



HL7 Lab Results API Developer Guide – 2.3

Quickly and easily connect your Laboratory Information System (LIS) with Practice Fusion's Electronic Health Record (EHR) System

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Practice Fusion 2.3 Result Overview

This document describes how to integrate with Practice Fusion’s Electronic Health Record (EHR) system by submitting version 2.3 Observation Result – Unsolicited messages that contain laboratory results data to the Practice Fusion API.

This section presents a high-level overview of the Practice Fusion 2.3 result implementation and how this integration project might differ from other integration projects.

Result Workflow

Security validation is first performed against the API credentials used to send the result to the Practice Fusion API. After successful validation, the result is routed to the correct EHR account based on the MSH-6 value. Once the result has been routed to an account, it is assigned to a provider based on the provider information in the OBR-16 field and assigned to a patient’s chart based on information in the PID segment.

The results are then available to be viewed in the “Tasks” section or within the patient’s chart.

Solicited and unsolicited results are handled in the same manner within the Practice Fusion EHR. Results and orders are housed separately within both the “Tasks” section and the patient “Charts” section. This allows for test results from multiple orders to be grouped together in one result report or tests from a single order to be sent in individual result reports.

Order Numbers

HL7 messages are grouped in the EHR based on the order and accession values (OBR-2 and OBR-3, respectively).

If separate HL7 messages are sent with identical OBR-2 values but unique OBR-3 accession values, the results will appear as separate result reports in the EHR.

If a single HL7 message contains multiple order groups, each with a different OBR-2 and OBR-3 value, only the order and accession number in the first OBR segment will be displayed at the top of the report and all results will be displayed in the same report.

If separate HL7 messages are sent with identical OBR-2 and OBR-3 values, the results will be grouped together in the same result report in the EHR. If a correction is made for an accession, be sure to populate OBX-11 with “C” so that the correction status is indicated in the EHR.

LOINC

Practice Fusion strongly recommends including LOINC codes in the result messages. Including LOINC codes provides tremendous value to providers as it allows lab values to be trended in patient flowsheets and ultimately enables better patient care through quality data. Furthermore, LOINC codes are necessary for providers to meet certain government incentive program criteria.

LOINC codes should be populated in OBX-3 in the following format: <Observation ID> ^ <Observation Name> ^ <Coding System>

Example: 3016-3^Thyrotropin:ACnc:Pt:Ser/Plas:Qn^LN

Embedded Attachments

Embedded PDFs can be included in HL7 result message. The base64 encoded PDF string must be included in an OBX segment in the following format: OBX|1|ED|PDF^PDFName|^AP^^Base64^[base64 encoded PDF strain]|||||F|

Please note that the PDF must be sent in the last order group of the message.

The attachment will be available for the provider to save or print. The value populated in OBX-3.2 will be displayed in the EHR as the attachment name.

URLs

A URL can be included in the result if there is a link the provider should be directed to open. The URL must be sent in the NTE-3 field of an NTE segment. The hyperlink will display in the Notes section of the test or observation depending on whether the NTE is placed after the OBR or OBX segment.

Textual Reports

A setting is available to display textual results, such as pathology reports, as narrative reports in the EHR. When applied, OBX-5 values from a series of OBX segments are concatenated into a single paragraph of text. Word wrapping will occur if the OBX-5 contents exceeds the UI limits for a single line of text. Blank OBX-5 fields can be used for spacing and formatting. If you will be sending textual reports, ask your implementation specialist about this option.

Performing Site Info

The performing site info should be included in the OBX-15 field in the following format: <Lab Site ID> ^ <Lab Site Name> ^ <Lab Site Street Address> ^ <Lab Site City> ^ <Lab Site State> ^ <Lab Site Zip> ^ <Lab Site Director Name>

This will be displayed in the upper-left corner of the result report. The information can also be found by expanding an individual observation and hovering over “Testing site”.

If different observations were performed at different labs, the unique performing site info can be included in the applicable OBX segments and each site will be displayed in the upper left corner.

Provider Matching

Practice Fusion strongly recommends including the NPI in OBR-16.1. Provider matching is first attempted against the OBR-16 field. If the NPI is included in OBR-16.1 and matches the NPI configured in the provider’s user profile, then the result will automatically be matched even if there is a discrepancy with the provider’s name (i.e. Dan instead of Daniel).

Although it is strongly recommended that the NPI is included, if it is not then provider matching is performed on the provider’s name in OBR-16.2 and OBR-16.3.

In the event that an exact provider match is not located, the result will be “unassigned” and can be manually assigned by the appropriate provider.

Patient Matching

Patient matching is performed against the PID-5 (Name), PID-7 (Date of Birth), and PID-8 (Gender) fields. In the event that multiple patients have the same name and date of birth, the provider will be required to manually assign the result to the correct patient chart.

OBX-5 Observation Value Character Limit

A maximum of 8,000 characters can be sent in the OBX-5 field. This is primarily applicable if textual report information will be sent in an OBX segment.

Notes

Note (NTE) segments can be associated with the following segments:

- The Patient Identification (PID) segment, where the note applies to the entire lab result
- The ORC or OBR segments, where the note applies to all observations related to that panel or test
- The OBX segment, where the note applies to only that one observation

Sample Messages

This section contains sample messages that conform to the Practice Fusion ORU_R01 message specification.

Bare minimum file

```
MSH|^~\&||||accountID|20090826163020||ORU^R01|MessageControlID|P|2.3
PID|||MRN||LastName^FirstName^MI
OBR|1|Placer1234|Filler56789|TestID^TestName^IDSystem|||ObservationDate/Time||||
||SpecimenReceivedDate/Time||OrderingProviderID^OrderingProviderLastName^Ordering
ProviderFirstName|||||ResultReportedDate/Time|||ResultStatus(From HL7 table
0123)
OBX|1|DataType|ObservationID^ObservationName^IDSystem||ResultValue|||||Status(Fr
om HL7table 0085)
```

