Radiology/Nuclear Medicine 5.0

HL7 Interface Specification

Version 3.1

Revised for

Patch RA*5.0*107

January 2012

Revision History

Date	Version	Change	Page
December 1999	1.0	Initial version of this document	
March 2007	2.0	Completely updated to include current functionality and to meet current HSD&D Documentation Standards	
August 2011	3.0	• Combined two HL7 specifications, VistA Imaging's Profiles for HL7 Messages from VistA to Commercial PACs and VistA Radiology's Radiology/Nuclear Medicine 5.0 HL7 Interface Specification for Voice Recognition Dictation Systems, and reformatted this new version, Radiology/Nuclear Medicine 5.0 HL7 Interface Specification • Incorporated updates from VistA Imaging's Profiles for HL7 Messages from VistA to Commercial PACs dated 03 Feb 11 version 1.2.9 • Updated to HL7 v2.4 with Patch RA*5*47	
January 2012	3.1	Patch RA*5.0*107 • Updated the description of MSH Segment; for ORMs and ORUs Seq 15: Usage is **X Not required** and Cardinality is **0..0**. • Updated the description of MSH Segment; for ORMs and ORUs Seq 16: Usage is **X Not required** and Cardinality is **0..0**. • Updated the description of MSH-4-Sending Facility; for ORMs and ORUs Seq 2 and 3: Usage is **X Not required** and Cardinality is **0..0** • Added 2 sections: a. 5 Query Profile b. 6 Response Profile • Added a Query message example • Added a Response message example	15 15 24 79 87 97 97

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1 Introduction

This document describes the messaging interface to the VistA Rad/Nuc Med 5.0 package (Rad/Nuc Med), which is based on the Integrating the Healthcare Enterprise (IHE) initiative. IHE promotes the coordinated use of established standards such as Health Level 7 (HL7) to support patient care. To comply with IHE, Rad/Nuc Med has implemented HL7 version 2.4 messaging standards for all electronic messages that are sent between VA medical center systems and commercial off-the-shelf (COTS) systems. These COTS systems include dictation systems (subscriber), picture archive and communication systems (subscriber), and other third-party information management software. This document primarily addresses bi-directional messaging between Rad/Nuc Med and COTS subscriber systems. It identifies the Rad/Nuc Med data elements and HL7 fields that are handled by the new interface, and it also defines the functional business requirements of this interface.

Several subscriber systems are already interfaced to Rad/Nuc Med, including PowerScribe, TalkStation, and RadWhere. Future COTS interfaces to Rad/Nuc Med must follow these specifications to comply with the existing interface design.

1.1 Organization of this Document

This specification is organized into six major sections.

1. The Introduction gives a brief overview of the document and an overview of HL7 terminology.
2. The Overview of Trigger Events chapter provides a high-level overview of four system events and the types of HL7 messages they trigger.
3. The Order Entry/Update Profile chapter contains detailed information on the ORM and A CK HL7 messages used by Rad/Nuc Med.
4. The Report Transmission/Storage Profile chapter contains detailed information on the ORU and ACK HL7 messages used by Rad/Nuc Med.
5. Appendix A contains message examples, showing a variety of messaging scenarios.
6. Appendix B contains VistA Data Attributes for the VistA HL7 messages.

1.2 Overview of HL7 Terminology

The following terms and concepts are used throughout this interface specification. For more information, see the HL7 VistA Messaging manuals in the VistA Documentation Library (VDL) at http://www.va.gov/vdl/application.asp?appid=8

1.2.1 Application Processing Rules

The VistA HL7 protocols describe the basic rules for application processing by the sending and receiving systems. Information contained in the protocol is not repeated in this document.

1.2.2 Communication Protocol

With the implementation of patch HL*1.6*19, the VistA HL7 package can now support TCP/IP interfaces. The TCP/IP network standard supports the transport layer and network layer of the interface. The Minimal Lower Layer Protocol (MLLP) as specified in the HL7 v2.3.1 Implementation Guide Appendix C.4 supports the presentation layer protocol for the interface and encapsulates the HL7 v2.4 messages with start and end markers.

Two links are required for message transactions.

1. VistA uses one link to send order messages and receive acknowledgments.
2. VistA uses the second link to send results and receive acknowledgments.

1.2.3 **Data Type**

Data type identifies the restrictions on the contents of the data field. HL7 defines a number of data types. This information is in a column labeled **DT** in the segment attribute tables.

Data Type	Data Type Name	Notes/Format
CE	Coded Element	identifier ^ text ^ name of coding system ^ alternate identifier ^ alternate text ^ name of alternate coding system
CM	Composite	Combination of components of varying data types
CQ	Composite quantity with units	quantity (NM) ^ units (CE)
CX	Extended composite ID with check digit	ID ^ check digit ^ code identifying the check digit scheme employed
EI	Entity identifier	entity identifier ^ namespace ID ^ universal ID ^ universal ID type
FT	Formatted text	See page 2 for a list of escape sequences and allowed formatting commands.
HD	Hierarchic designator	namespace ID ^ universal ID ^ universal ID type
ID	Coded value for HL7 defined tables	Valued from a table of HL7 legal values
IS	Coded value for user-defined tables	Valued from a table of site legal values
PT	Processing type	Processing ID ^ processing mode
ST	String	Data is left justified with trailing blanks optional.
TQ	Timing quantity	Utilizes the Priority component for order priority
TS	Time stamp	YYYYMMDDHHMMSS
TX	Text data	String data meant for user display.
XCN	Extended composite id number and name for persons	ID ^ family name ^ given name ^ middle initial or name
XPN	Extended person name	family name ^ given name ^ middle initial or name

1.2.4 **Escape Sequences in Data Fields**

When a field of type TX, FT, or CF is encoded, the escape character is used to signal certain special characteristics for portions of the text field. The escape character is whatever display ASCII character is specified in the Escape Character component of MSH-2-Encoding Characters. The character (\) must be used to represent the character so designated in a message. An escape sequence consists of the escape character followed by a one-character escape code ID, then another occurrence of the escape character.

The following escape sequences are decoded by the Rad/Nuc Med interface for *OBX-5-Observation value* only:

Sequence	Description
\S\	Component separator
\T\	Subcomponent separator
\R\	Repetition separator
\E\	Escape character

Note: No escape sequence may contain a *nested* escape sequence.

1.2.5 Fields

A field is a string of characters. The HL7 Messaging Standard does not specify how systems must store data within an application. When fields are transmitted, they are sent as character strings. Except where noted, HL7 data fields can use the null value. Sending the null value, which is transmitted as two double quote marks (“”), is different from omitting an optional data field. The difference appears when the contents of a message are used to update a record in a database, rather than create a new one.

- If no value is sent, such as, it is omitted, the old value remains unchanged.
- If the null value is sent, the old value is changed to null.

1.2.6 File

In this document, a file is a VA File Manager file on the local VistA system, unless explicitly indicated otherwise.

1.2.7 Maximum Length

Maximum length is the number of characters that one occurrence of the data field can occupy. It is calculated to include the component and subcomponent separators. Because the maximum length is that of a single occurrence, the repetition separator is not included in calculating the maximum length. In segment attribute tables, this information is in a column labeled **LEN.**

1.2.8 Messages

A **message** is the atomic unit of data transferred between systems. It comprises a group of segments in a defined sequence. Each message has a **message type** that defines its purpose. For example, the ORU message type is used to transmit information about a patient’s order results from one system to another. A three-character code contained within each message identifies its type.

The real-world event that initiates an exchange of messages is called a trigger event. For a more detailed description of trigger events, refer to section 2.3.1 Trigger Events of the HL7 Messaging Standard v2.4. A trigger event code represents values, such as a*n order event occurred*. There is a one-to-many relationship between message types and trigger event codes. The same trigger event code cannot be associated with more than one message type.

1.2.9 HL7 Messages

Rad/Nuc Med uses three HL7 message types to communicate with subscriber systems, subscribers, and additional HL7-subscribing applications: ORM, ORU, and ACK. HL7 messages are broadcast in response to trigger events. For instance, the order message (ORM) usually uses four statuses to trigger an HL7 message: Waiting, Examined, Transcribed, and Complete.

> **Note:** Individual sites can set parameters to define which HL7 message to broadcast when a specific status is reached. Consequently, HL7 messages are not triggered by the same statuses at all sites.

The business rules for the Rad/Nuc Med application state that when building HL7 messages, a continuation node must be created for any segment that exceeds 245 characters in length.[1]

For examples of ORM, ORU, and ACK messages, refer to Appendix A.

1.2.10 Message Delimiters

Delimiters are special characters used in constructing a message. They are the segment terminator, the field separator, the component separator, the subcomponent separator, the repetition separator, and the escape character.

- The segment terminator is always a carriage return (in ASCII, a hex 0D).
- The other delimiters are defined in the MSH segment, with the field delimiter in the 4th character position and the other delimiters occurring as in the field called Encoding Characters, which is the first field after the segment ID.
- The delimiter values shown in the MSH segment are used throughout the message.

Rad/Nuc Med uses the HL7 recommended values.

Delimiter	Suggested Value	Encoding Character Position	Usage
Segment Terminator	<cr> hex 0D	-	Terminates a segment record Implementers cannot change this value.
Field Separator	|	-	Separates two adjacent data fields within a segment It also separates the segment ID from the first data field in each segment.
Component Separator	^	1	Separates adjacent components of data fields where allowed
Subcomponent Separator	&	4	Separates adjacent subcomponents of data fields where allowed Can be omitted when there are no subcomponents

[1] June 2008 Updated the business rule for the VistA Rad/Nuc Med application when building an HL7 message for a segment that exceeds 245 characters in length.

Delimiter	Suggested Value	Encoding Character Position	Usage
Repetition Separator	~	2	Separates multiple occurrences of a field where allowed
Escape Character	\	3	Use with any field represented by an ST, TX or FT data type, or use with the data (fourth) component of the ED data type. If no escape characters are used in a message, this character can be omitted. If subcomponents are used in a message, this character must be present.

1.2.11 Position (sequence within the segment)

Position is the ordinal position of the data field within the segment. This number refers to the data field in the text comments that follow the segment definition table. In segment attribute tables, this information is in a column labeled **SEQ**.

1.2.12 Segments

A **segment** is a logical grouping of **data fields**. Segments of a message are required or optional. They occur only once in a message or are allowed to repeat. Each segment has a name and is identified by a unique three-character code known as the Segment ID. For example, the ORU message contains four segments: Message Header (MSH), Patient ID (PID), Observation Request (OBR), and Observation Result (OBX).

Segment tables are used to define the fields and properties of each HL7 segment. These terms are used in the table headings:

Term	Description
SEQ	Ordinal position of the data field within the segment
LEN	Maximum length of data for a specific HL7 field, in characters
DT	HL7 data type
Usage	Defines whether data is required, optional, or conditional for a field
Cardinality	Number of times a data element can repeat within an individual field for a particular segment
TBL#	Table attribute of the data field definition that specifies the HL7 identifier for a set of coded values
Element Name	Name of the referenced component
HL7 Chapter	Reference to the *HL7 Messaging Standard*, version 2.4

1.2.13 Table

A table is an HL7-defined or user-defined table, as cited in the HL7 Standard.

1.2.14 Usage

Usage defines whether data is required, optional, or conditional for a field.

Note: The constraints on the HL7 definitions of **CE** and **X** of a conforming receiving application must **not** raise an error, if these fields are populated.

Value	Description	Comment
R	Required	A conforming *sending* application must populate all **R** elements with a non-empty value. A conforming *receiving* application must process (save/print/archive, and so on) or ignore the information conveyed by required elements. A conforming *receiving* application must not raise an error due to the presence of a required element, but can raise an error due to the absence of a required element.
RE	Required but can be empty	The element can be missing from the message, but must be sent by the *sending* application when there is relevant data. A conforming *sending* application must be capable of providing all **RE** elements. If the conforming *sending* application knows the required values for the element, it must send that element. If the conforming *sending* application does not know the required values, that element is omitted. *Receiving* applications must process (save/print/archive, and so on) or ignore data contained in the element, but must be able to successfully process the message when the element is omitted No error message is generated when the element is missing.
C	Conditional	Usage with an associated condition predicate If the predicate is satisfied: A conforming *sending* application must always send the element. A conforming *receiving* application must process or ignore data in the element. It can raise an error when the element is not present. If the predicate is **not** satisfied: A conforming *sending* application must **not** send the element. A conforming *receiving* application must **not** raise an error when the condition predicate is false, whether the element is present or not.
CE	Conditional but can be empty	Usage with an associated condition predicate If the predicate is satisfied: If the conforming *sending* application knows the required values for the element, then the application must send the element. If the conforming *sending* application does not know the values required for this element, the element is omitted. The conforming *sending* application must be capable of knowing the element (when the predicate is true) for all CE elements.

Value	Description	Comment
		If the element is present, the conforming *receiving* application must process (display/print/archive, and so on) or ignore the values of that element. If the element is **not** present, the conforming *receiving* application must **not** raise an error due to the presence or absence of the element. If the predicate is **not** satisfied: A conforming *sending* application must **not** send the element. A conforming *receiving* application must **not** raise an error when the condition predicate is false, whether the element is present or not.
B	Retained for backward compatibility	A conforming *sending* application can populate this element. (This element was deprecated in the HL7 Standard and can be withdrawn from a future version of the Standard.) A conforming *receiving* application must process (save/print/archive/and so on) or ignore the information conveyed. A conforming *receiving* application must not raise an error due to the presence or absence of a deprecated element.
X	Not supported	A conforming *sending* application does **not** send the element. A conforming *receiving* application must ignore the element whether it is sent or not.

1.3 References

VistA HL7 Site Manager & Developer Manual version 1.6*56

HL7 Messaging Standard version 2.4, American National Standards Institute, 2000

For more information about Vista and HL7 messages, refer to *Profiles for HL7 Messages from VistA to Commercial Subscriber*

VistA HL7 - Optimized (HLO) Technical Manual

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2 Overview of Trigger Events

HL7 messages are created and transmitted in response to **trigger events**; real-world events that trigger messages.

- The VistA Rad/Nuc Med package sends an HL7 Order message (ORM) containing exam information to subscriber systems or subscribers whenever an exam is registered, edited, or canceled
- An Observation Results message (ORU) is sent whenever an exam report reaches a status of Verified or Released/Not Verified.
- An Acknowledgment message (ACK) is sent from the receiving system in response to all ORM and ORU messages.

2.1 Patient Registration

When a patient is registered in Rad/Nuc Med, the registration process creates a *registration notification* as an ORM message, which is sent to the subscriber system, subscriber, and/or additional HL7 subscribers (depending on the site's setup). In return, the receiving system sends an ACK message.

- A patient can be registered for an imaging exam when they arrive for the appointment, or registered up to a week in advance, depending on the VAMC's policy.
- The ORM message is sent at the time of registration, which is not necessarily the time of the exam.

2.2 Exam Edit

During an imaging exam, you can edit the exam order in Rad/Nuc Med. The exam editing process creates an *examined notification* as an ORM message, which is broadcast to the subscriber system and/or subscriber. In return, the receiving system sends an ACK message. The ORM format is the same as in the Patient Registration event.

When an examination reaches a predetermined *Examination Status*, the HL7 *Examined* ORM message is broadcast to subscribers. In return, the receiving system sends an ACK message back to VistA. The HL7 ORM format for an Examined event is identical to the HL7 ORM format of a Registration event

> **Note:** *Examination Status* is a data attribute of which *Canceled, Waiting for Exam, Called for Exam, Examined, Transcribed, and Complete* are data elements. The ADPAC can set a Radiology parameter to trigger an HL7 ORM Examined message when the exam reaches any one of the specific data elements of the *Examination Status*.

2.3 Exam Cancel

When an examination is canceled, the canceling process creates a *cancel notification* as an ORM message, which is broadcast to the subscriber system and/or other HL7 subscribers. In return, the receiving system sends an ACK message.

2.4 Report Verified or Released/Not Verified

Exam results can be sent as outbound messages (from Rad/Nuc Med to vendor) or as inbound messages (from vendor to Rad/Nuc Med). These outbound and inbound messages contain the same four segments, but each segment has different required fields.

When an exam report is entered into Rad/Nuc Med by a radiologist or transcriptionist, it moves through a series of report statuses to a Verified (final report) or Released/Not Verified (preliminary report) status. Depending on the policies at a particular VAMC, the Released/Not Verified status may or may not be allowed.

- When an exam report reaches the Verified or Released/Not Verified status in VistA, a *report notification* is created as an ORU message and is broadcast to the subscriber system and/or additional HL7 subscribers. In return, the receiving system sends an ACK message.
- When an exam report is entered into a COTS subscriber system or other non-VistA system, the process is reversed. An ORU message is created and sent from the non-VistA system to Rad/Nuc Med, and in return, Rad/Nuc Med sends an ACK message.

Over the lifecycle of a case, multiple ORUs can be created and broadcast for a single imaging exam. For example, as soon as a preliminary report is available for an exam, an ORU for the *Released/Not Verified report* is broadcast.

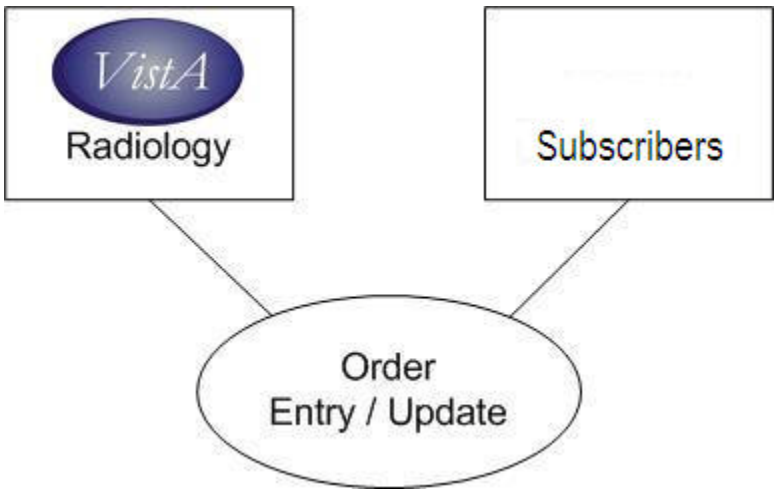
- When the final verified report is available, another ORU message is broadcast to replace the previous message.
- When a *Verified report* is retracted or unverified and reverified later, a second ORU message is broadcast with the amended, reverified report.

3 Order Entry/Update Profile

3.1 Use Case

3.1.1 Scope

This transaction is used by VistA Radiology to inform the subscriber of a new order. It also allows VistA Radiology to inform the subscriber that an order was canceled or updated.



3.1.2 Actors and Roles

Actor: VistA Radiology

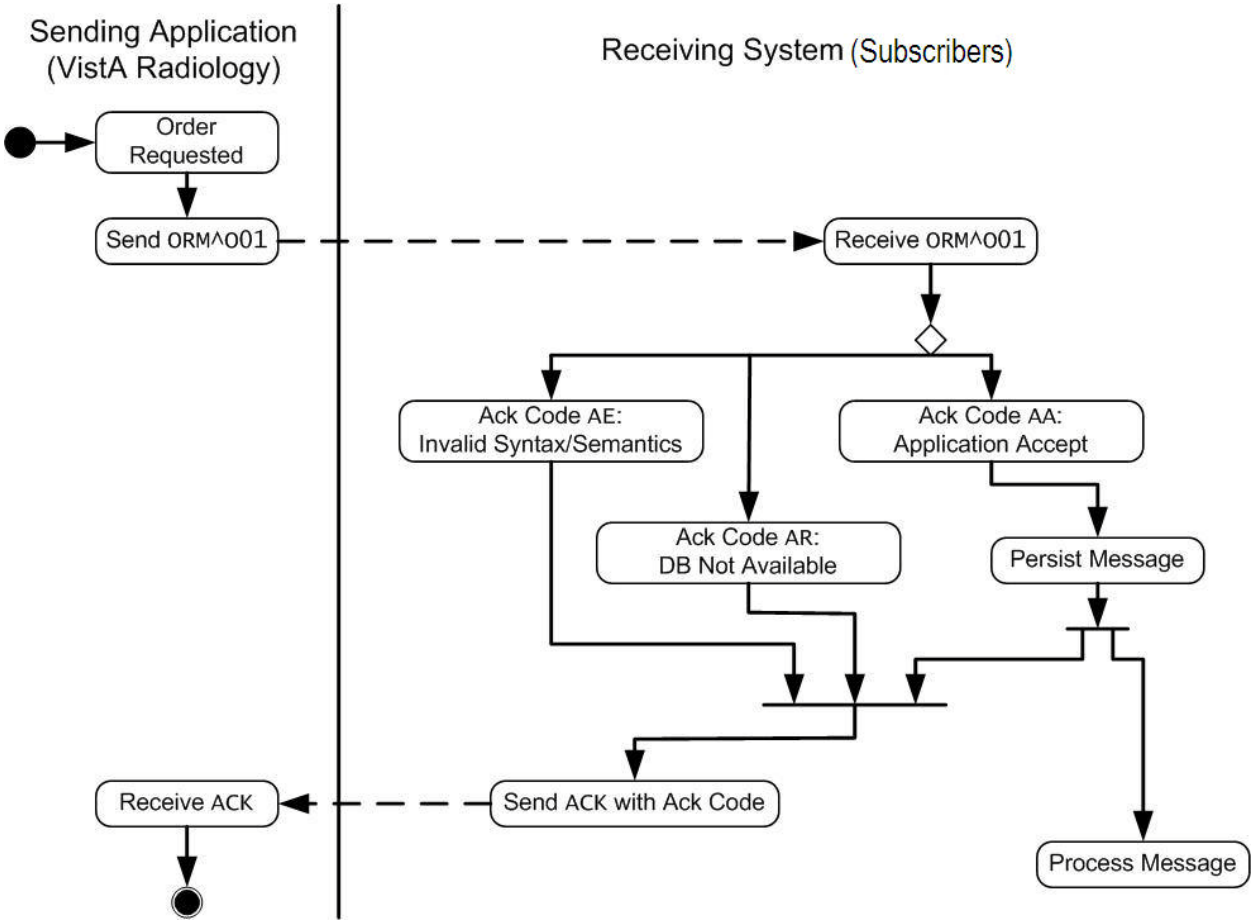
Role: Notifies ancillary VistA Modules and clinical systems when VistA Radiology orders are placed or updated.

Actor: Subscriber

Role: Receives order entry and update messages. Optionally, maintains the DICOM Modality Worklist.

3.2 Interactions

The actors in this use case shall perform the behaviors shown in the following activity diagram.



3.3 Dynamic Definition

VistA and the subscribers shall generate and process HL7 messages according to the following functional and business requirements.

3.3.1 ORM - Order Message

Rad/Nuc Med sends ORM messages to subscribers when an order is registered, examined, or cancelled.

The function of the order message is to transmit order information. The trigger events for an ORM message are patient registration, when an exam reaches the *Examined* status, and cancelling an exam.

ORM messages contain the following seven segments.

Segment	Order Message	HL7 Chapter
MSH	Message header	2
PID	Patient identification	3
PV1	Patient Visit	3
ORC	Common order	4
OBR	Order detail	4
ZDS	User Defined	N/A
OBX	Observation/Result	7

For examples of ORM messages, refer to Appendix A.

3.3.2 ACK - Acknowledgment Message

3.3.2.1 Return Original Mode ACK

The subscriber needs to return an ACK application acknowledgment, as defined in the HL7 Standard and prescribed by the IHE Radiology Technical Framework. The trigger event of the acknowledgment message must be equal to the trigger event of the message that was received.

3.3.2.2 Send MSA Segment for AE and AR conditions

When an error occurs, subscriber must return the acknowledgment code **AE** (Application Error) or **AR** (Application Reject) as appropriate.

3.4 Static Definition – Message Level

HL7 messages must be populated and processed according to the following abstract message definitions.

