Integrating the Healthcare Enterprise

IHE

IHE Endoscopy
Technical Framework Supplement

Endoscopy Ordering Workflow
(EWF)

Rev. 2.2 – Trial Implementation

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Author: IHE Endoscopy Technical Committee

Email: endoscopy@ihe.net

Foreword

This is a supplement to the forthcoming IHE Endoscopy Technical Framework. Each supplement undergoes a process of public comment and trial implementation before being incorporated into the volumes of the Technical Frameworks.

This supplement is published on November 28, 2018 for trial implementation and may be available for testing at subsequent IHE Connectathons. The supplement may be amended based on the results of testing. Following successful testing it will be incorporated into the forthcoming Endoscopy Technical Framework. Comments are invited and may be submitted at https://www.ihe.net/Endoscopy_Public_Comments.

This supplement describes changes to the existing technical framework documents.

"Boxed" instructions like the sample below indicate to the Volume Editor how to integrate the relevant section(s) into the relevant Technical Framework volume.

Amend Section X.X by the following:

Where the amendment adds text, make the added text **bold underline**. Where the amendment removes text, make the removed text **~~bold strikethrough~~**. When entire new sections are added, introduce with editor's instructions to "add new text" or similar, which for readability are not bolded or underlined.

General information about IHE can be found at www.ihe.net.

Information about the IHE Endoscopy domain can be found at http://www.ihe.net/IHE_Domains.

Information about the organization of IHE Technical Frameworks and Supplements and the process used to create them can be found at http://www.ihe.net/IHE_Process and http://www.ihe.net/Profiles.

The current version of the IHE Endoscopy Technical Framework can be found at http://www.ihe.net/Technical_Frameworks.

CONTENTS

Introduction to this Supplement

205 The Endoscopy Ordering Workflow Profile defines specific implementations of established standards to achieve integration goals for endoscopy. Such integration promotes appropriate sharing of medical information to support optimal patient care.

The IHE Endoscopy Integration Profiles rely heavily on, and reference, the transactions defined in those other IHE Technical Framework documents.

210 Please note that as a result of harmonization with SWF.b, the Endoscopy domain decided to adapt Transaction RAD-3 instead of Transaction ENDO-2 (Notify Patient Arrival). The change influences the patient arrival notification message in HL7[®][1] from ORU to OMG.

Open Issues and Questions

None

215 ## Closed Issues

None

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[1] HL7 is the registered trademark of Health Level Seven International.

General Introduction

Update the following Appendices to the General Introduction as indicated below. Note that these are not appendices to Volume 1.

220 ## Appendix A – Actor Summary Definitions

Add the following new actors to the IHE Technical Frameworks General Introduction list of Actors:

Actor	Definition
Performed Procedure Reporter (PPR)	The actor that provides information about performance of an endoscopy procedure to the OP.

Appendix B – Transaction Summary Definitions

225 *Add the following new transactions to the IHE Technical Frameworks General Introduction list of Transactions:*

Transaction	Definition
~~Notify Patient Arrival [ENDO-2]~~	~~The transaction that notifies the status of patient arrival.~~
Notify Performed Procedure Information [ENDO-4]	The transaction that provides performed procedure information.
Fill Endoscopy Order [ENDO-5]	The transaction that fills the endoscopy order.

Appendix D – Glossary

Add the following new glossary terms to the IHE Technical Frameworks General Introduction Glossary:

230

None

Volume 1 – Profiles

Copyright Licenses

Add the following to the IHE Technical Frameworks General Introduction Copyright section:

235   Section not applicable

Domain-specific additions

Section not applicable

Add new Section X

240

X Endoscopy Ordering Workflow (EWF) Profile

The Endoscopy Ordering Workflow Profiles specifies workflows where endoscopy is ordered from hospital information system located outside of the endoscopy department and the result returned to the system.

245   The Order Filler (OF) receives an order from the Order Placer (OP). When the endoscopy procedure is over, the Performed Procedure Reporter (PPR) notifies the OP located outside of the endoscopy department of the performed procedure information.

The PPR has been defined as an independent actor, because in actual system, various products may implement the role of PPR that generates performed procedure information and informs OP
250   of it.

X.1 EWF Actors, Transactions, and Content Modules

This section defines the actors, transactions, and/or content modules in this profile. General definitions of actors are given in the Technical Frameworks General Introduction Appendix A at http://www.ihe.net/Technical_Frameworks.

