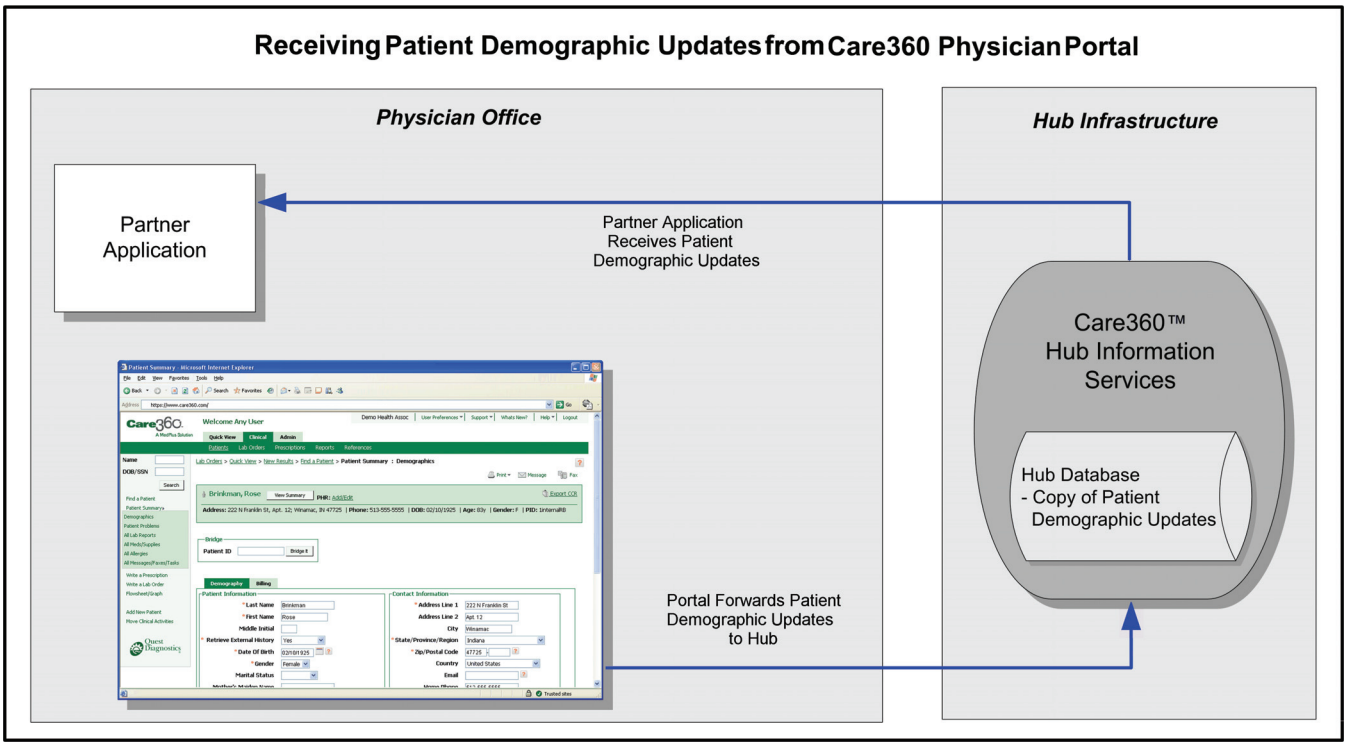
- ❑ The Hub converts the patient demographic messages to the Physician Portal format, and then forwards the messages to Physician Portal.

- ❑ Physician Portal applies the updates to its patient database.

  - ❑ Any validation errors that occur within Physician Portal are returned to the Hub.

Process Walkthrough: Outbound Patient Demographic Updates

The diagram below illustrates (at a high level) the flow of information between Physician Portal, Care360 Hub Information Services, and a partner application. Following the diagram is a step-by-step walkthrough of the patient demographic processes illustrated in the diagram.

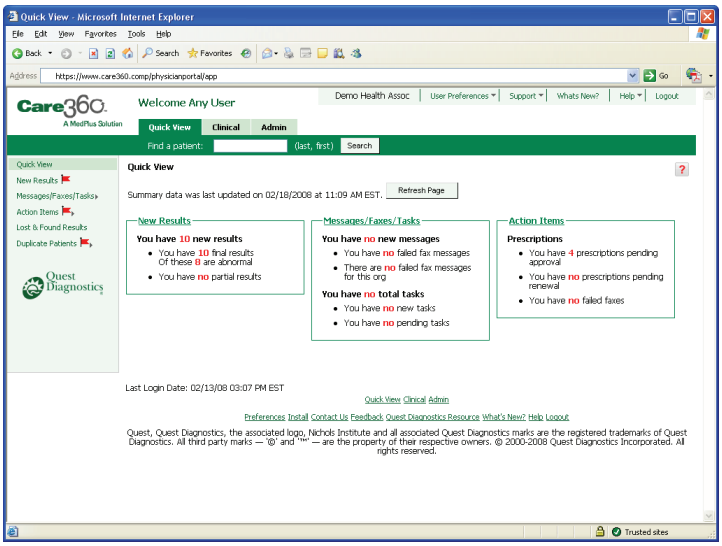


The following steps outline the procedure—and associated systems—involved in a partner application receiving patient demographic updates from Physician Portal.

- ❑ The Hub receives the patient demographic messages from Physician Portal, and verifies the format and content of the patient demographic messages.
- ❑ The Hub records the patient demographic transaction, and stores a copy of the discrete content of the patient demographic messages for a minimum of 90 days (or longer, as specified by the partner).
- ❑ The Hub converts the patient demographic messages to the standard HL7 ADT message format, and then forwards the messages to the partner application.
- ❑ The partner application applies the updates to its patient database.
  - ❑ Any validation errors that occur within the partner application are returned to the Hub.

Customizing the Physician Portal User Interface

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



The elements of the Physician Portal that can be customized include the following:

- **Logos and Images.** The Physician Portal 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 147.
- **Color Palette.** The overall color scheme of the Physician Portal user interface, including the navigational buttons, can be modified to reflect the partner organization or application. For details, see "Color Palette Specifications" on page 147.
- **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 147.
- **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 Web site. For details, see "Link Name and Destination Specifications" on page 147.
- **Custom Uniform Resource Locator (URL).** The Web address (or *URL*) that is used to access Physician Portal—and appears in the user's Web browser while using the Physician Portal—can be changed to include a domain name that reflects the partner organization or application. For details, see "Custom URL Specifications" on page 148.
- **User Manual and Help.** The *Care360 Physician Portal 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 148.

Custom UI Specifications

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

Logo and Image Specifications

The following Physician Portal logos and/or images can be replaced or removed:

Logo/Image	Location	File Type	Dimensions (Pixels)
Physician Portal 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
Physician Portal logo	Upper-left corner of login page	.GIF	302 W x 99 H

Color Palette Specifications

The overall color scheme of the Physician Portal 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 Physician Portal 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:

Physician Portal 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.

Physician Portal Link	Location	Customization Options
Contact Us	Login page, Each portal page	Can be renamed and/or linked to a different destination page, or removed.
Feedback	Each portal page	Can change e-mail 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 Physician Portal internal destination).

Custom URL Specifications

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

The format of the custom URL is as follows:

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

where:

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

  – and –

- `<brand uid>` is a random number that is generated by MedPlus to identify the branded Physician Portal instance to display.

For example:

```
https://www.care360.com/physicianportal/login.jsp?branduid=12345
```

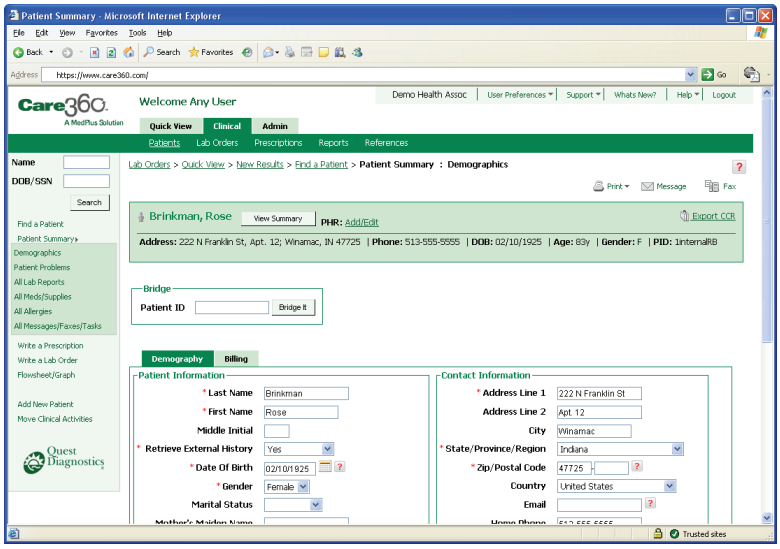
Partners that allow their users to access Physician Portal directly (outside the context of the partner application) can either provide their users with the MedPlus-supplied URL, or they can create a custom URL by aliasing a more appropriate domain name.

User Manual and Help Specifications

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

Note: The *Care360 Physician Portal Reference Guide* cannot be customized.

Chapter 6
Physician Portal SSO Specification



In This Chapter:

About the Physician Portal SSO Specification

Physician Portal 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 Physician Portal.

  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 Physician Portal. Since password management is not required to access Physician Portal, 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 Physician Portal 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 Physician Portal 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

MedPlus 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 Physician Portal passwords.

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

- ❑ **Performing a security assessment.** MedPlus 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 Physician Portal. 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 MedPlus.

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

- ❑ **The user is authenticated in the partner application.** Before accessing a link to a Physician Portal 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.

- ❑ **The user selects a linked Physician Portal feature.** The user takes some action (for example, clicking a button or submitting a form) that correlates to a feature hosted by Physician Portal. This action triggers the SAML authentication process, and directs Physician Portal to serve the requested content once authentication has been achieved. The requested content contains a target URI (*targetUri*), plus possible application context parameters.

- ❑ **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).

- ❑ **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 web site for a detailed explanation of each.)

- ❑ **The SAML response (assertion + signature) is transmitted to Physician Portal 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				
`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 Physician Portal 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	Physician Portal default brand
`TARGET`	A SAML 1.1 parameter that identifies a target page. This parameter is not used by Physician Portal 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 Physician Portal patient identifier (PID). **Note:** Valid only for the LabOrders, PatientSummary, and RxPad landing pages.	23456	N	

- ❑ **The SAML response is authenticated by Physician Portal.** Physician Portal 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 Physician Portal SSO keystore. If found, this step succeeds. This control prevents rogue third parties from forging the identities of Physician Portal 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?** Physician Portal 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 Physician Portal?** Having verified the signature of the SAML response, Physician Portal is assured that the `Issuer` value transmitted within the SAML assertion reflects your partner profile. When Physician Portal 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 Physician Portal?** The `NameIdentifier` value within the SAML assertion provides unique identification of the user, as recognized by the partner application. Physician Portal SSO looks up this user identifier in its user mapping table to determine the correlating Physician Portal user identity. If found, a Physician Portal login session is established for the user. If not found, Physician Portal SSO presumes the user is accessing Physician Portal via SSO for the first time, and directs the user to a one-time Physician Portal login page (for an overview of this process, see "Initializing a User's SSO Connection" on page 133).
- **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 Physician Portal user identity, the partner application's Issuer is also recorded for that user. On subsequent requests to Physician Portal, the SAML `Issuer` is compared to that stored in the user's mapping record. If they match, Physician Portal 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 Physician Portal to the partner application user/application within the HTTP Response. The returned page reflects the user's new Physician Portal login session.

Usage Scenario 1: Physician Portal SSO for Interactive Users

In this scenario, SSO is used to establish a Physician Portal 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 152, is manifested when the partner application launches the Web browser. Doing so loads an HTML document containing a form that targets the Physician Portal 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 Physician Portal from the partner application link, the user may remain within Physician Portal and perform any other tasks he/she is authorized to perform, based upon the Physician Portal user access rights previously configured.

About Session Timeouts and Terminations

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

It is quite possible that users who interact with Physician Portal 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.

Physician Portal 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):

- ❑ The partner application link has launched a *new* browser window.
- ❑ The partner application link attempts to update the *existing* browser window, for which the Physician Portal session has timed out.
- ❑ A different user has authenticated to the running partner application since the Physician Portal browser window was launched. This requires authentication to Physician Portal as the "new" partner application user.

About SSO User Initialization

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

The first time the user initiates SSO-based access to Physician Portal, 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 Physician Portal users will see this page on their first SSO-based access attempt. Both temporary passwords (issued by MedPlus 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 Physician Portal *User ID* and *Password*, a mapping record is stored within Physician Portal that relates the Physician Portal user identity to the partner application user identity passed within the SAML assertion.

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

Usage Scenario 2: Physician Portal SSO for Web Services

A partner application can leverage SSO in the process of invoking Physician Portal Web services on behalf of a previously-mapped user (see "About SSO User Initialization" on page 156). Establishing a session using SSO enables the partner application to establish a user-specific context to Physician Portal without having to know (or store) the user's Physician Portal password. For this release, the only Web service available for integration is the User Summary service, which is referenced in the following sections.