Sample file with multiple test or panels resultd

```
MSH|^~\&||||accountID|20090826163020||ORU^R01|MessageControlID|P|2.3
PID|||MRN||LastName^FirstName^MI
PV1|||||AttendingPhysicianID^AttendingPhysicianLastName^AttendingPhysicianFirst
Name
OBR|1|Placer1234|Filler56789|TestID^TestName^IDSystem|||ObservationDate/Time||||
||SpecimenReceivedDate/Time||OrderingProviderID^OrderingProviderLastName^Ordering
ProviderFirstName|||||ResultReportedDate/Time|||ResultStatus(From HL7 table
0123)
OBX|1|DataType|ObservationID^ObservationName^IDSystem||ResultValue|UnitsofMeasure
|RefRange|AbnormalFlag|||Observation Status(From HL7table 0085)
OBX|2|DataType|ObservationID^ObservationName^IDSystem||ResultValue|UnitsofMeasure
|RefRange|||Observation Status(From HL7table 0085)
OBX|3|DataType|ObservationID^ObservationName^IDSystem||ResultValue|UnitsofMeasure
|RefRange|||Observation Status(From HL7table 0085)
OBX|4|DataType|ObservationID^ObservationName^IDSystem||ResultValue|UnitsofMeasure
|RefRange|AbnormalFlag|||Observation Status(From HL7table 0085)
NTE|1||Note Here
OBR|2|Placer1234|Filler56789|TestID^TestName^IDSystem|||ObservationDate/Time||||
||SpecimenReceivedDate/Time|||||||ResultReportedDate/Time|||ResultStatus(From
HL7 table 0123)
OBX|1|DataType|ObservationID^ObservationName^IDSystem||ResultValue|||||Observati
on Status(From HL7table 0085)
OBX|2|DataType|ObservationID^ObservationName^IDSystem||ResultValue|||||Observati
on Status(From HL7table 0085)
```

ORU_R01 Detailed Segment Definitions

This section of the document provides detailed information about the segments in the ORU_R01 message. Each item in the following bulleted list links to the section that describes the identified segment:

- Message Header (MSH) 9
- Patient Identification (PID) 12
- Patient Visit (PV1) 14
- Order Common (ORC) 16
- Observation Request (OBR) 18
- Observation Result (OBX) 23
- Note (NTE)..... 28
- File Trailer Segment (FTS) 29

Each subsection provides a brief description of the segment and an example of the data it might contain in a valid message. The fields of each segment are detailed in a table with eight columns. When a field should contain values from a table identified by HL7 and the number of values is manageable, those values are included for convenience; if the number of values is too large (for example, in the case of Country Codes), the table is identified but only a few examples are given to avoid making the guide too large.

The segment definitions are truncated after all fields used by Practice Fusion have been defined. For more information about the HL7 2.3 specification, you can visit the [HL7 v2.3 Implementation Guide](#).

Table 1: Field Information

Column Name	Contents
Seq	Contains the sequence number of the field within the message.
Name	Contains the name of the field.
Value	Contains the value that <i>must</i> appear in the field (such as ORU^R01 for the “Message Type” field) or that <i>might</i> appear in the field (such as an example value for a date field that will not always contain the same value), as well as rules that must be applied to the data. Hard-coded or example values are formatted in Courier font to make them easy to identify from surrounding text.
Type	Identifies the data type of the field. For detailed information about each data type, see Data Types in the appendix.
Req'd	Identifies whether the field is required, optional, or required in certain conditions. For detailed information about each possible value, see Requiredness in the appendix. The value in this column is linked to its definition in the appendix.

Column Name	Contents
Length	Identifies the maximum length of this field. Fields that contain more characters in this field than are specified by the maximum length are truncated when processed by the API.
Card	Identifies the cardinality of the field. For detailed information about each possible cardinality state, see Cardinality in the appendix.
Used?	Indicates whether or not the field is used at all in the business logic of Practice Fusion.
Disp?	Indicates whether or not the field is displayed in the Practice Fusion application; some fields might be used in the logic layer, but never displayed in the presentation layer.

Message Header (MSH)

The MSH segment is the first segment in every HL7 message, and defines the message’s source, purpose, destination, and certain syntax specifics such as the delimiters and character sets used in the message.

The MSH segment is required and may only appear once. Required fields are highlighted in gray.

```
MSH|^~\&|||accountidentifer|20120816122332-0800||ORU^R01|MessageID1234|P|2.3
```

Seq	Name	Value	Type	Req'd	Length	Card	Used?	Disp?
MSH-0	Segment identifier	MSH	ST	R	3	1..1	Y	N
MSH-1	Field delimiter	(the “pipe” character)	ST	R	1	1..1	Y	N
MSH-2	Encoding characters	^~\&	ST	R	4	1..1	Y	N
MSH-3	Sending application	Identifies your application Example: LaboratoryInformationSystemName	HD	R	180	0..1	N	N
MSH-4	Sending facility	Identifies the sending laboratory or reporting site Example: Wildfire_Atlanta^45D0470381^CLIA	HD	O	180	0..1	N	N
MSH-5	Receiving application	Identifies Practice Fusion as the destination Example: Practice Fusion	HD	O	180	0..1	N	N
MSH-6	Receiving facility	Identifies the healthcare organization for which the message is intended Practice Fusion uses this field to route the result to the correct EHR account. NPI or a Practice ID is often used. Example: 1234567893	HD	R	200	1..1	Y	Y

Seq	Name	Value	Type	Req'd	Length	Card	Used?	Disp?
MSH-7	Message date and time	Identifies the date and time the message was created Example: 20130205022300-0500	TS	R	26	1..1	Y	Y
MSH-8	Security	Used in some implementations for security features	ST	O	40	0..1	N	N
MSH-9	Message type	ORU^R01	CM	R	7	1..1	N	N
MSH-10	Message control ID	Contains the value the system uses to associate the message with the response to the message Example: UNX3ZMH5YAPHBL63SB3	ST	R	200	1..1	Y	N
MSH-11	Processing ID	P for "in production" D for "in debugging" T for "in training"	PT	R	3	1..1	Y	N
MSH-12	HL7 version	2.3	VID	R	60	1..1	N	N
MSH-13	Sequence number	A non-null value in this field indicates that the sequence number protocol is in use	NM	O	15	0..1	N	N
MSH-14	Continuation pointer	Contains the value used by a system to associate a continuation message with the message that preceded it when the data of an unsolicited observation request must be split into multiple messages	ST	O	180	0..1	N	N

Seq	Name	Value	Type	Req'd	Length	Card	Used?	Disp?
MSH-15	Accept acknowledgement type	AL to always require accept acknowledgement messages to be returned NE to never require accept acknowledgements SU to only require accept acknowledgements for successfully transmitted messages ER to only require accept acknowledgements in the event of an error	ID	O	2	0..1	N	N
MSH-16	Application acknowledgement type	AL to always require application acknowledgements to be returned NE to never require application acknowledgements to be returned SU to require application acknowledgements to be returned only in response to successfully transmitted messages ER to only require application acknowledgements in the event of an error	ID	O	2	0..1	N	N
MSH-17	Country code	HL7 recommends values from ISO table 3166 Example: US for "United States"	ID	O	2	0..1	N	N
MSH-18	Character set	Valid character set codes are defined in HL7 table 0211 Example: ASCII for the ASCII character set	ID	O	6	0..1	N	N
MSH-19	Principle language of message	HL7 recommends values from ISO table 639 Example: en for "English"	CE	O	60	0..1	N	N

Patient Identification (PID)

The PID segment is used by all applications as the primary means of communicating patient identification information. This segment contains identifying and demographic information about the patient that is not likely to change frequently.