255   Figure X.1-1 shows the actors directly involved in the EWF Profile and the relevant transactions between them.
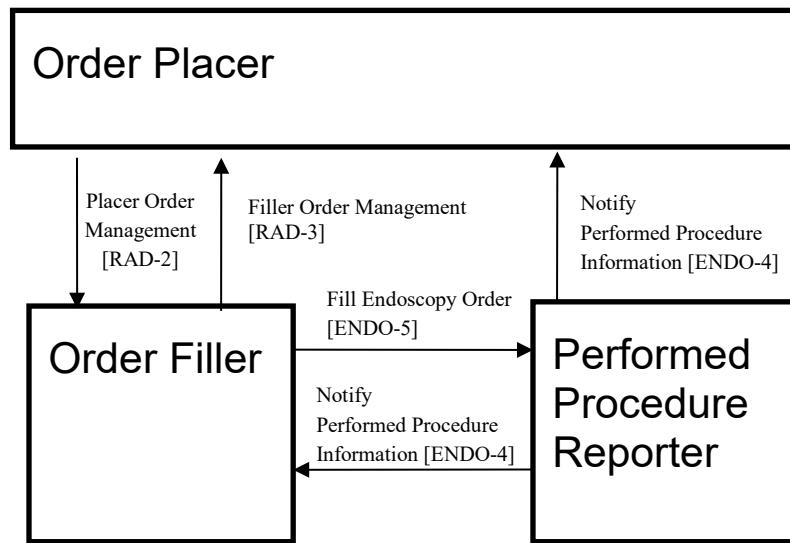
Figure X.1-1: EWF Actor Diagram

260 Table X.1-1 lists the transactions for each actor directly involved in the EWF Profile. To claim compliance with this profile, an actor shall support all required transactions (labeled "R") and may support the optional transactions (labeled "O").

Table X.1-1: EWF Profile - Actors and Transactions

Actors	Transactions	Optionality	Section
Order Placer	Placer Order Management [RAD-2] Note 1	R	RAD TF-2: 4.2
	Filler Order Management [RAD-3] Note 3	R	RAD TF-2: 4.3
	Notify Performed Procedure Information [ENDO-4]	R	ENDO TF- 2: 3.4
Order Filler	Placer Order Management [RAD-2] Note 1	R	RAD TF-2: 4.2
	Filler Order Management [RAD-3] Note 3	R	RAD TF-2: 4.3
	Notify Performed Procedure Information [ENDO-4]	O Note 2	ENDO TF-2: 3.4
	Fill Endoscopy Order [ENDO-5]	O Note 2	ENDO TF-2: 3.5
Performed Procedure Reporter	Notify Performed Procedure Information [ENDO-4]	R (to OP) O (to OF) Note 2	ENDO TF-2: 3.4
	Fill Endoscopy Order [ENDO-5]	O Note 2	ENDO TF-2: 3.5

Note 1: Apply RAD-2 of HL7 Ver2.5.1 to Endoscopy Placer Order Management.

265 Note 2: As far as Order Filler and Performed Procedure Reporter are implemented in same system, it is Optional.

Note 3: Apply RAD-3 of HL7 Ver2.5.1 to Notify Patient Arrival.

X.1.1 Actor Descriptions and Actor Profile Requirements

Most requirements are documented in Transactions (Volume 2) and Content Modules (Volume 3). This section documents any additional requirements on profile's actors.

X.2 EWF Actor Options

Options that may be selected for each actor in this profile, if any, are listed in the Table X.2-1. Dependencies between options when applicable are specified in notes.

Table X.2-1: EWF - Actors and Options

Actor	Option Name	Reference
Order Placer	No options defined	--
Order Filler	No options defined	--
Performed Procedure Reporter	No options defined	--

X.3 EWF Required Actor Groupings

An actor from this profile (Column 1) shall implement all of the required transactions and/or content modules in this profile *in addition to* all of the transactions required for the grouped actor (Column 2).

If this is a content profile, and actors from this profile are grouped with actors from a workflow or transport profile, the Content Bindings reference column references any specifications for mapping data from the content module into data elements from the workflow or transport transactions.

In some cases, required groupings are defined as at least one of an enumerated set of possible actors; this is designated by merging column one into a single cell spanning multiple potential grouped actors. Notes are used to highlight this situation.

Section X.5 describes some optional groupings that may be of interest for security considerations and Section X.6 describes some optional groupings in other related profiles.

Table X.3-1: EWF - Required Actor Groupings

EWF Actor	Actor to be grouped with	Reference	Content Bindings Reference
Order Placer	None	--	--
Order Filler	None	--	--
Performed Procedure Reporter	None	--	--

X.4 EWF Overview

X.4.1 Concepts

X.4.2 Use Cases

X.4.2.1 Use Case #1: Endoscopy Basic Workflow

The use case represents the basic workflow. It includes the information process of endoscopy order, performed information and actors' status information.