From the Physician Portal 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 Physician Portal server. It can then invoke a POST request to send the authentication information, and receive a landing page response along with the Physician Portal 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 2007 15:28:42 GMT
Pragma: no-cache
Content-Length: 350:
Content-Type: text/html
Expires: Thu, 01 Jan 2008 00:00:00 GMT
Last-Modified: Mon, 20 Nov 2006 16:23:24 GMT
Set-Cookie: JSESSIONID=F2sq7JLqQs19hkGfQf1v7qh1w2LrLgJT5NBz4HLYlYZybgPJr
   2y4!98796407;path=/
Set-Cookie: securityCheckUri=Care360SSOSecurityCheck
Set-Cookie: IsSSOClient=true
Set-Cookie: sso_lastKnownSessionId=F2sq7JLqQs19hkGfQf1v7qh1w2LrLgJT5NBz4
   HLYlYZybgPJr2y4!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. Physician Portal 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 Physician Portal 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 Physician Portal session cookies ('Set-Cookie' response headers) are important within an HTTP response indicating success.

The session cookies are passed back to the Physician Portal 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=F2sq7JLqQs19hkGfQf1v7qh1w2LrLgJT5NBz4HLYlYZybgPJr2
    y4!987964007; securityCheckUri=Care360SSOSecurityCheck;
    IsSSOClient=true;sso_lastKnownSessionId=F2sq7JLqQs19hkGfQf1v7qh1w2
    LrLgJT5NBz4HLYlYZybgPJr2y4!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 2007 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">
       2007-04-17T12:59:59.420Z</timeStamp>
   </result>
  </m:getOrgsResponse>
 </env:Body>
</env:Envelope>
```

For more information about the User Summary services, see "About User Summary Services" on page 136 and Chapter 7, "User Summary Services API Reference" on page 161.

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 Physician Portal Web service usage is impacted:

- Sessions established on behalf of Physician Portal 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 Physician Portal 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 Physician Portal 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.

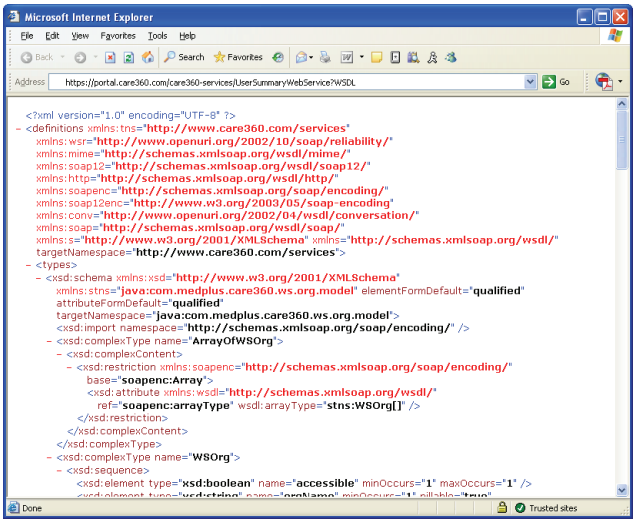
About SSO User Initialization

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 Physician Portal 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 7
User Summary Services API Reference



In This Chapter:

About the User Summary Services API Reference

This section provides details about the User Summary Services API calls provided by Physician Portal. The User Summary Services component of Physician Portal provides operations for receiving notification of the availability of user messages, new results, and pending prescriptions within Physician Portal.

For more information about the User Summary Services, see "About User Summary Services" on page 136. For details about the User Summary Services API, refer to "User Summary Services API" on page 163.

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

For More Information

For information about accessing the Web Services Definition Language (WSDL) documents for Physician Portal, see "About the WSDL Interface Documents" on page 237.

User Summary Services API

This section provides details on the methods and objects provided by each service within the User Summary Services API. User Summary Services enables a partner application to receive notification of the availability of user messages and new results within Physician Portal.

User Summary Methods

Following is a brief overview of each method provided by the User Summary Services Web service. (Usage details for each method are provided in the following section, "User Summary Method Details".)

- **getCounts.** Retrieves user summary data from Physician Portal 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 Physician Portal 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 Method Details

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

Method	Description
getCounts	**Summary** Retrieves user summary data from Physician Portal 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

Method	Description
getCountsByOrg	**Summary** Retrieves user summary data from Physician Portal 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 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 **getOrg**( ) throws SOAPException

User Summary Objects

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

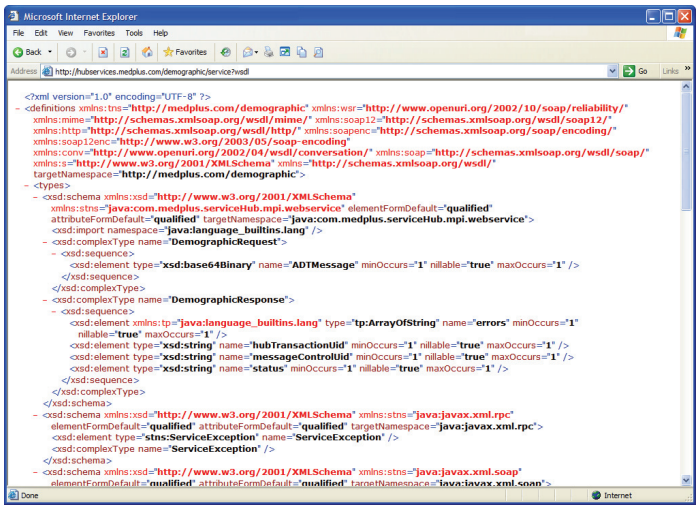
Object	Description/Attributes	Data Type	Req'd?[a]
WSUserSummaryData	Contains the user summary data returned from Physician Portal. Responses include:		
	counts – An array of WSUserSummaryCounts objects, one for each organization.	WSUserSummaryCounts[ ]	O
	timeStamp – The date and time at which the query was run.	DateTime	O
	warnMesage – A message indicating an error condition (for example, the maximum number of organizations was exceeded).	String	O

Object	Description/Attributes	Data Type	Req'd?[a]
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
	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

Object	Description/Attributes	Data Type	Req'd?[a]
	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.

Chapter 8
Patient Demographic Services API Reference



In This Chapter:

About the Patient Demographic Services API Reference

This section provides details about the Patient Demographic Services API calls provided by Care360 Hub Information Services. The Patient Demographic Services component of Care360 Hub Information Services provides operations for receiving and processing patient demographic updates from a partner application, and forwarding those updates to Care360 Physician Portal. For details about the Patient Demographic Services API, refer to "Patient Demographic Services API" on page 169.

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

For More Information

- For detailed specifications on formatting HL7 Patient Demographic Message (ADT) messages that are sent to Care360 Hub Information Services for processing, see Chapter 9, "Care360 Patient Demographic HL7 Specification" on page 173.
- For information about accessing the WSDL documents for Care360 Hub Information Services, see "About the WSDL Interface Document" on page 172.

Patient Demographic Services API

This section provides details on the methods and objects provided by each service within the Patient Demographic Services API. Patient Demographic Services enables the submission of patient demographic updates from a partner application, which are then forwarded to Physician Portal. Demographic updates can be submitted either in real-time or batch mode. For more information about the Patient Demographic Services, see "About Patient Demographic Services" on page 140.

Patient Demographic Methods

Following is a brief overview of each method provided by the Patient Demographic Services Web service. (Usage details for each method are provided in the following section, "Patient Demographic Method Details".)

- **submitRealTimeADTMessage.** Submits a patient demographic update ADT message (in HL7 format) to Care360 Hub Information Services in real-time.
- **submitBatchADTMessage.** Submits a patient demographic update ADT message (in HL7 format) to Care360 Hub Information Services in batch mode.

Patient Demographic 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 Care360 Hub Information Services in real-time mode. **Usage** The InboundPatientDemographicRequest object contains the inbound patient demographic update. **Notes:** • Even if an inbound patient demographic update is accepted by the Hub, it still may ultimately be rejected by Physician Portal. • For detailed specifications on formatting patient demographic update messages that are sent to Care360 Hub Information Services for processing, see Chapter 9, "Care360 Patient Demographic HL7 Specification" on page 173. **Preconditions** • The Demographics service is configured properly in Hub Information Services—Administration. **Method Signature** DemographicResponse **submitRealTimeADTMessage** (DemographicRequest request) throws SOAPException

Method	Description
submitBatchADTMessage	**Summary** Submits a patient demographic update (in HL7 format) to Care360 Hub Information Services in batch mode. **Usage** The InboundPatientDemographicRequest object contains the inbound patient demographic update. **Notes:** • Even if an inbound patient demographic update is accepted by the Hub, it still may ultimately be rejected by Physician Portal. • For detailed specifications on formatting patient demographic update messages that are sent to Care360 Hub Information Services for processing, see Chapter 9, "Care360 Patient Demographic HL7 Specification" on page 173. **Preconditions** • The Demographics service is configured properly in Hub Information Services—Administration. **Method Signature** DemographicResponse **submitBatchADTMessage** (DemographicRequest request) throws SOAPException

Patient Demographic Objects

The Patient Demographic Services API provides the objects described in the following table.

Object	Description/Attributes	Data Type	Req'd?[a]
DemographicRequest	Contains the inbound patient demographics update. **Note:** For detailed specifications on formatting patient demographic updates that are sent to Care360 Hub Information Services for processing, see Chapter 9, "Care360 Patient Demographic HL7 Specification" on page 173. Attributes that can be set for this object include:		
	ADTMessage – The ADT Patient Demographic update message content.	byte[ ]	R
DemographicResponse	Represents the response elements for a demographic update request. This includes the Hub 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 Hub.	String	O
	hubTransactionUid – The Hub transaction ID for the response.	String	O

Object	Description/Attributes	Data Type	Req'd?[a]
DemographicResponse, *continued*	**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 "consume" a Web service, you must develop a Web service client application. A client application created for accessing the 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 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 the process for obtaining the WSDL documents for Patient Demographic Web services.

Note: You must have a valid user name and password (issued by MedPlus) in order to access the WSDL interface documents. For the Production Hub environment, a user name and password will be issued once your application has been developed, tested, and certified.

Accessing the Patient Demographic Services WSDL Document

To access the WSDL service description for the Patient Demographic Services, use your browser to access the corresponding URL shown below. Using the WSDL that you obtain, you can build a client application to access the Web service.

Staging Environment

To access the Patient Demographic Services in the Staging Hub environment, used to develop, test, and certify your Web service application, access the following link:

```
https://cert.hub.care360.com/demographic/service?wsdl
```

Production Environment

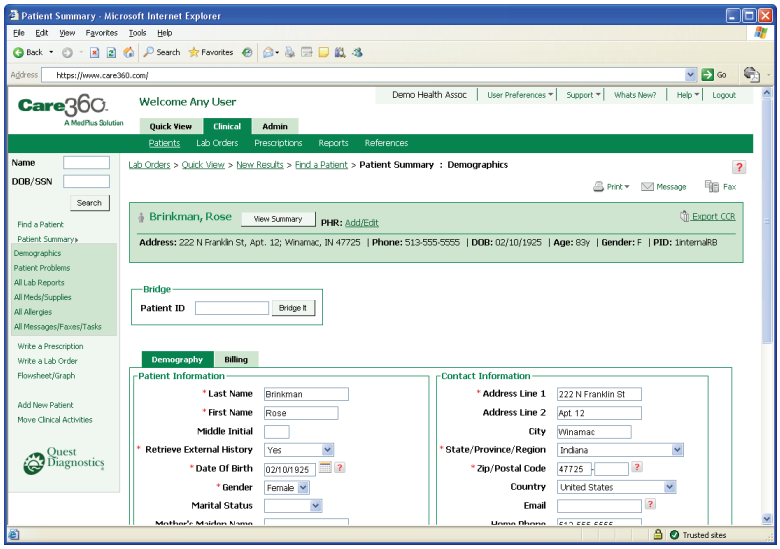
Once you have developed, tested, and certified your Web service client application in the MedPlus Staging Hub environment, you can then update the application to work in the Hub Production environment. Connecting a Web service client to the Production Hub environment is similar to connecting to the Staging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

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

To access the Patient Demographic Services in the Production environment, access the following link:

```
https://hubservices.medplus.com/demographic/service?wsdl
```

Chapter 9
Care360 Patient Demographic HL7 Specification



In This Chapter:

About the Care360 Patient Demographic HL7 Specification

This chapter provides detailed format specifications for patient demographic add, delete, update, and merge requests that are received by Care360 Hub Information Services from a partner application. Patient demographic update requests are received and processed by the Hub, and are then forwarded to Physician Portal. Any errors that are generated by Physician Portal are also returned to the originating partner application via the Hub.

Patient demographic messages must be formatted according to the HL7 2.3 Specification, with any exceptions noted in this chapter. Supported messages for inbound patient demographic updates include the following:

- ADT^A28—ADT A28 (Patient Add)
- ADT^A29—ADT A29 (Patient Delete)
- ADT^A31—ADT A31 (Patient Update)
- ADT^A39—ADT A39 (Patient Merge)

This chapter includes the following sections:

- **Patient demographic message format requirements.** For information on the message format requirements, see "Care360 Patient Demographic Message Format Requirements" on page 175.
- **Patient demographic message segment specifications.** Each result message received by the Hub contains a number of standard sections. For requirements on the standard segments of a result message, see the following:
  - "ADT A28 (Patient Add) Message Segment Specifications" on page 179.
  - "ADT A29 (Patient Delete) Message Segment Specifications" on page 195.
  - "ADT A31 (Patient Update) Message Segment Specifications" on page 204.
  - "ADT A39 (Patient Merge) Message Segment Specifications" on page 221.
- **Sample patient demographic messages.** For samples of the various patient demographic update messages, see "Sample Care360 Patient Demographic Messages" on page 231.

Care360 Patient Demographic Message Format Requirements

In addition to the field-level validation detailed in this chapter, each patient demographic message is validated by the Hub to ensure compliance with rules outlined in this section. The following requirements apply to all of the patient demographic message types supported by the Hub.

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 any given HL7 message is always 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	For a description of the data types, see "Data Type Specifications" on page 176.
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* (NS) as defined below: • ***Required.*** If the corresponding segment is present, the field must also be present within the segment, and the Hub validates it against any stated requirements. If the field is not present, the message is rejected by the Hub. • ***Optional.*** The field is not required; the segment is accepted by the Hub whether or not this field is present. If the field is present, the Hub validates it against any stated requirements. • ***Conditional.*** The field may or may not be required, depending on certain conditions (stipulated in the *Comments* column of each segment table). If the stated conditions are not met, the message is rejected by the Hub. If the field is present, the Hub validates it against any stated requirements. • ***Not Supported.*** If a field is described as *Not Supported* by the Hub (the corresponding row appears grayed in the table), the content of the field is not used by the Hub, 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 by the Hub.

Data Type Specifications

The following table describes the data types that may appear in the message segments.

Note: Brackets (**[]**) indicate that the enclosed data is optional.

Data Type/ Category	Data Type Name	Notes/Format
Alphanumeric		
ST	String	Any ACSII printable characters (ASCII decimal values between 32 and 126) with the exception of the defined delimiter characters. Left justified with optional trailing spaces.
FT	Formatted text	String data with embedded formatting instructions.
Numerical		
CQ	Composite quantity with units	<quantity (NM)> ^ <units (CE)>
NM	Numeric	Any of the ASCII numeric characters with an optional leading sign (+ or -) and/or an optional decimal point.
SI	Sequence ID	A non-negative integer in the form of a NM data type.
Identifier		
ID	Coded values for HL7 tables	String data drawn from an HL7-defined table of legal values (see Appendix A of HL7 2.3).
IS	Coded values for user-defined tables	String data drawn from a site-defined table of legal values.
HD	Hierarchic designator	<namespace ID (IS)> ^ <universal ID (ST)> ^ <universal ID type (ID)> Used only as part of EI and other data types.
EI	Entity identifier	<entity identifier (ST)> ^ <namespace ID (IS)> ^ <universal ID (ST)> ^<universal ID type (ID)>
PL	Person location	<point of care (IS)> ^ <room (IS)> ^ <bed (IS)> ^ <facility (HD)> ^ <location status (IS)> ^ <person location type (IS)> ^ <building (IS)> ^<floor (IS)> ^ <location description (ST)>
PT	Processing type	<processing ID (ID)> ^ <processing mode (ID)>
Date/Time		
DT	Date	YYYY[MM[DD]]
TM	Time	HH[MM[SS[.S[S[S[S]]]]]][+/-ZZZZ]
TS	Time stamp	YYYY[MM[DD[HHMM[SS[.S[S[S[S]]]]]]]][+/ -ZZZZ]^<degree of precision>

Data Type/ Category	Data Type Name	Notes/Format
Code Values		
CE	Coded element	<identifier (ST)> ^ <text (ST)> ^ <name of coding system (ST)> ^<alternate identifier (ST)> ^ <alternate text (ST)> ^ <name of alternate coding system (ST)>
CK	Composite ID with check digit	<ID number (NM)> ^ <check digit (NM)> ^ <code identifying the check digit scheme employed (ID)> ^ <assigning authority (HD)>
CX	Extended composite ID with check digit	<ID (ST)> ^ <check digit (ST)> ^ <code identifying the check digit scheme employed (ID)> ^ <assigning authority (HD)> ^ <identifier type code (IS)> ^ <assigning facility (HD)>
XCN	Extended composite ID number and name	In Version 2.3, replaces the CN data type. <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 code (ID)> ^ <identifier check digit (ST)> ^ <code identifying the check digit scheme employed (ID)> ^ <identifier type code (IS)> ^ <assigning facility (HD)>
Generic		
CM	Composite	No new CMs are allowed after HL7 Version 2.2. Hence there are no new CMs in Version 2.3.
Demographics		
XAD	Extended address	In Version 2.3, replaces the AD data type. <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)>
XPN	Extended person name	In Version 2.3, replaces the PN data type. <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)> ^ <name type code (ID)>
XON	Extended composite name and ID number for organizations	<organization name (ST)> ^ <organization name type code (IS)> ^ <ID number (NM)> ^ <check digit (NM)> ^ <code identifying the check digit scheme employed (ID)> ^ <assigning authority (HD)> ^ <identifier type code (IS)> ^ <assigning facility ID (HD)>

Data Type/ Category	Data Type Name	Notes/Format
XTN	Extended telecommunications number	In Version 2.3, replaces the TN data type. `[NNN] [(999)]999-9999 [X99999] [B99999] [C any text]^<telecommunication use code (ID)> ^ <telecommunication equipment type (ID)> ^ <email address (ST)> ^ <country code (NM)> ^ <area/city code (NM)> ^ <phone number (NM)> ^ <extension (NM)> ^ <any text (ST)>`
Time Series		
TQ	Timing/quantity	For timing/quantity specifications for orders, see Chapter 4 of the HL7 Standard, Section 4.4. `<quantity (CQ)> ^ <interval (*)> ^ <duration (*)> ^ <start date/time (TS)> ^ <end date/time (TS)> ^ <priority (ID)> ^ <condition (ST)> ^ <text (TX)> ^ <conjunction (ID)> ^ <order sequencing (*)>`

ADT A28 (Patient Add) Message Segment Specifications

This section provides detailed specifications for each segment of an ADT A28 (Patient Add) HL7 message. The purpose of this message type is to enable a partner application to add a new patient (via the Hub) to Physician Portal.

Message Segment Hierarchy

An ADT A28 message must follow the message segment hierarchy, as specified below:

MSH	Message Header	(*Required*; one per file)
EVN	Event Type	(*Required*)
PID	Patient Identification(*Required*)	
[PD1]	Additional Demographics(*Optional*; not supported by the Hub)	
[{NK1}]	Next of Kin /Associated Parties(*Optional*; not supported by the Hub)	
PV1	Patient Visit Data (*Required*)	
[PV2]	Patient Visit—Additional Info.(*Optional*; not supported by the Hub)	
[{DB1}]	Disability Information(*Optional*; not supported by the Hub)	
[{OBX}]	Observation/Result(*Optional*; not supported by the Hub)	
[{AL1}]	Allergy Information(*Optional*; not supported by the Hub)	
[{DG1}]	Diagnosis Information(*Optional*; not supported by the Hub)	
[DRG]	Diagnosis Related Group(*Optional*; not supported by the Hub)	
[{PR1	Procedures	(*Optional*; not supported by the Hub)
[{ROL}]	Role	(*Optional*; not supported by the Hub)
}]		
[{GT1}]	Guarantor	(*Optional*; forwarded to portal if provided. The system can only handle one GT1 at this time. You can have 1 Guarantor with 2 insurances but not 2 Guarantors.
[		
{IN1	Insurance	(*Optional*; forwarded to portal if provided. The first IN1=Primary Insurance for Guarantor. The second IN1=Secondary Insurance for Guarantor (if provided). In order for the IN1 information to be stored by the portal, the IN1.47 field must be populated with a 'T' or a 'P'.
[IN2]	Insurance Additional Info.(*Optional*; not supported by the Hub)	
[IN3]	Insurance Additional Info.(*Optional*; not supported by the Hub)	
}		
]		
[ACC]	Accident Information(*Optional*; not supported by the Hub)	
[UB1]	Universal Bill Information(*Optional*; not supported by the Hub)	
[UB2]	Universal Bill 92 Information(*Optional*; not supported by the Hub)	

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) message. Message segments supported by the Hub include the following:

Note: ADT A28 message segments that are not supported by the Hub are *not* included in this section; for detailed specifications, refer to the HL7 2.3 Specification.

MSH—Message Header Segment

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

Segment ID	Element Name	Type[a]	Length	Comments	Req'd[b]
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 sub-component separator. Format: ^~\& These values are recommended by HL7, and are the only values supported by Quest Diagnostics.	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. Inbound: The Hub verifies that the field is populated. Outbound: No verification by the Hub.	R

Segment ID	Element Name	Type[a]	Length	Comments	Req'd[b]
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. Inbound: The Hub verifies that the field is populated. Outbound: No verification by the Hub.	R
MSH.07	Date/Time of Message	TS	26	The date and time that the sending system created the message. Format: `YYYYMMDDHHMMSS` The Hub verifies that this field is populated, and that the value complies with the format above.	R
MSH.08	Security	ST	40		NS
MSH.09	Message Type	CM	7	The type of message being transmitted, and the event leading to the creation of the message. Valid value: `ADT^A28` (Add 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 lab system. The Hub 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` = Training • `D` = Debug (Development) The Hub verifies that the value in this field is `P`, `T`, or `D`.	R
MSH.12	Version ID	ID	8	The value for this field is `2.3`.	R
MSH.13	Sequence Number	NM	15		NS
MSH.14	Continuation Pointer	ST	180		NS
MSH.15	Accept Acknowledgment Type	ID	2		NS
MSH.16	Application Acknowledgment Type	ID	2		NS

Segment ID	Element Name	Type[a]	Length	Comments	Req'd[b]
MSH.17	Country Code	ID	2		NS
MSH.18	Character Set	ID	6		NS
MSH.19	Principal Language of Message	CE	60		NS

a. For a description of the HL7 data types, see "Data Type Specifications" on page 176.
b. R = Required, O = Optional, C = Conditional, NS = Not Supported.

EVN—Event Type Segment

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

Segment ID	Element Name	Type[a]	Length	Comments	Req'd[b]
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. **Note:** This field has been retained for backward compatibility only.	R
EVN.02	Recorded Date/Time	TS	26	The date and time that the transaction was entered.	O
EVN.03	Date/Time Planned Event	TS	26	The date and time that the event is planned.	O
EVN.04	Event Reason Code	IS	3	The reason for the event.	O
EVN.05	Operator ID	XCN	60	The individual responsible for triggering the event.	O
EVN.06	Event Occurred	TS	26	The date and time that the event actually occurred.	O

a. For a description of the HL7 data types, see "Data Type Specifications" on page 176.
b. R = Required, O = Optional, C = Conditional, NS = Not Supported.

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.

Segment ID	Element Name	Type[a]	Length	Comments	Req'd[b]
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 (External ID)	CX	20	When the patient is from another institution, outside office, etc., the identifier used by that institution can be shown in this field. This may be a number that multiple disparate corporations or facilities share.	R
PID.03	Patient ID (Internal ID)	CX	20	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.).	O
PID.04	Alternate Patient ID (PID)	CX	20		NS
PID.05	Patient Name	XPN	48	No more than 48 characters wide, including the delimiter between the last and first names. At least one character for first and last name. A numeric value cannot be used as the first character of the last name. Family name 50 ^ given name 50 ^ middle name or init 1 ^ suffix 10 ^ prefix 10 ^ degree 10 ^ name type code ^ 6. Alphanumeric data only. The Hub verifies that the value complies with rules above.	R
PID.06	Mother's Maiden Name	XPN	48		NS
PID.07	Date of Birth	TS	26	Date of birth (DOB), in `YYYYMMDD` format. The Hub verifies that the DOB is in this format.	O

Segment ID	Element Name	Type[a]	Length	Comments	Req'd[b]
PID.08	Sex	IS	1	Valid values for this field include: • M = Male • F = Female • Blank The Hub verifies that one of these values is present in this field.	O
PID.09	Patient Alias	XPN	48	Patient alias name.	O
PID.10	Race	IS	1		NS
PID.11	Patient Address	XAD	106	No more than 106 characters wide. Add1 50 ^ add2 50 ^ city 50^ state 2 ^ zip 10 ^ country code 3. Alphanumeric data only. The Hub verifies that the value complies with rules above.	O
PID.12	County Code	IS	4		NS
PID.13	Phone Number - Home	XTN	40	Accepted length of this field is 40 numeric characters. No dashes or other separating characters. The following elements are required and passed to Physician Portal (any additional elements are ignored): <country code (NM)> ^ <area/city code (NM)> ^ <phone number (NM)> ^ <extension (NM)> The Hub verifies that the value complies with 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. The following elements are required and passed to Physician Portal (any additional elements are ignored): <country code (NM)> ^ <area/city code (NM)> ^ <phone number (NM)> ^ <extension (NM)> The Hub verifies that the value complies with rules above.	O
PID.15	Language - Patient	CE	60		NS
PID.16	Marital Status	IS	1		NS
PID.17	Religion	IS	3		NS
PID.18	Patient Account Number	CX	20		NS

Segment ID	Element Name	Type[a]	Length	Comments	Req'd[b]
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 Hub verifies that the value complies with rules above.	O
PID.20	Driver's Lic Num - Patient	DLN	25		NS
PID.21	Mother's Identifier	CX	20		NS
PID.22	Ethnic Group	IS	3		NS
PID.23	Birth Place	ST	60		NS
PID.24	Multiple Birth Indicator	ID	2		NS
PID.25	Birth Order	NM	2		NS
PID.26	Citizenship	IS	4		NS
PID.27	Veterans Military Status	CE	60		NS
PID.28	Nationality	CD	80		NS
PID.29	Patient Death Date & Time	TS	26		NS
PID.30	Patient Death Indicator	ID	1		NS

a. For a description of the HL7 data types, see "Data Type Specifications" on page 176.

b. R = Required, O = Optional, C = Conditional, NS = Not Supported.

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.

Segment ID	Element Name	Type[a]	Length	Comments	Req'd[b]