The PID segment is required and may only appear once. Practice Fusion does not use any information after the PID-13 field, so the PID segment definition has been truncated after this field. Required fields are highlighted in gray.

```
PID|||PF00001||Patient^James||19521230|M|||123 Any
Court^Anytown^MD^12345|| (777) 123-4567|||||123-456-7890
```

Seq	Name	Value	Type	Req'd	Length	Card	Used?	Disp?
PID-0	Segment type ID	PID	SI	R	3	1..1	N	N
PID-1	Sequence number	Identifies the number of the PID segment in circumstances where the message contains multiple patient reports Example: 1	SI	O	4	0..1	N	N
PID-2	External patient ID	Unique identifier for the patient; retained for backward compatibility Example: 9817566735	CX	O	20	0..1	N	N
PID-3	Patient identifier list	Uniquely identifies the patient using values such as a medical record number, billing number, birth registry, and so forth This does not necessarily have to match the Practice Fusion MRN. Example: 9847466735^^^^PATGUI D	ST	O	200	0..1	N	N

Seq	Name	Value	Type	Req'd	Length	Card	Used?	Disp?
PID-4	Alternate patient ID	Contains alternate, pending, or temporary optional patient identifiers to be used, such as a social security number, a visit date, or a visit number; it has been retained for backward compatibility	ID	O	200	0..1	N	N
PID-5	Patient name	Patient's first, last, and middle name Example: Patient^Carol^Middle	XPN	R	200	1..1	Y	Y
PID-6	Mother's maiden name	Maiden name of mother	XPN	O	48	0..1	N	N
PID-7	Patient date of birth	Example: 19520215 Used in patient matching	DT	O	8	0..1	Y	Y
PID-8	Patient gender	Valid gender codes are defined in HL7 table 0001 Example: M for "male"	IS	O	1	0..1	Y	Y
PID-9	Patient alias	2106-3^White^HL70006	XPN	O	48	0..1	N	N
PID-10	Patient race	Valid race codes are defined in HL7 table 0005 Example: WH	CE	O	80	0..1	N	N
PID-11	Patient address	Example: 123 Any Grove^APT A1^Anytown^MD^12345^	XAD	O	660	0..1	Y	N
PID-12	Patient county code	Valid county codes are defined in HL7 table 0289 Example: 42001	IS	O	4	0..1	N	N
PID-13	Patient home phone number	Patient phone number Example: (555)555-5555	XTN	O	13	0..1	Y	N

Patient Visit (PV1)

The PV1 segment contains information about a specific patient visit. 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.

This segment is not required. If included, Practice Fusion only uses information from the PV1-7 field. The PV1 segment definition has been truncated after this field. Required fields are highlighted in gray.

```
PV1|1|||||12345678923^Provider^Stephanie
```

Seq	Name	Value	Type	Req'd	Length	Card	Used?	Disp?
PV1-0	Segment identifier	PV1	SI	R	3	1..1	N	N
PV1-1	Sequence number	1	SI	O	1	0..1	N	N
PV1-2	Patient class	Valid patient classes are defined in HL7 table 0004 C for "commercial account" N for "not applicable" U for "unknown" E for "emergency" I for "inpatient" O for "outpatient" P for "preadmit" R for "recurring patient" B for "obstetrics"	IS	O	4	0..1	N	N
PV1-3	Assigned patient location	Identifies the patient's initial assigned location or the location to which the patient is being moved. The first component may be the nursing station for inpatient locations, or clinic or department for locations other than inpatient. For situations where a transaction is being cancelled or a patient is being discharged, this field identifies the current location of the patient. If a value exists in the fifth component (location status), it supersedes the value in PV1-40 - Bed Status	PL	O	80	0..1	N	N
PV1-	Admission	Valid admission type codes are	IS	O	2	0..1	N	N

Seq	Name	Value	Type	Req'd	Length	Card	Used?	Disp?
4	type	defined in HL7 table 0007						
PV1-5	Pre-admit number	Identifies the patient's account prior to admission	CX	O	250	0..1	N	N
PV1-6	Prior patient location	Identifies the prior location of the patient when being transferred; the old location is null if the patient is new. If a value exists in the fifth component (location status), it supersedes the value in PV1-40 - Bed Status	PL	O	80	0..1	N	N
PV1-7	Attending provider	Attending provider's name and unique identifier. It is recommended that the NPI is included. Example: 1234567893^Provider^Stephanie	XCN	R	400	1..1	Y	Y

Order Common (ORC)

The optional ORC segment identifies basic information about the order for testing of the specimen. This segment includes identifiers of the order, who placed the order, when it was placed, what action to take regarding the order, and so forth.

The ORC segment is not required, but if it is present, the minimum information needed for the segment to be valid are the ORC-0, ORC-1, and ORC-6 fields. The ORC segment definition is truncated after the ORC-6 field. Required fields are highlighted in gray.

```
ORC|RE|20130103131405196|||F|
```

Seq	Name	Value	Type	Req'd	Length	Card	Used?	Disp?
ORC-0	Segment type	ORC	SI	R	3	1..1	N	N
ORC-1	Order control	Specifies the code in HL7 table 0119 that identifies the action to be taken for the order Examples: NW for "new order or service request" CA for "cancel order or service request"	ID	R	2	1..1	N	N
ORC-2	Placer order number	Identifies the application requesting the order Example: 92020AF	ED	O	22	0..1	N	N
ORC-3	Filler order number	The order number of the application filling the order Example: 27798445140	ED	O	22	0..1	N	N
ORC-4	Placer group number	Used by the application placing the order to group sets of orders together and identify them	ED	O	22	0..1	N	N
ORC-5	Order status	Specifies the code in HL7 table 0038 that identifies the status of the order. The purpose of this field is to report the status of an order either upon the receipt of a solicited request, or when the status changes unsolicited. It does not initiate action. It is assumed that the order status	ID	O	2	1..1	N	N

Seq	Name	Value	Type	Req'd	Length	Card	Used?	Disp?
		always reflects the status as it is known to the sending application at the time that the message is sent. Only the filler can originate the value of this field. Although HL7 Table 0038 - Order status contains many of the same values contained in HL7 Table 0119 - Order Control Codes and their meaning, the purpose is different. Order status may typically be used in a message with an ORC-1 - Order Control value of SR or SC to report the status of the order on request or to any interested party at any time						
ORC-6	Response flag	<p>Specifies the code in HL7 table 0121 that allows the placer application to determine the amount of information to be returned from the filler. Sometimes the requested level of response may not be possible immediately, but when it is possible, the filler application must send the information. When the field is null, D is the default interpretation of the field</p> <p>N for "Only the Message Acknowledgement (MSA) segment is returned"</p> <p>E for "Report exceptions only"</p> <p>R for "Report exceptions, Replacement, and Parent-Child"</p> <p>D for "Report exceptions, Replacement, Parent-Child, and associated segments"</p> <p>F for "Report exceptions, Replacement, Parent-Child, associated segments, and explicit confirmations"</p>	ID	R	1	0..1	N	N

Observation Request (OBR)

The OBR segment is used to transmit information specific to an order for a diagnostic study or observation, physical exam, or assessment. It defines the attributes of a particular request for diagnostic services (for example laboratory or EKG) or clinical observations, (for example, vital signs or physical exam).