X.4.2.1.1 Endoscopy Basic Workflow Use Case Description

The Process Flow from an endoscopy order and execution to the performed procedure information notification is presented below. The Order Placer places an order to prepare the endoscopy. The Order Filler notifies the Order Placer of patient arrival after which changes of order by the Order Placer are prohibited. Upon the completion of the performed data entry, the Performed Procedure Reporter notifies the Order Placer of the performed procedure information. Then the Order Filler identifies the Exam End when it receives the task completion notification from the Performed Procedure Reporter.

X.4.2.1.2 Endoscopy Basic Workflow Process Flow
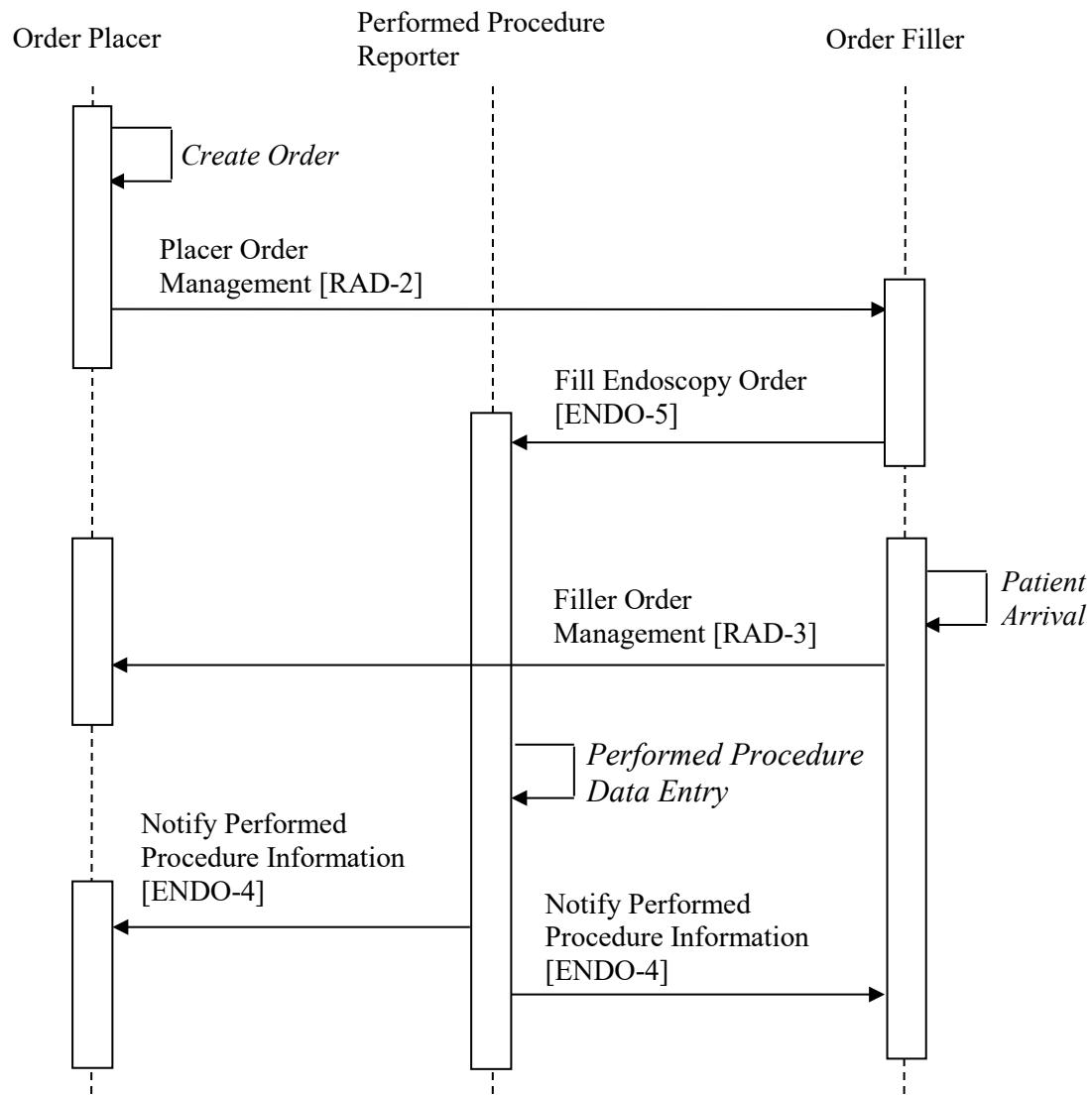
Figure X.4.2.1.2-1: Basic Process Flow in EWF Profile

X.5 EWF Security Considerations

310   The security considerations for a content module are dependent upon the security provisions defined by the grouped actor(s).