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	Examples of valid values: E = Emergency, I = Inpatient, O = Outpatient.	R

Segment ID	Element Name	Type[a]	Length	Comments	Req'd[b]
PV1.03	Assigned Patient Location	PL	80		NS
PV1.04	Admission Type	IS	2		NS
PV1.05	Preadmit Number	CX	20		NS
PV1.06	Prior Patient Location	PL	80		NS
PV1.07	Attending Doctor	XCN	60		NS
PV1.08	Referring Doctor	XCN	60		NS
PV1.09	Consulting Doctor	XCN	60		NS
PV1.10	Hospital Service	IS	3		NS
PV1.11	Temporary Location	PL	80		NS
PV1.12	Preadmit Test Indicator	IS	2		NS
PV1.13	Readmission Indicator	IS	2		NS
PV1.14	Admit Source	IS	3		NS
PV1.15	Ambulatory Status	IS	2		NS
PV1.16	VIP Indicator	IS	2		NS
PV1.17	Admitting Doctor	XCN	60		NS
PV1.18	Patient Type	IS	2		NS
PV1.19	Visit Number	CX	20		NS
PV1.20	Financial Class	FC	50		NS
PV1.21	Charge Price Indicator	IS	2		NS
PV1.22	Courtesy Code	IS	2		NS
PV1.23	Credit Rating	IS	2		NS
PV1.24	Contract Code	IS	2		NS
PV1.25	Contract Effective Date	DT	8		NS
PV1.26	Contract Amount	NM	12		NS

Segment ID	Element Name	Type[a]	Length	Comments	Req'd[b]
PV1.27	Contract Period	NM	3		NS
PV1.28	Interest Code	IS	2		NS
PV1.29	Transfer to Bad Debt Code	IS	1		NS
PV1.30	Transfer to Bad Debt Date	DT	8		NS
PV1.31	Bad Debt Agency Code	IS	10		NS
PV1.32	Bad Debt Transfer Amount	NM	12		NS
PV1.33	Bad Debt Recovery Amount	NM	12		NS
PV1.34	Delete Account Indicator	IS	1		NS
PV1.35	Delete Account Date	DT	8		NS
PV1.36	Discharge Disposition	IS	3		NS
PV1.37	Discharged to Location	CM	25		NS
PV1.38	Diet Type	IS	2		NS
PV1.39	Servicing Facility	IS	2		NS
PV1.40	Bed Status	IS	1		NS
PV1.41	Account Status	IS	2		NS
PV1.42	Pending Location	PL	80		NS
PV1.43	Prior Temporary Location	PL	80		NS
PV1.44	Admit Date/Time	TS	26		NS
PV1.45	Discharge Date/Time	TS	26		NS
PV1.46	Current Patient Balance	NM	12		NS
PV1.47	Total Charges	NM	12		NS

Segment ID	Element Name	Type[a]	Length	Comments	Req'd[b]
PV1.48	Total Adjustments	NM	12		NS
PV1.49	Total Payments	NM	12		NS
PV1.50	Alternate Visit ID	CX	20		NS
PV1.51	Visit Indicator	IS	1		NS
PV1.52	Other Healthcare Provider	XCN	60		NS

a. For a description of the HL7 data types, see "Data Type Specifications" on page 176.

b. R = Required, O = Optional, C = Conditional, NS = Not Supported.

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.

Segment ID	Element Name	Type[a]	Length	Comments	Req'd[b]
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	CX	59		NS
GT1.03	Guarantor Name	XPN	48	No more than 48 characters wide, including the delimiter between the last and first names. At least one character for first and last name. A numeric value cannot be used as the first character of the last name. Family name 50 ^ given name 50 ^ middle name or init 1 ^ suffix 10 ^ prefix 10 ^ degree 10 ^ name type code ^ 6. Alphanumeric data only. The Hub verifies that the value complies with rules above.	R
GT1.04	Guarantor Spouse Name	XPN	48		NS
GT1.05	Guarantor Address	XAD	106	No more than 106 characters wide. Add1 50 ^ add2 50 ^ city 50 ^ state 2 ^ zip 10 ^ country code 3. Alphanumeric data only. The Hub verifies that the value complies with rules above.	O

Segment ID	Element Name	Type[a]	Length	Comments	Req'd[b]
GT1.06	Guarantor Ph Num-Home	XTN	40	Accepted length of this field is 40 numeric characters. No dashes or other separating characters. The following elements are required and passed to Physician Portal (any additional elements are ignored): <country code (NM)> ^ <area/city code (NM)> ^ <phone number (NM)> ^ <extension (NM)> If present, the Hub verifies that the value complies with rules above.	O
GT1.07	Guarantor Ph Num-Business	XTN	40	Accepted length of this field is 40 numeric characters. No dashes or other separating characters. The following elements are required and passed to Physician Portal (any additional elements are ignored): <country code (NM)> ^ <area/city code (NM)> ^ <phone number (NM)> ^ <extension (NM)> If present, the Hub verifies that the value complies with rules above.	O
GT1.08	Guarantor Date/Time Of Birth	TS	26	The date and time of the guarantor's birth. Format: `YYYYMMDDHHMMSS` The Hub verifies that the date/time is in this format.	O
GT1.09	Guarantor Sex	IS	1	Valid values for this field include: • `M` = Male • `F` = Female • Blank The Hub verifies that one of these values is present in this field.	O
GT1.10	Guarantor Type	IS	2		NS
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	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 Hub verifies that the value complies with rules above.	O
GT1.13	Guarantor Date - Begin	DT	8		NS

Segment ID	Element Name	Type[a]	Length	Comments	Req'd[b]
GT1.14	Guarantor Date - End	DT	8		NS
GT1.15	Guarantor Priority	NM	2		NS
GT1.16	Guarantor Employer Name	XPN	130	Employer name. No more than 130 characters wide. Alphanumeric data only.	O
GT1.17	Guarantor Employer Address	XAD	106	No more than 106 characters wide. Add1 50 ^ add2 50 ^ city 50 ^ state 2 ^ zip 10 ^ country code 3. Alphanumeric data only. The Hub verifies that the value complies with rules above.	O
GT1.18	Guarantor Employer Phone Number	XTN	40		NS
GT1.19	Guarantor Employee ID Number	CX	20		NS
GT1.20	Guarantor Employment Status	IS	2		NS
GT1.21	Guarantor Organization Name	XON	130		NS
GT1.22	Guarantor Billing Hold Flag	ID	1		NS
GT1.23	Guarantor Credit Rating Code	CE	80		NS
GT1.24	Guarantor Death Date And Time	TS	26		NS
GT1.25	Guarantor Death Flag	ID	1		NS
GT1.26	Guarantor Charge Adjustment Code	CE	80		NS
GT1.27	Guarantor Household Annual Income	CP	10		NS
GT1.28	Guarantor Household Size	NM	3		NS
GT1.29	Guarantor Employer ID Number	CX	20		NS
GT1.30	Guarantor Marital Status Code	IS	1		NS

Segment ID	Element Name	Type[a]	Length	Comments	Req'd[b]
GT1.31	Guarantor Hire Effective Date	DT	8		NS
GT1.32	Employment Stop Date	DT	8		NS
GT1.33	Living Dependency	IS	2		NS
GT1.34	Ambulatory Status	IS	2		NS
GT1.35	Citizenship	IS	4		NS
GT1.36	Primary Language	CE	60		NS
GT1.37	Living Arrangement	IS	2		NS
GT1.38	Publicity Indicator	CE	80		NS
GT1.39	Protection Indicator	ID	1		NS
GT1.40	Student Indicator	IS	2		NS
GT1.41	Religion	IS	3		NS
GT1.42	Mother's Maiden Name	XPN	48		NS
GT1.43	Nationality	CE	80		NS
GT1.44	Ethnic Group	IS	3		NS
GT1.45	Contact Person's Name	XPN	48		NS
GT1.46	Contact Person's Telephone Number	XTN	40		NS
GT1.47	Contact Reason	CE	80		NS
GT1.48	Contact Relationship	IS	2		NS
GT1.49	Job Title	ST	20		NS
GT1.50	Job Code/Class	JCC	20		NS
GT1.51	Guarantor Employer's Organ. Name	XON	130		NS
GT1.52	Handicap	IS	2		NS
GT1.53	Job Status	IS	2		NS
GT1.54	Guarantor Financial Class	FC	50		NS
GT1.55	Guarantor Race	IS	1		NS

a. For a description of the HL7 data types, see "Data Type Specifications" on page 176.
b. R = Required, O = Optional, C = Conditional, NS = Not Supported.

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.

Segment ID	Element Name	Type[a]	Length	Comments	Req'd[b]
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	The Hub verifies that the field is populated.	R
IN1.03	Insurance Company ID	CX	59	This is the QDI Bill mnemonic. **Note:** Required only if IN1.47 = T(Third-Party Bill).	O
IN1.04	Insurance Company Name	XON	130	**Note:** Required only if IN1.47 = T(Third-Party Bill).	O
IN1.05	Insurance Company Address	XAD	106	No more than 106 characters wide. Add1 50 ^ add2 50 ^ city 50 ^ state 2 ^ zip 10 ^ country code 3. Alphanumeric data only. If populated, the Hub ignores this field.	O
IN1.06	Insurance Co. Contact Person	XPN	48		NS
IN1.07	Insurance Co Phone Number	XTN	40		NS
IN1.08	Group Number	ST	50	Characters permitted include: `A–Z` and `1–0`. If present, the Hub verifies that the value complies with rules above.	O
IN1.09	Group Name	XON	130		O
IN1.10	Insured's Group Emp ID	CX	12		NS
IN1.11	Insured's Group Emp Name	XON	130		NS
IN1.12	Plan Effective Date	DT	8		NS
IN1.13	Plan Expiration Date	DT	8		NS

Segment ID	Element Name	Type[a]	Length	Comments	Req'd[b]
IN1.14	Authorization Information	CM	55		NS
IN1.15	Plan Type	IS	3		NS
IN1.16	Name Of Insured	XPN	48		NS
IN1.17	Insured's Relationship To Patient	IS	2		NS
IN1.18	Insured's Date Of Birth	TS	26		NS
IN1.19	Insured's Address	XAD	106		NS
IN1.20	Assignment Of Benefits	IS	2		NS
IN1.21	Coordination Of Benefits	IS	2		NS
IN1.22	Coord Of Ben. Priority	ST	2		NS
IN1.23	Notice Of Admission Flag	ID	2		NS
IN1.24	Notice Of Admission Date	DT	8		NS
IN1.25	Report Of Eligibility Flag	ID	2		NS
IN1.26	Report Of Eligibility Date	DT	8		NS
IN1.27	Release Information Code	IS	2		NS
IN1.28	Pre-Admit Cert (PAC)	ST	15		NS
IN1.29	Verification Date/Time	TS	26		NS
IN1.30	Verification By	XCN	60		NS
IN1.31	Type Of Agreement Code	IS	2		NS
IN1.32	Billing Status	IS	2		NS

Segment ID	Element Name	Type[a]	Length	Comments	Req'd[b]
IN1.33	Lifetime Reserve Days	NM	4		NS
IN1.34	Delay Before L.R. Day	NM	4		NS
IN1.35	Company Plan Code	IS	8		NS
IN1.36	Policy Number	ST	50		O
IN1.37	Policy Deductible	CP	12		NS
IN1.38	Policy Limit - Amount	CP	12		NS
IN1.39	Policy Limit - Days	NM	4		NS
IN1.40	Room Rate - Semi-Private	CP	12		NS
IN1.41	Room Rate - Private	CP	12		NS
IN1.42	Insured's Employment Status	CE	60		NS
IN1.43	Insured's Sex	IS	1		NS
IN1.44	Insured's Employer Address	XAD	106		NS
IN1.45	Verification Status	ST	2		NS
IN1.46	Prior Insurance Plan ID	IS	8		NS
IN1.47	Coverage Type	IS	3	Valid values include: • T = Third-party bill • P = Patient bill • C = Client bill If present, the Hub verifies that the value complies with rules above.	O
IN1.48	Handicap	IS	2		NS
IN1.49	Insured's ID Number	CX	12		NS

a. For a description of the HL7 data types, see "Data Type Specifications" on page 176.

b. R = Required, O = Optional, C = Conditional, NS = Not Supported.

ADT A29 (Patient Delete) Message Segment Specifications

This section provides detailed specifications for each segment of an ADT A29 (Patient Delete) HL7 message. The purpose of this message type is to enable a partner application to delete an existing patient (via the Hub) from Physician Portal. This can be used, for example, to correct an error in adding the information, to delete a duplicate patient record, or to purge the patient from Physician Portal.

Note: You cannot delete a patient from Physician Portal 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.

Message Segment Hierarchy

An ADT A29 message must follow the message segment hierarchy, as specified below:

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

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. Message segments supported by the Hub include the following:

- "MSH—Message Header Segment" on page 196.
- "EVN—Event Type Segment" on page 198.
- "PID—Patient Identification Segment" on page 198.
- "PV1—Patient Visit Data Segment" on page 201.

Note: ADT A29 message segments that are not supported by the Hub are *not* included in this section; for detailed specifications, refer to the HL7 2.3 Specification.

MSH—Message Header Segment

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

Segment ID	Element Name	Type[a]	Length	Comments	Req'd[b]
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 sub-component separator. Format: ^~\& These values are recommended by HL7, and are the only values supported by Quest Diagnostics.	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. Inbound: The Hub verifies that the field is populated. Outbound: No verification by the Hub.	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 by Quest Diagnostics for the requester. Inbound: The Hub verifies that the field is populated. Outbound: No verification by the Hub.	R
MSH.07	Date/Time of Message	TS	26	The date and time that the sending system created the message. Format: YYYYMMDDHHMMSS The Hub verifies that this field is populated, and that the value complies with the format above.	R

Segment ID	Element Name	Type[a]	Length	Comments	Req'd[b]
MSH.08	Security	ST	40		NS
MSH.09	Message Type	CM	7	The type of message being transmitted, and the event leading to the creation of the message. Valid value: `ADT^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 lab system. The Hub 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` = Training • `D` = Debug (Development) The Hub verifies that the value in this field is `P`, `T`, or `D`.	R
MSH.12	Version ID	ID	8	The value for this field is `2.3`.	R
MSH.13	Sequence Number	NM	15		NS
MSH.14	Continuation Pointer	ST	180		NS
MSH.15	Accept Acknowledgment Type	ID	2		NS
MSH.16	Application Acknowledgment Type	ID	2		NS
MSH.17	Country Code	ID	2		NS
MSH.18	Character Set	ID	6		NS
MSH.19	Principal Language of Message	CE	60		NS

a. For a description of the HL7 data types, see "Data Type Specifications" on page 176.
b. R = Required, O = Optional, C = Conditional, NS = Not Supported.

EVN—Event Type Segment

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

Segment ID	Element Name	Type[a]	Length	Comments	Req'd[b]
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. **Note:** This field has been retained for backward compatibility only.	R
EVN.02	Recorded Date/Time	TS	26	The date and time that the transaction was entered.	O
EVN.03	Date/Time Planned Event	TS	26	The date and time that the event is planned.	O
EVN.04	Event Reason Code	IS	3	The reason for the event.	O
EVN.05	Operator ID	XCN	60	The individual responsible for triggering the event.	O
EVN.06	Event Occurred	TS	26	The date and time that the event actually occurred.	O

a. For a description of the HL7 data types, see "Data Type Specifications" on page 176.
b. R = Required, O = Optional, C = Conditional, NS = Not Supported.

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.

Segment ID	Element Name	Type[a]	Length	Comments	Req'd[b]
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

Segment ID	Element Name	Type[a]	Length	Comments	Req'd[b]
PID.02	Patient ID (External ID)	CX	20	When the patient is from another institution, outside office, etc., the identifier used by that institution can be shown in this field. This may be a number that multiple disparate corporations or facilities share.	R
PID.03	Patient ID (Internal ID)	CX	20	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.).	O
PID.04	Alternate Patient ID (PID)	CX	20		NS
PID.05	Patient Name	XPN	48	No more than 48 characters wide, including the delimiter between the last and first names. At least one character for first and last name. A numeric value cannot be used as the first character of the last name. Family name 50 ^ given name 50 ^ middle name or init 1 ^ suffix 10 ^ prefix 10 ^ degree 10 ^ name type code ^ 6. Alphanumeric data only. The Hub verifies that the value complies with rules above.	R
PID.06	Mother's Maiden Name	XPN	48		NS
PID.07	Date/Time of Birth	TS	26	Date of birth (DOB), in `YYYYMMDDHHMMSS` format. The Hub verifies that the DOB is in this format.	O
PID.08	Sex	IS	1	Valid values for this field include: • `M` = Male • `F` = Female • Blank The Hub verifies that one of these values is present in this field.	O
PID.09	Patient Alias	XPN	48	Patient alias name.	O
PID.10	Race	IS	1		NS
PID.11	Patient Address	XAD	106	No more than 106 characters wide. Add1 50 ^ add2 50 ^ city 50 ^ state 2 ^ zip 10 ^ country code 3. Alphanumeric data only. The Hub verifies that the value complies with rules above.	O

Segment ID	Element Name	Type[a]	Length	Comments	Req'd[b]
PID.12	County Code	IS	4		NS
PID.13	Phone Number - Home	XTN	40	Accepted length of this field is 40 numeric characters. No dashes or other separating characters. The following elements are required and passed to Physician Portal (any additional elements are ignored): <country code (NM)> ^ <area/city code (NM)> ^ <phone number (NM)> ^ <extension (NM)> The Hub verifies that the value complies with 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. The following elements are required and passed to Physician Portal (any additional elements are ignored): <country code (NM)> ^ <area/city code (NM)> ^ <phone number (NM)> ^ <extension (NM)> The Hub verifies that the value complies with rules above.	O
PID.15	Language - Patient	CE	60		NS