The OBR segment is required and may repeat. Practice Fusion does not use any information after OBR-25, so the OBR segment definition has been truncated after this field. Required fields are highlighted in gray.

```
OBR|1|Placer1234|Filler56789|TestID^TestName^IDSystem|||ObservationDate/Time|||||
||SpecimenReceivedDate/Time||OrderingProviderID^OrderingProviderLastName^Ordering
ProviderFirstName|||||ResultReportedDate/Time|||ResultStatus(From HL7 table
0123)
```

Seq	Name	Value	Type	Req'd	Length	Card	Used?	Disp?
OBR-0	Segment type	OBR	ST	R	3	1..1	N	N
OBR-1	Sequence number	These values should be a numeric sequence, increasing with each OBR segment present in the message Example: OBR 1	SI	R	4	1..1	N	N
OBR-2	Placer order number	Identifies the application requesting the order. This will appear as the order number in the EHR. Example: 92020AF	ED	R	30	1..1	Y	Y
OBR-3	Filler order number	Contains a permanent identifier for an order and its associated observations This will appear as the accession number in the EHR Example: 27798445140	ED	O	75	0..1	Y	Y
OBR-4	Universal service ID	Specifies the code for the requested observation or test battery Example: 266706003^SNOMED-CT^Continuous ECG monitoring	CE	O	400	0..1	N	N
OBR-5	Priority	Specifies the priority of the request, but exists for backward compatibility only; in current implementations, the priority value is specified by the sixth	ID	O	2	0..1	N	N

Seq	Name	Value	Type	Req'd	Length	Card	Used?	Disp?
		component of the OBR-27 Quantity/Timing field						
OBR-6	Requested date and time	Specifies the date and time of the request, but exists for backward compatibility only; in current implementations, the value is specified by the fourth component of the OBR-27 Quantity/Timing field	TS	O	26	0..1	N	N
OBR-7	Observation date and time	Identifies the clinically-relevant date and time of the observation In the case of observations taken directly from a subject, it is the actual date and time the observation was obtained In the case of a specimen-associated study, this field identifies the date and time the specimen was collected or obtained Example: 20130205022300-0500	TS	R	26	1..1	Y	Y
OBR-8	Observation end date and time	Identifies the end date and time of a study or timed specimen collection. If an observation takes place over a substantial period of time, it will indicate when the observation period ended. For observations made at a point in time, it will be null. This is a results field except when the placer or a party other than the filler has already drawn the specimen Example: 20130205022300-0500	TS	O	26	0..1	N	N
OBR-9	Collection volume	Specifies the collection volume of a specimen. Valid values are identified in "Figure 7-13. Common ISO derived units and *ISO extensions" in Chapter 7 of the HL7 specification Example: ML	CQ	O	20	0..1	N	N
OBR-10	Collector identifier	Identifies the individual, department, or facility that collected the specimen	XCN	O	60	0..*	N	N

Seq	Name	Value	Type	Req'd	Length	Card	Used?	Disp?
OBR-11	Action code	Specifies the code in HL7 table 0065 that identifies the action to be taken with respect to the specimens that accompany or precede the order	ID	O	1	0..1	N	N
OBR-12	Danger code	Contains the code, or text, or both that indicate any known or suspected patient or specimen hazards, such as a patient with active tuberculosis or blood from a patient with hepatitis. The code must always appear in the first component position and text must always appear in the second component; if the code is absent, the text must be preceded by a component delimiter	CE	O	60	0..1	N	N
OBR-13	Relevant clinical information	Contains additional clinical information about the patient or specimen, such as the suspected diagnosis and clinical findings on requests for interpreted diagnostic studies. For example, this field might identify the amount of inspired carbon dioxide for blood gasses, the point in the menstrual cycle for cervical pap tests, and other conditions that influence test interpretations. For some orders this information may be sent on a more structured form as a series of OBX segments that immediately follow the order segment	ST	O	300	0..1	N	N
OBR-14	Specimen received date and time	Identifies the date and time a diagnostic service receives the specimen Example: 20130205022300-0500	TS	O	26	1..1	Y	Y
OBR-15	Specimen source	Identifies the site where the specimen should be obtained or where the service should be performed. Valid codes for the specimen source code subcomponent are defined in HL7 table 0070. Valid codes for the body site code	CM	O	300	0..1	N	N

Seq	Name	Value	Type	Req'd	Length	Card	Used?	Disp?
		subcomponent are defined in HL7 table 0163						
OBR-16	Ordering provider	Identifies the individual that requested the order or prescription It is recommended that the NPI is included. Example: 12345678923^Provider^Stephanie	XCN	O	80	0..*	N	N
OBR-17	Order callback phone number	Identifies the telephone number to call for clarification of a request or other information regarding the order; identical to the value populated in ORC-14 Callback Phone Number Example: (555)555-5555	XTN	O	40	0..N (2)	N	N
OBR-18	Placer field #1	Contains free-form text entered by the placer	ST	O	60	0..1	N	N
OBR-19	Placer field #2	Contains free-form text entered by the placer	ST	O	60	0..1	N	N
OBR-20	Filler 1	Contains free-form text entered by the filler	ST	O	60	0..1	N	N
OBR-21	Filler 2	Contains free-form text entered by the filler	ST	O	60	0..1	N	N
OBR-22	Result reported date and time	Identifies the date and time when the results are entered in a report or when the status value in the ORC-5 - Order Status field was changed. When other applications (such as office or clinical database applications) query the laboratory application for results that have not yet been transmitted, the information in this field may be used to control processing in the exchange. Usually, the ordering service would want only those results for which the reporting date and time is greater than the date and time the inquiring application last received results	TS	R	26	0..1	Y	N

Seq	Name	Value	Type	Req'd	Length	Card	Used?	Disp?
		Example: 20130205022300-0500						
OBR-23	Charge to practice	Contains the charge to the ordering entity for the studies performed, when applicable. The first subcomponent is a dollar amount identified by the filler; the second subcomponent is a charge code identified by the filler	CM	O	40	0..1	N	N
OBR-24	Diagnostic serv sect ID	Specifies the code in HL7 table 0074 that identifies where the observation was performed Examples: AU for "Audiology" RAD for "Radiology"	ID	O	10	0..1	N	N
OBR-25	Test status	Specifies the code in HL7 table 0123 that identifies the status of results for the order O for "Order received; specimen not yet received" I for "No results available; specimen received; procedure incomplete" S for "No results available; procedure scheduled but not performed yet" A for "Some, but not all results are available" P for "Preliminary: a verified early result is available, but final results are not yet obtained" C for "Correction to results" R for "Results stored, but not yet verified" F for "Final results are stored and verified; can only be changed with a corrected result" X for "No results available; order cancelled" Y for "No order on record for this test" Z for "No record of the patient"	ID	R	1	1..1	Y	N

Observation Result (OBX)

The OBX segment is used to transmit a single observation or observation fragment. It represents the smallest indivisible unit of a report and is designed to carry information about observations in report messages.