3.4.1 Order Message (ORM)

Segment	ORM Message	Usage	Cardinality	HL7 Chapter
MSH	Message Header	R	[1..1]	2
[{ NTE }]	Notes and Comments (for Header)	X	[0..0]	2
[				
PID	Patient Identification	R	[1..1]	3
[PD1]	Additional Demographics	X	[0..0]	3
[{ NTE }]	Notes and Comments (for Patient ID)	X	[0..0]	2
[PV1	Patient Visit	R	[1..1]	3
[PV2]]	Patient Visit – Additional Info.	X	[0..0]	3
[{ IN1	Insurance	X	[0..0]	6

Segment	ORM Message	Usage	Cardinality	HL7 Chapter
[IN2]	Insurance Additional Info.	X	[0..0]	6
[[IN3]]	Insurance Additional Info. – Cert.	X	[0..0]	6
[{ GT1 }]	Guarantor	X	[0..0]	6
[{ AL1 }]	Allergy Information	X	[0..0]	3
]				
{ ORC	Common Order	R	[1..1]	4
[OBR	Observation Request	R	[1..1]	4
ZDS	Additional Identification Information	R	[1..1]	[1]
[{ NTE }]	Notes and Comments (for Detail)	X	[0..0]	2
[{ DG1 }]	Diagnosis	X	[0..0]	6
[{ OBX	Observation/Result	RE	[0..999]	7
[{ NTE }]	Notes and Comments (for Results)	X	[0..0]	2
}]]				
{ [CTI] }	Clinical Trial Information	X	[0..0]	7
[BLG]	Billing Segment	X	[0..0]	4
}				

3.4.2 **Acknowledgment Message (ACK)**

Segment	ACK Message	Usage	Cardinality	HL7 Chapter
MSH	Message Header	R	[1..1]	2
MSA	Message Acknowledgment	R	[1..1]	2
[ERR]	Error	RE	[0..1]	2

[1] This segment is defined in IHE Rad-TF Transaction 4 (Procedure Scheduled).

3.5 Static Definition – Segment Level

Fields in HL7 messages must be populated and processed according to the following Segment Attribute Tables.

3.5.1 MSH Segment

The following is a listing of all the fields defined for the MSH Segment in HL7, and their usage in the order message.

Seq	Len	DT	Usage	Cardinality	TBL#	Item #	Element Name
1	1	ST	R	[1..1]		00001	Field Separator
2	4	ST	R	[1..1]		00002	Encoding Characters
3	180	HD	R	[1..1]	0361	00003	Sending Application
4	180	HD	R	[1..1]	0362	00004	Sending Facility
5	180	HD	R	[1..1]	0361	00005	Receiving Application
6	180	HD	R	[1..1]	0362	00006	Receiving Facility
7	26	TS	R	[1..1]		00007	Date/Time of Message
8	40	ST	X	[0..0]		00008	Security
9	13	CM	R	[1..1]	0076 0003	00009	Message Type
10	20	ST	R	[1..1]		00010	Message Control ID
11	3	PT	R	[1..1]		00011	Processing ID
12	60	VID	R	[1..1]	0104	00012	Version ID
13	15	NM	X	[0..0]		00013	Sequence Number
14	180	ST	X	[0..0]		00014	Continuation Pointer
15	2	ID	X	[0..0][1]	0155	00015	Accept Acknowledgment Type
16	2	ID	X	[0..0][2]	0155	00016	Application Acknowledgment Type
17	3	ID	R	[1..1]		00017	Country Code
18	16	ID	X	[0..0]	0211	00692	Character Set
19	250	CE	X	[0..0]		00693	Principal Language of Message
20	20	ID	X	[0..0]	0356	01317	Alternate Character Set Handling Scheme

[1] Patch 107 January 2012 Updated the description of MSH Segment; for ORMs and ORUs Seq 15: Usage is **X Not required** and Cardinality is **0..0**.
[2] Patch 107 January 2012 Updated the description of MSH Segment; for ORMs and ORUs Seq 16: Usage is **X Not required** and Cardinality is **0..0**.

Seq	Len	DT	Usage	Cardinality	TBL#	Item #	Element Name
21	10	ID	X	[0..0]		01598	Conformance Statement ID

3.5.2 **PID Segment**

The following is a listing of all the fields defined for the PID Segment in HL7, and their usage in the order message.

Seq	Len	DT	Usage	Cardinality	TBL#	Item #	Element Name
1	4	SI	X	[0..0]		00104	Set ID – PID
2	20	CX	R	[1..1]		00105	Patient ID
3	250	CX	R	[1..1]		00106	Patient Identifier List
4	20	CX	R	[1..1]		00107	Alternate Patient ID – PID
5	250	XPN	R	[1..1]		00108	Patient Name
6	250	XPN	X	[0..0]		00109	Mother's Maiden Name
7	26	TS	RE	[0..1]		00110	Date/Time of Birth
8	1	IS	RE	[0..1]	0001	00111	Sex
9	250	XPN	X	[0..0]		00112	Patient Alias
10	250	CE	RE	[0..1]	0005	00113	Race
11	250	XAD	RE	[0..1]		00114	Patient Address
12	4	IS	X	[0..0]	0289	00115	County Code
13	250	XTN	RE	[0..1]		00116	Phone Number – Home
14	250	XTN	RE	[0..1]		00117	Phone Number – Business
15	250	CE	X	[0..0]	0296	00118	Primary Language
16	250	CE	X	[0..0]	0002	00119	Marital Status
17	250	CE	X	[0..0]	0006	00120	Religion
18	250	CX	X	[0..0]		00121	Patient Account Number
19	16	ST	R	[1..1]		00122	SSN Number – Patient
20	25	DLN	X	[0..0]		00123	Driver's License Number – Patient
21	250	CX	X	[0..0]		00124	Mother's Identifier
22	250	CE	RE	[0..1]	0189	00125	Ethnic Group
23	250	ST	X	[0..0]		00126	Birth Place
24	1	ID	X	[0..0]	0136	00127	Multiple Birth Indicator
25	2	NM	X	[0..0]		00128	Birth Order
26	250	CE	X	[0..0]	0171	00129	Citizenship
27	250	CE	X	[0..0]	0172	00130	Veterans Military Status
28	250	CE	X	[0..0]	0212	00739	Nationality

Seq	Len	DT	Usage	Cardinality	TBL#	Item #	Element Name
29	26	TS	X	[0..0]		00740	Patient Death Date and Time
30	1	ID	X	[0..0]	0136	00741	Patient Death Indicator
31	1	ID	X	[0..0]	0136	01535	Identity Unknown Indicator
32	20	IS	X	[0..0]	0445	01536	Identity Reliability Code
33	26	TS	X	[0..0]		01537	Last Update Date/Time
34	40	HD	X	[0..0]		01538	Last Update Facility
35	250	CE	X	[0..0]	0446	01539	Species Code
36	250	CE	X	[0..0]	0447	01540	Breed Code
37	80	ST	X	[0..0]		01541	Strain
38	250	CE	X	[0..0]	0429	01542	Production Class Code

3.5.3 **PV1 Segment**

The following is a listing of all the fields defined for the PV1 Segment in HL7, together with their usage in the VistA order message.

Seq	Len	DT	Usage	Cardinality	TBL#	Item #	Element Name
1	4	SI	X	[0..0]		00131	Set ID – PV1
2	1	IS	R	[1..1]	0004	00132	Patient Class
3	80	PL	C	[0..1]		00133	Assigned Patient Location
4	2	IS	X	[0..0]	0007	00134	Admission Type
5	250	CX	X	[0..0]		00135	Pre-admit Number
6	80	PL	X	[0..0]		00136	Prior Patient Location
7	250	XCN	CE	[0..1]	0010	00137	Attending Doctor
8	250	XCN	RE	[0..1]	0010	00138	Referring Doctor
9	250	XCN	X	[0..0]	0010	00139	Consulting Doctor
10	30	IS	C	[0..1]	0069	00140	Hospital Service
11	80	PL	X	[0..0]		00141	Temporary Location
12	2	IS	X	[0..0]	0087	00142	Pre-admit Test Indicator
13	2	IS	X	[0..0]	0092	00143	Re-admission Indicator
14	6	IS	X	[0..0]	0023	00144	Admit Source
15	2	IS	RE	[0..2]	0009	00145	Ambulatory Status
16	2	IS	RE	[0..1]	0099	00146	VIP Indicator
17	250	XCN	X	[0..0]	0010	00147	Admitting Doctor
18	2	IS	X	[0..0]	0018	00148	Patient Type

Seq	Len	DT	Usage	Cardinality	TBL#	Item #	Element Name
19	250	CX	R	[1..1]		00149	Visit Number
20	50	FC	X	[0..0]	0064	00150	Financial Class
21	2	IS	X	[0..0]	0032	00151	Charge Price Indicator
22	2	IS	X	[0..0]	0045	00152	Courtesy Code
23	2	IS	X	[0..0]	0046	00153	Credit Rating
24	2	IS	X	[0..0]	0044	00154	Contract Code
25	8	DT	X	[0..0]		00155	Contract Effective Date
26	12	NM	X	[0..0]		00156	Contract Amount
27	3	NM	X	[0..0]		00157	Contract Period
28	2	IS	X	[0..0]	0073	00158	Interest Code
29	1	IS	X	[0..0]	0110	00159	Transfer to Bad Debt Code
30	8	DT	X	[0..0]		00160	Transfer to Bad Debt Date
31	10	IS	X	[0..0]	0021	00161	Bad Debt Agency Code
32	12	NM	X	[0..0]		00162	Bad Debt Transfer Amount
33	12	NM	X	[0..0]		00163	Bad Debt Recovery Amount
34	1	IS	X	[0..0]	0111	00164	Delete Account Indicator
35	8	DT	X	[0..0]		00165	Delete Account Date
36	3	IS	X	[0..0]	0112	00166	Discharge Disposition
37	25	CM	X	[0..0]	0113	00167	Discharged to Location
38	250	CE	X	[0..0]	0114	00168	Diet Type
39	2	IS	X	[0..0]	0115	00169	Servicing Facility
40	1	IS	X	[0..0]	0116	00170	Bed Status
41	2	IS	X	[0..0]	0117	00171	Account Status
42	80	PL	X	[0..0]		00172	Pending Location
43	80	PL	X	[0..0]		00173	Prior Temporary Location
44	26	TS	X	[0..0]		00174	Admit Date/Time
45	26	TS	X	[0..0]		00175	Discharge Date/Time
46	12	NM	X	[0..0]		00176	Current Patient Balance
47	12	NM	X	[0..0]		00177	Total Charges
48	12	NM	X	[0..0]		00178	Total Adjustments
49	12	NM	X	[0..0]		00179	Total Payments
50	250	CX	X	[0..0]	0203	00180	Alternate Visit ID
51	1	IS	X	[0..0]	0326	01226	Visit Indicator
52	250	XCN	X	[0..0]	0010	01274	Other Healthcare Provider

3.5.4 **ORC Segment**

The following is a listing of all the fields defined for the ORC Segment in HL7.

Seq	Len	DT	Usage	Cardinality	TBL #	Item #	Element Name
1	2	ID	R	[1..1]	0119	00215	Order Control
2	22	EI	R	[1..1]		00216	Placer Order Number
3	22	EI	R	[1..1]		00217	Filler Order Number
4	22	EI	X	[0..0]		00218	Placer Group Number
5	2	ID	R	[1..1]	0038	00219	Order Status
6	1	ID	X	[0..0]	0121	00220	Response Flag
7	200	TQ	R	[1..1]		00221	Quantity/Timing
8	200	CM	RE	[0..1]		00222	Parent
9	26	TS	R	[1..1]		00223	Date/Time of Transaction
10	250	XCN	R	[1..1]		00224	Entered By
11	250	XCN	X	[0..0]		00225	Verified By
12	250	XCN	RE	[0..1]		00226	Ordering Provider
13	80	PL	RE	[0..1]		00227	Enterer's Location
14	250	XTN	RE	[0..8]		00228	Call Back Phone Number
15	26	TS	X	[0..0]		00229	Order Effective Date/Time
16	250	CE	X	[0..0]		00230	Order Control Code Reason
17	250	CE	RE	[0..1]		00231	Entering Organization
18	250	CE	X	[0..0]		00232	Entering Device
19	250	XCN	X	[0..0]		00233	Action By
20	250	CE	X	[0..0]	0339	01310	Advanced Beneficiary Notice Code
21	250	XON	X	[0..0]		01311	Ordering Facility Name
22	250	XAD	X	[0..0]		01312	Ordering Facility Address
23	250	XTN	X	[0..0]		01313	Ordering Facility Phone Number
24	250	XAD	X	[0..0]		01314	Ordering Provider Address
25	250	CWE	X	[0..0]		01473	Order Status Modifier

3.5.5 **OBR Segment**

The following is a listing of all the fields defined for the OBR Segment in HL7.

Seq	Len	DT	Usage	Cardinality	TBL#	Item #	Element Name

Seq	Len	DT	Usage	Cardinality	TBL#	Item #	Element Name
1	4	SI	R	[1..1]		00237	Set ID - OBR
2	22	EI	R	[1..1]		00216	Placer Order Number
3	22	EI	R	[1..1]		00217	Filler Order Number
4	250	CE	R	[1..1]		00238	Universal Service Identifier
5	2	ID	R	[1..1]		00239	Priority - OBR
6	26	TS	X	[0..0]		00240	Requested Date/Time
7	26	TS	X	[0..0]		00241	Observation Date/Time
8	26	TS	X	[0..0]		00242	Observation End Date/Time
9	20	CQ	X	[0..0]		00243	Collection Volume
10	250	XCN	X	[0..0]		00244	Collector Identifier
11	1	ID	X	[0..0]	0065	00245	Specimen Action Code
12	250	CE	X	[0..0]		00246	Danger Code
13	300	ST	X	[0..0]		00247	Relevant Clinical Information
14	26	TS	X	[0..0]		00248	Specimen Received Date/Time
15	300	CM	RE	[0..1]	0070 0163 0369	00249	Specimen Source
16	250	XCN	R	[1..1]		00226	Ordering Provider
17	250	XTN	RE	[0..8]		00250	Order Callback Phone Number
18	60	ST	R	[1..1]		00251	Placer Field 1
19	60	ST	R	[1..1]		00252	Placer Field 2
20	60	ST	R	[1..1]		00253	Filler Field 1
21	60	ST	R	[1..1]		00254	Filler Field 2
22	26	TS	X	[0..0]		00255	Results Rpt/Status Chng - Date/Time
23	40	CM	X	[0..0]		00256	Charge to Practice
24	10	ID	RE	[0..1]	0074	00257	Diagnostic Serv Sect ID
25	1	ID	X	[0..0]	0123	00258	Result Status
26	400	CM	X	[0..0]		00259	Parent Result
27	200	TQ	R	[1..1]		00221	Quantity/Timing
28	250	XCN	X	[0..0]		00260	Result Copies To
29	200	CM	RE	[0..1]		00222	Parent

Seq	Len	DT	Usage	Cardinality	TBL#	Item #	Element Name
30	20	ID	RE	[0..1]	0124	00262	Transportation Mode
31	250	CE	R	[1..1]		00263	Reason for Study
32	200	CM	X	[0..0]		00264	Principal Result Interpreter
33	200	CM	X	[0..0]		00265	Assistant Result Interpreter
34	200	CM	X	[0..0]		00266	Technician
35	200	CM	X	[0..0]		00267	Transcriptionist
36	26	TS	X	[0..0]		00268	Scheduled Date/Time
37	4	NM	X	[0..0]		01028	Number of Sample Containers
38	250	CE	X	[0..0]		01029	Transport Logistics of Collected Sample
39	250	CE	X	[0..0]		01030	Collector's Comment
40	250	CE	X	[0..0]		01031	Transport Arrangement Responsibility
41	30	ID	X	[0..0]	0224	01032	Transport Arranged
42	1	ID	X	[0..0]	0225	01033	Escort Required
43	250	CE	X	[0..0]		01034	Planned Patient Transport Comment
44	250	CE	X	[0..0]	0088	00393	Procedure Code
45	250	CE	X	[0..0]	0340	01316	Procedure Code Modifier
46	250	CE	X	[0..0]	0411	01474	Placer Supplemental Service Information
47	250	CE	X	[0..0]	0411	01475	Filler Supplemental Service Information

3.5.6 **ZDS Segment**

The following is the field defined for the ZDS Segment in HL7. For a more detailed explanation of the fields used by VistA, refer to Section 3.6.6 on page 54.

Seq	Len	DT	Usage	Cardinality	TBL #	Item #	Element Name
1	200	RP	R	[1..1]			Study Instance UID

3.5.7 **OBX Segment**

In the order message, the OBX Segment is used to communicate ancillary order information including history. The following is a listing of all the fields defined for the OBX Segment in HL7.

Seq	Len	DT	Usage	Cardinality	TBL#	Item #	Element Name
1	4	SI	R	[1..1]		00569	Set ID – OBX
2	2	ID	R	[1..1]	0125	00570	Value Type
3	250	CE	R	[1..1]		00571	Observation Identifier
4	20	ST	X	[0..0]		00572	Observation Sub-ID
5	65536[1]		R	[1..4]		00573	Observation Value
6	250	CE	X	[0..0]		00574	Units
7	60	ST	X	[0..0]		00575	Reference Range
8	5	IS	X	[0..0]	0078	00576	Abnormal Flags
9	5	NM	X	[0..0]		00577	Probability
10	2	ID	X	[0..0]		00578	Nature of Abnormal Test
11	1	ID	R	[1..1]	0085	00579	Observation Result Status
12	26	TS	X	[0..0]		00580	Date Last Observation Normal Value
13	20	ST	X	[0..0]		00581	User Defined Access Checks
14	26	TS	X	[0..0]		00582	Date/Time of the Observation
15	250	CE	X	[0..0]		00583	Producer's ID
16	250	XCN	X	[0..0]		00584	Responsible Observer
17	250	CE	X	[0..0]		00936	Observation Method
18	22	EI	X	[0..0]		01479	Equipment Instance Identifier
19	26	TS	X	[0..0]		01480	Date/Time of the Analysis

3.5.8 **MSA Segment**

MSA is used only in the acknowledgment message. The following is a listing of all the fields defined for the MSA Segment in HL7.

Seq	Len	DT	Usage	Cardinality	TBL#	Item #	Element Name
1	2	ID	R	[1..1]	0003	00018	Acknowledgment Code

[1] The length and data type of this field are variable, depending on *OBX-2-Value Type*.

Seq	Len	DT	Usage	Cardinality	TBL#	Item #	Element Name
2	20	ST	R	[1..1]		00010	Message Control ID
3	80	ST	B	[0..1]		00020	Text Message
4	15	NM	X	[0..0]		00021	Expected Sequence Number
5	1	ID	X	[0..0]	0102	00022	Delayed Acknowledgment Type
6	250	CE	B	[0..1]		00023	Error Condition

3.6 Static Definition – Field Level

3.6.1 MSH Segment Fields in ORM and ORU

The Message Header segment is used in ORM and ORU messages. A description of each MSH field element is provided in the table; unsupported fields are not described.

Segment	Seq #	Usage	Field Element Name and Values
MSH	1	R	Field Separator (determined by VistA HL7 package set-up)
	2	R	Encoding Characters (determined by VistA HL7 package set-up)
	3	R	Sending Application (determined by VistA HL7 package set-up or by vendor)
	4	R	Sending Facility (determined by VistA HL7 package set-up or by vendor)
	5	R	Receiving Application (determined by VistA HL7 package set-up)
	6	R	Receiving Facility (determined by VistA HL7 package set-up)
	7	R	Date/Time of Message
	8	X	Security
	9	R	Message Type and Event Code
	10	R	Message Control ID (determined by VistA HL7 package or by vendor)
	11	R	Processing ID (determined by VistA HL7 Package set-up)
	12	R	Version ID (determined by VistA HL7Package set-up)
	13	X	Sequence Number
	14	X	Continuation Pointer
	15	X	Accept Acknowledgment Type
	16	X	Application Acknowledgment Type

Segment	Seq #	Usage	Field Element Name and Values
	17	R	Country Code (determined by VistA HL7 Package set-up)
	18	X	Character Set
	19	X	Principal Language of Message
	20	X	Alternate Character Set Handling Scheme
	21	X	Conformance Statement ID

3.6.1.1 MSH-1-Field Separator

This field contains the top-level delimiter for HL7 elements within segments.

3.6.1.2 MSH-2-Encoding Characters

This field contains the component separator (secondary element delimiter), repetition separator, escape character, and subcomponent separator (tertiary element delimiter).

3.6.1.3 MSH-3-Sending Application

This field contains three components.

Seq	Len	DT	Usage	Cardinality	TBL#	Element Name
1	20	IS	R	[1..1]	0300	Namespace ID
2	250	ST	X	[0..0]		Universal ID
3	20	ID	X	[0..0]	0301	Universal ID Type

In the VistA order message, the first component of this field is populated with the value **RA-SERVER-IMG** from user-defined Table 0361, *Sending/Receiving Application*. The subscriber returns this value in component MSH-5.1 of the acknowledgment message. The second and third components of MSH-3 are not valued.

3.6.1.4 MSH-4-Sending Facility [1]

This field contains three components.

Seq	Len	DT	Usage	Cardinality	TBL#	Element Name
1	20	IS	R	[1..1]	0300	Namespace ID
2	250	ST	X	[0..0]		Universal ID
3	20	ID	X	[0..0]	0301	Universal ID Type

[1] Patch RA*5*107 January 2012: Updated the description of MSH-4-Sending Facility; for ORMs and ORUs Seq 2 and 3: Usage is **X Not required** and Cardinality is **0..0**.

In the VistA message, the first component of this field is populated from user-defined Table 0362, *Sending/Receiving Facility*, with the name of the medical center at which the message was generated. The subscriber returns this value in component MSH-6.1 of the acknowledgment message.

3.6.1.5 MSH-5-Receiving Application

This field contains three components.

Seq	Len	DT	Usage	Cardinality	TBL#	Element Name
1	20	IS	R	[1..1]	0300	Namespace ID
2	250	ST	X	[0..0]		Universal ID
3	20	ID	X	[0..0]	0301	Universal ID Type

In the VistA message, the first component of this field is populated from user-defined Table 0361, *Sending/Receiving Application*, with the name of the subscriber application. The subscriber returns this value in component MSH-3.1 of the acknowledgment message. The second and third components of MSH-5 are not valued.

3.6.1.6 MSH-6-Receiving Facility

This field contains three components.

Seq	Len	DT	Usage	Cardinality	TBL#	Element Name
1	20	IS	R	[1..1]	0300	Namespace ID
2	250	ST	X	[0..0]		Universal ID
3	20	ID	X	[0..0]	0301	Universal ID Type

In the VistA message, the first component of this field is populated from user-defined Table 0362, Sending/Receiving Facility, with the name of the medical center at which the message was received. The subscriber returns this value in field MSH-4 of the acknowledgment message. The second and third components of MSH-6 are not valued.

3.6.1.7 MSH-7-Date/Time of Message

This field contains the date and time of the sending system that built the message.

3.6.1.8 MSH-9-Message Type

This field contains three components used by VistA.

Seq	Len	DT	Usage	Cardinality	TBL#	Element Name
1	3	ID	R	[1..1]	0076	Message Type
2	3	ID	R	[1..1]	0003	Trigger Event
3	7	ID	X	[0..0]	0354	Message Structure

3.6.1.8.1 MSH-9.1-Message Type

This component is populated with a value from HL7 Table 0076, *Message Type*. For the order message, it always contains the value **ORM**.

For the observation result message, it always contains the value **ORU**.

3.6.1.8.2 MSH-9.2-Trigger Event

This component is populated with a value from HL7 Table 0003, *Event Type*. For the order message, it always contains the value **O01** (letter O> digit 0>number 1).

For the observation result message, it always contains the value **R01**.

3.6.1.9 MSH-10-Message Control ID

This field contains a unique identifier for the message.

3.6.1.10 MSH-11-Processing ID

This field contains two components used by VistA.

Seq	Len	DT	Usage	Cardinality	TBL#	Element Name
1	1	ID	R	[1..1]	0103	Processing ID
2	1	ID	RE	[0..1]	0207	Processing Mode

3.6.1.10.1 MSH-11.1-Processing ID

This component is populated with one of the following values from HL7 Table 0103, *Processing ID.*

Value	Description
P	Production
D	Debugging
T	Training

3.6.1.10.2 MSH-11.2-Processing Mode

This component is populated with one of the following values from HL7 Table 0207, *Processing Mode.*

Value	Description
A	Archive
R	Restore from archive
I	Initial load
T	Current processing, transmitted at intervals (scheduled or on demand)
not present	Not present (the default, meaning *current* processing)

3.6.1.11 MSH-12-Version ID

This field contains three components. The first component always contains a value from v2.3.1 from HL7 Table 0104, *Version ID*. Other components of this field are not used.

Seq	Len	DT	Usage	Cardinality	TBL#	Element Name
1	10	ID	R	[1..1]	0104	Version ID
2	250	CE	X	[0..0]		Internationalization Code
3	250	CE	X	[0..0]		Internal Version ID

Although the VistA message pre-adopts certain v2.4 structures, such as the ROL segment, receivers that are unable to recognize v2.4 can use v2.3.1 syntax rules as prescribed by IHE. Receivers not now using HL7 v2.3.1 can process the v2.3.1 messages according to the HL7 rules for backward compatibility. When IHE is revised to a newer version of HL7, receivers must adapt to the new structures within a stated period of time following the revision.

3.6.1.12 MSH-15-Accept Acknowledgment Type

This field contains the conditions under which accept acknowledgments are required in response to this message. The field is required for enhanced acknowledgment mode.