PID.16	Marital Status	IS	1		NS
PID.17	Religion	IS	3		NS
PID.18	Patient Account Number	CX	20		NS
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 Hub verifies that the value complies with rules above.	O
PID.20	Driver's Lic Num - Patient	DLN	25		NS
PID.21	Mother's Identifier	CX	20		NS
PID.22	Ethnic Group	IS	3		NS
PID.23	Birth Place	ST	60		NS
PID.24	Multiple Birth Indicator	ID	2		NS

Segment ID	Element Name	Type[a]	Length	Comments	Req'd[b]
PID.25	Birth Order	NM	2		NS
PID.26	Citizenship	IS	4		NS
PID.27	Veterans Military Status	CE	60		NS
PID.28	Nationality	CD	80		NS
PID.29	Patient Death Date & Time	TS	26		NS
PID.30	Patient Death Indicator	ID	1		NS

a. For a description of the HL7 data types, see "Data Type Specifications" on page 176.

b. R = Required, O = Optional, C = Conditional, NS = Not Supported.

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.

Segment ID	Element Name	Type[a]	Length	Comments	Req'd[b]
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	Examples of valid values: E = Emergency, I = Inpatient, O = Outpatient.	R
PV1.03	Assigned Patient Location	PL	80		NS
PV1.04	Admission Type	IS	2		NS
PV1.05	Preadmit Number	CX	20		NS
PV1.06	Prior Patient Location	PL	80		NS
PV1.07	Attending Doctor	XCN	60		NS
PV1.08	Referring Doctor	XCN	60		NS
PV1.09	Consulting Doctor	XCN	60		NS
PV1.10	Hospital Service	IS	3		NS

Segment ID	Element Name	Type[a]	Length	Comments	Req'd[b]
PV1.11	Temporary Location	PL	80		NS
PV1.12	Preadmit Test Indicator	IS	2		NS
PV1.13	Readmission Indicator	IS	2		NS
PV1.14	Admit Source	IS	3		NS
PV1.15	Ambulatory Status	IS	2		NS
PV1.16	VIP Indicator	IS	2		NS
PV1.17	Admitting Doctor	XCN	60		NS
PV1.18	Patient Type	IS	2		NS
PV1.19	Visit Number	CX	20		NS
PV1.20	Financial Class	FC	50		NS
PV1.21	Charge Price Indicator	IS	2		NS
PV1.22	Courtesy Code	IS	2		NS
PV1.23	Credit Rating	IS	2		NS
PV1.24	Contract Code	IS	2		NS
PV1.25	Contract Effective Date	DT	8		NS
PV1.26	Contract Amount	NM	12		NS
PV1.27	Contract Period	NM	3		NS
PV1.28	Interest Code	IS	2		NS
PV1.29	Transfer to Bad Debt Code	IS	1		NS
PV1.30	Transfer to Bad Debt Date	DT	8		NS
PV1.31	Bad Debt Agency Code	IS	10		NS
PV1.32	Bad Debt Transfer Amount	NM	12		NS
PV1.33	Bad Debt Recovery Amount	NM	12		NS

Segment ID	Element Name	Type[a]	Length	Comments	Req'd[b]
PV1.34	Delete Account Indicator	IS	1		NS
PV1.35	Delete Account Date	DT	8		NS
PV1.36	Discharge Disposition	IS	3		NS
PV1.37	Discharged to Location	CM	25		NS
PV1.38	Diet Type	IS	2		NS
PV1.39	Servicing Facility	IS	2		NS
PV1.40	Bed Status	IS	1		NS
PV1.41	Account Status	IS	2		NS
PV1.42	Pending Location	PL	80		NS
PV1.43	Prior Temporary Location	PL	80		NS
PV1.44	Admit Date/Time	TS	26		NS
PV1.45	Discharge Date/Time	TS	26		NS
PV1.46	Current Patient Balance	NM	12		NS
PV1.47	Total Charges	NM	12		NS
PV1.48	Total Adjustments	NM	12		NS
PV1.49	Total Payments	NM	12		NS
PV1.50	Alternate Visit ID	CX	20		NS
PV1.51	Visit Indicator	IS	1		NS
PV1.52	Other Healthcare Provider	XCN	60		NS

a. For a description of the HL7 data types, see "Data Type Specifications" on page 176.

b. R = Required, O = Optional, C = Conditional, NS = Not Supported.

ADT A31 (Patient Update) Message Segment Specifications

This section provides detailed specifications for each segment of an ADT A31 (Patient Update) HL7 message. The purpose of this message type is to enable a partner application to modify an existing patient (via the Hub) in Physician Portal.

Message Segment Hierarchy

An ADT A31 message must follow the message segment hierarchy, as specified below:

MSH	Message Header	(*Required*; one per file)
EVN	Event Type	(*Required*)
PID	Patient Identification	(*Required*)
[PD1]	Additional Demographics	(*Optional*; not supported by the Hub)
[{NK1}]	Next of Kin /Associated Parties	(*Optional*; not supported by the Hub)
PV1	Patient Visit Data	(*Required*)
[PV2]	Patient Visit—Additional Info.	(*Optional*; not supported by the Hub)
[{DB1}]	Disability Information	(*Optional*; not supported by the Hub)
[{OBX}]	Observation/Result	(*Optional*; not supported by the Hub)
[{AL1}]	Allergy Information	(*Optional*; not supported by the Hub)
[{DG1}]	Diagnosis Information	(*Optional*; not supported by the Hub)
[DRG]	Diagnosis Related Group	(*Optional*; not supported by the Hub)
[{PR1	Procedures	(*Optional*; not supported by the Hub)
[{ROL}]	Role	(*Optional*; not supported by the Hub)
}]		
[{GT1}]	Guarantor	(*Optional*; forwarded to portal if provided. The system can only handle one GT1 at this time. You can have 1 Guarantor with 2 insurances but not 2 Guarantors.)
[		
{IN1	Insurance	(*Optional*; forwarded to portal if provided. The first IN1=Primary Insurance for Guarantor. The second IN1=Secondary Insurance for Guarantor (if provided). In order for the IN1 information to be stored by the portal, the IN1.47 field must be populated with a 'T' or a 'P'.
[IN2]	Insurance Additional Info.	(*Optional*; not supported by the Hub)
[IN3]	Insurance Additional Info.	(*Optional*; not supported by the Hub)
}		
]		
[ACC]	Accident Information	(*Optional*; not supported by the Hub)
[UB1]	Universal Bill Information	(*Optional*; not supported by the Hub)
[UB2]	Universal Bill 92 Information	(*Optional*; not supported by the Hub)

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 A31 (Patient Update) message. Message segments supported by the Hub include the following:

Note: ADT A31 message segments that are not supported by the Hub are *not* included in this section; for detailed specifications, refer to the HL7 2.3 Specification.

MSH—Message Header Segment

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

Segment ID	Element Name	Type[a]	Length	Comments	Req'd[b]
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 sub-component separator. Format: ^~\& These values are recommended by HL7, and are the only values supported by Quest Diagnostics.	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. Inbound: The Hub verifies that the field is populated. Outbound: No verification by the Hub.	R

Segment ID	Element Name	Type[a]	Length	Comments	Req'd[b]
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. Inbound: The Hub verifies that the field is populated. Outbound: No verification by the Hub.	R
MSH.07	Date/Time of Message	TS	26	The date and time that the sending system created the message. Format: `YYYYMMDDHHMMSS` The Hub verifies that this field is populated, and that the value complies with the format above.	R
MSH.08	Security	ST	40		NS
MSH.09	Message Type	CM	7	The type of message being transmitted, and the event leading to the creation of the message. Valid value: `ADT^A31` (Update 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 lab system.	R
MSH.11	Processing ID	PT	3	The placer system's intent for the message. Valid values include: • `P` = Production • `T` = Training • `D` = Debug (Development) The Hub verifies that the value in this field is `P`, `T`, or `D`.	R
MSH.12	Version ID	ID	8	The value for this field is `2.3`.	R
MSH.13	Sequence Number	NM	15		NS
MSH.14	Continuation Pointer	ST	180		NS
MSH.15	Accept Acknowledgment Type	ID	2		NS
MSH.16	Application Acknowledgment Type	ID	2		NS
MSH.17	Country Code	ID	2		NS
MSH.18	Character Set	ID	6		NS

Segment ID	Element Name	Type[a]	Length	Comments	Req'd[b]
MSH.19	Principal Language of Message	CE	60		NS

a. For a description of the HL7 data types, see "Data Type Specifications" on page 176.
b. R = Required, O = Optional, C = Conditional, NS = Not Supported.

EVN—Event Type Segment

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

Segment ID	Element Name	Type[a]	Length	Comments	Req'd[b]
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. **Note:** This field has been retained for backward compatibility only.	R
EVN.02	Recorded Date/Time	TS	26	The date and time that the transaction was entered.	O
EVN.03	Date/Time Planned Event	TS	26	The date and time that the event is planned.	O
EVN.04	Event Reason Code	IS	3	The reason for the event.	O
EVN.05	Operator ID	XCN	60	The individual responsible for triggering the event.	O
EVN.06	Event Occurred	TS	26	The date and time that the event actually occurred.	O

a. For a description of the HL7 data types, see "Data Type Specifications" on page 176.
b. R = Required, O = Optional, C = Conditional, NS = Not Supported.

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.

Segment ID	Element Name	Type[a]	Length	Comments	Req'd[b]
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 (External ID)	CX	20	When the patient is from another institution, outside office, etc., the identifier used by that institution can be shown in this field. This may be a number that multiple disparate corporations or facilities share.	R
PID.03	Patient ID (Internal ID)	CX	20	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.).	O
PID.04	Alternate Patient ID (PID)	CX	20		NS
PID.05	Patient Name	XPN	48	No more than 48 characters wide, including the delimiter between the last and first names. At least one character for first and last name. A numeric value cannot be used as the first character of the last name. Family name 50 ^ given name 50 ^ middle name or init 1 ^ suffix 10 ^ prefix 10 ^ degree 10 ^ name type code ^ 6. Alphanumeric data only. The Hub verifies that the value complies with rules above.	R
PID.06	Mother's Maiden Name	XPN	48		NS
PID.07	Date of Birth	TS	26	Date of birth (DOB), in `YYYYMMDD` format. The Hub verifies that the DOB is in this format.	O

Segment ID	Element Name	Type[a]	Length	Comments	Req'd[b]
PID.08	Sex	IS	1	Valid values for this field include: • M = Male • F = Female • Blank The Hub verifies that one of these values is present in this field.	O
PID.09	Patient Alias	XPN	48	Patient alias name.	O
PID.10	Race	IS	1		NS
PID.11	Patient Address	XAD	106	No more than 106 characters wide. Add1 50 ^ add2 50 ^ city 50 ^ state 2 ^ zip 10 ^ country code 3. Alphanumeric data only. The Hub verifies that the value complies with rules above.	O
PID.12	County Code	IS	4		NS
PID.13	Phone Number - Home	XTN	40	Accepted length of this field is 40 numeric characters. No dashes or other separating characters. The following elements are required and passed to Physician Portal (any additional elements are ignored): <country code (NM)> ^ <area/city code (NM)> ^ <phone number (NM)> ^ <extension (NM)>	O
PID.14	Phone Number - Business	XTN	40	Accepted length of this field is 40 numeric characters. No dashes or other separating characters. The following elements are required and passed to Physician Portal (any additional elements are ignored): <country code (NM)> ^ <area/city code (NM)> ^ <phone number (NM)> ^ <extension (NM)>	O
PID.15	Language - Patient	CE	60		NS
PID.16	Marital Status	IS	1		NS
PID.17	Religion	IS	3		NS
PID.18	Patient Account Number	CX	20		NS

Segment ID	Element Name	Type[a]	Length	Comments	Req'd[b]
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 Hub verifies that the value complies with rules above.	O
PID.20	Driver's Lic Num - Patient	DLN	25		NS
PID.21	Mother's Identifier	CX	20		NS
PID.22	Ethnic Group	IS	3		NS
PID.23	Birth Place	ST	60		NS
PID.24	Multiple Birth Indicator	ID	2		NS
PID.25	Birth Order	NM	2		NS
PID.26	Citizenship	IS	4		NS
PID.27	Veterans Military Status	CE	60		NS
PID.28	Nationality	CD	80		NS
PID.29	Patient Death Date & Time	TS	26		NS
PID.30	Patient Death Indicator	ID	1		NS

a. For a description of the HL7 data types, see "Data Type Specifications" on page 176.

b. R = Required, O = Optional, C = Conditional, NS = Not Supported.

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.

Segment ID	Element Name	Type[a]	Length	Comments	Req'd[b]
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	Examples of valid values: E = Emergency, I = Inpatient, O = Outpatient.	R

Segment ID	Element Name	Type[a]	Length	Comments	Req'd[b]
PV1.03	Assigned Patient Location	PL	80		NS
PV1.04	Admission Type	IS	2		NS
PV1.05	Preadmit Number	CX	20		NS
PV1.06	Prior Patient Location	PL	80		NS
PV1.07	Attending Doctor	XCN	60		NS
PV1.08	Referring Doctor	XCN	60		NS
PV1.09	Consulting Doctor	XCN	60		NS
PV1.10	Hospital Service	IS	3		NS
PV1.11	Temporary Location	PL	80		NS
PV1.12	Preadmit Test Indicator	IS	2		NS
PV1.13	Readmission Indicator	IS	2		NS
PV1.14	Admit Source	IS	3		NS
PV1.15	Ambulatory Status	IS	2		NS
PV1.16	VIP Indicator	IS	2		NS
PV1.17	Admitting Doctor	XCN	60		NS
PV1.18	Patient Type	IS	2		NS
PV1.19	Visit Number	CX	20		NS
PV1.20	Financial Class	FC	50		NS
PV1.21	Charge Price Indicator	IS	2		NS
PV1.22	Courtesy Code	IS	2		NS
PV1.23	Credit Rating	IS	2		NS
PV1.24	Contract Code	IS	2		NS
PV1.25	Contract Effective Date	DT	8		NS
PV1.26	Contract Amount	NM	12		NS

Segment ID	Element Name	Type[a]	Length	Comments	Req'd[b]
PV1.27	Contract Period	NM	3		NS
PV1.28	Interest Code	IS	2		NS
PV1.29	Transfer to Bad Debt Code	IS	1		NS
PV1.30	Transfer to Bad Debt Date	DT	8		NS
PV1.31	Bad Debt Agency Code	IS	10		NS
PV1.32	Bad Debt Transfer Amount	NM	12		NS
PV1.33	Bad Debt Recovery Amount	NM	12		NS
PV1.34	Delete Account Indicator	IS	1		NS
PV1.35	Delete Account Date	DT	8		NS
PV1.36	Discharge Disposition	IS	3		NS
PV1.37	Discharged to Location	CM	25		NS
PV1.38	Diet Type	IS	2		NS
PV1.39	Servicing Facility	IS	2		NS
PV1.40	Bed Status	IS	1		NS
PV1.41	Account Status	IS	2		NS
PV1.42	Pending Location	PL	80		NS
PV1.43	Prior Temporary Location	PL	80		NS
PV1.44	Admit Date/Time	TS	26		NS
PV1.45	Discharge Date/Time	TS	26		NS
PV1.46	Current Patient Balance	NM	12		NS
PV1.47	Total Charges	NM	12		NS

Segment ID	Element Name	Type[a]	Length	Comments	Req'd[b]
PV1.48	Total Adjustments	NM	12		NS
PV1.49	Total Payments	NM	12		NS
PV1.50	Alternate Visit ID	CX	20		NS
PV1.51	Visit Indicator	IS	1		NS
PV1.52	Other Healthcare Provider	XCN	60		NS

a. For a description of the HL7 data types, see "Data Type Specifications" on page 176.

b. R = Required, O = Optional, C = Conditional, NS = Not Supported.

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.

Segment ID	Element Name	Type[a]	Length	Comments	Req'd[b]
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	CX	59		NS
GT1.03	Guarantor Name	XPN	48	No more than 48 characters wide, including the delimiter between the last and first names. At least one character for first and last name. A numeric value cannot be used as the first character of the last name. Family name 50 ^ given name 50 ^ middle name or init 1 ^ suffix 10 ^ prefix 10 ^ degree 10 ^ name type code ^ 6. Alphanumeric data only. The Hub verifies that the value complies with rules above.	R
GT1.04	Guarantor Spouse Name	XPN	48		NS

Segment ID	Element Name	Type[a]	Length	Comments	Req'd[b]
GT1.05	Guarantor Address	XAD	106	No more than 106 characters wide. Add1 50 ^ add2 50 ^ city 50 ^ state 2 ^ zip 10 ^ country code 3. Alphanumeric data only. The Hub verifies that the value complies with rules above.	O
GT1.06	Guarantor Ph Num-Home	XTN	40	Accepted length of this field is 40 numeric characters. No dashes or other separating characters. The following elements are required and passed to Physician Portal (any additional elements are ignored): <country code (NM)> ^ <area/city code (NM)> ^ <phone number (NM)> ^ <extension (NM)>	O
GT1.07	Guarantor Ph Num-Business	XTN	40	Accepted length of this field is 40 numeric characters. No dashes or other separating characters. The following elements are required and passed to Physician Portal (any additional elements are ignored): <country code (NM)> ^ <area/city code (NM)> ^ <phone number (NM)> ^ <extension (NM)>	O
GT1.08	Guarantor Date/Time Of Birth	TS	26	The date and time of the guarantor's birth. Format: `YYYYMMDDHHMMSS` The Hub verifies that the date/time is in this format.	O
GT1.09	Guarantor Sex	IS	1	Valid values for this field include: • `M` = Male • `F` = Female • Blank The Hub verifies that one of these values is present in this field.	O
GT1.10	Guarantor Type	IS	2		NS
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	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 Hub verifies that the value complies with rules above.	O