The OBX segment is required and may repeat. Required fields are highlighted in gray.

OBX example with a lab site:

```
OBX|1|ST|Identifier^ObservationName^NameOfCodingSystem||5.5|mEq/L|2.5-5.3|H|||Status|||20120816122332-0800|LP^Lab Partners^123SomeDrive^AnyTown^CA^95835^MedicalDirector^(555)555-1212
```

OBX example without a lab site:

```
OBX|1|TX|Identifier^ObservationName^NameOfCodingSystem||5.5|mEq/L|2.5-5.3|H|||Status|||20120816122332-0800
```

OBX example with a PDF Attachment:

```
OBX|1|ED|PDF^PDF||^AP^^Base64^[base64 encoded PDF strain]|||||F|
```

Seq	Name	Value	Type	Req'd	Length	Card	Used?	Disp?
OBX-0	Segment type	OBX	ST	R	3	1..1	N	N
OBX-1	Sequence number	These values should be a numeric sequence, increasing with each OBX segment present in the message Example: OBX 1	SI	R	6	1..1	N	N
OBX-2	Value type	Contains the format of the observation value If the value is CE then the result must be a coded entry If the value is TX then the results are bulk text If the value is NM then the value must be numeric only	CE, ST, NM, SN, TX	R	2	1..1	Y	N
OBX-3	Observation identifier	Contains a unique identifier for the observation, such as Local Observation Identifiers Names and Codes (LOINC)	CE	R	325	1..1	Y	N

Seq	Name	Value	Type	Req'd	Length	Card	Used?	Disp?
		values						
OBX-4	Observation sub-id	Contains a unique identifier for each OBX segment with the same value in the OBX-3 Observation Identifier field in a single Observation Request	ST	O	20	0..1	N	N
OBX-5	Observation value	Contains the value observed by the producer If the value in the OBX-2 Value Type field is ED, then this field should contain the value OBX5.5; otherwise, this field should contain the value OBX-5.1	¹	O	8000	1..1	Y	Y
OBX-6	Result units of measurement	Specifies the ISO value of the units for the measurement	CE	O	50	0..1	Y	Y
OBX-7	Result unit reference range	Specifies lower limits, upper limits, or both for result values Examples: > 10 < 15 3.5 – 4.5	ST	O	50	0..1	Y	Y
OBX-8	Abnormal flags	Specifies the code in HL7 table 0078 that identifies the normalcy status of the result L for “below normal low” LL for “alert low” < for “panic low” H for “above normal high” HH for “alert high” > for “panic high” A for “abnormal”	IS	O	2	0..N (5)	Y	Y

¹Although NM is a valid type, observations which are usually reported as numbers will sometimes have the string (ST) data type because non-numeric characters are often reported as part of the result, e.g., >300 to indicate the result was off-scale for the instrument. In the example, ">300", ">" is a symbol and the digits are considered a numeric value. However, this usage of the ST type should be discouraged since the SN (structured numeric) data type now accommodates such reporting and, in addition, permits the receiving system to interpret the magnitude. All HL7 data types are valid, and are included in Table 0125 except CM, CQ, SI, and ID.

Seq	Name	Value	Type	Req'd	Length	Card	Used?	Disp?
		N for "normal" AA for "very abnormal" U for "significant change up" D for "significant change down" B for "better" W for "worse" S for "susceptible" R for "resistant" I for "intermediate" MS for "moderately susceptible" VS for "very susceptible" NULL for "no range defined, or normal ranges don't apply"						
OBX-9	Probability	Contains a decimal value between 0 and 1 that identifies the probability of the result being true	NM	O	5	0..1	N	N
OBX-10	Nature of abnormal test	Specifies the codes in HL7 table 0080 that identify the nature of an abnormal test A for "An age-based population" N for "Non-generic normal range" R for "A race-based population" S for "A sex-based population"	ID	O	2	0..*	N	N
OBX-11	Observation result status	Specifies the codes in HL7 table 0085 that identifies the current completion status of the observation result C for "Record coming over is a correction and replaces a final result" D for "Delete the OBX record" F for "Final results; can only be changed with a corrected	ID	R	20	1..1	Y	Y

Seq	Name	Value	Type	Req'd	Length	Card	Used?	Disp?
		<p>result”</p> <p>I for “Specimen in lab; results pending”</p> <p>P for “Preliminary results”</p> <p>R for “Results entered but not yet verified”</p> <p>S for “Partial results”</p> <p>X for “Results cannot be obtained for this observation”</p> <p>U for “Results status change to Final without re-transmitting results already sent as “preliminary”</p> <p>W for “Post original as wrong”, such as when the results were sent for the wrong patient</p>						
OBX-12	Effective date of last normal observation	Contains changes in the observation methods that would make values obtained from an old method not comparable with those obtained from the new method	DT	O	26	0..1	N	N
OBX-13	User-defined access checks	Permits the producer to record results-dependent codes for classifying the observation at the receiving system	ST	O	20	0..1	N	N
OBX-14	Observation date and time	<p>Identifies the physiologically-relevant date and time of the report</p> <p>20130205022300-0500</p>	DT	O	26	0..1	Y	Y
OBX-15	Producer’s id (lab site information)	<p>Contains the unique identifier of the responsible producing service. Use the following format:</p> <p><Lab Site ID>^<Lab Site Name>^<Lab Site Street Address>^<Lab Site City>^<Lab Site State>^<Lab Site Zip>^<Lab Site Director Name></p>	CE	O	903	0..1	Y	Y

Seq	Name	Value	Type	Req'd	Length	Card	Used?	Disp?
OBX-16	Responsible observer	Contains the unique identifier of the individual responsible for performing or verifying the observation	XCN	O	3220	0..1	N	N
OBX-17	Observation method	Identifies the method or procedure by which an observation was obtained when the sending system wishes to distinguish between measurements obtained by different methods	CE	O	705	0..*	N	N

Note (NTE)

The NTE segment contains notes and comments, and can be attached to the PID, ORC, OBR, and OBX segments.