Value	Text
AL	Always
NE	Never
ER	Error/Reject conditions only
SU	Successful completion only

3.6.1.13 MSH-16-Application Acknowledgment Type

This field contains the conditions under which application acknowledgments are required in response to this message. The field is required for enhanced acknowledgment mode.

Value	Text
AL	Always
NE	Never
ER	Error/Reject conditions only
SU	Successful completion only

Note: If MSH-15-Accept Acknowledgment Type and MSH-16-Application Acknowledgment Type are omitted, (or are both **Null**), the original acknowledgment mode rules are used.

3.6.1.14 MSH-17-Country Code

This field always contains the value **USA** from the ISO 3166 country code table.

For an explanation of the MSH segment fields used in the VistA order and report messages, refer to 3.6.1 MSH Segment Fields on page 23.

3.6.2 PID Segment Fields

The Patient Identification segment is used in ORM and ORU messages. A description of each PID field element is provided in the table; unsupported fields are not described.

Segment	Seq #	Usage	Field Element Name and Values
PID	1	X	Set ID – PID
	2	R	Patient ID
	3	R	Patient Identifier List
	4	R	Alternate Patient ID-PID
	5	R	Patient Name
	6	X	Mother's Maiden Name
	7	RE	Date/Time of Birth
	8	RE	Sex
	9	X	Patient Alias
	10	RE	Race
	11	RE	Patient Address
	12	X	County Code
	13	RE	Phone Number – Home
	14	RE	Phone Number – Business
	15	X	Primary Language
	16	X	Marital Status
	17	X	Religion
	18	X	Patient Account Number
	19	R	SS Number – Patient
	20	X	Driver's License Number – Patient
	21	X	Mother's Identifier
	22	RE	Ethnic Group
	23	X	Birth Place
	24	X	Multiple Birth Indicator
	25	X	Birth Order
	26	X	Citizenship

Segment	Seq #	Usage	Field Element Name and Values
	27	X	Veterans Military Status
	28	X	Nationality
	29	X	Patient Death Date and Time
	30	X	Patient Death Indicator
	31	X	Identity Unknown Indicator
	32	X	Identity Reliability Code
	33	X	Last Update Date/Time
	34	X	Last Update Facility
	35	X	Species Code
	36	X	Breed code
	37	X	Strain
	38	X	Production Class Code

3.6.3 **PID-2-Patient ID**

This field contains the station number and patient file internal entry number (DFN).

Seq	Len	DT	Usage	Cardinality	TBL#	Element Name
1	20	ID	R	[1..1]		ID
2	2	ST	X	[0..0]		Check Digit
3	250	CE	X	[0..0]	0061	Code Identifying the Check Digit Scheme Employed
4	180	HD	R	[1..1]	0363	Assigning Authority
5	20	ID	R	[1..1]	0203	Identifier Type Code
6	180	HD	X	[0..0]		Assigning Facility

The following components are valued.

3.6.3.1.1 PID-2.1-ID

This component is populated with the station number and DFN (patient file internal entry number).

The format of this component is mmm-nnnnnnnn, where mmm is the station number and nnnnnnnn (1-8 characters, not zero-filled) is the DFN.

3.6.3.1.2 PID-2.4-Assigning Authority

This component is populated with the entity that assigned the identifier value in PID-2.1-ID.

Seq	Len	DT	Usage	Cardinality	TBL#	Element Name
1	20	IS	R	[1..1]	0300	Namespace ID
2	250	ST	RE	[0..1]		Universal ID
3	20	ID	CE	[0..1]	0301	Universal ID Type

At present, only the first subcomponent is considered for identifying the assigning authority. Subcomponent 1 contains the value USVHA, meaning United States Veterans Health Administration, from user-defined Table 0300, Namespace ID.

In the future, the assigning authority may be designated as an Object Identifier (OID) in the second and third subcomponents of Component 4.

3.6.3.1.3 PID-2.5-Identifier Type

The component is populated with a value that distinguishes the kind of identifier contained in PID-2.1-ID. It contains the value PI, meaning Patient Identifier, from user-defined Table 0203, *Identifier Type*.

3.6.3.2 PID-3-Patient Identifier List

This field contains six components that transmit the patient Social Security Number (SSN). Other components of this field are not used. Within each repetition, the components are valued.

Seq	Len	DT	Usage	Cardinality	TBL#	Element Name
1	20	ID	R	[1..1]		ID
2	2	ST	X	[0..0]		Check Digit
3	250	CE	X	[0..0]	0061	Code Identifying the Check Digit Scheme Employed
4	180	HD	R	[1..1]	0363	Assigning Authority
5	20	ID	R	[1..1]	0203	Identifier Type Code
6	180	HD	X	[0..0]		Assigning Facility

3.6.3.2.1 PID-3.1-ID

This component is populated with the Social Security Number.

3.6.3.2.2 PID-3.4-Assigning Authority

This component is populated with three subcomponents and identifies the entity that assigned the identifier value in *PID-3.1-ID*.

Seq	Len	DT	Usage	Cardinality	TBL#	Element Name
1	20	IS	R	[1..1]	0300	Namespace ID
2	250	ST	RE	[0..1]		Universal ID
3	20	ID	RE	[0..1]	0301	Universal ID Type

At present, only the first subcomponent identifies the assigning authority. Subcomponent 1 contains the value **USVHA**, meaning United States Veterans Health Administration, from user-defined Table 0300, *Namespace ID*.

In the future, the assigning authority may be designated as an Object Identifier (OID) in the second and third subcomponents of Component 4.

3.6.3.2.3 PID-3.5-Identifier Type

This component is populated with the kind of identifier in *PID-3.1-ID*. It contains the fixed value, **NI** (National Identifier), from user-defined Table 0203, *Identifier Type*.

Note: NI, which is used by the VA, is the Integration Control Number found in PID-3.1.

3.6.3.3 PID-4-Alternate Patient ID

This field contains the patient Integration Control Number (ICN).

Seq	Len	DT	Usage	Cardinality	TBL#	Element Name
1	20	ID	R	[1..1]		ID
2	2	ST	X	[0..0]		Check Digit
3	250	CE	X	[0..0]	0061	Code Identifying the Check Digit Scheme Employed
4	180	HD	R	[1..1]	0363	Assigning Authority
5	20	ID	R	[1..1]	0203	Identifier Type Code
6	180	HD	X	[0..0]		Assigning Facility

The following components are valued.

3.6.3.3.1 PID-4.1-ID

This component is populated with an alphanumeric identification string.

3.6.3.3.2 PID-4.4-Assigning Authority

This component is populated with the entity that assigned the identifier value in PID-4.1-ID.

Seq	Len	DT	Usage	Cardinality	TBL#	Element Name
1	20	IS	R	[1..1]	0300	Namespace ID

Seq	Len	DT	Usage	Cardinality	TBL#	Element Name
2	250	ST	RE	[0..1]		Universal ID
3	20	ID	CE	[0..1]	0301	Universal ID Type

At present, only the first subcomponent identifies the assigning authority. Subcomponent 1 contains the value **USVHA**, meaning United States Veterans Health Administration, from user-defined Table 0300, *Namespace ID*.

In the future, the assigning authority may be designated as an Object Identifier (OID) in the second and third subcomponents of Component 4.

3.6.3.3.3 PID-4.5-Identifier Type

This component is populated with the value that distinguishes the kind of identifier contained in PID-4.1-ID. It contains the value NI, meaning National Unique Individual Identifier, from user-defined Table 0203, *Identifier Type*.

3.6.3.4 PID-5-Patient Name

This field contains the following components. Component 7, Name Type Code, indicates the type of name given in Components 1-6, such as legal, birth name, or alias. At present, VistA only uses name type **L** (legal).

Seq	Len	DT	Usage	Cardinality	TBL#	Element Name
1	35	FN	R	[1..1]		Family Name
2	35	ST	R	[1..1]		Given Name
3	35	ST	RE	[0..1]		Middle Initial or Name
4	10	ST	RE	[0..1]		Suffix
5	10	ST	RE	[0..1]		Prefix
6	10	IS	RE	[0..1]	0360	Degree
7	10	ID	R	[1..1]	0200	Name Type Code
8	10	ID	X	[0..0]	4000	Name Representation Code

3.6.3.5 PID-7-Date/Time of Birth

This field contains the date and time that the patient was born. It may be as imprecise as the four-digit birth year (*e.g.*, **1962**).

3.6.3.6 PID-8-Sex

This field contains the sex of the patient and is populated with one of the values from user-defined Table 0001, *Sex*, if a value is known.

Value	Description
F	Female
M	Male
U	Unknown

3.6.3.7 PID-10-Race

This field contains a code indicating the race of the patient and uses four subcomponents.

Seq	Len	DT	Usage	Cardinality	TBL#	Element Name
1	250	ST	R	[1..1]		Identifier
2	250	ST	X	[0..0]		Text
3	250	ST	R	[1..1]		Name of Coding System
4	250	ST	R	[1..1]		Alternate Identifier
5	250	ST	X	[0..0]		Alternate Text
6	250	ST	R	[1..1]		Name of Alternate Coding System

3.6.3.7.1 PID-10.1-Identifier

This component is populated with the Race Information value from the VistA PATIENT file, which is derived from user-defined Table 0005, *Race*.

3.6.3.7.2 PID-10.3-Name of Coding System

This component is populated with the value **0005**.

3.6.3.7.3 PID-10.4-Alternate Identifier

This component is populated with an appropriate value from the table, if one exists.

Value	Description
0000-0	Declined To Answer
1002-5	American Indian Or Alaska Native
2028-9	Asian
2054-5	Black Or African American
2076-8	Native Hawaiian Or Other Pacific Islander
2106-3	White

Value	Description
9999-4	Unknown By Patient

3.6.3.7.4 PID-10.6-Name of Coding System

This component is populated with the value **CDC**.

3.6.3.8 PID-11-Patient Address

This field contains the address of the patient.

Seq	Len	DT	Usage	Cardinality	TBL#	Element Name
1	250	ST	RE	[0..1]		Street Address
2	250	ST	RE	[0..1]		Other Designation
3	250	ST	RE	[0..1]		City
4	250	ST	RE	[0..1]		State or Province
5	250	ST	RE	[0..1]		ZIP or Postal Code
6	20	ID	X	[0..0]		Country
7	20	ID	X	[0..0]	0190	Address Type
8	250	ST	X	[0..0]		Other Geographic Designation
9	20	IS	X	[0..0]	0289	County/Parish Code
10	20	IS	X	[0..0]	0288	Census Tract
11	20	ID	X	[0..0]	4000	Address Representation Code

3.6.3.9 PID-13-Phone Number – Home

This field contains the home telephone number of the patient. Only the first three components of this field are used.

Seq	Len	DT	Usage	Cardinality	TBL#	Element Name
1	250	ST	R	[1..1]		[NNN] [(999)]999-9999 [X99999] [B99999] [C any text]
2	3	ID	R	[1..1]	0201	Telecommunication use code
3	10	ID	R	[1..1]	0202	Telecommunication equipment type
4	250	ST	X	[0..0]		Email address
5	20	NM	X	[0..0]		Country code
6	20	NM	X	[0..0]		Area/city code
7	20	NM	X	[0..0]		Phone number
8	20	NM	X	[0..0]		Extension
9	250	ST	X	[0..0]		Any text

3.6.3.9.1 PID-13.1-[NNN] [(999)]999-9999 [X99999] [B99999] [C any text]

This component is populated with the full telephone number as recorded in VistA. Components 5-9 are not used to break out the subelements of the telephone number.

3.6.3.9.2 PID-13.2-Telecommunication Use Code

This component is populated with the kind of number that is contained in component 1 with a value from HL7 Table 0201, *Telecommunication Use Code*.

Value	Description
PRN	Primary Residence Number

3.6.3.9.3 PID-13.3-Telecommunication Equipment Type

This component is populated with the kind of device that is reached on the number contained in component 1 with a value from HL7 Table 202, *Telecommunication Equipment Type*.

Value	Description
PH	Telephone

3.6.3.10 PID-14-Phone Number – Business

This field contains the work telephone number of the patient. Only the first three components of this field are used.

Seq	Len	DT	Usage	Cardinality	TBL#	Element Name
1	250	ST	R	[1..1]		[NNN] [(999)]999-9999 [X99999] [B99999] [C any text]
2	3	ID	R	[1..1]	0201	Telecommunication use code
3	10	ID	R	[1..1]	0202	Telecommunication equipment type
4	250	ST	X	[0..0]		Email address
5	20	NM	X	[0..0]		Country code
6	20	NM	X	[0..0]		Area/city code
7	20	NM	X	[0..0]		Phone number
8	20	NM	X	[0..0]		Extension
9	250	ST	X	[0..0]		Any text

3.6.3.10.1 PID-14.1-[NNN] [(999)]999-9999 [X99999] [B99999] [C any text]

This component is populated with the full telephone number as recorded in VistA. Components 5-9 are not used to break out the subelements of the telephone number.

3.6.3.10.2 PID-14.2-Telecommunication Use Code

This component is populated with the kind of number contained in component 1 with a value from HL7 Table 0201, *Telecommunication Use Code*.

Value	Description
WPN	Work Number

3.6.3.10.3 PID-14.3-Telecommunication Equipment Type

This component is populated with the kind of device that is reached on the number contained in component 1 with a value from HL7 Table 202, *Telecommunication Equipment Type*.

Value	Description
PH	Telephone

3.6.3.11 PID-19-SSN Number – Patient

This field contains the patient Social Security Number, for backward compatibility with versions of HL7 prior to v2.4. The Social Security Number is a secondary patient identifier. For the primary patient identifier, use the Integration Control Number from PID-3-Patient Identifier List.

3.6.3.12 PID-22-Ethnic Group

This field contains a code indicating whether the patient is of Hispanic descent.

Seq	Len	DT	Usage	Cardinality	TBL#	Element Name
1	250	ST	R	[1..1]		Identifier
2	250	ST	X	[0..0]		Text
3	250	ST	R	[1..1]		Name of Coding System
4	250	ST	R	[1..1]		Alternate Identifier
5	250	ST	X	[0..0]		Alternate Text
6	250	ST	R	[1..1]		Name of Alternate Coding System

3.6.3.12.1 PID-22.1-Identifier

This component is populated with the Ethnicity Information value from the VistA PATIENT file, which is derived from user-defined Table 0189, *Ethnic Group*.

3.6.3.12.2 PID-22.3-Name of Coding System

This component is populated with the value **0189**.

3.6.3.12.3PID-22.4-Alternate Identifier

This component is populated with an appropriate value from the table, if one exists.

Value	Description
0000-0	Declined to Answer
2135-2	Hispanic or Latino
2186-5	Not Hispanic or Latino
9999-4	Unknown by Patient

3.6.3.12.4PID-22.6-Name of Coding System

This component is populated with the value **CDC**.

3.6.4 PV1 Segment Fields in ORM

The Patient Visit segment is used in ORM messages. A description of each PV1 field element is provided in the table; unsupported fields are not described.

Segment	Seq #	Usage	Field Element Name and Values
PV1	1	X	Set ID – PV1
	2	R	Patient Class
	3	C	Assigned Patient Location
	4	X	Admission Type
	5	X	Pre-admit number
	6	X	Prior Patient Location
	7	CE	Attending doctor
	8	RE	Referring doctor
	9	X	Consulting Doctor
	10	C	Hospital Service
	11	X	Temporary Location
	12	X	Pre-admit Test Indicator
	13	X	Re-admission Indicator
	14	X	Admit Source
	15	RE	Ambulatory Status
	16	RE	VIP Indicator
	17	X	Admitting Doctor
	18	X	Patient Type
	19	RE	Visit Number
	20	X	Financial Class
	21	X	Charge Price Indicator
	22	X	Courtesy Code
	23	X	Credit Rating
	24	X	Contract Code
	25	X	Contract Effective Date
	26	X	Contract Amount
	27	X	Contract Period

Segment	Seq #	Usage	Field Element Name and Values
	28	X	Interest Code
	29	X	Transfer to Bad Debt Code
	30	X	Transfer to Bad Debt Date
	31	X	Bad Debt Agency Code
	32	X	Bad Debt Transfer Amount
	33	X	Bad Debt Recovery Amount
	34	X	Delete Account Indicator
	35	X	Delete Account Date
	36	X	Discharge Disposition
	37	X	Discharge to Location
	38	X	Diet Type
	39	X	Servicing Facility
	40	X	Bed Status
	41	X	Account Status
	42	X	Pending Location
	43	X	Prior Temporary Location
	44	RE	Admit Date/Time
	45	X	Discharge Date/Time
	46	X	Current Patient Balance
	47	X	Total Charges
	48	X	Total Adjustments
	49	X	Total Payments
	50	X	Alternate Visit ID
	51	X	Visit Indicator
	52	X	Other Healthcare Provider

3.6.4.1 PV1-2-Patient Class

This field contains indicates either that the patient is an inpatient (**I**) or an outpatient (**O**).

3.6.4.2 PV1-3-Assigned Patient Location

For inpatients, this field contains the location of the patient in the medical center.

Seq	Len	DT	Usage	Cardinality	TBL#	Element Name
1	30	IS	R	[1..1]	0302	Point of Care
2	30	IS	R	[1..1]	0303	Room
3	30	IS	RE	[0..1]	0304	Bed
4	30	HD	X	[0..0]		Facility
5	30	IS	X	[0..0]	0306	Location Status
6	30	IS	X	[0..0]	0305	Person Location Type
7	30	IS	X	[0..0]	0307	Building
8	30	IS	X	[0..0]	0308	Floor
9	199	ST	X	[0..0]		Location Description

VistA sends component 1, Point of Care, as three subcomponents.
1. Internal entry number into the VistA WARD LOCATION file (#42)
2. Name of the ward location
3. Internal designator of the WARD LOCATION file and is ignored

3.6.4.3 PV1-7-Attending Doctor

This field contains the physician responsible for the care of the patient during the present encounter. VistA values this field for inpatient encounters only. Only the first four components are used and the other components are ignored.

Seq	Len	DT	Usage	Cardinality	TBL#	Element Name
1	10	ST	R	[1..1]		ID Number
2	250	ST	R	[1..1]		Family Name
3	250	ST	R	[1..1]		Given Name
4	250	ST	RE	[0..1]		Middle Initial or Name
5	250	ST	RE	[0..1]		Suffix
6	250	ST	RE	[0..1]		Prefix
7	10	IS	RE	[0..1]		Degree
8	10	IS	X	[0..0]		Source Table
9	250	HD	X	[0..0]		Assigning Authority
10	10	ID	X	[0..0]		Name Type Code
11	1	ST	X	[0..0]		Identifier Check Digit
12	10	ID	X	[0..0]		Code Identifying the Check Digit Scheme Employed
13	10	IS	X	[0..0]		Identifier Type Code
14	250	HD	X	[0..0]		Assigning Facility
15	10	ID	X	[0..0]		Name Representation Code

3.6.4.4 PV1-8-Referring Doctor

This field contains information about the physician that placed the order. Only the first four components are used and the other components are ignored.

Seq	Len	DT	Usage	Cardinality	TBL#	Element Name
1	10	ST	R	[1..1]		ID Number
2	250	ST	R	[1..1]		Family Name
3	250	ST	R	[1..1]		Given Name
4	250	ST	RE	[0..1]		Middle Initial or Name
5	250	ST	RE	[0..1]		Suffix
6	250	ST	RE	[0..1]		Prefix

Seq	Len	DT	Usage	Cardinality	TBL#	Element Name
7	10	IS	RE	[0..1]		Degree
8	10	IS	X	[0..0]		Source Table
9	250	HD	X	[0..0]		Assigning Authority
10	10	ID	X	[0..0]		Name Type Code
11	1	ST	X	[0..0]		Identifier Check Digit
12	10	ID	X	[0..0]		Code Identifying the Check Digit Scheme Employed
13	10	IS	X	[0..0]		Identifier Type Code
14	250	HD	X	[0..0]		Assigning Facility
15	10	ID	X	[0..0]		Name Representation Code

3.6.4.5 PV1-10-Hospital Service

This field contains the treating specialty assigned to the patient with the most recent movement. VistA values this field for inpatient encounters only. When populated, it contains a value from user-defined Table 0069, *Hospital Service*; VistA sends values from the HOSPITAL LOCATION file (#44).

3.6.4.6 PV1-15-Ambulatory Status

This field contains any permanent or transient conditions affecting the patient's mode of transportation. This field may also contain the pregnancy status of the patient.

The RAD/NUC MED ORDERS file (#75.1) contains two fields that decide the values set into this field: Pregnant (#13) and Mode of Transport (#19). Because of this, the field may repeat when the patient is both ambulatory and pregnant.

This field may contain one or more values from user-defined Table 0009, *Ambulatory Status*. This field is not populated if the patient's ambulatory status or pregnancy status is not known.

Note: VistA populates this field with the value **B6** to indicate that the patient is pregnant.

Value	Description
A0	No functional limitations
A2	Wheelchair/stretcher bound
B6	Pregnant

3.6.4.7 PV1-16-VIP Indicator

This field contains that the patient is an employee, or that the patient record is sensitive and must not be made available for general personnel access. If one of these conditions applies, VistA populates this field with a value from user-defined Table 0099, *VIP Indicator*.

Value	Description
E	Patient is a VA employee
S	Patient record is sensitive
ES	Patient is a VA employee and patient record is sensitive

3.6.4.8 PV1-19-Visit

For an inpatient, this field contains an **I** concatenated with the inpatient visit number from the VistA PIMS package.

For an outpatient, this field contains an **O** concatenated with an integer representing today's date.

3.6.5 ORC Segment Fields in ORM

The Common Order segment is used in ORM messages. A description of each ORC field element is provided in the table; unsupported fields are not described.

Segment	Seq #	Usage	Field Element Name and Values
ORC	1	R	Order Control
	2	R	Placer Order Number
	3	R	Filler Order Number
	4	X	Placer Group Number
	5	R	Order Status
	6	X	Response Flag
	7	R	Quantity/Timing
	8	RE	Parent
	9	R	Date/Time of Transaction
	10	R	Entered By
	11	X	Verified By
	12	RE	Ordering Provider
	13	RE	Enterer's Location
	14	RE	Call Back Phone Number
	15	X	Order Effective Date/Time
	16	X	Order Control Code Reason
	17	RE	Entering Organization
	18	X	Entering Device
	19	X	Action By
	20	X	Advanced Beneficiary Notice Code
	21	X	Ordering Facility Name
	22	X	Ordering Facility Address
	23	X	Ordering Facility Phone Number

Segment	Seq #	Usage	Field Element Name and Values
	24	X	Ordering Provider Address
	25	X	Order Status Modifier

3.6.5.1 ORC-1-Order Control

This field contains a value from HL7 Table 0119, *Order Control Codes*.

Value	Description
CA	Cancel order/service request
NW	New order/service
XO	Change order/service request

3.6.5.2 ORC-2-Placer Order Number

This field contains the medical center station number of the accession number of the case in question, concatenated with the Day-Case # of the examination (Accession Number). The elements of this field are separated by hyphens.

Example: 578-102104-1693.

3.6.5.3 ORC-3-Filler Order Number

This field contains the medical center station number of the accession number of the case in question, concatenated with the Day-Case # of the examination (Accession Number). The elements of this field are separated by hyphens.

Example: 688-102104-1693.

3.6.5.4 ORC-5-Order Status

This field contains a value from HL7 Table 0038, *Order Status*.

Value	Description
CA	Order was canceled
CM	Order is completed
IP	In process, unspecified

3.6.5.5 ORC-7-Quantity/Timing

This field contains twelve components.

Seq	Len	DT	Usage	Cardinality	TBL#	Element Name
1	250	CQ	X	[0..0]		Quantity
2	250	CM	X	[0..0]		Interval

Seq	Len	DT	Usage	Cardinality	TBL#	Element Name
3	250	CM	X	[0..0]		Duration
4	26	TS	R	[1..1]		Start Date/Time
5	26	TS	X	[0..0]		End Date/Time
6	20	ST	R	[1..1]		Priority
7	250	ST	X	[0..0]		Condition
8	65535	TX	X	[0..0]		Text
9	250	ST	X	[0..0]		Conjunction
10	250	CM	X	[0..0]		Order Sequencing
11	250	CE	X	[0..0]		Occurrence Duration
12	10	NM	X	[0..0]		Total Occurrences

3.6.5.5.1 ORC-7.4-Start Date/Time

This component is populated with the date and time requested for the start of the order.

3.6.5.5.2 ORC-7.6-Priority

This component is populated with the priority of the order.

Value	Description
S	Stat (with highest priority)
A	ASAP (fill after Stat orders)
R	Routine (the default)

3.6.5.6 ORC-8-Parent

This field contains a value to identify an examset or printset, or to indicate the parent order of the examset or printset that was purged.