Segment ID	Element Name	Type[a]	Length	Comments	Req'd[b]
GT1.13	Guarantor Date - Begin	DT	8		NS
GT1.14	Guarantor Date - End	DT	8		NS
GT1.15	Guarantor Priority	NM	2		NS
GT1.16	Guarantor Employer Name	XPN	130	Employer name. No more than 130 characters wide. Alphanumeric data only.	O
GT1.17	Guarantor Employer Address	XAD	106	No more than 106 characters wide. Add1 50 ^ add2 50 ^ city 50 ^ state 2 ^ zip 10 ^ country code 3. Alphanumeric data only. The Hub verifies that the value complies with rules above.	O
GT1.18	Guarantor Employer Phone Number	XTN	40		NS
GT1.19	Guarantor Employee ID Number	CX	20		NS
GT1.20	Guarantor Employment Status	IS	2		NS
GT1.21	Guarantor Organization Name	XON	130		NS
GT1.22	Guarantor Billing Hold Flag	ID	1		NS
GT1.23	Guarantor Credit Rating Code	CE	80		NS
GT1.24	Guarantor Death Date And Time	TS	26		NS
GT1.25	Guarantor Death Flag	ID	1		NS
GT1.26	Guarantor Charge Adjustment Code	CE	80		NS

Segment ID	Element Name	Type[a]	Length	Comments	Req'd[b]
GT1.27	Guarantor Household Annual Income	CP	10		NS
GT1.28	Guarantor Household Size	NM	3		NS
GT1.29	Guarantor Employer ID Number	CX	20		NS
GT1.30	Guarantor Marital Status Code	IS	1		NS
GT1.31	Guarantor Hire Effective Date	DT	8		NS
GT1.32	Employment Stop Date	DT	8		NS
GT1.33	Living Dependency	IS	2		NS
GT1.34	Ambulatory Status	IS	2		NS
GT1.35	Citizenship	IS	4		NS
GT1.36	Primary Language	CE	60		NS
GT1.37	Living Arrangement	IS	2		NS
GT1.38	Publicity Indicator	CE	80		NS
GT1.39	Protection Indicator	ID	1		NS
GT1.40	Student Indicator	IS	2		NS
GT1.41	Religion	IS	3		NS
GT1.42	Mother's Maiden Name	XPN	48		NS
GT1.43	Nationality	CE	80		NS
GT1.44	Ethnic Group	IS	3		NS
GT1.45	Contact Person's Name	XPN	48		NS

Segment ID	Element Name	Type[a]	Length	Comments	Req'd[b]
GT1.46	Contact Person's Telephone Number	XTN	40		NS
GT1.47	Contact Reason	CE	80		NS
GT1.48	Contact Relationship	IS	2		NS
GT1.49	Job Title	ST	20		NS
GT1.50	Job Code/Class	JCC	20		NS
GT1.51	Guarantor Employer's Organ. Name	XON	130		NS
GT1.52	Handicap	IS	2		NS
GT1.53	Job Status	IS	2		NS
GT1.54	Guarantor Financial Class	FC	50		NS
GT1.55	Guarantor Race	IS	1		NS

a. For a description of the HL7 data types, see "Data Type Specifications" on page 176.

b. R = Required, O = Optional, C = Conditional, NS = Not Supported.

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.

Segment ID	Element Name	Type[a]	Length	Comments	Req'd[b]
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	CD	50	The Hub verifies that the field is populated.	R
IN1.03	Insurance Company ID	CX	59	This is the QDI Bill mnemonic. **Note:** Required only if IN1.47 = T (Third-Party Bill).	O
IN1.04	Insurance Company Name	XON	130	**Note:** Required only if IN1.47 = T (Third-Party Bill).	O

Segment ID	Element Name	Type[a]	Length	Comments	Req'd[b]
IN1.05	Insurance Company Address	XAD	106	No more than 106 characters wide. Add1 50 ^ add2 50 ^ city 50 ^ state 2 ^ zip 10 ^ country code 3. Alphanumeric data only. If populated, the Hub ignores this field.	O
IN1.06	Insurance Co. Contact Person	XPN	48		NS
IN1.07	Insurance Co Phone Number	XTN	40		NS
IN1.08	Group Number	ST	50	Characters permitted include: A–Z and 1–0. If present, the Hub verifies that the value complies with rules above.	O
IN1.09	Group Name	XON	130		O
IN1.10	Insured's Group Emp ID	CX	12		NS
IN1.11	Insured's Group Emp Name	XON	130		NS
IN1.12	Plan Effective Date	DT	8		NS
IN1.13	Plan Expiration Date	DT	8		NS
IN1.14	Authorization Information	CM	55		NS
IN1.15	Plan Type	IS	3		NS
IN1.16	Name Of Insured	XPN	48		NS
IN1.17	Insured's Relationship To Patient	IS	2		NS
IN1.18	Insured's Date Of Birth	TS	26		NS
IN1.19	Insured's Address	XAD	106		NS
IN1.20	Assignment Of Benefits	IS	2		NS
IN1.21	Coordination Of Benefits	IS	2		NS
IN1.22	Coord Of Ben. Priority	ST	2		NS

Segment ID	Element Name	Type[a]	Length	Comments	Req'd[b]
IN1.23	Notice Of Admission Flag	ID	2		NS
IN1.24	Notice Of Admission Date	DT	8		NS
IN1.25	Report Of Eligibility Flag	ID	2		NS
IN1.26	Report Of Eligibility Date	DT	8		NS
IN1.27	Release Information Code	IS	2		NS
IN1.28	Pre-Admit Cert (PAC)	ST	15		NS
IN1.29	Verification Date/Time	TS	26		NS
IN1.30	Verification By	XCN	60		NS
IN1.31	Type Of Agreement Code	IS	2		NS
IN1.32	Billing Status	IS	2		NS
IN1.33	Lifetime Reserve Days	NM	4		NS
IN1.34	Delay Before L.R. Day	NM	4		NS
IN1.35	Company Plan Code	IS	8		NS
IN1.36	Policy Number	ST	50		O
IN1.37	Policy Deductible	CP	12		NS
IN1.38	Policy Limit - Amount	CP	12		NS
IN1.39	Policy Limit - Days	NM	4		NS
IN1.40	Room Rate - Semi-Private	CP	12		NS
IN1.41	Room Rate - Private	CP	12		NS

Segment ID	Element Name	Type[a]	Length	Comments	Req'd[b]
IN1.42	Insured's Employment Status	CE	60		NS
IN1.43	Insured's Sex	IS	1		NS
IN1.44	Insured's Employer Address	XAD	106		NS
IN1.45	Verification Status	ST	2		NS
IN1.46	Prior Insurance Plan ID	IS	8		NS
IN1.47	Coverage Type	IS	3	Valid values include: • `T` = Third-party bill • `P` = Patient bill • `C` = Client bill If present, the Hub verifies that the value complies with rules above.	O
IN1.48	Handicap	IS	2		NS
IN1.49	Insured's ID Number	CX	12		NS

a. For a description of the HL7 data types, see "Data Type Specifications" on page 176.

b. R = Required, O = Optional, C = Conditional, NS = Not Supported.

ADT A39 (Patient Merge) Message Segment Specifications

This section provides detailed specifications for each segment of an ADT A39 (Patient Merge) HL7 message. The purpose of this message type is to enable a partner application to merge two patient records (via the Hub) in Physician Portal. This can be used, for example, to merge two patient records for the same patient who was incorrectly filed under two separate PIDs.

Message Segment Hierarchy

An ADT A39 message must follow the message segment hierarchy, as specified below:

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

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. Message segments supported by the Hub include the following:

- "MSH—Message Header Segment" on page 222.
- "EVN—Event Type Segment" on page 224.
- "PID—Patient Identification Segment —Correct" on page 224.
- "MRG—Merge Patient Information Segment" on page 227.
- "PID—Patient Identification Segment—Incorrect" on page 228.

Note: ADT A39 message segments that are not supported by the Hub are *not* included in this section; for detailed specifications, refer to the HL7 2.3 Specification.

MSH—Message Header Segment

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

Segment ID	Element Name	Type[a]	Length	Comments	Req'd[b]
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 sub-component separator. Format: ^~\& These values are recommended by HL7, and are the only values supported by Quest Diagnostics.	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. Inbound: The Hub verifies that the field is populated. Outbound: No verification by the Hub.	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 by Quest Diagnostics for the requester. Inbound: The Hub verifies that the field is populated. Outbound: No verification by the Hub.	R
MSH.07	Date/Time of Message	TS	26	The date and time that the sending system created the message. Format: YYYYMMDDHHMMSS The Hub verifies that this field is populated, and that the value complies with the format above.	R

Segment ID	Element Name	Type[a]	Length	Comments	Req'd[b]
MSH.08	Security	ST	40		NS
MSH.09	Message Type	CM	7	The type of message being transmitted, and the event leading to the creation of the message. Valid value: `ADT^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 lab system. The Hub 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` = Training • `D` = Debug (Development) The Hub verifies that the value in this field is `P`, `T`, or `D`.	R
MSH.12	Version ID	ID	8	The value for this field is `2.3`.	R
MSH.13	Sequence Number	NM	15		NS
MSH.14	Continuation Pointer	ST	180		NS
MSH.15	Accept Acknowledgment Type	ID	2		NS
MSH.16	Application Acknowledgment Type	ID	2		NS
MSH.17	Country Code	ID	2		NS
MSH.18	Character Set	ID	6		NS
MSH.19	Principal Language of Message	CE	60		NS

a. For a description of the HL7 data types, see "Data Type Specifications" on page 176.
b. R = Required, O = Optional, C = Conditional, NS = Not Supported.

EVN—Event Type Segment

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

Segment ID	Element Name	Type[a]	Length	Comments	Req'd[b]
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. **Note:** This field has been retained for backward compatibility only.	R
EVN.02	Recorded Date/Time	TS	26		NS
EVN.03	Date/Time Planned Event	TS	26		NS
EVN.04	Event Reason Code	IS	3		NS
EVN.05	Operator ID	XCN	60		NS
EVN.06	Event Occurred	TS	26		NS

a. For a description of the HL7 data types, see "Data Type Specifications" on page 176.

b. R = Required, O = Optional, C = Conditional, NS = Not Supported.

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 contains permanent patient identifying and demographic information that, for the most part, is not likely to change frequently.

Segment ID	Element Name	Type[a]	Length	Comments	Req'd[b]
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

Segment ID	Element Name	Type[a]	Length	Comments	Req'd[b]
PID.02	Patient ID (External ID)	CX	20	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. **Note:** Must **not** contain the same value as MRG.04.	R
PID.03	Patient ID (Internal ID)	CX	20	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.).	O
PID.04	Alternate Patient ID (PID)	CX	20		NS
PID.05	Patient Name	XPN	48	No more than 48 characters wide, including the delimiter between the last and first names. At least one character for first and last name. A numeric value cannot be used as the first character of the last name. Family name 50 ^ given name 50 ^ middle name or init 1 ^ suffix 10 ^ prefix 10 ^ degree 10 ^ name type code ^ 6. Alphanumeric data only. The Hub verifies that the value complies with rules above.	R
PID.06	Mother's Maiden Name	XPN	48		NS
PID.07	Date/Time of Birth	TS	26	Date of birth (DOB), in `YYYYMMDDHHMMSS` format. The Hub verifies that the DOB is in this format.	O
PID.08	Sex	IS	1	Valid values for this field include: • `M` = Male • `F` = Female The Hub verifies that one of these values is present in this field.	O
PID.09	Patient Alias	XPN	48	Patient alias name.	O
PID.10	Race	IS	1		NS
PID.11	Patient Address	XAD	106	No more than 106 characters wide. Add1 50 ^ add2 50 ^ city 50 ^ state 2 ^ zip 10 ^ country code 3. Alphanumeric data only. The Hub verifies that the value complies with rules above.	O

Segment ID	Element Name	Type[a]	Length	Comments	Req'd[b]
PID.12	County Code	IS	4		NS
PID.13	Phone Number - Home	XTN	40	Accepted length of this field is 40 numeric characters. No dashes or other separating characters. The following elements are required and passed to Physician Portal (any additional elements are ignored): <country code (NM)> ^ <area/city code (NM)> ^ <phone number (NM)> ^ <extension (NM)>	O
PID.14	Phone Number - Business	XTN	40	Accepted length of this field is 40 numeric characters. No dashes or other separating characters. The following elements are required and passed to Physician Portal (any additional elements are ignored): <country code (NM)> ^ <area/city code (NM)> ^ <phone number (NM)> ^ <extension (NM)>	O
PID.15	Language - Patient	CE	60		NS
PID.16	Marital Status	IS	1		NS
PID.17	Religion	IS	3		NS
PID.18	Patient Account Number	CX	20		NS
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 Hub verifies that the value complies with rules above.	O
PID.20	Driver's Lic Num - Patient	DLN	25		NS
PID.21	Mother's Identifier	CX	20		NS
PID.22	Ethnic Group	IS	3		NS
PID.23	Birth Place	ST	60		NS
PID.24	Multiple Birth Indicator	ID	2		NS
PID.25	Birth Order	NM	2		NS
PID.26	Citizenship	IS	4		NS

Segment ID	Element Name	Type[a]	Length	Comments	Req'd[b]
PID.27	Veterans Military Status	CE	60		NS
PID.28	Nationality	CD	80		NS
PID.29	Patient Death Date & Time	TS	26		NS
PID.30	Patient Death Indicator	ID	1		NS

a. For a description of the HL7 data types, see "Data Type Specifications" on page 176.

b. R = Required, O = Optional, C = Conditional, NS = Not Supported.

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.

Segment ID	Element Name	Type[a]	Length	Comments	Req'd[b]
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	20	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

Segment ID	Element Name	Type[a]	Length	Comments	Req'd[b]
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 wide, including the delimiter between the last and first names. At least one character for first and last name. A numeric value cannot be used as the first character of the last name. Family name 50 ^ given name 50 ^ middle name or init 1 ^ suffix 10 ^ prefix 10 ^ degree 10 ^ name type code ^ 6. Alphanumeric data only. The Hub verifies that the value complies with rules above.	R

a. For a description of the HL7 data types, see "Data Type Specifications" on page 176.
b. R = Required, O = Optional, C = Conditional, NS = Not Supported.

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 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**.

Segment ID	Element Name	Type[a]	Length	Comments	Req'd[b]
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 Hub verifies that the value complies with rules above.	R
PID.02	Patient ID (External ID)	CX	20		NS
PID.03	Patient ID (Internal ID)	CX	20		NS
PID.04	Alternate Patient ID (PID)	CX	20		NS
PID.05	Patient Name	XPN	48		NS

Segment ID	Element Name	Type[a]	Length	Comments	Req'd[b]
PID.06	Mother's Maiden Name	XPN	48		NS
PID.07	Date/Time of Birth	TS	26	Date of birth (DOB), in `YYYYMMDDHHMMSS` format. The Hub verifies that the DOB is in this format.	O
PID.08	Sex	IS	1	Valid values for this field include: • `M` = Male • `F` = Female • Blank The Hub verifies that one of these values is present in this field.	O
PID.09	Patient Alias	XPN	48	Patient alias name.	O
PID.10	Race	IS	1		NS
PID.11	Patient Address	XAD	106	No more than 106 characters wide. Add1 50 ^ add2 50 ^ city 50 ^ state 2 ^ zip 10 ^ country code 3. Alphanumeric data only. The Hub verifies that the value complies with rules above.	O
PID.12	County Code	IS	4		NS
PID.13	Phone Number - Home	XTN	40	Accepted length of this field is 40 numeric characters. No dashes or other separating characters. The following elements are required and passed to Physician Portal (any additional elements are ignored): <country code (NM)> ^ <area/city code (NM)> ^ <phone number (NM)> ^ <extension (NM)>	O
PID.14	Phone Number - Business	XTN	40	Accepted length of this field is 40 numeric characters. No dashes or other separating characters. The following elements are required and passed to Physician Portal (any additional elements are ignored): <country code (NM)> ^ <area/city code (NM)> ^ <phone number (NM)> ^ <extension (NM)>	O
PID.15	Language - Patient	CE	60		NS
PID.16	Marital Status	IS	1		NS
PID.17	Religion	IS	3		NS

Segment ID	Element Name	Type[a]	Length	Comments	Req'd[b]
PID.18	Patient Account Number	CX	20		NS
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 Hub verifies that the value complies with rules above.	O
PID.20	Driver's Lic Num - Patient	DLN	25		NS
PID.21	Mother's Identifier	CX	20		NS
PID.22	Ethnic Group	IS	3		NS
PID.23	Birth Place	ST	60		NS
PID.24	Multiple Birth Indicator	ID	2		NS
PID.25	Birth Order	NM	2		NS
PID.26	Citizenship	IS	4		NS
PID.27	Veterans Military Status	CE	60		NS
PID.28	Nationality	CD	80		NS
PID.29	Patient Death Date & Time	TS	26		NS
PID.30	Patient Death Indicator	ID	1		NS

a. For a description of the HL7 data types, see "Data Type Specifications" on page 176.
b. R = Required, O = Optional, C = Conditional, NS = Not Supported.

Sample Care360 Patient Demographic Messages

Following are several sample patient demographic messages, formatted according to the "Care360 Patient Demographic Message Format Requirements" on page 175 and the corresponding message segment specifications (Patient Add, Patient Delete, Patient Update, or Patient Merge).

Sample 1—Add Patient