The NTE segment is optional and may repeat. Required fields are highlighted in gray.

```
NTE|1|TX|EPITHELIAL CELL ABNORMALITY: SQUAMOUS CELLS
```

Seq	Name	Value	Type	Req'd	Length	Card	Used?	Disp?
NTE-0	Segment type	NTE	ST	R	3	1..1	N	N
NTE-1	Sequence number	These values should be a numeric sequence, increasing with each NTE segment present Example: NTE 1	SI	R	6	1..1	N	N
NTE-2	Comment source	Identifies the source of the comment Examples: P for "practice" O for "other system"	ID	O	2	0..1	N	N
NTE-3	Comment	Contains the comments entered by the source EPITHELIAL CELL ABNORMALITY: SQUAMOUS CELLS	FT	O	32000	0..*	N	Y

File Trailer Segment (FTS)

Currently only one message per file is supported, so the FTS segment is optional and does not affect the processing of the message whether present or not.

The FTS segment is optional and may appear only once. Required fields are highlighted in gray.

```
FTS|1|End of File
```

Seq	Name	Value	Type	Req'd	Length	Card	Used?	Disp?
FTS-0	Segment type	FTS	ST	O	3	0..1	N	N
FTS-1	ID	1	NM	O	6	0..1	N	N
FTS-2	File trailer comment	End of File	ST	O	32000	0..1	N	N

Practice Fusion SOAP-Based Services

There are two services you can make SOAP-based calls to in order to submit 2.3 ORU_R01 messages to Practice Fusion for processing:

1. Practice Fusion Security Service
2. Practice Fusion LabConnect Service

1. Practice Fusion Security Service

The Practice Fusion Security Service is the first service you should invoke, providing the username and password assigned to your lab by the Practice Fusion team during the onboarding process. The service returns a security token you will then use when invoking the LabConnect service, as well as a status value about the invocation. The token is cached and can be used for two hours before having to re-authenticate.

a) Making a Request of the Security Service

To make an authentication request of the Security Service, issue a SOAP request based on the Security WSDL below:

- Test Security WSDL: <https://partner.practicefusion.com/PFAPI/security.asmx?WSDL>
- Production Security WSDL: <https://resultapi.practicefusion.com/PFAPI/security.xml>

More detailed information about the request can be found below.

i. Request Object Structures

The following sections detail the Login request objects for SOAP versions 1.1 and 1.2. Populate the necessary attributes with the appropriate values in the SOAP request.

Login Object Variables

Attribute	Value to Populate
username	The API username provided to you by Practice Fusion.
password	The password for your API username

ii. Sample SOAP Request Envelope

```
<soapenv:Envelope
xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:sec="http://pfapi.practicefusion.com/2010/01/28/security">
  <soapenv:Header/>
  <soapenv:Body>
    <sec:Login>
      <!--Optional:-->
      <sec:username>usernamestring</sec:username>
      <!--Optional:-->
    </sec:Login>
  </soapenv:Body>
</soapenv:Envelope>
```

```

        <sec:password>passwordstring</sec:password>
    </sec:Login>
</soapenv:Body>
</soapenv:Envelope>

```

b) Receiving a Response from the Security Service

PracticeFusion returns a LoginResponse object in response to your request, returning information such as your security token or information about any errors.

i. Response Object Structures

The following sections detail the LoginResponse objects for SOAP versions 1.1 and 1.2.

LoginResponse Object Attributes

Attribute	Data Type	Value Populated
token	String	Contains the security token returned by Practice Fusion
operationStatus	ComplexType	Contains the success, errorCode, and errorDetails attributes
success	boolean	Contains the value true if the request was successful, or false if there was an error
errorCode	String	Contains a code specifying the error in the event of an unsuccessful request Example: ACCOUNT_LOCKED

ii. Sample SOAP Response Envelope

```

<soap:Envelope xmlns:soap="http://www.w3.org/2003/05/soap-envelope"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xmlns:xsd="http://www.w3.org/2001/XMLSchema">
    <soap:Body>
        <LoginResponse
xmlns="http://pfapi.practicefusion.com/2010/01/28/security">
            <LoginResult>
                <token>alphanumericstring</token>
            </LoginResult>
            <operationStatus>
                <success>boolean</success>
            </operationStatus>
        </LoginResponse>
    </soap:Body>
</soap:Envelope>

```

```
</soap:Body>
</soap:Envelope>
```

2. Practice Fusion LabConnect Service

After you have successfully invoked the Practice Fusion Security Service and received a token, you can invoke the Practice Fusion LabConnect Service to send your ORU_R01 message.

a) Making a Request of the LabConnect Service

To send an HL7 result message, issue a SOAP request based on the Security WSDL below:

- Test LabConnect WSDL: <https://partner.practicefusion.com/PFAPI/LabConnect.asmx?WSDL>
- Production Lab Connect WSDL: <https://resultapi.practicefusion.com/PFAPI/LabConnect.xml>

i. Request Object Structures

The following sections detail the ProcessLabResult request objects for SOAP versions 1.1 and 1.2.

ProcessLabResult Object Variables

Attribute	Value to Populate
token	The token returned by the Practice Fusion Security Service
Base64HL7Result	Your HL7 message encoded as Base64 data

ii. Sample SOAP Request Envelope

```
<soapenv:Envelope
xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:lab="http://pfapi.practicefusion.com/2012/02/01/labconnect">
  <soapenv:Header/>
  <soapenv:Body>
    <lab:ProcessLabResult>
      <!--Optional:-->
      <lab:token>alphanumericstring</lab:token>
      <!--Optional:-->

    <lab:Base64HL7Result>base64encodedHL7result</lab:Base64HL7Result>
  </lab:ProcessLabResult>
</soapenv:Body>
</soapenv:Envelope>
```

a) Receiving a Response from the LabConnect Service

PracticeFusion returns a ProcessLabResultResponse object in response to your request, returning information about the success or failure of the processing.

i. Response Object Structures

The following sections detail the ProcessLabResultResponse objects for SOAP versions 1.1 and 1.2.