- If the order is part of an examset, the field is valued as:
  EXAMSET: *procedure_name*
- If the order is part of a printset, the field is valued as:
  PRINTSET: *procedure_name*
- If the parent order was purged, the field is valued as:
  ORIGINAL ORDER PURGED

3.6.5.7 ORC-9-Date/Time of Transaction

This field contains the date and time that the case was registered into VistA.

3.6.5.8 ORC-10-Entered By

This field contains the name of the person who entered the order into VistA. Only the first four components are used. Other components are ignored.

Seq	Len	DT	Usage	Cardinality	TBL#	Element Name
1	10	ST	R	[1..1]		ID Number
2	250	ST	R	[1..1]		Family Name
3	250	ST	R	[1..1]		Given Name
4	250	ST	R	[1..1]		Middle Initial or Name
5	250	ST	X	[0..0]		Suffix
6	250	ST	X	[0..0]		Prefix
7	10	IS	X	[0..0]		Degree
8	10	IS	X	[0..0]		Source Table
9	250	HD	X	[0..0]		Assigning Authority
10	10	ID	X	[0..0]		Name Type Code
11	1	ST	X	[0..0]		Identifier Check Digit
12	10	ID	X	[0..0]		Code Identifying the Check Digit Scheme Employed
13	10	IS	X	[0..0]		Identifier Type Code
14	250	HD	X	[0..0]		Assigning Facility
15	10	ID	X	[0..0]		Name Representation Code

3.6.5.9 ORC-12-Ordering Provider

This field contains the ID number and name of the provider that requested the order. Only the first four components are used. Other components are ignored.

Seq	Len	DT	Usage	Cardinality	TBL#	Element Name
1	10	ST	R	[1..1]		ID Number
2	250	ST	R	[1..1]		Family Name
3	250	ST	R	[1..1]		Given Name
4	250	ST	R	[1..1]		Middle Initial or Name
5	250	ST	X	[0..0]		Suffix
6	250	ST	X	[0..0]		Prefix
7	10	IS	X	[0..0]		Degree
8	10	IS	X	[0..0]		Source Table
9	250	HD	X	[0..0]		Assigning Authority
10	10	ID	X	[0..0]		Name Type Code
11	1	ST	X	[0..0]		Identifier Check Digit
12	10	ID	X	[0..0]		Code Identifying the Check Digit Scheme Employed
13	10	IS	X	[0..0]		Identifier Type Code

Seq	Len	DT	Usage	Cardinality	TBL#	Element Name
14	250	HD	X	[0..0]		Assigning Facility
15	10	ID	X	[0..0]		Name Representation Code

3.6.5.10 ORC-13-Enterer's Location

This field contains the location of the person in the medical center who entered the order, if known. Only the first component is populated. It contains the name of the enterer's service/section from the VistA SERVICE/SECTION file (#49).

Seq	Len	DT	Usage	Cardinality	TBL#	Element Name
1	30	IS	R	[1..1]	0302	Point of Care
2	30	IS	X	[0..0]	0303	Room
3	30	IS	X	[0..0]	0304	Bed
4	30	HD	X	[0..0]		Facility
5	30	IS	X	[0..0]	0306	Location Status
6	30	IS	X	[0..0]	0305	Person Location Type
7	30	IS	X	[0..0]	0307	Building
8	30	IS	X	[0..0]	0308	Floor
9	199	ST	X	[0..0]		Location Description

3.6.5.11 ORC-14-Call Back Phone Number

This field contains the telephone number of the provider identified in *ORC-11-Ordering Provider*. It clarifies the request or other information regarding the order. Up to eight telephone numbers can be entered into this field. Only the first three components are used.

Seq	Len	DT	Usage	Cardinality	TBL#	Element Name
1	250	ST	R	[1..1]		[NNN] [(999)]999-9999 [X99999] [B99999] [C any text]
2	3	ID	R	[1..1]	0201	Telecommunication use code
3	10	ID	R	[1..1]	0202	Telecommunication equipment type
4	250	ST	X	[0..0]		Email address
5	20	NM	X	[0..0]		Country code
6	20	NM	X	[0..0]		Area/city code
7	20	NM	X	[0..0]		Phone number
8	20	NM	X	[0..0]		Extension
9	250	ST	X	[0..0]		Any text

3.6.5.11.1ORC-14.1-[NNN] [(999)]999-9999 [X99999] [B99999] [C any text]

This component is populated with the full telephone number as recorded in VistA. Components 5-9 are not used to break out the subelements of the telephone number.

3.6.5.11.2ORC-14.2-Telecommunication Use Code

This component is populated with the kind of number that is in component 1 with a value from HL7 Table 0201, *Telecommunication Use Code*.

Value	Description
PRN	Primary Residence Number
WPN	Work Number
BPN	Beeper Number

3.6.5.11.3ORC-14.3-Telecommunication Equipment Type

This component is populated with the kind of device that is reached on the number in component 1 with a value from HL7 Table 202, *Telecommunication Equipment Type*.

Value	Description
PH	Telephone
FX	Fax
BP	Beeper

3.6.5.12 ORC-17-Entering Organization

This field contains the service/section of the medical center of the person identified in *ORC-10-Entered By* from the VistA SERVICE/SECTION file (#49).

Seq	Len	DT	Usage	Cardinality	TBL#	Element Name
1	250	ST	R	[1..1]		Identifier
2	250	ST	R	[1..1]		Text
3	250	ST	R	[1..1]		Name of Coding System
4	250	ST	X	[0..0]		Alternate Identifier
5	250	ST	X	[0..0]		Alternate Text
6	250	ST	X	[0..0]		Name of Alternate Coding System

3.6.5.12.1ORC-17.1-Identifier

This component is populated with the abbreviation for the service/section of the medical center.

*3.6.5.12.2*ORC-17.2-Text

This component is populated with the full name of the service/section of the medical center.

*3.6.5.12.3*ORC-17.3-Name of Coding System

This component is populated with the value **VISTA49**.

3.6.6 OBR Segment Fields in ORM

The Observation Request segment is used in ORM and ORU messages, though field usage is different for ORU messages. A description of each OBR field element is provided in the table of ORM message attributes; unsupported fields are not described.

Segment	Seq #	Usage	Field Element Name and Values
OBR	1	R	Set ID – OBR
	2	R	Placer Order Number
	3	R	Filler Order Number (Exam & Case IDs)
	4	R	Universal Service ID
	5	R	Priority – OBR
	6	X	Requested Date/Time
	7	X	Observation Date/Time
	8	X	Observation End Date/Time
	9	X	Collection Volume
	10	X	Collector Identifier
	11	X	Specimen Action Code
	12	X	Danger Code
	13	X	Relevant Clinical Information
	14	X	Specimen Received Date/Time
	15	RE	Specimen Source
	16	R	Ordering Provider
	17	RE	Order Callback Phone Number
	18	R	Placer Field 1
	19	R	Placer Field 2
	20	R	Filler Field 1
	21	R	Filler Field 2
	22	X	Results Report Status Change – Date/Time
	23	X	Charge to Practice
	24	RE	Diagnostic Service Section ID
	25	X	Result Status
	26	X	Parent Result
	27	R	Quantity/Timing
	28	X	Result Copies To
	29	RE	Parent
	30	RE	Transportation Mode
	31	R	Reason for Study
	32	X	Principal Result Interpreter
	33	X	Assistant Result Interpreter
	34	X	Technician

Segment	Seq #	Usage	Field Element Name and Values
	35	X	Transcriptionist
	36	X	Scheduled Date/Time
	37	X	Number of Sample Containers
	38	X	Transport Logistics of Collected Sample
	39	X	Collector's Comment
	40	X	Transport Arrangement Responsibility
	41	X	Transport Arranged
	42	X	Escort Required
	43	X	Planned Patient Transfer Comment
	44	X	Procedure Code
	45	X	Procedure Code Modifier
	46	X	Placer Supplemental Service Information
	47	X	Filler Supplemental Service Information

Note: OBR and OBX (for procedure only) segments repeat in pairs for printsets (such as, single report entered for multiple cases).

3.6.6.1 OBR-1-Set ID

This field contains an integer corresponding to the ordinal position of this OBR segment in the message. The first occurrence is labeled 1, the second 2, and so on.

3.6.6.2 OBR-2-Placer Order Number

This field contains the medical center station number of the accession number of the case in question, concatenated with Day-Case # of the examination (Accession Number). The elements of this field are separated by hyphens.
Example: 688-102104-1693.

3.6.6.3 OBR-3-Filler Order Number

This field contains the medical center station number of the accession number of the case in question, concatenated with Day-Case # of the examination (Accession Number). The elements of this field are separated by hyphens.
Example: 688-102104-1693.

Note: For OBR-2 and OBR-3, when the site-specific accession number is **not** set to YES, the value for each is only the Day-Case #.
Example: 102104-1693

3.6.6.4 OBR-4-Universal Service Identifier

This field contains six components.

Seq	Len	DT	Usage	Cardinality	TBL#	Element Name
1	250	ST	R	[1..1]		Identifier
2	250	ST	R	[1..1]		Text
3	250	ST	R	[1..1]		Name of Coding System

Seq	Len	DT	Usage	Cardinality	TBL#	Element Name
4	250	ST	R	[1..1]		Alternate Identifier
5	250	ST	R	[1..1]		Alternate Text
6	250	ST	R	[1..1]		Name of Alternate Coding System

3.6.6.4.1 OBR-4.1-Identifier

This component is populated with the CPT code from the VistA CPT file (#81).

3.6.6.4.2 OBR-4.2-Text

This component is populated with the short name associated with the CPT code in *OBR-4.1-Identifier*.

3.6.6.4.3 OBR-4.3-Name of Coding System

This component is populated with the value **C4**.

3.6.6.4.4 OBR-4.4-Alternate Identifier

This component is populated with the internal entry number (IEN) of this procedure as defined in the VistA RAD/NUC MED PROCEDURES file (#71).

3.6.6.4.5 OBR-4.5-Alternate Text

This component is populated with the name of the procedure as defined in the RAD/NUC MED PROCEDURES file (#71).

3.6.6.4.6 OBR-4.6-Name of Alternate Coding System

This component is populated with the value **99RAP**.

3.6.6.5 OBR-5-Priority

This field contains the priority of the order to satisfy IHE requirements, but is intended for backward compatibility only.

Value	Description
S	Stat
A	ASAP
R	Routine

3.6.6.6 OBR-15-Specimen Source

This field contains six components. Only component 5 is populated. When a procedure modifier (LEFT and/or RIGHT) is included in the order, that value is sent in subcomponent 2 of component 5.

Seq	Len	DT	Usage	Cardinality	TBL#	Element Name
1	250	CE	X	[0..0]		Specimen Source Name or Code
2	65535	TX	X	[0..0]		Additives
3	65535	TX	X	[0..0]		Free text
4	250	CE	X	[0..0]		Procedure Modifier
5	250	CE	RE	[0..1]		Site Modifier
6	250	CE	X	[0..0]		Collection Method Modifier Code

3.6.6.7 OBR-16-Ordering Provider

This field contains the ID number and name of the provider that requested the order. Only the first four components are used. Other components are ignored.

Seq	Len	DT	Usage	Cardinality	TBL#	Element Name
1	10	ST	R	[1..1]		ID Number
2	250	ST	R	[1..1]		Family Name
3	250	ST	R	[1..1]		Given Name
4	250	ST	R	[1..1]		Middle Initial or Name
5	250	ST	X	[0..0]		Suffix
6	250	ST	X	[0..0]		Prefix
7	10	IS	X	[0..0]	0360	Degree
8	10	IS	X	[0..0]	0297	Source Table
9	250	HD	X	[0..0]	0363	Assigning Authority
10	10	ID	X	[0..0]	0200	Name Type Code
11	1	ST	X	[0..0]		Identifier Check Digit
12	10	ID	X	[0..0]	0061	Code Identifying the Check Digit Scheme Employed
13	10	IS	X	[0..0]	0203	Identifier Type Code
14	250	HD	X	[0..0]	0300	Assigning Facility
15	10	ID	X	[0..0]	4000	Name Representation Code

3.6.6.8 OBR-17-Order Callback Phone Number

This field contains up to eight telephone numbers that can be used to report order status or results. Only the first three components of this field are used. Other components are ignored.

Seq	Len	DT	Usage	Cardinality	TBL#	Element Name
1	250	ST	R	[1..1]		[NNN] [(999)]999-9999 [X99999] [B99999] [C any text]
2	3	ID	R	[1..1]	0201	Telecommunication use code
3	10	ID	R	[1..1]	0202	Telecommunication equipment type
4	250	ST	X	[0..0]		Email address
5	20	NM	X	[0..0]		Country code
6	20	NM	X	[0..0]		Area/city code
7	20	NM	X	[0..0]		Phone number
8	20	NM	X	[0..0]		Extension
9	250	ST	X	[0..0]		Any text

3.6.6.8.1 OBR-17.1-[NNN] [(999)]999-9999 [X99999] [B99999] [C any text]

This component is populated with the full telephone number as recorded in VistA. Components 5-9 are not used to break out the subelements of the telephone number.

3.6.6.8.2 OBR-17.2-Telecommunication Use Code

This component is populated with the kind of number that is contained in component 1 with a value from HL7 Table 0201, *Telecommunication Use Code*.

Value	Description
PRN	Primary Residence Number
WPN	Work Number
BPN	Beeper Number

3.6.6.8.3 OBR-17.3-Telecommunication Equipment Type

This component is populated with the kind of device that is reached on the number in component 1 with a value from HL7 Table 202, *Telecommunication Equipment Type*.

Value	Description
PH	Telephone
FX	Fax
BP	Beeper

3.6.6.9 OBR-18-Placer Field 1

This field contains the Facility Identifier concatenated with Day-Case # of the examination (Accession Number).

Note: OBR-18 shares the same value as OBR-2, OBR-3, and OBR-20.

3.6.6.10 OBR-19-Placer Field 2

This field contains the case number, which is unique only to the facility that initiated the patient event.

3.6.6.11 OBR-20-Filler Field 1

This field contains the Facility Identifier concatenated with Day-Case # of the examination (Accession Number).

Notes: OBR-20 shares the same value as OBR-2, OBR-3, and OBR-18.
For both OBR-18 and OBR-20, when the site-specific accession number is **not** set to YES, the value for each is only the Day-Case #.
Example: 102104-1693

3.6.6.12 OBR-21-Filler Field 2

This field contains a number of different data attributes. The data string is as follows:

- The first component is populated with the imaging type abbreviation and the imaging type name.
- The second component is populated with the IEN of the IMAGING LOCATION (#79.1) record and the name of the HOSPITAL LOCATION (#44) referenced by that imaging location.
- The third component is populated with the IEN of the RAD/NUC MED DIVISION (#79) record and the name of the INSTITUTION (#4) referenced by that division.

The components are delimited by the accent grave (`) and the subcomponents are delimited by the underscore (_)

3.6.6.13 OBR-24-Diagnostic Service Section ID

This field contains the single known Procedure Modality associated with the type of exam ordered. If more than one Procedure Modality is known to VistA, nothing is sent in this field. The terms used are from the VistA RAD MODALITY DEFINED TERMS file (#73.1).

3.6.6.14 OBR-27-Quantity/Timing

This field contains twelve components.

Seq	Len	DT	Usage	Cardinality	TBL#	Element Name
1	250	CQ	X	[0..0]		Quantity
2	250	CM	X	[0..0]		Interval
3	250	CM	X	[0..0]		Duration
4	26	TS	R	[1..1]		Start Date/Time
5	26	TS	X	[0..0]		End Date/Time
6	20	ST	R	[1..1]		Priority
7	250	ST	X	[0..0]		Condition
8	65535	TX	X	[0..0]		Text
9	250	ST	X	[0..0]		Conjunction
10	250	CM	X	[0..0]		Order Sequencing
11	250	CE	X	[0..0]		Occurrence Duration
12	10	NM	X	[0..0]		Total Occurrences

3.6.6.14.1 OBR-27.4-Start Date/Time

This component is populated with the scheduled start date and time requested for the order.

3.6.6.14.2 OBR-27.6-Priority

This component is populated with the priority of the order.

Value	Description
S	Stat (with highest priority)
A	ASAP (fill after Stat orders)
R	Routine (the default)

3.6.6.15 OBR-29-Parent

This field contains a value to identify an examset or printset, or to indicate that the parent order of the examset or printset was purged.

- If the order is part of an examset, the field is valued as:
  EXAMSET: *procedure_name*
- If the order is part of a printset, the field is valued as:
  PRINTSET: *procedure_name*
- If the parent order was purged, the field is valued as:
  ORIGINAL ORDER PURGED

3.6.6.16 OBR-30-Transportation Mode

This field contains how, or whether to transport a patient with a value from HL7 Table 0124, *Transportation Mode*.

HL7 Value	HL7 Description	VistA Value
CART	Cart - patient travels on cart or gurney	STRETCHER
PORT	The examining device goes to patient's location	PORTABLE
WALK	Patient walks to diagnostic service	AMBULATORY
WHLC	Wheelchair	WHEELCHAIR

3.6.6.17 OBR-31-Reason for Study

This field contains six components.

Seq	Len	DT	Usage	Cardinality	TBL#	Element Name
1	250	ST	X	[0..0]		Identifier
2	250	ST	R	[1..1]		Text
3	250	ST	X	[0..0]		Name of Coding System
4	250	ST	X	[0..0]		Alternate Identifier
5	250	ST	X	[0..0]		Alternate Text
6	250	ST	X	[0..0]		Name of Alternate Coding System

3.6.6.17.1 OBR-31.2-Reason for Study

This component is populated with the Reason for Study, which is free text string entered when the order is requested.

3.6.7 ZDS Segment Fields in ORM and ORU

The ZDS segment is a user-defined segment used in ORM and ORU messages. It contains one field, Study Instance Unique Identifier, which is made up of four components.

Segment	Seq #	Usage	Field Element Name and Values
ZDS	1	R	Study Instance UID

3.6.7.1 ZDS-1-Study Instance UID

This field contains the unique identifier that VistA assigns to the study.

Seq	Len	DT	Usage	Cardinality	Item #	Element Name
1	250	ST	R	[1..1]		Pointer
2	250	HD	R	[1..1]		Application ID

Seq	Len	DT	Usage	Cardinality	Item #	Element Name
3	20	ID	R	[1..1]	0191	Type of Data
4	20	ID	R	[1..1]	0291	Subtype

The components of this field are populated as follows.

3.6.7.1.1 ZDS-1.1-Pointer

This component is populated with the ISO Object Identifier (OID) value that VistA assigned to the study. The subscriber and modalities must use this value instead of assigning one.

3.6.7.1.2 ZDS-1.2-Application ID

This component is populated with the value **VISTA**, indicating the application that generated the value in Component 1.

3.6.7.1.3 ZDS-1.3-Type of Data

This component is populated with the value **Application**, indicating general type of data to which it is pointed.

3.6.7.1.4 ZDS-1.4-Subtype

This component is populated with the value **DICOM**, indicating the specific type of data to which it is pointed.

3.6.8 OBX Segment Fields in ORM and ORU

The Observation Segment is used in ORM and ORU messages, though field usage is different for ORU messages. A description of each OBX field element is provided in the table; unsupported fields are not described.

Segment	Seq #	Usage	Field Element Name and Values
OBX	1	R	Set – ID OBX
	2	R	Value Type
	3	R	Observation Identifier
	4	X	Observation Sub-ID
	5	R	Observation Value
	6	X	Units
	7	X	Reference Range
	8	X	Abnormal Flags
	9	X	Probability
	10	X	Nature of Abnormal Test
	11	R	Observation Result Status
	12	X	Date Last Observation Normal Value
	13	X	User Defined Access Checks
	14	X	Date/Time of the Observation
	15	X	Producer's ID
	16	X	Responsible Observer

Segment	Seq #	Usage	Field Element Name and Values
	17	X	Observation Method
	18	X	Equipment Instance Identifier
	19	X	Date/Time of Analysis

3.6.8.1 OBX-2-Value Type

This field contains the data type of the information carried in *OBX-5-Observation Value* with a value from HL7 Table 0125, *Value Type*.

Value	Description
CE	Coded Element
TX	Text

3.6.8.2 OBX-3-Observation Identifier

This field contains the classification of the kind of information carried in *OBX-5-Observation Value*. Component 3 is always valued **L**.

Seq	Len	DT	Usage	Cardinality	TBL#	Element Name
1	250	ST	R	[1..1]		Identifier
2	250	ST	R	[1..1]		Text
3	250	ST	R	[1..1]		Name of Coding System
4	250	ST	X	[0..0]		Alternate Identifier
5	250	ST	X	[0..0]		Alternate Text
6	250	ST	X	[0..0]		Name of Alternate Coding System

3.6.8.2.1 OBX-3.1-Identifier and OBX-3.2-Text

These two components are populated with one of the following values.

Identifier	Text
P	Procedure
M	Modifiers
H	History
TCM	Tech Comment
A	Allergies
C4	CPT Modifiers

3.6.8.2.2 OBX-3.3-Name of Coding System

This component is populated with the value **L**.

3.6.8.3 OBX-5-Observation Value

This field contains the actual value of the data type in *OBX-2-Value Type* and of the classification in *OBX-3-Observation Identifier*. Formatting follows the rules for the data type in OBX-2.

3.6.8.4 OBX-11-Observation Result Status

In the order message, this field contains the fixed value **O** (order detail description only, no result) from HL7 Table 0085, *Observation Result Status Codes Interpretation*.

3.6.9 MSA Segment Fields

For a listing of all the fields defined for the MSA segments in HL7, refer to 3.5.8 MSA Segment on page 22.

For an explanation of the MSA segment fields used by VistA acknowledgment messages, refer to 4.7.1 MSA Segment Fields in ACK Messages on page 77.

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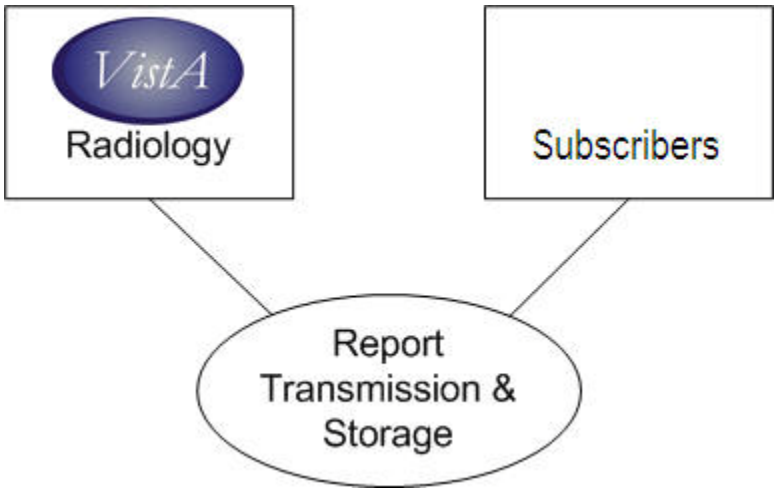
4 Report Transmission/Storage Profile

4.1 Use Case

4.1.1 Scope

This transaction is used by the VistA Rad/Nuc Med package to transmit a radiology report to subscribers.