```
MSH|^~\&|sending
application|DemographicDemo||DemographicDemoOrg|20061211153336||ADT^A28|m
sgControlID123|P|2.3
EVN|A28|199608190820
PID|1|pid123|^^^LH||Wally^SHERRY^M||20000101|F|PETRY^SHERRY||4690 Parkway
Dr.^address line 2^Mason^OH^45040^USA|a2|^^^^86^999^9999999^99999|513-
999-9999|a5|||1-FOUND|444-66-9999
PV1|1|O
GT1|1|88|Smith^John^M^JR^DR^MD||3710 Emery Lake Ln^Street
line2^Cincinnati^OH^45010|^^^^1^513^8888888^1234|^^^^1^238^4444444^5678|1
9960708112233|M|I|8|287889999||||ABC Inc.^Limited^M |4567 Kelly
Drive^address line 2^Oxford^OH^45068|55566677777|4556|FT|Guarantor
Organization
IN1|1|INSID123^Insurance Plan ABC|INSCOID123|insuranceco|1800 Insurance
Rd.^^Detroit^MI^45777||^^^^1^555^6667777^1234|3433|name|||||^19960707||||
||||||||||||||||||||||||||T
```

Sample 2—Delete Patient

```
MSH|^~\&|SecondSub|DemographicDemo||DemographicDemoOrg|20070321000000||AD
T^A29|1|P|2.3
EVN|A29|199608190820
PID|1|pid666|NEWMRN-
2^^^LH||Wally^SHERRY^1^^DR|dkdk|20000101000000|F|PETRY^SHERRY||B|a2|^^^^1
^513^8888888^9999|^^^^1^520^6666666^7777|a5||X|1-FOUND
PV1|1|O
```

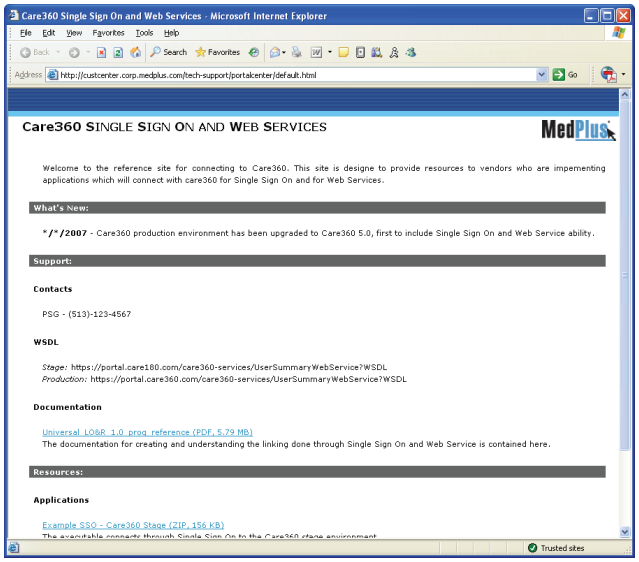
Sample 3—Update Patient