ProcessLabResultResponse Object Attributes

Attribute	Data Type	Value Populated
resultStatus	ComplexType	Contains the success, errorCode, and errorDetails attributes
success	boolean	Contains the value true if the message was successfully processed, or false if there was an error
errorDetails	String	Contains text describing the error in the event of a processing failure Example: The system is currently down for maintenance. Please try again later.

ii. Sample SOAP Successful Response Envelope

The response below indicates the message was successfully processed and delivered to the practice's EHR.

```
<soap:Envelope xmlns:soap="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xmlns:xsd="http://www.w3.org/2001/XMLSchema">
  <soap:Body>
    <ProcessLabResultResponse
xmlns="http://pfapi.practicefusion.com/2012/02/01/labconnect">
      <resultStatus>
        <success>true</success>
        <errorCode>0000</errorCode>
      </resultStatus>
    </ProcessLabResultResponse>
  </soap:Body>
</soap:Envelope>
```

iii. Sample SOAP Errored Response Envelope

In the example response below, the HL7 message did not contain the MSH-6 value of an existing account ID associated with the lab.

```
<soap:Envelope xmlns:soap="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xmlns:xsd="http://www.w3.org/2001/XMLSchema">
  <soap:Body>
    <ProcessLabResultResponse
xmlns="http://pfapi.practicefusion.com/2012/02/01/labconnect">
      <resultStatus>
        <success>false</success>
        <errorDetails>UnknownKeyIdentifier: Can't determine
practice based on account number;</errorDetails>
      </resultStatus>
    </ProcessLabResultResponse>
  </soap:Body>
</soap:Envelope>
```

Practice Fusion RESTful Services

Practice Fusion also exposes a Representational State Transfer (REST) service that can process HL7 data.

1. Practice Fusion LabConnectHTTPService

The Practice Fusion LabConnectHTTPService is a RESTful endpoint you can invoke to process HL7 messages.

Make an HTTP POST to the following URLs:

- Test URL: <https://partner.practicefusion.com/PFAPI/LabConnectHttpService.svc/processlabresult>
- Production URL: <https://resultapi.practicefusion.com/PFAPI/LabConnectHttpService.svc/processlabresult>

The call must include headers containing the username and password provided by Practice Fusion according to the Basic Authentication protocol as defined in RFC 2617. Concatenate the API credentials as “username:password” and convert the string into a base64 encoded string. The Authorization header should be in the following format—

Basic base64encodedstring

The lab result data should be sent as raw HL7, not base64 encoded as with the Practice Fusion SOAP services. See Sample REST Request for an example call.

a. Sample REST Request

Method: POST

Content-Type: plain/text

Authorization: Basic Y3JlZGVudG1hbHM6Y3JlZGVudG1hbHM=

```
MSH|^~\&|||accountID|20090826163020||ORU^R01|MessageControlID|P|2.3
```

```
PID|||MRN||LastName^FirstName^MI
```

```
OBR|1|Placer1234|Filler56789|TestID^TestName^IDSystem|||ObservationDate/Time|||SpecimenReceivedDate/Time||OrderingProviderID^OrderingProviderLastName^OrderingProviderFirstName|||ResultReportedDate/Time||ResultStatus(From HL7 table 0123)
```

```
OBX|1|DataType|ObservationID^ObservationName^IDSystem||ResultValue|||Status(From HL7table 0085)
```

b. Sample REST Response

```
<data contentType="plain/text"
  contentLength="121"><![CDATA[MSH|^~\&|Site|accountID|SendingApp|Sending
  Site|20160613131041.7844-0700||ACK|2b4273fe-937d-4c64-8739-
  f293f98fbc1c|T|2.3
  MSA|AA
  ]]></data>
```

Appendix

This section details the values that appear in the “Req’d”, “Card”, and “Type” columns in the detailed segment definition tables.

Requiredness

This section defines the values that appear in the “Req’d” of the detailed segment definitions, which specify whether the segment is required, optional, or required based on certain conditions.

R

The segment is required.

O

The segment is optional, and may be omitted.

C

The segment might be required depending on conditions related to the trigger event or the value of other fields.

Cardinality

This section defines the cardinality values displayed in the “Card” column of the detailed segment definitions, which specify the logic behind how a segment may repeat or not.

0..1

The segment may be omitted and can occur only once.

1..1

The segment must occur only once.

0..*

The segment may be omitted or may repeat an unlimited number of times.

1..*

The segment must appear at least once, and may repeat an unlimited number of times.

0..N

The segment may be omitted or may repeat a specific number of times.

Data Types

This section defines the data types displayed in the “Type” column of the detailed segment definitions.

CE

Coded Element	<p>This data type transmits codes and the text associated with the code.</p> <pre><identifier (ST)> ^ <text (ST)> ^ <name of coding system (ST)> ^ <alternate identifier (ST)> ^ <alternate text (ST)> ^ <name of alternate coding system (ST)></pre>
---------------	---

CM

Composite	<p>A field that is a combination of other meaningful data fields. The specific components of CM fields are defined within the field description, not by the data type itself.</p>
-----------	---

CQ

Composite Quantity with Units	<p>Used to express a quantity, and the units in which the quantity is expressed.</p> <pre><quantity (NM)> ^ <units (CE)></pre>
-------------------------------	--

CX

Extended Composite ID with Check Digit	<p>Used to express an alphanumeric identifier, a check digit and scheme, and the source of the identifier, check digit, and scheme.</p> <pre><ID (ST)> ^ <check digit (ST)> ^ <code identifying the check digit scheme employed (ID)> ^ < assigning authority (HD)> ^ <identifier type code (IS)> ^ < assigning facility (HD)</pre>
--	--

DLN

Driver's license number	<pre><license number (ST)> ^ <issuing state, province, country (IS)> ^ <expiration date (DT)</pre>
-------------------------	---

DT

Date	<p>A date in the format YYYYMMDD</p>
------	--------------------------------------

ED

Encapsulated data	<p>Data that is primarily intended for human interpretation or for further machine processing outside the scope of HL7, such as a Portable Document Format (PDF) file. This includes unformatted or formatted written language, multimedia data, or structured information as defined by a different standard, such as XML signatures.</p>
-------------------	--

EI

Entity identifier	<p>The entity identifier permits the identification of a given entity within an application or system.</p> <pre><entity identifier (ST)> ^ <namespace ID (IS)> ^ <universal ID (ST)> ^ <universal ID type (ID)></pre>
-------------------	---

FT

Formatted text	<p>This data type is derived from the string data type by allowing the addition of embedded formatting instructions.</p>
----------------	--

HD

Hierarchic designator	<p>A unique name that identifies the system that was the source of the data. The HD type is designed to be used either as a local version of a site-defined application identifier or as a publicly-assigned UID.</p> <pre><namespace ID (IS)> ^ <universal ID (ST)> ^ <universal ID type (ID)></pre>
-----------------------	---

ID

Coded value for HL7-defined tables	<p>The value of such a field follows the formatting rules for an ST field except that it is drawn from an HL7-defined table. A specific HL7 table number is inherently associated with the field, rather than explicitly stated, when this data type is used.</p>
------------------------------------	---