4.1.2 Actors and Roles

Actor: Rad/Nuc Med

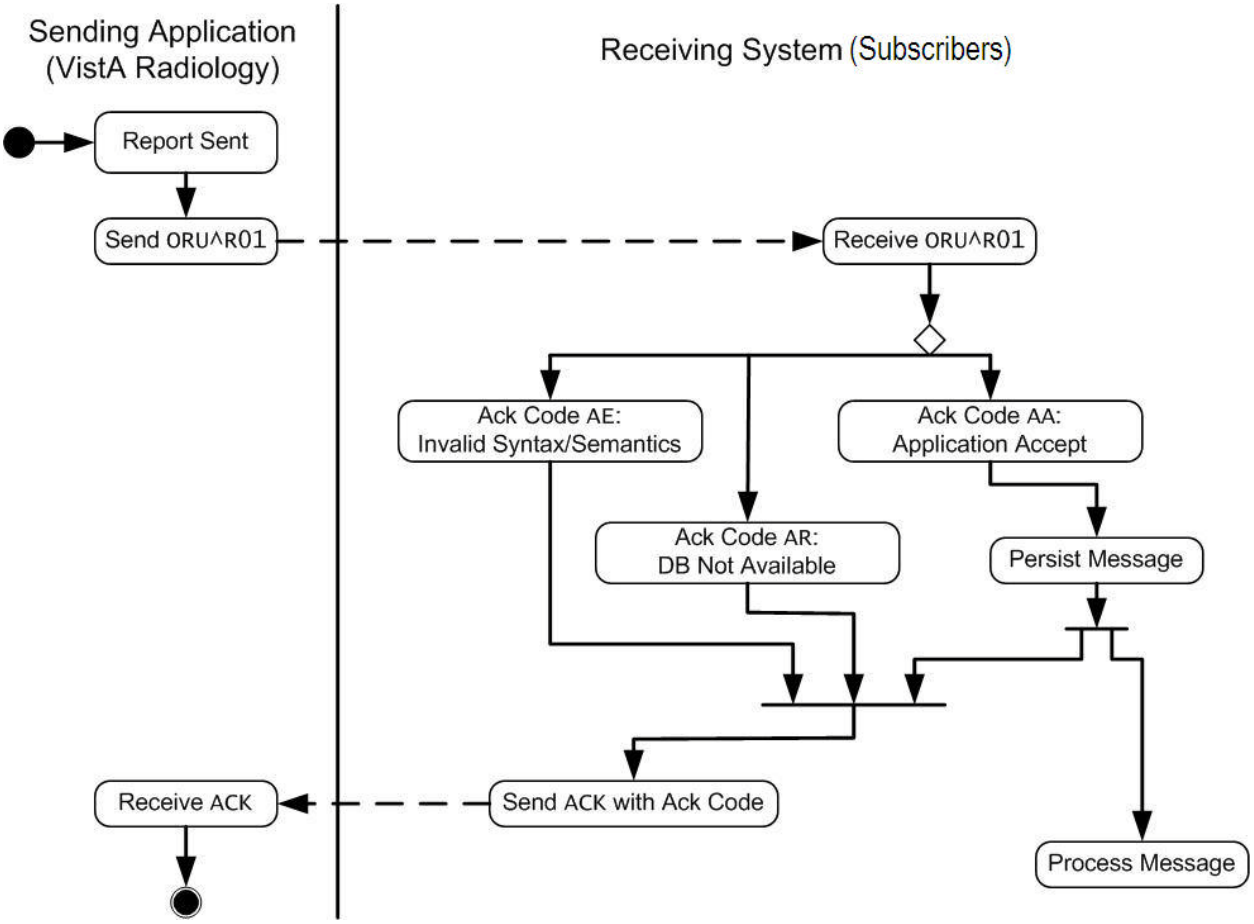
Role: Transmits radiology report information to ancillary VistA modules and clinical systems when Rad/Nuc Med reports are filed.

Actor: Subscribers

Role: Receives and files radiology report information.

4.2 Interactions

The actors perform the behaviors shown in the activity diagram.



4.3 Dynamic Definition

VistA and subscribers generate and process HL7 messages according to functional and business requirements.

4.3.1 ORU – Unsolicited Observation Results

The function of the ORU message is to transmit information about a report. Almost any clinical report message can be constructed as a three-level hierarchy, with the patient identification (PID) segment at the top level, an order segment (OBR) at the next level, and one or more observation segments (OBX) at the bottom. One OBX is transmitted for each component of a diagnostic report, such as an EKG or obstetrical ultrasound or electrolyte battery.

The business rules for the VistA Rad/Nuc Med application state that when building outbound ORU HL7 messages, a continuation node must be created for any segment that exceeds 245 characters in length.[1]

Many OBR segments may be associated with a PID segment, with many separate OBX segments associated with each OBR.

Segment	Order Message	HL7 Chapter
MSH	Message header	2
PID	Patient identification	3
OBR	Order detail	4
OBX	Observation/Result	7

For examples of ORU messages, refer to Appendix A.

Rad/Nuc Med transmits an ORU message to a subscriber when a report is filed.

4.4 Static Definition – Message Level

HL7 messages are populated and processed according to the following abstract message definitions.

4.4.1 Observation Result–Unsolicited (ORU)

Segment	ORU Message	Usage	Cardinality	HL7 Chapter
MSH	Message Header	R	[1..1]	2
{ [PID	Patient Identification	R	[1..1]	3
[PD1]	Additional Demographics	X	[0..0]	3
[{ NK1 }]	Next of Kin / Associated Parties	X	[0..0]	3
[{ NTE }]	Notes and Comments	X	[0..0]	2
[PV1	Patient Visit	X	[0..0]	3
[PV2]]	Patient Visit – Additional Info.	X	[0..0]	3
]				
{ [ORC]	Common Order	X	[0..0]	4
OBR	Observation Request	R	[1..1]	4
[{ NTE }]	Notes and Comments (for Detail)	X	[0..0]	2
ZDS	Additional Identification Information	R	[1..1]	††
[{ OBX	Observation/Result	RE	[0..999]	7
[{ NTE	Notes and Comments (for	X	[0..0]	2

[1] June 2008 Updated the business rule for the VistA Rad/Nuc Med application when building an HL7 message for a segment that exceeds 245 characters in length.

Segment	ORU Message	Usage	Cardinality	HL7 Chapter
}]	Results)			
}]				
{ [CTI] }	Clinical Trial Information	X	[0..0]	7
}				
[DSC]	Continuation Pointer	X	[0..0]	2

†† This segment is defined in IHE Rad-TF Transaction 4 (Procedure Scheduled).

4.5 Static Definition – Segment Level

4.5.1 MSH Segment

- For a listing of all the fields defined for the MSH segment in HL7, refer to 3.5.1 MSH Segment on page 15.
- For an explanation of the MSH fields used in the VistA order and report messages, refer to 3.6.1 MSH Segment Fields in ORM and ORU on page 23.

4.5.2 PID Segment

- For a listing of all the fields defined for the PID segment in HL7, refer to 3.5.2 PID Segment on page 16.
- For an explanation of the PID fields used in the VistA order and report messages, refer to 3.2.6 PID Segment Fields on page 28.

4.5.3 OBR Segment

For an explanation of the OBR fields used in the VistA order message, refer to 4.6.3 OBR Segment Fields on page 74.

A listing of all the fields defined for the OBR segment in HL7.

Seq	Len	DT	Usage	Cardinality	TBL#	Item #	Element Name
1	4	SI	R	[1..1]		00237	Set ID - OBR
2	22	EI	R	[1..1]		00216	Placer Order Number
3	22	EI	R	[1..1]		00217	Filler Order Number
4	250	CE	R	[1..1]		00238	Universal Service Identifier
5	2	ID	X	[0..0]		00239	Priority - OBR
6	26	TS	X	[0..0]		00240	Requested Date/Time
7	26	TS	R	[1..1]		00241	Observation Date/Time
8	26	TS	X	[0..0]		00242	Observation End Date/Time
9	20	CQ	X	[0..0]		00243	Collection Volume

Seq	Len	DT	Usage	Cardinality	TBL#	Item #	Element Name
10	250	XCN	X	[0..0]		00244	Collector Identifier
11	1	ID	X	[0..0]	0065	00245	Specimen Action Code
12	250	CE	X	[0..0]		00246	Danger Code
13	300	ST	X	[0..0]		00247	Relevant Clinical Information
14	26	TS	X	[0..0]		00248	Specimen Received Date/Time
15	300	CM	RE	[0..1]	0070 0163 0369	00249	Specimen Source
16	250	XCN	R	[1..1]		00226	Ordering Provider
17	250	XTN	RE	[0..8]		00250	Order Callback Phone Number
18	60	ST	R	[1..1]		00251	Placer Field 1
19	60	ST	R	[1..1]		00252	Placer Field 2
20	60	ST	R	[0..0]		00253	Filler Field 1
21	60	ST	R	[1..1]		00254	Filler Field 2
22	26	TS	R	[1..1]		00255	Results Rpt/Status Chng - Date/Time
23	40	CM	X	[0..0]		00256	Charge to Practice
24	10	ID	X	[0..0]	0074	00257	Diagnostic Serv Sect ID
25	1	ID	R	[1..1]	0123	00258	Result Status
26	400	CM	X	[0..0]		00259	Parent Result
27	200	TQ	X	[0..0]		00221	Quantity/Timing
28	250	XCN	X	[0..0]		00260	Result Copies To
29	200	CM	RE	[0..1]		00222	Parent
30	20	ID	X	[0..0]	0124	00262	Transportation Mode
31	250	CE	X	[0..0]		00263	Reason for Study
32	200	CM	RE	[0..1]		00264	Principal Result Interpreter
33	200	CM	RE	[0..10]		00265	Assistant Result Interpreter
34	200	CM	X	[0..0]		00266	Technician
35	200	CM	RE	[0..1]		00267	Transcriptionist
36	26	TS	X	[0..0]		00268	Scheduled Date/Time
37	4	NM	X	[0..0]		01028	Number of Sample Containers
38	250	CE	X	[0..0]		01029	Transport Logistics of Collected Sample
39	250	CE	X	[0..0]		01030	Collector’s Comment

Seq	Len	DT	Usage	Cardinality	TBL#	Item #	Element Name
40	250	CE	X	[0..0]		01031	Transport Arrangement Responsibility
41	30	ID	X	[0..0]	0224	01032	Transport Arranged
42	1	ID	X	[0..0]	0225	01033	Escort Required
43	250	CE	X	[0..0]		01034	Planned Patient Transport Comment
44	250	CE	X	[0..0]	0088	00393	Procedure Code
45	250	CE	X	[0..0]	0340	01316	Procedure Code Modifier
46	250	CE	X	[0..0]	0411	01474	Placer Supplemental Service Information
47	250	CE	X	[0..0]	0411	01475	Filler Supplemental Service Information

4.5.4 ZDS Segment

The following is the field defined for the ZDS Segment in HL7. For a more detailed explanation of the fields used by VistA, refer to Section 4.6.4 on page 74.

Seq	Len	DT	Usage	Cardinality	TBL#	Item #	Element Name
1	200	RP	R	[1..1]			Study Instance UID

4.5.5 OBX Segment

- For a listing of all the fields defined for the OBX segment in HL7, refer to 3.5.7 OBX Segment on page 22.
- For an explanation of the OBX segment fields used by VistA order and report messages, refer to 4.6.4 OBX Segment Fields in ORU Messages on page 74.

4.5.6 MSA Segment

- For a listing of all the fields defined for the MSA segments in HL7, refer to 3.5.8 MSA Segment on page 22.
- For an explanation of the MSA segment fields used by VistA acknowledgment messages, refer to 4.7.1 MSA Segment Fields on page77 .

4.6 Static Definition – Field Level

4.6.1 MSH Segment Fields in ORU Messages (Outbound and Inbound)

When **outbound** ORU messages are sent from Rad/Nuc Med to an outside application (subscriber or other HL7 subscriber), the MSH segment attributes are the same as in the full MSH Segment table on page 15.

When **inbound** ORU messages are sent from an outside application to Rad/Nuc Med, the MSH segment attributes are essentially the same as those listed in the MSH Segment table on page 15.

4.6.2 PID Segment Fields in ORU Messages (Outbound and Inbound)

The Patient Identifier segment is used in ORM and ORU messages. The PID segment attributes are the same as in the full PID Segment table, on page 16; regardless of whether the ORU message is **outbound** from Rad/Nuc Med to an outside application (subscriber or HL7 subscriber), or **inbound** from an outside application to Rad/Nuc Med.

For an explanation of the PID segment fields used in the VistA order and report messages, refer to 3.6.2 PID Segment Fields on page 28.

4.6.3 OBR Segment Fields in ORU Messages (Outbound and Inbound)

The Observation Request segment is used in ORM and ORU messages, though field usage is different for ORM messages. A description of each OBR segment field element is provided in the table; unsupported fields are not described.

This table of OBR segment attributes for ORU messages applies to **outbound** ORU messages, sent from Rad/Nuc Med to an outside application, and **inbound** ORU messages from an outside application to Rad/Nuc Med.

Segment	Seq #	Usage	Field Element Name and Values
OBR	1	R	Set ID – OBR
	2	R	Placer Order Number
	3	R	Filler Order Number (Exam & Case IDs)
	4	R	Universal Service ID
	5	X	Priority – OBR
	6	X	Requested Date/Time
	7	R	Observation Date/Time
	8	X	Observation End Date/Time
	9	X	Collection Volume
	10	X	Collector Identifier
	11	X	Specimen Action Code
	12	X	Danger Code
	13	X	Relevant Clinical Information
	14	X	Specimen Received Date/Time
	15	RE	Specimen Source
	16	R	Ordering Provider

Segment	Seq #	Usage	Field Element Name and Values
	17	RE	Order Callback Phone Number
	18	R	Placer Field 1
	19	R	Placer Field 2
	20	R	Filler Field 1
	21	R	Filler Field 2
	22	R	Results Report Status Change – Date/Time
	23	X	Charge to Practice
	24	X	Diagnostic Service Section ID
	25	R	Result Status (F=final, R=results stored, not verified, C=correction to results, verified)
	26	X	Parent Result
	27	X	Quantity/Timing
	28	X	Result Copies To
	29	RE	Parent
	30	X	Transportation Mode
	31	X	Reason for Study
	32	RE	Principal Result Interpreter
	33	RE	Assistant Result Interpreter
	34	X	Technician
	35	RE	Transcriptionist
	36	X	Scheduled Date/Time
	37	X	Number of Sample Containers
	38	X	Transport Logistics of Collected Sample
	39	X	Collector's Comment
	40	X	Transport Arrangement Responsibility
	41	X	Transport Arranged
	42	X	Escort Required
	43	X	Planned Patient Transfer Comment
	44	X	Procedure Code
	45	X	Procedure Code Modifier
	46	X	Placer Supplemental Service Information
	47	X	Filler Supplemental Service Information

4.6.3.1 OBR-1-Set ID

This field contains an integer corresponding to the ordinal position of the OBR segment in the message. The first occurrence is labeled 1, the second 2, and so on.

4.6.3.2 OBR-2-Placer Order Number

This field contains the medical center site number (Facility Identifier) of the examination, concatenated with the date of the examination, concatenated with Day-Case # of the examination (Accession Number). The elements of this field are separated by hyphens.

Example: 688-102104-1693.

4.6.3.3 OBR-3-Filler Order Number

This field contains the medical center site number (Facility Identifier) of the examination, concatenated with the date of the examination, concatenated with Day-Case # of the examination (Accession Number). The elements of this field are separated by hyphens.

Example: 688-102104-1693.

4.6.3.4 OBR-4-Universal Service Identifier

This field contains six components.

Seq	Len	DT	Usage	Cardinality	TBL#	Element Name
1	250	ST	R	[1..1]		Identifier
2	250	ST	R	[1..1]		Text
3	250	ST	R	[1..1]		Name of Coding System
4	250	ST	R	[1..1]		Alternate Identifier
5	250	ST	R	[1..1]		Alternate Text
6	250	ST	R	[1..1]		Name of Alternate Coding System

4.6.3.4.1 OBR-4.1-Identifier

This component is populated with the CPT code from the VistA CPT file (#81).

4.6.3.4.2 OBR-4.2-Text

This component is populated with the short name associated with the CPT code in the OBR-4.1-Identifier.

4.6.3.4.3 OBR-4.3-Name of Coding System

This component is populated with the value **C4**.

4.6.3.4.4 OBR-4.4-Alternate Identifier

This component contains the internal entry number (IEN) of the procedure in the VistA RAD/NUC MED PROCEDURES file (#71).

4.6.3.4.5 OBR-4.5-Alternate Text

This component is populated with the name of the procedure as defined in the RAD/NUC MED PROCEDURES file (#71).

4.6.3.4.6 OBR-4.6-Name of Alternate Coding System

This component is populated with the value **99RAP**.

4.6.3.5 OBR-7-Observation Date/Time

This field contains the date and time the interpreting physician entered the report.

4.6.3.6 OBR-15-Specimen Source

This field contains six components. Only component 5 is populated. When a procedure modifier (LEFT or RIGHT) is included in the order, that value is sent in subcomponent 2 of component 5.

Seq	Len	DT	Usage	Cardinality	TBL#	Element Name
1	250	CE	X	[0..0]		Specimen Source Name or Code
2	65535	TX	X	[0..0]		Additives
3	65535	TX	X	[0..0]		Free text
4	250	CE	X	[0..0]		Procedure Modifier
5	250	CE	RE	[0..1]		Site Modifier
6	250	CE	X	[0..0]		Collection Method Modifier Code

4.6.3.7 OBR-16-Ordering Provider

This field contains the ID number and name of the provider who requested the order. Only the first four components are used. Other components are ignored.

Seq	Len	DT	Usage	Cardinality	TBL#	Element Name
1	10	ST	R	[1..1]		ID Number
2	250	ST	R	[1..1]		Family Name
3	250	ST	R	[1..1]		Given Name
4	250	ST	R	[1..1]		Middle Initial or Name
5	250	ST	X	[0..0]		Suffix
6	250	ST	X	[0..0]		Prefix
7	10	IS	X	[0..0]	0360	Degree
8	10	IS	X	[0..0]	0297	Source Table
9	250	HD	X	[0..0]	0363	Assigning Authority

Seq	Len	DT	Usage	Cardinality	TBL#	Element Name
10	10	ID	X	[0..0]	0200	Name Type Code
11	1	ST	X	[0..0]		Identifier Check Digit
12	10	ID	X	[0..0]	0061	Code Identifying the Check Digit Scheme Employed
13	10	IS	X	[0..0]	0203	Identifier Type Code
14	250	HD	X	[0..0]	0300	Assigning Facility
15	10	ID	X	[0..0]	4000	Name Representation Code

4.6.3.8 OBR-17-Order Callback Phone Number

This field contains up to eight telephone numbers that can be used to report order status or results. Only the first three components of this field are used.

Seq	Len	DT	Usage	Cardinality	TBL#	Element Name
1	250	ST	R	[1..1]		[NNN] [(999)]999-9999 [X99999] [B99999] [C any text]
2	3	ID	R	[1..1]	0201	Telecommunication use code
3	10	ID	R	[1..1]	0202	Telecommunication equipment type
4	250	ST	X	[0..0]		Email address
5	20	NM	X	[0..0]		Country code
6	20	NM	X	[0..0]		Area/city code
7	20	NM	X	[0..0]		Phone number
8	20	NM	X	[0..0]		Extension
9	250	ST	X	[0..0]		Any text

4.6.3.8.1 OBR-17.1-[NNN] [(999)]999-9999 [X99999] [B99999] [C any text]

This component is populated with the full telephone number as recorded in VistA. Components 5-9 are not used to break out the subelements of the telephone number.

4.6.3.8.2 OBR-17.2-Telecommunication Use Code

This component is populated with the kind of number that is in component 1 with a value from HL7 Table 0201, *Telecommunication Use Code*.

Value	Description
PRN	Primary Residence Number
WPN	Work Number
BPN	Beeper Number

4.6.3.8.3 OBR-17.3-Telecommunication Equipment Type

This component is populated with the kind of device that is reached on the number in component 1 with a value from HL7 Table 202, *Telecommunication Equipment Type*.

Value	Description
PH	Telephone
FX	Fax
BP	Beeper

4.6.3.9 OBR-18-Placer Field 1

This field contains the Facility Identifier concatenated with the Day-Case # of the examination (Accession Number).

Note: OBR-18 shares the same value as OBR-2, OBR-3, and OBR-20.

4.6.3.10 OBR-19-Placer Field 2

This field contains the case number, which is unique only to the facility that initiated the patient event.

4.6.3.11 OBR-20-Filler Field 1

This field contains the Facility Identifier concatenated with Day-Case # of the examination (Accession Number).

Note: OBR-20 shares the same value as OBR-2, OBR-3, and OBR-18.

4.6.3.12 OBR-21-Filler Field 2

This field contains a number of different data attributes.

- The first component is populated with the imaging type abbreviation and the imaging type name.
- The second component is populated with the IEN of the IMAGING LOCATION (#79.1) record and the name of the HOSPITAL LOCATION (#44) referenced by that imaging location.
- The third component is populated with the IEN of the RAD/NUC MED DIVISION (#79) record and the name of the INSTITUTION (#4) referenced by that division.

The components are delimited by the accent grave (`) and the subcomponents are delimited by the underscore (_).

4.6.3.13 OBR-22-Results Rpt/Status Chng – Date/Time

This field contains the date/time the report was entered, if the report is unverified, or the date/time of verification, if the report is verified.

4.6.3.14 OBR-25-Result Status

This field contains the status of the report with a value from HL7 Table 0123, *Result Status*.

Value	Description
R	Results stored; not yet verified
F	Final results; results stored and verified. Can only be changed with a corrected result.
C	Correction to results

4.6.3.15 OBR-29-Parent

This field contains a value to identify an examset or printset, or to indicate that the parent order of the examset or printset was purged.

- If the order is part of an examset, the field is valued as:
  EXAMSET: *procedure_name*
- If the order is part of a printset, the field is valued as:
  PRINTSET: *procedure_name*
- If the parent order was purged, the field is valued as:
  ORIGINAL ORDER PURGED

4.6.3.16 OBR-32-Principal Result Interpreter

This field identifies the physician or other clinician who interpreted the observation and is responsible for the report content. Only component 1, Name, is populated.

Seq	Len	DT	Usage	Cardinality	TBL#	Element Name
1	250	CN	R	[1..1]		Name
2	26	TS	X	[0..0]		Start Date/Time
3	26	TS	X	[0..0]		End Date/Time
4	20	IS	X	[0..0]		Point of Care
5	20	IS	X	[0..0]		Room
6	20	IS	X	[0..0]		Bed
7	250	HD	X	[0..0]		Facility
8	20	IS	X	[0..0]		Location Status
9	20	IS	X	[0..0]		Patient Location Type
10	20	IS	X	[0..0]		Building
11	20	IS	X	[0..0]		Floor

4.6.3.16.1 OBR-32.1-Name

This component is populated with subcomponents.

Seq	Len	DT	Usage	Cardinality	TBL#	Element Name
1	250	ST	R	[1..1]		ID Number

Seq	Len	DT	Usage	Cardinality	TBL#	Element Name
2	250	ST	R	[1..1]		Family Name
3	250	ST	R	[1..1]		Given Name
4	250	ST	RE	[0..1]		Middle Initial or Name
5	250	ST	RE	[0..1]		Suffix (e.g., JR or III)
6	250	ST	RE	[0..1]		Prefix (e.g., DR)
7	20	IS	RE	[0..1]	0360	Degree (e.g., MD)
8	20	IS	X	[0..0]		Source Table
9	250	HD	X	[0..0]		Assigning Authority

4.6.3.17 OBR-33-Assistant Result Interpreter

This field contains the clinical observer(s) who assisted with the interpretation of the study. Up to 10 Assistant Result Interpreters can be sent. Only component 1, Name, is populated.

Seq	Len	DT	Usage	Cardinality	TBL#	Element Name
1	250	CN	R	[1..1]		Name
2	26	TS	X	[0..0]		Start Date/Time
3	26	TS	X	[0..0]		End Date/Time
4	20	IS	X	[0..0]		Point of Care
5	20	IS	X	[0..0]		Room
6	20	IS	X	[0..0]		Bed
7	250	HD	X	[0..0]		Facility
8	20	IS	X	[0..0]		Location Status
9	20	IS	X	[0..0]		Patient Location Type
10	20	IS	X	[0..0]		Building
11	20	IS	X	[0..0]		Floor

4.6.3.17.1 OBR-33.1-Name

This component is populated with subcomponents.

Seq	Len	DT	Usage	Cardinality	TBL#	Element Name
1	250	ST	R	[1..1]		ID Number
2	250	ST	R	[1..1]		Family Name
3	250	ST	R	[1..1]		Given Name
4	250	ST	RE	[0..1]		Middle Initial or Name
5	250	ST	RE	[0..1]		Suffix (e.g., JR or III)
6	250	ST	RE	[0..1]		Prefix (e.g., DR)

Seq	Len	DT	Usage	Cardinality	TBL#	Element Name
7	20	IS	RE	[0..1]	0360	Degree (e.g., MD)
8	20	IS	X	[0..0]		Source Table
9	250	HD	X	[0..0]		Assigning Authority

4.6.3.18 OBR-35-Transcriptionist

This field contains the report transcriber. Only component 1, Name, is populated.

Seq	Len	DT	Usage	Cardinality	TBL#	Element Name
1	250	CN	R	[1..1]		Name
2	26	TS	X	[0..0]		Start Date/Time
3	26	TS	X	[0..0]		End Date/Time
4	20	IS	X	[0..0]		Point of Care
5	20	IS	X	[0..0]		Room
6	20	IS	X	[0..0]		Bed
7	250	HD	X	[0..0]		Facility
8	20	IS	X	[0..0]		Location Status
9	20	IS	X	[0..0]		Patient Location Type
10	20	IS	X	[0..0]		Building
11	20	IS	X	[0..0]		Floor

4.6.3.18.1 OBR-35.1-Name

This component is populated with subcomponents. Only the first four subcomponents are populated; other subcomponents are not used.

Seq	Len	DT	Usage	Cardinality	TBL#	Element Name
1	250	ST	R	[1..1]		ID Number
2	250	ST	R	[1..1]		Family Name
3	250	ST	R	[1..1]		Given Name
4	250	ST	RE	[0..1]		Middle Initial or Name
5	250	ST	RE	[0..1]		Suffix (e.g., JR or III)
6	250	ST	RE	[0..1]		Prefix (e.g., DR)
7	20	IS	RE	[0..1]	0360	Degree (e.g., MD)
8	20	IS	X	[0..0]		Source Table
9	250	HD	X	[0..0]		Assigning Authority

4.6.4 ZDS Segment Fields in ORU and ORM

The ZDS segment is a user-defined segment used in ORM and ORU messages. It contains one field, Study Instance Unique Identifier, which is made up of four components.