```
MSH|^~\&|sending
application|DemographicDemo||DemographicDemoOrg|20061211153336||ADT^A31|m
sgControlID123|P|2.3
EVN|A31|199608190820
PID|1|pid123|^^^LH||Wally^SHERRY^M||20000101153336|F|PETRY^SHERRY||4690
Parkway Dr.^^Mason^OH^45040^USA|a2|^^^^86^999^9999999^99999|513-999-
9999|a5|||1-FOUND|444669999
PV1|1|O
GT1|1|88|Smith^John^M^JR^DR^MD||3710 Emery Lake
Ln^^Cincinnati^OH^45010|^^^^1^513^8888888^1234|^^^^1^238^4444444^5678|199
60708000000|M|I|8|444556666||||ABC Inc.^EFG^M |4567 Kelly
Drive^^Oxford^OH^45068|55566677777|4556|FT|organization
IN1|1|INSID123^Insurance Plan ABC|INSCOID123|insuranceco|1800 Insurance
Rd.^^Detroit^MI^45777||^^^^1^555^6667777^1234|3433|name|||||^19960707||||
||||||||||||||||||||||||||T
```

Sample 4—Merge Patient

```
MSH|^~\&|SecondSub|DemographicDemo||DemographicDemoOrg|20061211153336||AD
T^A39|A39M|P|2.3
EVN|A39|199608190820
PID|1|ABC|NEWMRN-2||Wally^SHERRY^^^Dr|dkdk|20000101|F|||4690 Parway
Dr.^^Mason^OH^45040|a2|^^^^1^226^1111111^2222|^^^^1^222^5555555^6666|||||
287-87-8787
MRG||||pid666|||Johnson^William^L
PID|2||||||19681121|M|||3710 Emery Lake Lane^^Mason^OH^45040||||||||999-
99-9999
```

Chapter 10
Care360 SSO and Web Services Site



In This Chapter:

About the Care360 SSO and Web Services Site

The Physician Portal SSO and Web Services site is a companion to the Universal Lab Orders and Results Programmer Reference that provides additional support to vendors who are developing partner applications to interact with Physician Portal. The Web site provides sample code, documentation, and other tools and resources that can be used to understand how to develop a partner application to interact with Physician Portal via SSO and Web Services.

This chapter provides an overview of each of the tools provided on the Physician Portal SSO and Web Services site, as well information about accessing the site online.

Note: For information about linking a partner application to Physician Portal, see Chapter 5, "Linking to Physician Portal" on page 129.

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 Physician Portal—is available for download from the Physician Portal 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 MedPlus) for access.

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

- ***What's New.*** A list of the latest Physician Portal changes and related announcements.
- ***Support.*** Contact information for various members of the Physician Portal support team, links to the WSDL documents for both the Stage 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. When prompted, type your *username* and *password*, and then press *Enter*.

   For future reference, record your *username* and *password* in the spaces below:

   Username: _____

   Password: _____

3. From the *Resources* area, do the following:
   - To download the sample application, click the *Example SSO - Care360 Stage* link. When prompted, click *Save As*, and then locate the desired download directory on your hard disk.
   - To download the sample source code, click the *SSO-Test-EMR Source Code* link. When prompted, click *Save As*, and then locate the desired download directory on your hard disk.
4. Unzip the contents of the sample application and source code files.

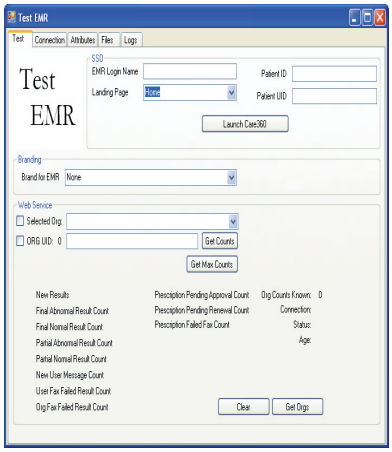
   For an overview of the file contents, see "About the Sample Application" on page 236.

About the Sample Application

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

Sample Source Code

The Physician Portal 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 238.)

About the WSDL Interface Documents

In order to "consume" 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 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 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 the process for obtaining the WSDL documents for User Summary Web services.

Note: You must have a valid user name and password (issued by MedPlus) in order to access the WSDL interface documents. For the Physician Portal Production environment, a user name and password will be issued once your application has been developed, tested, and certified.

Accessing the User Summary Services WSDL Document

To access the WSDL service description for the User Summary Services, use your browser to access the corresponding URL shown below. Using the WSDL that you obtain, you can build a client application to access the Web service.

Staging Environment

To access the User Summary Services in the Physician Portal Staging environment, used to develop, test, and certify your Web service application, access the following link:

`https://portal.care180.com/care360-services/UserSummaryWebService?WSDL`

Production Environment

Once you have developed, tested, and certified your Web service client application in the MedPlus Physician Portal Staging environment, you can then update the application to work in the Physician Portal Production environment. Connecting a Web service client to the Physician Portal 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 Physician Portal Production environment, and vice versa; the WSDL content is identical in both environments.

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

`https://portal.care360.com/care360-services/UserSummaryWebService?WSDL`

About the Sample Code

The Physician Portal 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 Physician Portal. 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 Physician Portal.

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.

MedPlus Disclaimer

All sample code referenced in this Programmer Reference and the Physician Portal 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 MedPlus, Inc.

Third-Party Disclaimer

MedPlus 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 (30 trail, version 1.1).

For more information, refer to the following ComponentSpace Web site:

http://www.componentspace.com/saml.net.aspx

Glossary

Account ID

A unique identifier for a care site that uses Quest Diagnostics laboratory services. This is the identifier used by Quest Diagnostics for billing each care site.

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 healthcare facility. ADT messages keep patient demographic and visit information synchronized across healthcare systems. (See Health Level Seven (HL7).)

Ambulatory Care

Healthcare services provided without the patient being admitted to a facility. Also called outpatient care. The services of ambulatory care centers, hospital outpatient departments, physicians' offices, urgent care centers, and home healthcare services fall under this heading provided that the patient remains at the facility less than 24 hours. No overnight stay in a hospital is required.

Benefits

Specific areas of plan coverages (for example, outpatient visits, hospitalization, or pharmaceuticals) that make up the range of medical services that a payer markets to its subscribers.

Clinical Data Compendium (CDC)

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

Coverage

Services provided within a given health or pharmacy care plan. Healthcare and drug benefit services provided or authorized by the payer's medical staff or payment for healthcare services.

Diagnosis

The identification of a disease or condition through analysis and examination by a physician.

Eligibility

A person entitled to receive benefits for healthcare services.

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.

Emergency

Sudden unexpected onset of illness or injury which requires the immediate care and attention of a qualified physician, and which, if not treated immediately, would jeopardize or impair the health of an individual.

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 HL7 interfaces for its products.

Hospital

Any facility duly licensed, certified, and operated as a hospital. Does not include a convalescent facility, nursing home, or any institution or part thereof which is used principally as a convalescence facility, rest facility, nursing facility, or facility for the aged.

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 established using Hub Information Services—Administration to enable an authorized external system (for example, EMR vendor) to interact with Care360 Hub Information Services.

Hub ID

A unique identifier assigned by Quest Diagnostics to each EMR system that is registered to receive lab results on behalf of a Quest Diagnostics account. This is the identifier given to EMR vendors (such as Web-based EMRs) that retrieve results for several accounts, as well as standalone EMRs that retrieve results for a single account. See also Account ID.

Interface

The code written and the specifications and protocols used for the electronic data exchange between RxHub and SureScripts 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.

Management Information System (MIS)

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

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 of Physician Portal.

Master Patient/Member Index

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

Patient Consent

The written or verbal permission given by a patient for the release and use of their personal information.

Payor

The party or group an individual contracts with to cover healthcare services, unless the patient is paying out-of-pocket. This is sometimes referred to as a "third-party payor."

Physician Practice Management System (PPMS) Technology Provider

A physician practice management system company who supports medical office administration with applications and support.

Provider

An organization that provides information or data to Care360 Hub Information Services. Organizations can include reference labs, esoteric labs, hospitals, payers, radiology clinics, clearinghouses, pharmacies, or 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 IPA, a clinic, or a hospital. The provider account uniquely defines the organization, allowing accurate distribution of data to an authorized entity.

Quality

Can be defined as a measure of the degree to which delivered health services meet established professional standards and judgments of value to the consumer. Quality may also be seen as the degree to which actions taken or not taken impact the likelihood of beneficial health outcomes and minimize risk and other undesired outcomes, given the existing state of medical science and art.

Request ID

A unique identifier that references a specific request for lab results made by an EMR system and received by Care360 Hub Information Services. This identifier is assigned to a request upon receipt of the request message. The Request ID is unique across all Care360 Hub Information Services accounts.

SAML Browser/POST

A data exchange model by which SAML messages are digitally signed and transmitted from the issuer (EMR) to the consumer (Physician Portal) 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.

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 (Physician Portal). 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.

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.

Service Scope

The account-based scope defined by a request for lab results. Specifically, this scope definition provides the EMR vendor the capability of receiving results for every registered care site account associated with a specific Hub ID, or, alternatively, receiving results for specific accounts as defined by their account IDs.

Single Sign-On (SSO)

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

SOAP

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

Subscriber

An individual who is a member of a benefits plan. For example, in the case of family coverage, one adult is ordinarily the subscriber. A spouse and children would ordinarily be dependents.

Time Scope

The time-based scope defined by a request for lab results. Specifically, this scope definition allows the EMR vendor to receive the latest (previously unretrieved) results, or, alternatively, to receive results ordered within a specific time frame.

Technology Provider

A healthcare technology company that develops applications to support physicians with practice management, electronic prescribing, electronic medical records, or similar office automation products.

Third-Party Payment

Payment or reimbursement amounts that are established by third-party drug programs for prescriptions and services dispensed to recipients.

UDDI

Universal Description, Discovery, and Integration is an XML-based specification for a registry of businesses and the Web services they offer. By providing the necessary translations, it enables software to automatically discover Web services and integrate with them.

User

An administrator who is authorized to access Hub Information Services—Administration to perform management tasks, or an authorized account used by a vendor to interact with Care360 Hub Information Services.

Vendor

An organization that connects to providers to distribute information or data to their customers. Customers of vendors typically include physicians' offices, IPAs, clinics, and hospitals. Also referred to as *EMR vendor.*

WSDL

Web Services Description Language lets developers expose the syntax of a Web service. Using an XML format, it describes network services as a set of endpoints operating on messages containing either document- or procedure-oriented information. The operations and messages are described abstractly and then bound to a concrete network protocol and message format to define the endpoints.

XML

Extensible Markup Language has become the standard for defining data interchange formats on the internet. It is similar to HyperText Markup Language (HTML) in that it uses tags to encode information. But whereas HTML tells browsers how to display information, XML defines values for the information. XML also lets users create their own tags.

XML Parser

A software application that processes an XML document. An XML parser reads the XML document, checks its syntax, reports any errors, and allows programmatic access to the document's contents. An XML document is considered "well-formed" if it is syntactically correct, meaning no errors are reported by the parser when the document is processed.

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We'd Like to Hear From You

After you have had a chance to use the Manuals and/or Help for this product, please take a moment to give us your comments. Respond to the questions below, and return this form (or send comments via e-mail) to MedPlus at your convenience. Thank you!

✔ What MedPlus product are you using? (Please provide version number)

_____

✔ What documentation do you refer to most often?

____ Manuals ____ Help

✔ What chapters or topics do you refer to most often?

_____

_____

✔ How often do you expect to refer to the Manuals?

____ Often ____ Occasionally ____ Never

The Reference Guide?

____ Often ____ Occasionally ____ Never

The Help?

____ Often ____ Occasionally ____ Never

✔ How is the level of detail in the Manuals?

____ Too little ____ Just right ____ Too much

In the Reference Guide?

____ Too little ____ Just right ____ Too much

In the Help?

____ Too little ____ Just right ____ Too much

✔ Does the documentation adequately explain how to get started using the product?

____ Yes ____ No

If not, what information is missing?

_____

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✔ How do you normally search for information in the Manuals and/or Help?

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