IS

Coded values for user-defined tables	<p>The value of such a field follows the formatting rules for an ST field except that it is drawn from a user-defined table. A specific HL7 table number is inherently associated with the field, rather than explicitly stated, when this data type is used.</p>
--------------------------------------	---

NM

Numeric	<p>A series of ASCII numeric characters consisting of an optional leading sign (+ or -), the digits, and an optional decimal point. In the absence of a sign, the number is assumed to be positive. If there is no decimal point, the number is assumed to be an integer.</p> <p>Leading zeros or trailing zeros after a decimal point are not significant.</p>
---------	---

PL

Person location	<pre><point of care (IS)> ^ <room (IS)> ^ <bed (IS)> ^ <facility (HD)> ^ < location status (IS)> ^ <person location type (IS)> ^ <building (IS)> ^ <floor (IS)> ^ <location description (ST)></pre>
-----------------	---

PT

Processing type	<processing ID (ID)> ^ <processing mode (ID)>
-----------------	---

SI

Sequence ID	A non-negative integer in the form of an NM field.
-------------	--

SN

Structured numeric	<p>The structured numeric data type is used to unambiguously express numeric clinical results along with qualifications.</p> <p><comparator (ST)> ^ <num1 (NM)> ^ <separator/suffix> ^ <num2 (NM)></p> <p>Examples:</p> <p><^.255</p> <p>>^100</p> <p>^1^:^100</p> <p>^5^-^10</p>
--------------------	---

ST

String data	Any printable ASCII characters except the defined delimiter characters. To include any HL7 delimiter character (except the segment terminator) within a string data field, the appropriate HL7 escape sequence must be used. String data is left justified with trailing blanks optional.
-------------	---

TM

Time	A time value in the format HH[MM[SS[S[S[S[S]]]]]] [+/-ZZZZ]
------	---

TS

Timestamp	<p>Any timestamp value formatted according to the HL7 specifications for the TS data type, with items in brackets ([]) being optional:</p> <p>YYYY[MM[DD[HHMM[SS[.S[S[S[S]]]]]]]] [+/-ZZZZ]</p> <p>The preferred format of Practice Fusion is YYYYMMDDHHMMSS±ZZZZ (where ZZZZ is the time zone offset from Greenwich Mean Time), such as 20130205022300-0500</p>
-----------	---

TX

Text data	String data meant for print or for display on a terminal. Not necessarily left justified. Leading spaces may contribute to clarity of the presentation to the user.
-----------	---

VID

Version identifier	<p>Used to identify the HL7 version.</p> <pre><version ID (ID)> ^ <internationalization code (CE)> ^ <international version ID (CE)</pre>
--------------------	--

XAD

Extended address	<p>Used to express address data associated with a person or institution.</p> <pre><street address (ST)> ^ <other designation (ST)> ^ <city (ST)> ^ <state or province (ST)> ^ <zip or postal code (ST)> ^ <country (ID)> ^ < address type (ID)> ^ <other geographic designation (ST)> ^ <county/parish code (IS)> ^ <census tract (IS)> ^ <address representation code (ID)></pre>
------------------	--

XCN

Extended composite ID number and name for persons	<p>Used to express person name information in conjunction with a composite ID and check digit.</p> <pre><ID number (ST)> ^ <family name (ST)> & <last_name_prefix (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)> ^ <name representation code (ID)></pre>
---	--

XON

Extended composite name and identification number for organizations	<p>Used to express organization name information in conjunction with a composite ID and check digit.</p> <pre><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)> ^ <name representation code (ID)></pre>
---	---

XPN

Extended person name	<p>Used to express person name information.</p> <pre><family name (ST)> & <last_name_prefix (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) (IST)> ^ <name type code (ID) > ^ <name representation code (ID)></pre>
----------------------	---

XTN

Extended telecommunications number	<p>Used to express telecommunications information.</p> <pre>[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)></pre>
------------------------------------	--

Version History

Version	Date	Comment
v. 29	June 13, 2016	Updated specification and added additional helpful implementation information
v. 28	May 08, 2013	Reformatted, and added greater detail Added information about more than one attachment
v. 25	Nov 28, 2012	Added correct info on OBX-5 use, and clarified OBX-3 use.
v. 24	Nov 13, 2012	Increased NTE 3 from 200 to 32000
v. 23	Nov 08, 2012	Added requirement for MSH-11
v. 22	Nov 07, 2012	Increased OBX 3.2 length from 75 to 200
v. 21	Nov 02, 2012	Supporting additional abnormal flags.
v. 20	Oct 03, 2012	Updated PV1.7 to reflect our use of NPI for provider lookup.
v. 19	Oct 03, 2012	Formatting changes
v. 18	Aug 17, 2012	Removed footnote stating OBR-22 cannot be present in some cases.
v. 17	Aug 16, 2012	Formatting changes and updated examples to match the spec. Also added comment about NTE.3 handling
v. 16	Aug 03, 2012	Changed patient first name to be required.
v. 15	Jul 24, 2012	Added that OBX.3.1, 3.2, and 3.3 not required when value type is ED (embedded PDF)
v. 14	Jul 24, 2012	Added footnote to OBX.11 stating that it's not required when Value Type is set to ED for embedded PDF
v. 13	Jul 23, 2012	Refactored by marking any unused fields as such. Refactored OBR and OBX tables. Added supported abnormal flags. Many other changes.
v. 12	May 30, 2012	Updated OBX-15 to reflect all the lab site information that can be sent. Removed OBX-18+ as they are not valid in HL7 v2.3.information
v. 11	May 03, 2012	Updated PV1 table to show all fields and formatted for easier readability.
v. 10	Apr 23, 2012	Reverted back to requiring PID-3 (not PID-2) for ID after team discussions. PID-2 is deprecated in later HL7v2 versions.
v. 9	Apr 18, 2012	Marked PID-3 as not required/display and PID-2 as required/displayed based on current system behavior.

v. 8	Apr 17, 2012	Updated MSH section to show all fields and include details about sub-components when necessary.
v. 7	Apr 17, 2012	Massive update to the PID section. Added all pid fields. Greyed out unused fields. Updated valid phone numbers and SSN's.
v. 6	Apr 17, 2012	Updated PID-11 (Address) to show all fields that have size limitations. Also marked appropriate fields as displayed in EHR.
v. 5	Apr 12, 2012	Added additional PV1-7 fields. Also clearly marked what is required or not required in PV1-7
v. 4	Apr 09, 2012	Added sub-components for PID-3
v. 3	Mar 27, 2012	Added MSH-6 sub components and indicated that we use the first one for Vendor Client Account Number
v. 2	Mar 27, 2012	Indicated that OBX.3's subcomponents are required (identifier and text)
v. 1	Mar 27, 2012	New Document