Segment	Seq #	Usage	Field Element Name and Values
ZDS	1	R	Study Instance UID

4.6.4.1 ZDS-1-Study Instance UID

This field contains the unique identifier that VistA assigns to the study.

Seq	Len	DT	Usage	Cardinality	Item #	Element Name
1	250	ST	R	[1..1]		Pointer
2	250	HD	R	[1..1]		Application ID
3	20	ID	R	[1..1]	0191	Type of Data
4	20	ID	R	[1..1]	0291	Subtype

The components of this field are populated as follows.

4.6.4.1.1 ZDS-1.1-Pointer

This component is populated with the ISO Object Identifier (OID) value that VistA assigned to the study. The subscriber and modalities must use this value instead of assigning one.

4.6.4.1.2 ZDS-1.2-Application ID

This component is populated with the value **VISTA**, indicating the application that generated the value in Component 1.

4.6.4.1.3 ZDS-1.3-Type of Data

This component is populated with the value **Application**, indicating general type of data to which it is pointed.

4.6.4.1.4 ZDS-1.4-Subtype

This component is populated with the value **DICOM**, indicating the specific type of data to which it is pointed.

4.6.5 OBX Segment Fields in ORU Messages (Outbound and Inbound)

The Observation Segment is used in ORM and ORU messages. The OBX segment attributes are substantially the same for both **outbound** (from Rad/Nuc Med to an outside application) and **inbound** (from outside applications to Rad/Nuc Med). Certain field values are used only in **inbound** messages. A description of each OBX field element is provided in the table; unsupported fields are not described.

Segment	Seq #	Usage	Field Element Name and Values
OBX	1	R	Set – ID OBX
	2	R	Value Type
	3	R	Observation Identifier
	4	X	Observation Sub-ID
	5	R	Observation Value
	6	X	Units
	7	X	Reference Range
	8	X	Abnormal Flags
	9	X	Probability
	10	X	Nature of Abnormal Test
	11	R	Observation Result Status
	12	X	Date Last Observation Normal Value
	13	X	User Defined Access Checks
	14	X	Date/Time of the Observation
	15	X	Producer's ID
	16	X	Responsible Observer
	17	X	Observation Method
	18	X	Equipment Instance Identifier
	19	X	Date/Time of Analysis

4.6.5.1 OBX-2-Value Type

This field contains the data type of the information carried in *OBX-5-Observation Value*. The field is populated with a value from HL7 Table 0125, *Value Type*.

Value	Description
CE	Coded Element
TX	Text

4.6.5.2 OBX-3-Observation Identifier

This field contains the kind of information carried in *OBX-5-Observation Value*.

Seq	Len	DT	Usage	Cardinality	TBL#	Element Name
1	250	ST	R	[1..1]		Identifier
2	250	ST	R	[1..1]		Text
3	250	ST	R	[1..1]		Name of Coding System
4	250	ST	X	[0..0]		Alternate Identifier
5	250	ST	X	[0..0]		Alternate Text
6	250	ST	X	[0..0]		Name of Alternate Coding System

4.6.5.2.1 OBX-3.1-Identifier and OBX-3.2-Text

These two components, Identifier and Text, are populated with one of the following.

Identifier	Text
P	Procedure
I	Impression
D	Diagnostic Code
M	Modifiers
TCM	Tech Comment
C4	CPT Modifiers
R	Report Text

4.6.5.2.2 OBX-3.3-Name of Coding System

This component is always populated with the value **L**.

4.6.5.3 OBX-5-Observation Value

This field contains the actual value of the data type given in *OBX-2-Value Type* and of the classification given in *OBX-3-Observation Identifier*. Formatting follows the rules for the data type given in OBX-2.

4.6.5.4 OBX-6-Units

For quantitative measurements, this field contains the units of the observation. For observations other than quantitative measurements, this field is not populated.

Seq	Len	DT	Usage	Cardinality	TBL#	Element Name
1	250	ST	R	[1..1]		Identifier
2	250	ST	R	[1..1]		Text
3	250	ST	R	[1..1]		Name of Coding System
4	250	ST	X	[0..0]		Alternate Identifier
5	250	ST	X	[0..0]		Alternate Text
6	250	ST	X	[0..0]		Name of Alternate Coding System

4.6.5.5 OBX-11-Observation Result Status

In the report message, this field contains a value from HL7 Table 0085, *Observation Result Status Codes Interpretation*.

Value	Description
F	Final Results – Report Verified; can only be changed with a corrected result.
C	Correction – Report replaces a previous final result
R	Results entered but not verified; can be replaced with final results

4.7 ACK – General Acknowledgment Message

The application acknowledgment message (ACK) is sent in response to ORM and ORU messages. The function of this message is to acknowledge receipt of a message. If an ORM or ORU is sent from VistA to a subscriber vendor system, the subscriber vendor system must return an ACK in response; conversely, if a subscriber vendor system sends an ORU to VistA, VistA must return an ACK to the vendor.
ACK messages contain two segments:

Segment	ACK Message	HL7 Chapter
MSH	Message Header	2
MSA	Message Acknowledgment	2

For an example of an ACK message, refer to Appendix A.

4.7.1 MSA Segment Fields in ACK Messages

The Message Acknowledgment segment contains three fields. A description of each MSA field element is in the table.

Segment	Seq #	Usage	Field Element Name and Values
MSA	1	R	Acknowledgment Code
	2	R	Message Control ID
	3	C	Text Message

4.7.1.1 MSA-1-Acknowledgment Code

This field contains acknowledgment that the message was processed successfully with a value from HL7 Table 0008, *Acknowledgment Code*. Original mode acknowledgment is used.

Value	Description
AA	Application Accept
AE	Application Error
AR	Application Reject

4.7.1.2 MSA-2-Message Control ID

This field contains the value of MSH-10-Message Control ID from the acknowledged message.

4.7.1.3 MSA-3-Text Message

This field contains a narrative description of the error found in the message. The ERR-1-Error Code and Location is used to communicate precise error information.

For a listing of all the fields defined for the MSA segments in HL7, refer to 3.5.8 MSA Segment on page 22.

5 Query Profile[1]

5.1 Static Definition – Field Level

5.1.1 MSH Segment Fields in QRY and RSP

The Message Header segment is used in ORM and ORU messages. A description of each MSH field element is provided in the table; unsupported fields are not described.

Segment	Seq #	Usage	Field Element Name and Values
MSH	1	R	Field Separator (determined by VistA HL7 package set-up)
	2	R	Encoding Characters (determined by VistA HL7 package set-up)
	3	R	Sending Application (determined by VistA HL7 package set-up or by vendor)
	4	R	Sending Facility (determined by VistA HL7 package set-up or by vendor)
	5	R	Receiving Application (determined by VistA HL7 package set-up)
	6	RE	Receiving Facility (determined by VistA HL7 package set-up) Defined for response messages and not defined for query messages
	7	R	Date/Time of Message
	8	X	Security
	9	R	Message Type and Event Code
	10	R	Message Control ID (determined by VistA HL7 package or by vendor)
	11	R	Processing ID (determined by VistA HL7 Package set-up)
	12	R	Version ID (determined by VistA HL7Package set-up)
	13	X	Sequence Number
	14	X	Continuation Pointer
	15	R	Accept Acknowledgment Type
	16	R	Application Acknowledgment Type
	17	RE	Country Code Response messages use country code; Query messages do not.

[1] Patch RA*5.0*107 January 2012: Added Section 5 Query Profile.

Segment	Seq #	Usage	Field Element Name and Values
	18	X	Character Set
	19	X	Principal Language of Message
	20	X	Alternate Character Set Handling Scheme
	21	X	Conformance Statement ID

5.1.1.1 MSH-1-Field Separator

This field contains the top-level delimiter for HL7 elements within segments.

5.1.1.2 MSH-2-Encoding Characters

This field contains the component separator (secondary element delimiter), repetition separator, escape character, and subcomponent separator (tertiary element delimiter).

5.1.1.3 MSH-3-Sending Application

This field contains three components.

Seq	Len	DT	Usage	Cardinality	TBL#	Element Name
1	20	IS	R	[1..1]	0300	Namespace ID
2	250	ST	X	[0..0]		Universal ID
3	20	ID	X	[0..0]	0301	Universal ID Type

In the VistA order message, the first component of this field is populated with values from user-defined Table 0361, *Sending/Receiving Application.*

- For the query message, the sending application is: RA-NTP-QRY-CLIENT and the receiving application is: RA-NTP-QRY-SERVER.
- For the response message, the sending application is: RA-NTP-QRY-SERVER and the receiving application is: RA-NTP-QRY-CLIENT.

The subscriber returns these values in component MSH-5.1 of the acknowledgment message. The second and third components of MSH-3 are not valued.

5.1.1.4 MSH-4-Sending Facility

This field contains three components.

Seq	Len	DT	Usage	Cardinality	TBL#	Element Name
1	20	IS	R	[1..1]	0300	Namespace ID
2	250	ST	R	[1..1]		Universal ID
3	20	ID	R	[1..1]	0301	Universal ID Type

In the VistA message for Rad/Nuc Med, the first component of this field is populated from user-defined Table 0362, Sending/Receiving Facility, with the NTP at which the message was generated. The subscriber returns this value in component MSH-6.1 of the acknowledgment message.

The second and third components of MSH-4 are valued for query and response messaging.

- MSH-4.2 for the query message identifies the domain to which the responses are to be broadcast.
- MSH-4.2 for the response message identifies the VistA domain from which the responses originated.
- MSH-4.3 is always set to DNS.

5.1.1.5 MSH-5-Receiving Application

This field contains three components.

Seq	Len	DT	Usage	Cardinality	TBL#	Element Name
1	20	IS	R	[1..1]	0300	Namespace ID
2	250	ST	X	[0..0]		Universal ID
3	20	ID	X	[0..0]	0301	Universal ID Type

In the VistA message, the first component of this field is populated from user-defined Table 0361, *Sending/Receiving Application*, with the name of the subscriber application. The subscriber returns this value in component MSH-3.1 of the acknowledgment message. The second and third components of MSH-5 are not valued.

5.1.1.6 MSH-6-Receiving Facility

This field contains three components.

Seq	Len	DT	Usage	Cardinality	TBL#	Element Name
1	20	IS	R	[1..1]	0300	Namespace ID
2	250	ST	X	[0..0]		Universal ID
3	20	ID	X	[0..0]	0301	Universal ID Type

In the VistA message, the first component of this field is populated from user-defined Table 0362, Sending/Receiving Facility, with the name of the medical center at which the message was received. The subscriber returns this value in field MSH-4 of the acknowledgment message. The second and third components of MSH-6 are not valued.

5.1.1.7 MSH-7-Date/Time of Message

This field contains the date and time of the sending system that built the message.

5.1.1.8 MSH-9-Message Type

This field contains three components used by VistA.

Seq	Len	DT	Usage	Cardinality	TBL#	Element Name
1	3	ID	R	[1..1]	0076	Message Type
2	3	ID	R	[1..1]	0003	Trigger Event
3	7	ID	X	[0..0]	0354	Message Structure

5.1.1.8.1 MSH-9.1-Message Type

This component is populated with a value from HL7 Table 0076, *Message Type*. For the order message, it always contains the value **ORM**.

For the observation result message, it always contains the value **ORU**.

5.1.1.8.2 MSH-9.2-Trigger Event

This component is populated with a value from HL7 Table 0003, *Event Type*. For the order message, it always contains the value **O01** (letter O> digit 0>number 1).

For the observation result message, it always contains the value **R01**.

5.1.1.9 MSH-10-Message Control ID

This field contains a unique identifier for the message.

5.1.1.10 MSH-11-Processing ID

This field contains two components used by VistA.

Seq	Len	DT	Usage	Cardinality	TBL#	Element Name
1	1	ID	R	[1..1]	0103	Processing ID
2	1	ID	RE	[0..1]	0207	Processing Mode

5.1.1.10.1 MSH-11.1-Processing ID

This component is populated with one of the following values from HL7 Table 0103, *Processing ID.*

Value	Description
P	Production
D	Debugging
T	Training

5.1.1.10.2MSH-11.2-Processing Mode

This component is populated with one of the following values from HL7 Table 0207, *Processing Mode*.

Value	Description
A	Archive
R	Restore from archive
I	Initial load
T	Current processing, transmitted at intervals (scheduled or on demand)
not present	Not present (the default, meaning *current* processing)

5.1.1.11 MSH-12-Version ID

This field contains three components. The first component always contains a value from v2.4 from HL7 Table 0104, *Version ID*. Other components of this field are not used.

Seq	Len	DT	Usage	Cardinality	TBL#	Element Name
1	10	ID	R	[1..1]	0104	Version ID
2	250	CE	X	[0..0]		Internationalization Code
3	250	CE	X	[0..0]		Internal Version ID

This field is matched by the receiving system with its own version to ensure that the message will be interpreted correctly.

The **<internal version ID>** has a CE data type, because the table values vary for each HL7 Affiliate.

5.1.1.12 MSH-15-Accept Acknowledgment Type

This field contains the conditions under which accept acknowledgments are required in response to this message. The field is required for enhanced acknowledgment mode.

- For Query messages, MSH-15 is AL (Always)
- For Response messages, MSH-15 is AL (Always)

Seq	Len	DT	Usage	Cardinality	TBL#	Element Name
1	2	ID	R	[1..1]	0155	Accept Acknowledgement Type

Refer *to HL7 Table 0155 - Accept/application acknowledgment conditions* for valid values.

5.1.1.13 MSH-16-Application Acknowledgment Type

This field contains the conditions under which application acknowledgments are required in response to this message. The field is required for enhanced acknowledgment mode.

- For Query messages, MSH-16 is AL (Always)
- For Response messages, MSH-16 is NE (Never)

Seq	Len	DT	Usage	Cardinality	TBL#	Element Name
1	2	ID	R	[1..1]	0155	Application Acknowledgement Type

This component is populated with one of the following values from HL7 Table 0155, *Accept/application acknowledgment conditions*.

Value	Description
AL	Always
NE	Never
ER	Error/reject conditions only
SU	Successful completion only

5.1.1.14 MSH-17-Country Code

This field is requires on response message and not the query. When this field is populated it always contains the value **USA** from the ISO 3166 country code table.

5.1.2 QPD Segment

The QPD – Query Name segment is used to define the parameters of the query.

Seq	Len	DT	OPT	RP/#	TBL#	Item #	Element Name
1	250	CE	R		0471	01375	Message Query Name
2	32	ST	R			00696	Query Tag
3-n	256	varies	R			01435	Use parameters (in successive fields)

5.1.2.1 QPD-1 Message Query Name

Components:
<identifier (ST)> ^ <text (ST)> ^ <name of coding system (IS)> ^ <alternate identifier (ST)> ^ <alternate text (ST)> ^ <name of alternate coding system (IS)>

This field contains the name of the query. The names are assigned by the function-specific chapters of this specification. It is one to one with the conformance statement for this query name, and it is an identifier for that conformance statement. Site-specific query names begin with the letter **Z**.

Value	Description
	There are no suggested values for Query Name defined in the HL7 Table 0471, *Query Name*.

The identifier component for this interface is static and has a value of **Z06**. The text component for this interface is static and has a value of **Radiology Results History 107**.

5.1.2.2 QPD-2 Query Tag

This field may be valued by the initiating system to identify the query, and may be used to match response messages to the originating query. If this field is valued, the responding system is required to echo it back as the first field in the query acknowledgement segment (QAK).

This field differs from **MSA-2-Message Control ID** in that its value remains constant for each message (i.e. all continuation messages) associated with the query, whereas **MSA-2-Message Control ID** may vary with each continuation message, because it is associated with each individual message, not the query as a whole.

The Query Tag for this interface is dynamic. The Query Tag value is the Site Specific Accession Number (SSAN).

Example

010-082511-11115, where **010** is the first three digits of the station number, **082511** is in the *mmddyy* format, and **11115** is the case number.

5.1.2.3 QPD-3 User Parameters (varies)

The successive parameter fields hold the values that the Client passes to the Server.

- The client data is presented as a sequence of HL7 fields.
- These parameters are understood to be separated by logical operators.
- For this interface, the *AND* operator is used exclusively.

Example

@PID3.1.1^EQ^000-11-2222^AND~@PID3.5.1^EQ^SS^AND~@OBR.22^GE^20060825^AND~@OBR.22^LE^20110825

- First logical parameter:
  @PID3.1.1^EQ^000-11-2222^AND~@PID3.5.1^EQ^SS

  PID.3, component one, subcomponent one has a value of 000-11-2222.
  PID.3, component five, subcomponent one has a value of SS.
  This indicates that 000-11-2222 is the Social Security Number the server software is to use to look up a specific patient.

- The second and third logical parameters:
  ^AND~@OBR.22^GE^20060825^AND~@OBR.22^LE^20110825

  OBR.22 is the HL7 field Results rpt/Status chng date/time field.
  For the patient, the server software looks for final results greater than or equal to (GE) an event date of August 25th 2006 (20060825) and final results less than or equal to (LE) an event date of August 25th 2011 (20110825).

6 Response Profile[1]

6.1 Static Definition – Field Level

6.1.1 RCP Segment

The RCP – Response Control Parameter segment is used to restrict the amount of data that should be returned in response to a query.

Seq	Len	DT	OPT	RP/#	TBL#	Item #	Element Name
1	1	ID	R		0091	00027	Query Priority
2	10	CQ	R		0126	00031	Quantity Limited Request
3	250	CE	X		0394	01440	Response Modality
4	26	TS	X			01441	Execution and Delivery Time
5	1	ID	X		0395	01443	Modify Indicator
6	512	SRT	X	Y		01624	Sort-by Field
7	256	ID	X	Y		01594	Segment group inclusion

6.1.1.1 RCP-1 Query Priority

This field contains the timeframe in which the response is expected.
Refer to HL7 Table 0091 - *Query Priority* for valid values.

Value	Description
D	Deferred
I	Immediate

The Query Priority value used for this interface is **I**.

6.1.1.2 RCP-2 Quantity Limited Request

Components:
<quantity (NM)> ^ <units (CE)>

This field contains the maximum length of the response that can be accepted by the requesting system. Valid entries are numerical values (in the first component) given in the units specified in the second component.

Refer to HL7 Table 0126 - *Quantity Limited Request* for valid entries for the second component.

[1] Patch RA*5.0*107 January 2012: Added the Response Profile section

Value	Description	Message Usage	Comment
CH	Characters	RSP/RTB/RDY	Used where size of input buffer has limitations
LI	Lines	RTB/RDY	
PG	Pages	RDY	
RD	Records	RSP/RTB/RDY	In RSP record = hit
ZO	Locally defined		

The Quantity Limited Request value used for this interface is **50^RD** where **50** is the Quantity component and **RD** is the Units component.

6.1.2 QAK Segment

The QAK – Query Acknowledgment segment contains information sent with responses to a query. The QAK segment is required in the responses to the enhanced queries.

Seq	Len	DT	OPT	RP/#	TBL#	Item #	Element Name
1	32	ST	R			00696	Query Tag
2	2	ID	R		0208	00708	Query Response Status
3	250	CE	R			01375	Message Query Name
4	10	NM	X			01434	Hit Count
5	10	NM	X			01622	This payload
6	10	NM	X			01623	Hits remaining

6.1.2.1 QAK-1 Query Tag

This field may be valued by the initiating system to identify the query, and may be used to match response messages to the originating query. If it is valued, the responding system is required to echo it back as the first field in the Query Acknowledgment segment (QAK).

This field differs from the **MSA-2 Message Control ID** in that its value remains constant for each message (i.e., all continuation messages) associated with the query, whereas **MSA-2 Message Control ID** may vary with each continuation message, because it is associated with each individual message, not the query as a whole.

The Query Tag for this interface is dynamic. The Query Tag value is the Site Specific Accession Number (SSAN).

Example
010-082511-11115, where **010** is the first three digits of the station number, **082511** is in the *mmddyy* format, and **11115** is the case number.

Note: QAK-1 Query Tag has the same value as QPD-2 Query Tag.

6.1.2.2 QAK-2 Query Response Status

This field allows the responding system to return a precise response status. It is especially useful in the case where no data is found that matches the query parameters, but where there is also no error. It is defined with HL7 Table 0208 - *Query Response Status*.

Value	Description
OK	Data found, no errors (this is the default)
NF	No data found, no errors
AE	Application error
AR	Application reject

For this interface, the only two Query Response Status values are **NF** and **OK**.

6.1.2.3 QAK-3 Message Query Name

Components:
<identifier (ST)> ^ <text (ST)> ^ <name of coding system (IS)> ^ <alternate identifier (ST)> ^ <alternate text (ST)> ^ <name of alternate coding system (IS)>

This field contains the name of the query. The names are assigned by the function-specific chapters of this specification. Site-specific event replay query names begin with the letter **Z**.

The identifier component for this interface is static and has a value of **Z06**. The text component for this interface is static and has a value of **Radiology Results History 107**.

Note: QAK-3 Message Query Name has the same value as QPD-1 Message Query Name.

6.1.3 ERR Segment

The ERR – Error segment is used to add error comments to acknowledgment messages.

Seq	Len	DT	OPT	RP/#	TBL#	Item #	Element Name
1	80	CM	R	Y		00024	Error Code and Location

6.1.3.1 ERR-1 Error Code and Location

Components:
<segment ID (ST)> ^ <sequence (NM)> ^ <field position (NM)> ^ <code identifying error (CE)>

This field identifies an erroneous segment in another message.

When there is no data for a patient, the segment of the query message containing patient search criteria is identified. **ERR.1.1** is fixed with a value of **QPD**. If no data is found for the patient, the value passed in **ERR.1.4.2** is **no data for this patient within this timeframe**.

7 Appendix A – Message Examples

For reference, Appendix A contains examples of ORM, ORU, and ACK messages.

7.1 ORM Examples

When an exam is registered, edited, or canceled by the Rad/Nuc Med package, an Order (ORM) message is sent to the site-specified application. The messages broadcast at these three event points (registered, edited, and canceled) are almost identical, with the exception of the Order Control (ORC-1) and Order Status (ORC-5) fields.

Note: An HL7 message for edited messages: if the exam is complete, ORC-5 is **CM**, otherwise the Order Status is **IP**.

ORC Field	Registration	Cancel/Delete	Edited	Edited (complete)
ORC-1	NW	CA	XO	XO
ORC-5	IP	CA	IP	CM

Note: The OBR segment can exceed 255 characters.

7.1.1 ORM for new/registered order

```
MSH|^~\&|RA-VOICE-SERVER|HINES CIOFO|RA-TALKLINK-TCP|TalkStation|20110629092627-
   0500||ORM^O01|4993885697|P|2.4||||USA
PID||141-167^^^USVHA^PI|666432134^^^USVHA^NI|6666559019V812454^^^USVHA^NI|INPATI
   ENT^VISIT||19350101|M||""^^0005^""^^CDC|""^""^""^""^""|||||||666432134|||""^^01
   89^""^^CDC
PV1||I|4AS-1^410^1||||28^RAD^PROVIDER1|28^RAD^PROVIDER1||CARDIOLOGY|||||A2||28^RAD
   ^PROVIDER1||I2189|||||||||||||||||||||20070119094640-0500
ORC|NW|141-062911-3432|141-062911-3432||IP||^^^^^R||201106290920-0500|1901^RADIOLOGY
   ^USER1||1901^RADIOLOGY^USER1|INFORMATION RESOURCE MGMT|123-456-7890^PRN^PH~098-7
   65-4321^WPN^PH~543-543-5435^^PH|||IRM^INFORMATION RESOURCE MGMT^VISTA49
OBR|1|141-062911-3432|141-062911-3432|73562^X-RAY EXAM OF KNEE 3^C4^155^KNEE 3 VIEWS
   ^99RAP|R||||||||||^^^^&right|1901^RADIOLOGY^USER1|123-456-7890^PRN^PH~098-765-4321
   ^WPN^PH~543-543-5435^^PH|141-062911-3432|3432|141-062911-3432|RAD_GENERAL RADIOLO
   GY`3_RADIOLOGY LAB`499_SUPPORT ISC||||||^^^^^R|||WHLC|^Pain in right knee when
   walking.
ZDS|1.2.840.113754.1.4.141.6889370.9079.1.141.62911.3432^VISTA^Application^DICOM
OBX|1|CE|P^PROCEDURE^L||155^KNEE 3 VIEWS^L||||||O
OBX|2|TX|M^MODIFIERS^L||RIGHT||||||O
OBX|3|CE|C4^CPT MODIFIERS^L||26^PROFESSIONAL COMPONENT^C4||||||O
OBX|4|CE|C4^CPT MODIFIERS^L||LT^LEFT SIDE^C4||||||O
OBX|5|TX|H^HISTORY^L||Reason for Study: Pain in right knee when walking.||||||O
OBX|6|TX|H^HISTORY^L|| ||||||O
OBX|7|TX|H^HISTORY^L||Clinical history text entered here for this sample case us
   ing the v2.4 HL7||||||O
OBX|8|TX|H^HISTORY^L||interface.  ||||||O
OBX|9|TX|A^ALLERGIES^L||APRICOTS(V)||||||O
OBX|10|TX|A^ALLERGIES^L||KIWI FRUIT(V)||||||O
OBX|11|TX|TCM^TECH COMMENT^L||The tech comment is that this is case #3432.||||||O
```

7.1.2 ORM for registration of a Printset

A printset is a group of individual orders that comprise a single report; an examset is a group of individual orders that are linked to individual reports. There are two differences between an exam or printset order message and a single order message.

7.1.2.1 ORC-8-Parent and OBR-29-Parent

The Parent field is populated with either the printset or examset parent name. The format is always in the form of [PRINTSET: {*parent_procedure_name*}] or [EXAMSET: {*parent_procedure_name*}].

7.1.2.2 OBR-2-Placer and OBR-3-Filler

These fields are populated with the site-specific accession number (Facility Identifier concatenated with Day-Case # of the examination), which contains the same date for each descendant within a print or examset.

Note: The same value is used to populate OBR-2, ORC-2 (for orders), OBR-3, ORC-3 (only for orders), OBR-18, and OBR-20.

```
MSH|^~\&|RA-VOICE-SERVER|HINES CIOFO|RA-TALKLINK-TCP|TalkStation|20110629093257-
   0500||ORM^O01|4993885698|P|2.4||||USA
PID||141-167^^^USVHA^PI|666432134^^^USVHA^NI|6666559019V812454^^^USVHA^NI|INPATI
   ENT^VISIT||19350101|M||""^^0005^""^^CDC|""^""^""^""^""|||||||666432134|||""^^01
   89^""^^CDC
PV1||I|4AS1^410^1||||28^PROVIDER^RADFOUR|28^PROVIDER^RADFOUR||CARDIOLOGY|||||||28^PROV
   IDER^RADFOUR||I2189|||||||||||||||||||||||20070119094640-0500
ORC|NW|141-062911-3433|141-062911-3433||IP||^^^^^R|Printset: ZZPRINTSET PROCEDURE|20
   1106290929-0500|1901^PROVIDER^RADTHREE||1901^PROVIDER^RADTHREE|INFORMATION RESOURCE
   MGMT|123-456-7890^PRN^PH~098-765-4321^WPN^PH~543-543-5435^^PH|||IRM^INFORMATION
   RESOURCE MGMT^VISTA49
OBR|1|141-062911-3433|141-062911-3433|74330^X-RAY BILE/PANC ENDOSCOPY^C4^207^ENDOSCO
   PIC CATH BIL \T\ PANC DUCTS S\T\I^99RAP|R||||||||||1901^PROVIDER^RADTHREE|123-4567
   890^PRN^PH~098-765-4321^WPN^PH~543-543-5435^^PH|141-062911-3433|3433|141-062911-3
   433|RAD_GENERAL RADIOLOGY`3_RADIOLOGY LAB`499_SUPPORT ISC||||||^^^^^R||Printset:
    ZZPRINTSET PROCEDURE|PORT|^Example of a printset study for use in documentation.
ZDS|1.2.840.113754.1.4.141.6889370.907.1.141.62911.3433^VISTA^Application^DICOM
OBX|1|CE|P^PROCEDURE^L||207^ENDOSCOPIC CATH BIL \T\ PANC DUCTS S\T\I^L||||||O
OBX|2|TX|M^MODIFIERS^L||PORTABLE EXAM||||||O
OBX|3|TX|H^HISTORY^L||Reason for Study: Example of a printset study for use in d
   ocumentation.||||||O
OBX|4|TX|H^HISTORY^L|| ||||||O
OBX|5|TX|H^HISTORY^L||The Clinical History text is entered here.  ||||||O
OBX|6|TX|A^ALLERGIES^L||APRICOTS(V)||||||O
OBX|7|TX|A^ALLERGIES^L||KIWI FRUIT(V)||||||O
OBX|8|TX|TCM^TECH COMMENT^L||This is the first case (3433) in the Printset.||||||O


MSH|^~\&|RA-VOICE-SERVER|HINES CIOFO|RA-TALKLINK-TCP|TalkStation|20110629093257-
   0500||ORM^O01|4993885699|P|2.4||||USA
PID||141-167^^^USVHA^PI|666432134^^^USVHA^NI|6666559019V812454^^^USVHA^NI|INPATI
   ENT^VISIT||19350101|M||""^^0005^""^^CDC|""^""^""^""^""|||||||666432134|||""^^01
   89^""^^CDC
PV1||I|4AS1^410^1||||28^PROVIDER^RADFOUR|28^PROVIDER^RADFOUR||CARDIOLOGY|||||||28^PROV
   IDER^RADFOUR||I2189|||||||||||||||||||||||20070119094640-0500
```

```
ORC|NW|141-062911-3434|141-062911-3434||IP||^^^^^R|Printset: ZZPRINTSET PROCEDURE|20
   1106290929-0500|1901^PROVIDER^RADTHREE||1901^PROVIDER^RADTHREE|INFORMATION RESOURCE
   MGMT|123-456-7890^PRN^PH~098-765-4321^WPN^PH~543-543-5435^^PH|||IRM^INFORMATION
   RESOURCE MGMT^VISTA49
OBR|1|141-062911-3434|141-062911-3434|74328^X-RAY BILE DUCT ENDOSCOPY^C4^205^ENDOSCO
   PIC CATH BIL DUCTS S\T\I^99RAP|R||||||||||1901^PROVIDER^RADTHREE|123-4567890^PRN^P
   H~098-765-4321^WPN^PH~543-543-5435^^PH|141-062911-3434|3434|141-062911-3434|RAD_G
   ENERAL RADIOLOGY`3_RADIOLOGY LAB`499_SUPPORT ISC||||||^^^^^R||Printset: ZZPRINTS
   ET PROCEDURE|PORT|^Example of a printset study for use in documentation.
ZDS|1.2.840.113754.1.4.141.6889370.907.2.141.62911.3434^VISTA^Application^DICOM
OBX|1|CE|P^PROCEDURE^L||205^ENDOSCOPIC CATH BIL DUCTS S\T\I^L||||||O
OBX|2|TX|M^MODIFIERS^L||PORTABLE EXAM||||||O
OBX|3|TX|H^HISTORY^L||Reason for Study: Example of a printset study for use in d
   ocumentation.||||||O
OBX|4|TX|H^HISTORY^L|| ||||||O
OBX|5|TX|H^HISTORY^L||The Clinical History text is entered here.  ||||||O
OBX|6|TX|A^ALLERGIES^L||APRICOTS(V)||||||O
OBX|7|TX|A^ALLERGIES^L||KIWI FRUIT(V)||||||O
OBX|8|TX|TCM^TECH COMMENT^L||This is the second case (3434) in the Printset.||||||O


MSH|^~\&|RA-VOICE-SERVER|HINES CIOFO|RA-TALKLINK-TCP|TalkStation|20110629093258-
   0500||ORM^O01|4993885700|P|2.4||||USA
PID||141-167^^^USVHA^PI|666432134^^^USVHA^NI|6666559019V812454^^^USVHA^NI|INPATI
   ENT^VISIT||19350101|M||""^^0005^""^^CDC|""^""^""^""^""|||||||666432134|||""^^01
   89^""^^CDC
PV1||I|4AS1^410^1||||28^PROVIDER^RADFOUR|28^PROVIDER^RADFOUR||CARDIOLOGY|||||||28^PROV
   IDER^RADFOUR||I2189|||||||||||||||||||||||20070119094640-0500
ORC|NW|141-062911-3435|141-062911-3435||IP||^^^^^R|Printset: ZZPRINTSET PROCEDURE|20
   1106290929-0500|1901^PROVIDER^RICH||1901^PROVIDER^RICH|INFORMATION RESOURCE MGMT
   |123-456-7890^PRN^PH~098-765-4321^WPN^PH~543-543-5435^^PH|||IRM^INFORMATION RESOU
   RCE MGMT^VISTA49
OBR|1|141-062911-3435|141-062911-3435|74329^X-RAY FOR PANCREAS ENDOSCOPY^C4^206^ENDO
   SCOPIC CATH PANC DUCTS S\T\I^99RAP|R||||||||||1901^PROVIDER^RICH|123-456-7890^P
   RN^PH~098-765-4321^WPN^PH~543-543-5435^^PH|141-062911-3435|3435|141-062911-3435|R
   AD_GENERAL RADIOLOGY`3_RADIOLOGY LAB`499_SUPPORT ISC||||||^^^^^R||Printset: ZZPR
   INTSET PROCEDURE|PORT|^Example of a printset study for use in documentation.
ZDS|1.2.840.113754.1.4.141.6889370.907.3.141.62911.3435^VISTA^Application^DICOM
OBX|1|CE|P^PROCEDURE^L||206^ENDOSCOPIC CATH PANC DUCTS S\T\I^L||||||O
OBX|2|TX|M^MODIFIERS^L||PORTABLE EXAM||||||O
OBX|3|TX|H^HISTORY^L||Reason for Study: Example of a printset study for use in d
   ocumentation.||||||O
OBX|4|TX|H^HISTORY^L|| ||||||O
OBX|5|TX|H^HISTORY^L||The Clinical History text is entered here.  ||||||O
OBX|6|TX|A^ALLERGIES^L||APRICOTS(V)||||||O
OBX|7|TX|A^ALLERGIES^L||KIWI FRUIT(V)||||||O
OBX|8|TX|TCM^TECH COMMENT^L||This is the third and last case (3435) in the Print
   set.||||||O
```

7.1.3 **ORM for an edited order**

```
MSH|^~\&|RA-VOICE-SERVER|HINES CIOFO|RA-TALKLINK-TCP|TalkStation|20110629100417-
   0500||ORM^O01|4993885701|P|2.4|||||USA
PID||141-167^^^USVHA^PI|666432134^^^USVHA^NI|6666559019V812454^^^USVHA^NI|INPATI
   ENT^VISIT||19350101|M||""^^0005^""^^CDC|""^""^""^""^""|||||||666432134|||""^^01
   89^""^^CDC
PV1||I|4AS1^410^1||||28^PROVIDER^RADFOUR|28^PROVIDER^RADFOUR||CARDIOLOGY|||||A2||28^PR
   OVIDER^RADFOUR||I2189|||||||||||||||||||||||20070119094640-0500
ORC|XO|141-062911-3432|141-062911-3432||IP||^^^^^R||201106290920-0500|1901^PROVIDER
   ^RADTHREE||1901^PROVIDER^RADTHREE|INFORMATION RESOURCE MGMT|123-4567890^PRN^PH~098-
   765-4321^WPN^PH~543-543-5435^^PH|||IRM^INFORMATION RESOURCE MGMT^VISTA49
OBR|1|141-062911-3432|141-062911-3432|73562^X-RAY EXAM OF KNEE 3^C4^155^KNEE 3 VIEWS
   ^99RAP|R|||||||||^^^^&right|1901^PROVIDER^RADTHREE|123-456-7890^PRN^PH~098-7654321
   ^WPN^PH~543-543-5435^^PH|141-062911-3432|3432|141-062911-3432|RAD_GENERAL RADIOLO
   GY`3_RADIOLOGY LAB`499_SUPPORT ISC||||||^^^^^R|||WHLC|^Pain in right knee when
   walking.
ZDS|1.2.840.113754.1.4.141.6889370.9079.1.141.62911.3432^VISTA^Application^DICOM
OBX|1|CE|P^PROCEDURE^L||155^KNEE 3 VIEWS^L||||||O
OBX|2|TX|M^MODIFIERS^L||RIGHT||||||O
OBX|3|CE|C4^CPT MODIFIERS^L||26^PROFESSIONAL COMPONENT^C4||||||O
OBX|4|CE|C4^CPT MODIFIERS^L||LT^LEFT SIDE^C4||||||O
OBX|5|CE|C4^CPT MODIFIERS^L||99^MULTIPLE MODIFIERS^C4||||||O
OBX|6|TX|H^HISTORY^L||Reason for Study: Pain in right knee when walking.||||||O
OBX|7|TX|H^HISTORY^L|| ||||||O
OBX|8|TX|H^HISTORY^L||Clinical history text entered here for this sample case us
   ing the v2.4 HL7||||||O
OBX|9|TX|H^HISTORY^L||interface.  ||||||O
OBX|10|TX|A^ALLERGIES^L||APRICOTS(V)||||||O
OBX|11|TX|A^ALLERGIES^L||KIWI FRUIT(V)||||||O
OBX|12|TX|TCM^TECH COMMENT^L||The tech comment is that this is case #3432.||||||O
OBX|13|TX|TCM^TECH COMMENT^L|||||||O
```

7.1.4 **ORM for a canceled order**

```
MSH|^~\&|RA-VOICE-SERVER|HINES CIOFO|RA-TALKLINK-TCP|TalkStation|20110629100555-
   0500||ORM^O01|4993885702|P|2.4|||||USA
PID||141-167^^^USVHA^PI|666432134^^^USVHA^NI|6666559019V812454^^^USVHA^NI|INPATI
   ENT^VISIT||19350101|M||""^^0005^""^^CDC|""^""^""^""^""|||||||666432134|||""^^01
   89^""^^CDC
PV1||I|4AS1^410^1||||28^PROVIDER^RADFOUR|28^PROVIDER^RADFOUR||CARDIOLOGY|||||A2||28^PR
   OVIDER^RADFOUR||I2189|||||||||||||||||||||||20070119094640-0500
ORC|CA|141-062811-3431|141-062811-3431||CA||^^^^^R||201106281148-0500|1901^PROVIDER
   ^RADTHREE||4683^PROVIDER^ONE|INFORMATION RESOURCE MGMT||||IRM^INFORMATION RESOURC
   E MGMT^VISTA49
OBR|1|141-062811-3431|141-062811-3431|73500^X-RAY EXAM OF HIP^C4^145^HIP 1 VIEW^99RA
   P|R|||||||||^^^^&right|4683^PROVIDER^ONE||141-062811-3431|3431|141-062811-3431|
   RAD_GENERAL RADIOLOGY`3_RADIOLOGY LAB`499_SUPPORT ISC||||||^^^^^R|||WHLC|^Pain in
   hip when walking
ZDS|1.2.840.113754.1.4.141.6889371.8851.1.141.62811.3431^VISTA^Application^DICOM
OBX|1|CE|P^PROCEDURE^L||145^HIP 1 VIEW^L||||||O
OBX|2|TX|M^MODIFIERS^L||RIGHT||||||O
OBX|3|CE|C4^CPT MODIFIERS^L||99^MULTIPLE MODIFIERS^C4||||||O
OBX|4|CE|C4^CPT MODIFIERS^L||AD^MD SUPERVISION, >4 ANES PROC^C4||||||O
OBX|5|TX|H^HISTORY^L||Reason for Study: Pain in hip when walking||||||O
```

```
OBX|6|TX|H^HISTORY^L|| ||||||O
OBX|7|TX|H^HISTORY^L||This is some clinical history text for a sample case using
   HL7 version 2.4||||||O
OBX|8|TX|H^HISTORY^L||interface messaging.  ||||||O
OBX|9|TX|A^ALLERGIES^L||APRICOTS(V)||||||O
OBX|10|TX|A^ALLERGIES^L||KIWI FRUIT(V)||||||O
OBX|11|TX|TCM^TECH COMMENT^L||The tech comments are entered here for this sample
   case (#3431)||||||O
OBX|12|TX|TCM^TECH COMMENT^L|||||||O
OBX|13|TX|TCM^TECH COMMENT^L||The tech comments are entered here for this sample
   case (#3431) -- CANCELLING THIS CASE!!||||||O
```

7.2 ORU Exampless

When a report is **Verified** or **Released/Not Verified** by the Rad/Nuc Med package, an Order Results (ORU) message is sent to the site-specified application.

7.2.1 ORU for report on a single procedure

```
MSH|^~\&|RA-VOICE-SERVER|HINES CIOFO|RA-TALKLINK-TCP|TalkStation|20110629133221-
   0500||ORU^R01|4993885703|P|2.4||||USA
PID||141-167^^^USVHA^PI|666432134^^^USVHA^NI|6666559019V812454^^^USVHA^NI|INPATI
   ENT^VISIT||19350101|M||""^^0005^""^^CDC|""^""^""^""^""|||||||666432134|||""^^01
   89^""^^CDC
OBR|1|141-062911-3432|141-062911-3432|73562^X-RAY EXAM OF KNEE 3^C4^155^KNEE 3 VIEWS
   ^99RAP|||20110629132828-0500|||||||^^^^&right|1901^PROVIDER^RADTHREE|123-456-
   7890^PRN^PH~098-765-4321^WPN^PH~543-543-5435^^PH|141-062911-3432|3432|141
   0629113432|RAD_GENERAL RADIOLOGY`3_RADIOLOGY LAB`499_SUPPORT ISC|201106291331-
   0500|||F|||||||76^OERR^CLINICIAN^G|2188^RADIOLOGY^USER^G~22^STAFF^PROVIDER~4569^
   STAFF^PROVIDERTWO||1901^PROVIDER^RADTHREE
ZDS|1.2.840.113754.1.4.141.6889370.9079.1.141.62911.3432^VISTA^Application^DICOM
OBX|1|CE|P^PROCEDURE^L||155^KNEE 3 VIEWS^L||||||F
OBX|2|TX|I^IMPRESSION^L||This is the generic impression text entered for this sa
   mple report for ||||||F
OBX|3|TX|I^IMPRESSION^L||documentation purposed.  ||||||F
OBX|4|TX|I^IMPRESSION^L|| ||||||F
OBX|5|TX|I^IMPRESSION^L||This is the last line of the sample impression text.  |
   |||||F
OBX|6|CE|D^DIAGNOSTIC CODE^L||1^NORMAL^L||||||F
OBX|7|CE|D^DIAGNOSTIC CODE^L||1000^NO ALERT REQUIRED^L||||||F
OBX|8|CE|D^DIAGNOSTIC CODE^L||9^NO DISCRETE MASS^L||||||F
OBX|9|TX|M^MODIFIERS^L||RIGHT||||||F
OBX|10|TX|TCM^TECH COMMENT^L||The tech comment is that this is case #3432.||||||F
OBX|11|CE|C4^CPT MODIFIERS^L||26^PROFESSIONAL COMPONENT^C4||||||F
OBX|12|CE|C4^CPT MODIFIERS^L||LT^LEFT SIDE^C4||||||F
OBX|13|CE|C4^CPT MODIFIERS^L||99^MULTIPLE MODIFIERS^C4||||||F
OBX|14|TX|R^REPORT^L||This is the report text for case #3432, which was a Knee e
   xam for the ||||||F
OBX|15|TX|R^REPORT^L||patient.  This sample report text will be filed in the Rad
   iology Report ||||||F
OBX|16|TX|R^REPORT^L||file for the patient/exam.  ||||||F
```

7.2.2 **ORU for Printset (single report on multiple procedures)**

```
MSH|^~\&|RA-VOICE-SERVER|HINES CIOFO|RA-TALKLINK-TCP|TalkStation|20110629134632-
   0500||ORU^R01|4993885704|P|2.4|||||USA
PID||141-167^^^USVHA^PI|666432134^^^USVHA^NI|6666559019V812454^^^USVHA^NI|INPATI
   ENT^VISIT||19350101|M||""^^0005^""^^CDC|""^""^""^""^""|||||||||666432134|||""^^01
   89^""^^CDC
OBR|1|141-062911-3433|141-062911-3433|74330^X-RAY BILE/PANC ENDOSCOPY^C4^207^ENDOSCO
   PIC CATH BIL \T\ PANC DUCTS S\T\I^99RAP|||20110629133257-0500|||||||||1901^PROVIDER
   ^RADTHREE|123-456-7890^PRN^PH~098-765-4321^WPN^PH~543-543-5435^^PH|141-062911-3433
   |3433|141-062911-3433|RAD_GENERAL RADIOLOGY`3_RADIOLOGY LAB`499_SUPPORT ISC|2011
   06291346-0500|||F||||Printset: ZZPRINTSET PROCEDURE|||76^OERR^CLINICIAN^G|2188^R
   ADIOLOGY^USER^G~2178^STAFF^PROVIDER~4569^STAFF^PROVIDERTWO||1901^PROVIDER^RADTHREE
ZDS|1.2.840.113754.1.4.141.6889370.907.1.141.62911.3433^VISTA^Application^DICOM
OBX|1|CE|P^PROCEDURE^L||207^ENDOSCOPIC CATH BIL \T\ PANC DUCTS S\T\I^L||||||F
OBX|2|TX|I^IMPRESSION^L||This is the impression text for the printset.  ||||||F
OBX|3|TX|I^IMPRESSION^L|| ||||||F
OBX|4|TX|I^IMPRESSION^L||Cases 3433, 3434 and 3435 will all recive the same text.
   ||||||F
OBX|5|TX|I^IMPRESSION^L|| ||||||F
OBX|6|TX|I^IMPRESSION^L||Final line of impression text.  ||||||F
OBX|7|CE|D^DIAGNOSTIC CODE^L||1^NORMAL^L||||||F
OBX|8|CE|D^DIAGNOSTIC CODE^L||9^NO DISCRETE MASS^L||||||F
OBX|9|CE|D^DIAGNOSTIC CODE^L||13^CODE WITH AN \T\ IN IT (HL7 TEST)^L||||||F
OBX|10|TX|M^MODIFIERS^L||PORTABLE EXAM||||||F
OBX|11|TX|TCM^TECH COMMENT^L||This is the first case (3433) in the Printset.||||||F
OBX|12|TX|R^REPORT^L||This is the report text for the printset exam, case number
   s 3433, 3434 and||||||F
OBX|13|TX|R^REPORT^L||3435.  ||||||F
OBX|14|TX|R^REPORT^L|| ||||||F
OBX|15|TX|R^REPORT^L||This sample report text will be filed in the Radiology Rep
ort file and all||||||F
OBX|16|TX|R^REPORT^L||3 cases in the printset will point to the same report.  ||||||F
OBX|17|TX|R^REPORT^L|| ||||||F
OBX|18|TX|R^REPORT^L||This is the last line of the report text.  ||||||F
```

7.3 ACK Example

The General Acknowledgment (ACK) message is sent by both systems in response to ORM and ORU messages. The ACK message format is the same for ORM and ORU messages.

```
MSH|^~\&|RA-TALKLINK-TCP|TALKSTATION|RA-VOICE-SERVER|HINES
CIOFO|||ACK|200503311137070234|P|2.3||
MSA|AA|4993680801|
```

7.4 Query Example[1]

```
                          Administrative Information
MsgID: 20111206130720930
Status: ERROR
Error: ** SYSTEM PROCESSING ID=T **
Direction: IN    TransDt/Tm: 12/6/11@12:07:31  Purge DT/TM: 12/13/11@12:07:31
Link:  VASDC_M                          Queue:
Accept Ack: 664 100000000020            DT/TM Ack'd: 12/6/11@12:07:31
   MSA|CR|20111206130720930|SYSTEM PROCESSING ID=T
App Response Rtn: n/a                   Executed: n/a

Message Text

MSH|^~\&|RA-NTP-QRY-CLIENT|NTP^vhaxxxntp02.v20.med.va.gov^DNS|RA-NTP-QRY-SERVER|
|20111206130720.930-700||QBP^Q11^QBP_Q11|20111206130720930|P|2.4|||AL|AL
QPD|Z06^Radiology Results History 107|664-120611-45|@PID.3.1.1^EQ^000-35-5542^AN
D~@PID.3.5.1^EQ^SS^AND~@OBR.22^GE^20061206^AND~@OBR.22^LE^20111206
RCP|I|50^RD
```

7.5 Response Example[2]

```
                          Administrative Information
MsgID: 664 4407460
Status: SUCCESSFUL
Direction: OUT   TransDt/Tm(1x): 12/7/11@11:37:25  Purge DT/TM: 12/8/11@23:37:25
Link:  RA-SCIBOI                        Queue:       RA-NTP-QRY-CLIENT
Accept Ack: 127123725646                DT/TM Ack'd: 12/7/11@11:37:25
   MSA|CA|664 4407460
Accept Ack Rtn: n/a

                                 Message Text
MSH|^~\&|RA-NTP-QRY-SERVER|664^TEST.ANY-WHERE.MED.VA.GOV:5056^DNS|RA-NTP-QRY-
   CLIENT|^vhaxxxntp02.v20.med.va.gov:21998^DNS|20111207113720-0800||RSP^K11^RSP_K11|6
64 4407460|T^P|2.4|||AL|NE|USA
MSA|AA|20111207123522908
QAK|664-120611-45|OK|Z06^Radiology Results History 107
QPD|Z06^Radiology Results History 107|664-120611-45|@PID.3.1.1^EQ^000-35-
   5542^AND~@PID.3.5.1^EQ^SS^AND~@OBR.22^GE^20061207^AND~@OBR.22^LE^20111207
RCP|Z06^Radiology Results History 107|50
PID||664-664264454^^^USVHA^PI|000355542^^^USVHA^NI||WDYXBRU^WHSHU^TSHWELY||19410
```

[1] Patch RA*5.0*107 January 2012: Added a Query message example
[2] Patch RA*5.0*107 January 2012: Added a Response message example

```
826|M||2106-3^^0005^2106-3^^CDC|12305 ZHARPO COVE^""^LOST
   LAKE^NC^12345|||||||000355542|||2186-5^^0189^2186-5^^CDC
OBR|1|012407-1472|012407-1472|60100^BIOPSY OF THYROID^C4^1064^1064^99RAP|||20070
1241347-0800|||||||||0000^RADPROVIDER^IMA^^^^MD|2239^WPN^PH~4050^BPN^BP~000-000-
   0000^BPN^BP|012407-1472|1472|012407-1472|ANI_ANGIO/NEURO/INTERVENTIONAL`14_ANGIO/
NEURO/INTERVENTIONAL`664_SAN DIEGO HCS|200701241554-0800|||F||||Printset: THYROID
   PERCUTANEOUS|||1004^ZZZZZZ^ANNE^C^^^MD|50000^ZZFARAWAY^HOME^^^^MD||50000^
   ZZFARAWAY^HOME^^^^MD
ZDS|1.2.000.113754.1.4.664.6929875.9264.1.00000.0000^VISTA^Application^DICOM
OBX|1|CE|P^PROCEDURE^L||1064^THYROID PERCUTANEOUS^L||||||F
OBX|2|TX|I^IMPRESSION^L|| Successful ultrasound guided thyroid biopsy of 2 nodules
   (one right ||||||F
OBX|3|TX|I^IMPRESSION^L||and one left lobe of the thyroid)||||||F
OBX|1|TX|TCM^TECH COMMENT^L|||||||F
OBX|2|TX|TCM^TECH COMMENT^L|||||||F
OBX|3|TX|TCM^TECH COMMENT^L|||||||F
OBX|1|TX|R^REPORT^L||PROCEDURE:Thyroid biopsy||||||F
OBX|2|TX|R^REPORT^L|| ||||||F
OBX|3|TX|R^REPORT^L|| OPERATORS: ||||||F
OBX|4|TX|R^REPORT^L|| ||||||F
OBX|5|TX|R^REPORT^L||  Resident: Zzfaraway ||||||F
OBX|6|TX|R^REPORT^L||  Attending: A. Zzzzzz, M.D.||||||F
OBX|7|TX|R^REPORT^L|| ||||||F
OBX|8|TX|R^REPORT^L||  MEDICATIONS: ||||||F
OBX|9|TX|R^REPORT^L||   Lidocaine (local)||||||F
OBX|10|TX|R^REPORT^L|| ||||||F
OBX|11|TX|R^REPORT^L|| ||||||F
OBX|12|TX|R^REPORT^L|| ||||||F
OBX|13|TX|R^REPORT^L||Indication: 69 M with incidental finding of thyroid nodules on
   carotid ||||||F
OBX|14|TX|R^REPORT^L||u/s. ||||||F
OBX|15|TX|R^REPORT^L||Patient is asymptomatic, and has normal TSH/Free T4.||||||F
OBX|16|TX|R^REPORT^L|| ||||||F
OBX|17|TX|R^REPORT^L|| ||||||F
OBX|18|TX|R^REPORT^L||FINDINGS||||||F
OBX|19|TX|R^REPORT^L||  Ultrasound examination demonstrated nodules in the Right and
   Left ||||||F
OBX|20|TX|R^REPORT^L||lobes||||||F
OBX|21|TX|R^REPORT^L||  of the thyroid. Following adminstration of local anesthesia
   and using ||||||F
OBX|22|TX|R^REPORT^L||  ultrasound guidance,  12 passes were made into the nodules (6
   passes ||||||F
OBX|23|TX|R^REPORT^L||in each nodule).  Five passes were made with 25 gauge needles,
   and one ||||||F
OBX|24|TX|R^REPORT^L||with a 22 gauge needle.||||||F
OBX|25|TX|R^REPORT^L||  The material was given to the pathologists for
   evaluation.||||||F
```

8 Appendix B – VistA Data Attributes

The following tables show the relationship between VistA Radiology data attributes and the HL7 message segment counterparts.

8.1 MSH Segments

For descriptions of MSH segment field elements in ORM and ORU messages, refer to MSH Segment Fields in ORM on page 23 and MSH Segment Fields in ORU on page 65.

MSH Segment	PID Field Name	VistA File	VistA Field(s)
MSH-2	ENCODING CHARACTERS	HL7 APPLICATION PARAMETER (#771)	HL7 ENCODING CHARACTERS (#101)
MSH-3	SENDING APPLICATION	HL7 APPLICATION PARAMETER (#771)	NAME (#.01)
MSH-4	SENDING FACILITY	HL7 APPLICATION PARAMETER (#771)	FACILITY NAME (#3)
MSH-5	RECEIVING APPLICATION	HL7 APPLICATION PARAMETER (#771)	NAME (#.01)
MSH-6	RECEIVING FACILITY	HL7 APPLICATION PARAMETER (#771)	FACILITY NAME (#3)
MSH-7	DATE/TIME OF MESSAGE	HL7 MESSAGE TEXT (#772)	DATE/TIME ENTERED (#.01)
MSH-9	MESSAGE TYPE	HL7 MESSAGE ADMINISTRATION (#773)	TRANSMISSION TYPE (#3)
MSH-10	MESSAGE CONTROL ID	HL7 MESSAGE ADMINISTRATION (#773)	MESSAGE ID (#2)
MSH-11	PROCESSING ID	HL7 MESSAGE TEXT (#772)	MESSAGE ID (#6)
MSH-12	VERSION ID	HL7 VERSION (#771.5)	VERSION (#.01)
MSH-17	COUNTRY CODE	HL7 APPLICATION PARAMETER (#771)	COUNTRY CODE (#7)

8.2 PID Segments

For descriptions of PID segment field elements in ORM and ORU messages, refer to PID Segment Fields in ORM on page 28 and PID Segment Fields in ORU on page 65.

PID Segment $$PID^MAGDHLS	PID Field Name	VistA File	VistA Field(s)
PID-2	PATIENT ID	INSTITUTION (#4) and PATIENT (#2)	STATION NUMBER (#99) of INSTITUTION (#4) file concatenated with Patient DFN
PID-3	PATIENT IDENTIFIER LIST	PATIENT (#2)	SSN (#.09)
PID-4	ALTERNATE PATIENT ID	PATIENT (#2)	INTEGRATION CONTROL NUMBER (#991.01)
PID-5	PATIENT NAME	PATIENT (#2)	NAME (#.01)
PID-7	DATE/TIME OF BIRTH	PATIENT (#2)	DATE OF BIRTH (#.03)
PID-8	ADMINISTRATIVE SEX	PATIENT (#2)	SEX (#.02)
PID-10	RACE	PATIENT (#2)	RACE (#.06)
PID-11	PATIENT ADDRESS	PATIENT (#2)	STREET ADDRESS [LINE 1] (#.111) STREET ADDRESS [LINE 1] (#.112) STREET ADDRESS [LINE 1] (#.113) CITY (#.114) STATE (#.115) ZIP CODE (#.116)
PID-13	PHONE NUMBER-HOME	PATIENT (#2)	PHONE NUMBER [RESIDENCE] (#.131)
PID-14	PHONE NUMBER-BUSINESS	PATIENT (#2)	PHONE NUMBER [WORK] (#.132)
PID-19	SS NUMBER-PATIENT	PATIENT (#2)	SOCIAL SECURITY NUMBER (#09)
PID-22	ETHNIC GROUP	PATIENT (#2)	ETHNICITY INFORMATION (#6)

Note: Functions $$PID^MAGDHLS and $$PV1^MAGDHLS are covered by Integration Agreement 5023.

8.3 PV-1 Segments

For descriptions of PV-1 segment field elements, refer to PV-1 Segment Fields in ORM on page 37.

PV1 Segment $$PV1^MAGDHLS	PV1 Field Name	VistA File	VistA Field(s)
PV1-2	PATIENT CLASS		"I" if patient is an Inpatient, "O" if patient is an Outpatient
PV1-3	ASSIGNED PATIENT LOCATION	WARD LOCATION (#42)	NAME (#.01)
PV1-7	ATTENDING DOCTOR	NEW PERSON (#200)	NAME (#.01)
PV1-8	REFERRING DOCTOR	NEW PERSON (#200)	NAME (#.01)
PV1-10	HOSPITAL SERVICE	HOSPITAL LOCATION (#44)	NAME (#.01)
PV1-15	AMBULATORY STATUS	RAD/NUC MED PATIENT (#70) or if that is null RAD/NUC MED ORDERS (#75.1)	PREGNANCY SCREEN (#70.03, #32) or PREGNANT (#75.1, #13) AND MODE OF TRANSPORT (#75.1, #19)
PV1-16	VIP INDICATOR		"E" if patient is a VA Employee, "S" if the patient record is sensitive, "ES" if patient is a VA Employee and patient record is sensitive.
PV1-19	VISIT	PATIENT MOVEMENT (#405)	"I" concatenated with a Pointer Value to the Patient Movement File (#405) if patient is an Inpatient, "O" concatenated with today's date if patient is an Outpatient.

8.4 ORC Segments

For descriptions of ORC segment field elements in ORM messages, refer to ORC Segment Fields in ORM on page 41.

ORC Segment	ORC Field Name	VistA File	VistA Field(s)
ORC-1	ORDER CONTROL		
ORC-2	PLACER ORDER NUMBER (station #-day-case #) Note: The first 3	KERNEL SYSTEM PARAMETERS (#8989.3)	DEFAULT INSTITUTION (#217)

ORC Segment	ORC Field Name	VistA File	VistA Field(s)
	characters of the possible 7-character station number are used as the site identifier. Integration Agreements 2171 ($$NS^XUAF4) & 2541 ($$KSP^XUPARAM) are used to create the site identifier.	INSTITUTION (#4)	STATION NUMBER (#99)
		REGISTERED EXAMS subfile (#70.02)	EXAM DATE (#.01)
		EXAMINATIONS EXAMS subfile (#70.03)	CASE NUMBER (#.01)
ORC-3	FILLER ORDER NUMBER (station #-day-case #)	See ORC-2	See ORC-2 **Note:** ORC-2, ORC-3, OBR-2, OBR-3, OBR-18, & OBR-20 share the same values. [1]
ORC-5	ORDER STATUS	EXAMINATION STATUS (#72)	ORDER (#3)
ORC-7	QUANTITY/TIMING		
ORC-7.4	START DATE/TIME	RAD/NUC MED ORDERS (#75.1)	SCHEDULED DATE (TIME optional) (#23)
ORC-7.6	PRIORITY	RAD/NUC MED ORDERS (#75.1)	REQUEST URGENCY (#6)
ORC-8	PARENT	EXAMINATIONS SUBFILE (#70.03)	MEMBER OF SET (#25) **Note:** ORC-8 & OBR-29 share the same value.
ORC-9	DATE/TIME OF TRANSACTION	REGISTERED EXAMS subfile (#70.02)	EXAM DATE (#.01)
ORC-10	ENTERED BY	RAD/NUC MED ORDERS (#75.1)	USER ENTERING REQUEST (#15)
ORC-12	ORDERING PROVIDER	RAD/NUC MED ORDERS (#75.1)	REQUESTING PHYSICIAN (#14)
ORC-13	ENTERER'S LOCATION	NEW PERSON (#200)	SERVICE/SECTION (#29)
ORC-14	CALL BACK PHONE NUMBER	NEW PERSON (#200)	OFFICE PHONE (#.132) **Note:** The function NPFON^MAG7UFO (IA: 5021) is called to build the call back phone number list

[1] July 2007 Updated the note to reflect the definition changes for the HL7 fields of both the ORM and ORU messages.

ORC Segment	ORC Field Name	VistA File	VistA Field(s)
ORC-17	ENTERER'S ORGANIZATION	NEW PERSON (#200)	SERVICE/SECTION (#29) **Note:** returns SERVICE/SECTION NAME (#.01) & ABBREVIATION (#1)

8.5 OBR Segments

For descriptions of OBR segment field elements in ORM and ORU messages, refer to OBR Segment Fields in ORM on page 47 and OBR Segment Fields in ORU on page 65.

OBR Segment	OBR Field Name	VistA File	VistA Field(s)
OBR-1	SET ID		
OBR-2	PLACER ORDER NUMBER (station #-day-case #) **Note:** The first three characters of the possible seven-character station number are used as the site identifier. Integration Agreements 2171 ($$NS^XUAF4) & 2541 ($$KSP^XUPARAM) are used to create the site identifier.	REGISTERED EXAMS subfile (#70.02)	EXAM DATE (#.01)
		EXAMINATIONS EXAMS subfile (#70.03)	CASE NUMBER (#.01)
		KERNEL SYSTEM PARAMETERS (#8989.3)	DEFAULT INSTITUTION (#217)
		INSTITUTION (#4)	STATION NUMBER (#99)
OBR-3	FILLER ORDER NUMBER (station #-day-case #)	See OBR-2	See OBR-2 **Note:** ORC-2, ORC-3, OBR-2, OBR-3, OBR-18, & OBR-20 share the same values.
OBR-4	UNIVERSAL SERVICE ID		
OBR-4.1	IDENTIFIER	CPT (#81)	CPT CODE (#.01)
OBR-4.2	TEXT	CPT (#81)	SHORT NAME (#2)
OBR-4.3	NAME OF CODING SYSTEM Field is populated with a value of C4	Field not mapped to a VistA File	
OBR-4.4	ALTERNATE IDENTIFIER	RAD/NUC MED PROCEDURES (#71)	IEN
OBR-4.5	ALTERNATE TEXT	RAD/NUC MED PROCEDURES (#71)	NAME (#.01)

OBR Segment	OBR Field Name	VistA File	VistA Field(s)
OBR-4.6	NAME OF ALTERNATE CODING SYSTEM Field is populated with a value of 99RAP	Field not mapped to a VistA File	
OBR-5	PRIORITY	RAD/NUC MED ORDERS (#75.1)	REQUEST URGENCY (#6)
OBR-7 **Note:** in ORU message only	OBSERVATION DATE/TIME	RAD/NUC MED REPORTS (#74)	DATE REPORT ENTERED (#6)
OBR-15	SPECIMEN SOURCE		
OBR-15.5	SITE MODIFIER **Note:** Only 'Left' and 'Right' procedure modifiers are captured.	PROCEDURE MODIFIERS (#75.1125)	PROCEDURE MODIFIERS (#.01)
OBR-16	ORDERING PROVIDER	RAD/NUC MED ORDERS (#75.1)	REQUESTING PHYSICIAN (#14) **Note:** Integration Agreement 3065 breaks the REQUESTING PHYSICIAN name into the four HL7 name components below.
OBR-16.1	ID NUMBER	NEW PERSON (#200)	IEN from File #200
OBR-16.2	FAMILY NAME	See OBR-16	See OBR-16
OBR-16.3	GIVEN NAME	See OBR-16	See OBR-16
OBR-16.4	MIDDLE INITIAL OR NAME	See OBR-16	See OBR-16
OBR-17	ORDER CALLBACK PHONE NUMBER		
OBR-17.1	[NNN] [(999)]999-9999 [X99999] [B99999] [C ANY TEXT]		
OBR-17.2	TELECOMMUNICATION USE CODE Field is populated with one of the values below: PRN-Primary Residence Number WPN-Work Number BPN-Beeper	Field not mapped to a VistA File	
OBR-17.3	TELECOMMUNICATION EQUIPMENT TYPE Field is populated with one of the values below: PH-Telephone	Field not mapped to a VistA File	

OBR Segment	OBR Field Name	VistA File	VistA Field(s)
	FX-Fax BP-Beeper		
OBR-18	PLACER FIELD 1	See OBR-2	See OBR-2 **Note:** ORC-2, ORC-3, OBR-2 & OBR-3, OBR-18, OBR-20 share the same values.
OBR-19	PLACER FIELD 2	CASE NUMBER (#.01) field of the EXAMINATIONS subfile (#70.03)	The case number of the exam
OBR-20	FILLER FIELD 1	See OBR-18	See OBR-18
OBR-21	FILLER FIELD 2	IMAGING TYPE (#79.2) IMAGING LOCATION (#79.1) HOSPITAL LOCATION file (#44) RAD/NUC MED DIVISION (#79) INSTITUTION (#4)	Imaging type (#79.2) abbreviation concatenated to (by an underscore as a separator) imaging type name concatenated (by the tick "`" mark) to imaging location (#79.1) record IEN concatenated (underscore) to the name of the imaging location from the HOSPITAL LOCATION file (#44) concatenated (tick) to the RAD/NUC MED DIVISION (#79) file IEN concatenated (underscore) to the name of the hospital division from the INSTITUTION (#4) file
OBR-22 **Note:** in ORU message only	RESULTS REPORT STATUS CHANGE - DATE/TIME	RAD/NUC MED REPORTS (#74)	If verified: VERIFIED DATE (#7) Else: DATE REPORT ENTERED (#6)
OBR-24 **Note:** in ORM message only	DIAGNOSTIC SERVICE SECTION ID *Note*: this field is populated only if one modality is associated with the CPT.	RAD MODALITY DEFINED TERMS (#73.1)	MODALITY ABBREVIATION (#.01)
OBR-25	STATUS Field is populated with one of the values below: C-Correction to results R-Results stored F-Final results	Field not mapped to a VistA File	
OBR-27 **Note:** in ORM message only	QUANTITY/TIMING		
OBR-27.4	START DATE/TIME	RAD/NUC MED ORDERS (#75.1)	SCHEDULED DATE (TIME optional) (#23)
OBR-27.6	PRIORITY	RAD/NUC MED ORDERS (#75.1)	REQUEST URGENCY (#6)

OBR Segment	OBR Field Name	VistA File	VistA Field(s)
OBR-29	PARENT	EXAMINATIONS SUBFILE (#70.03)	MEMBER OF SET (#25) **Note:** ORC-8 & OBR-29 share the same value.
OBR-30 **Note:** in ORM message only	TRANSPORTATION MODE	RAD/NUC MED ORDERS (#75.1)	(#19) MODE OF TRANSPORT
OBR-31	REASON FOR STUDY	RAD/NUC MED ORDERS (#75.1)	REASON FOR STUDY (#1.1)
OBR-32	PRINCIPAL RESULT INTERPRETER	EXAMINATIONS EXAMS subfile (70.03)	PRIMARY INTERPRETING STAFF (#15) **Note:** Integration Agreement 3065 breaks the REQUESTING PHYSICIAN name into the HL7 name component.
OBR-32.1	NAME		
OBR-33	ASSISTANT RESULT INTERPRETER	EXAMINATIONS EXAMS subfile (70.03)	PRIMARY INTERPRETING RESIDENT (#12) PRIMARY INTERPRETING STAFF (#15) **Note:** The first resident is the Primary Resident; subsequent residents associated with the report are Secondary Residents. All ASSISTANT RESULT INTERPRETER members classified as 'staff' will be deemed as secondary staff in the VistA Rad/Nuc Med application. Also: Integration Agreement 3065 breaks the REQUESTING PHYSICIAN name into the HL7 name component.
OBR-33.1	NAME		
OBR-35	TRANSCRIPTIONIST	RAD/NUC MED REPORTS (#74)	(#11) TRANSCRIPTIONIST **Note:** Integration Agreement 3065 breaks the REQUESTING PHYSICIAN name into the HL7 name component.
OBR-35.1	NAME		

8.6 ZDS Segments ORM and ORU

For descriptions of ZDS segment field elements in ORM and ORU messages, refer to ZDS Segment Fields in ORM on page 54 and ORU on page 64.

ZDS Segment $$ZDS^MAGDRAHL	ZDS Field Name	VistA File	VistA Field(s)
ZDS-1	STUDY INSTANCE UID	DICOM UID ROOT (#2006.15) and INSTITUTION (#4)	This component is populated with the ISO Object Identifier (OID) value that VistA assigned to the study, 2 of the components are the UID ROOT (#1) field of the DICOM UID ROOT file (#2006.15) and a pointer to the Institution File (#4).

Note: Function $$ZDS^MAGDRAHL is covered by Integration Agreement 5022.

8.7 OBX (ORU) Segments

For descriptions of OBX segment field elements in ORU messages, refer to OBX Segment Fields in ORU Messages on page 74.

OBX Segment	OBX Field Name	VistA File	VistA Field(s)
OBX-2	VALUE TYPE	Field not mapped to a VistA File	
OBX-3	OBSERVATION ID	Field not mapped to a VistA File	
OBX-3.1	IDENTIFIER Field is populated with one of the values below: P I M D TCM C4 R	Field not mapped to a VistA File	

OBX Segment	OBX Field Name	VistA File	VistA Field(s)
OBX-3.2	TEXT Field is populated with one of the values below: PROCEDURE IMPRESSION MODIFIERS DIAGNOSTIC CODE TECH COMMENT CPT MODIFIERS REPORT	Field not mapped to a VistA File	
OBX-3.3	NAME OF CODING SYSTEM Field is populated with a fixed value of L	Field not mapped to a VistA File	
OBX-5	OBSERVATION VALUE Field is populated with one of the values below, which map to the VistA files/fields at right: PROCEDURE IMPRESSION TEXT PROCEDURE MODIFIERS PRIMARY DIAGNOSTIC CODE	RAD/NUC MED PATIENT (#70) RAD/NUC MED REPORTS (#74) RAD/NUC MED PATIENT (#70) RAD/NUC MED PATIENT (#70)	PROCEDURE (70.03;2) IMPRESSION TEXT (74; 300) PROCEDURE MODIFIERS (70.03;125) PRIMARY DIAGNOSTIC CODE (70.03;13)
	TECHNOLOGIST COMMENT	RAD/NUC MED PATIENT (#70)	TECHNOLOGIST COMMENT (70.03;4)
	CPT MODIFIERS	RAD/NUC MED PATIENT (#70)	CPT MODIFIERS (70.03;135)
	REPORT TEXT	RAD/NUC MED REPORTS (#74)	REPORT TEXT (74; 200)
OBX-11	OBSERVATION RESULT STATUS Field is populated with one of the values below: F for final results C for record correction (amended) R for results entered	Field not mapped to a VistA File	

8.8 OBX (ORM) Segments

For descriptions of OBX segment field elements in ORM messages, refer to OBX Segment Fields in ORM messages on page 55.

OBX Segment	OBX Field Name	VistA File	VistA Field(s)
OBX-2	VALUE TYPE	Field not mapped to a VistA File	
OBX-3	OBSERVATION ID	Field not mapped to a VistA File	
OBX-3.1	IDENTIFIER Field is populated with one of the values below: P M H TCM A C4	Field not mapped to a VistA File	
OBX-3.2	TEXT Field is populated with one of the values below: PROCEDURE MODIFIERS CLINICAL HISTORY TECH COMMENT ALLERGIES CPT MODIFIERS	Field not mapped to a VistA File	
OBX-3.3	NAME OF CODING SYSTEM Field is populated with a fixed value of L	Field not mapped to a VistA File	
OBX-5	OBSERVATION VALUE Field is populated with one of the values below, which map to the VistA files/fields at right:		
	PROCEDURE	RAD/NUC MED PATIENT (#70)	PROCEDURE (70.03;2)

OBX Segment	OBX Field Name	VistA File	VistA Field(s)
	PROCEDURE MODIFIERS	RAD/NUC MED PATIENT (#70)	PROCEDURE MODIFIERS (70.03;125)
	CLINICAL HISTORY FOR EXAM	RAD/NUC MED PATIENT (#70)	CLINICAL HISTORY FOR EXAM (70.03;400)
	TECHNOLOGIST COMMENT	RAD/NUC MED PATIENT (#70)	TECHNOLOGIST COMMENT (70.03;4)
	ALLERGIES	PATIENT ALLERGIES (#120.8)	ALLERGIES DBIA #10099
	CPT MODIFIERS	RAD/NUC MED PATIENT (#70)	CPT MODIFIERS (70.03;135)
OBX-11	OBSERVATION RESULT STATUS Field is populated with a fixed value of O	Field not mapped to a VistA File	