X.6 EWF Cross Profile Considerations

PAM – Patient Administration Management

Patient Demographics Consumer and Patient Encounter Consumer in Patient Administration Management could be grouped with an Order Placer and an Order Filler in order to manage patient demographics.

PDQ – Patient Demographics Query

Patient Demographics Consumer and Patient Encounter Consumer in Patient Demographics Query could be grouped with an Order Placer and an Order Filler in order to manage patient demographics.

CT – Consistent Time

Time Client in Consistent Time could be grouped with an Order Placer, an Order Filler and Performed Procedure Reporter in order to synchronize the entire system.

Appendices

325

None

Volume 2 – Transactions

330 | *Add Section 3.4*

3.4 Notify Performed Procedure Information [ENDO-4]

This section corresponds to transaction [ENDO-4] of the IHE Technical Framework. Transaction [ENDO-4] is used by the Order Filler, Performed Procedure Reporter and Order Placer Actors.

335 ### 3.4.1 Scope

3.4.2 Actor Roles
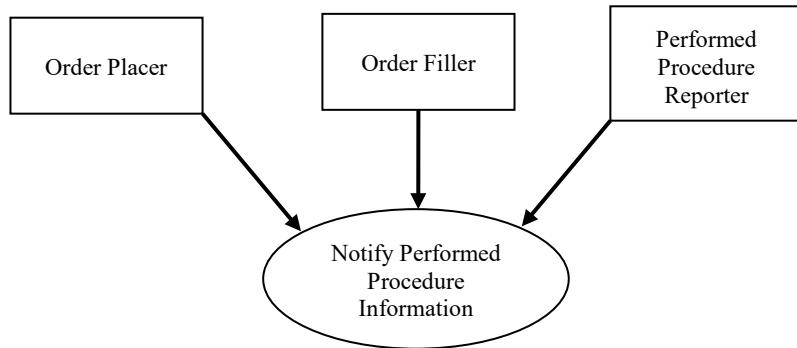
340 **Figure 3.4.2-1: Use Case Diagram**

Table 3.4.2-1: Actor Roles

Actor:	Order Placer
Role:	Receive information about the performance of an endoscopy procedure.
Actor:	Order Filler
Role:	Receive information about the performance of an endoscopy procedure.
Actor:	Performed Procedure Reporter
Role:	Provide information about the performance of an endoscopy procedure.

3.4.3 Referenced Standards

HL7 Ver2.5 Chapter 4.4

3.4.4 Interaction Diagram

345
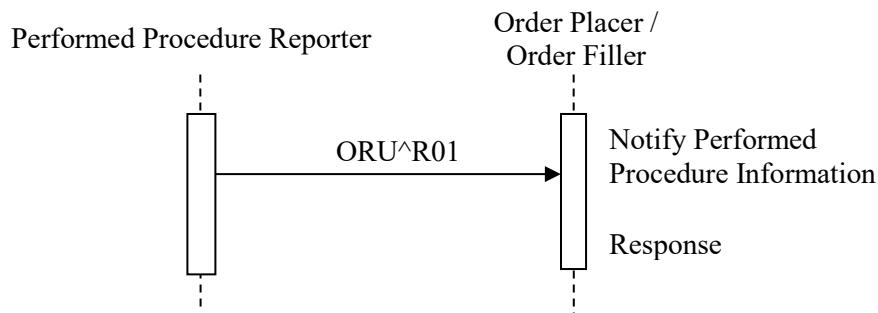
Figure 3.4.4-1: ORU Interaction Diagram

3.4.4.1 ORU^R01

Notify Performed Procedure Information is an event that notifies endoscopy procedure
350   information. The trigger event type is R01.

3.4.4.1.1 Trigger Events

R01- Unsolicited transmission of an observation message

3.4.4.1.2 Message Semantics

ORU^R01^ORU_R01	Unsolicited observation Message	Status	Chapter
MSH	Message Header		2
{			
PID	Patient Identification		3
[{ NTE }]	Notes and Comments (for Patient ID)		2
[PV1]	Patient Visit		3
{			
[ORC]	Common Order		4
OBR	Observation		4
[{ NTE }]	Notes and Comments (for Detail)		2
{	--- TIMING begin		

ORU^R01^ORU_R01	Unsolicited observation Message	Status	Chapter
TQ1	Timing/Quantity		4
[{ TQ2 }]	Timing/Quantity Order Sequence		4
}	--- TIMING end		
[{	--- OBSERVATION begin		
OBX	Observation/Result		7
[{ NTE }]	Notes and Comments (for Results)		2
}]	--- OBSERVATION end		
{	--- Execution begin		
ZE1	Performed Procedure Information Notification		
{	--- OBSERVATION begin		
OBX	Observation/Result		7
}	--- OBSERVATION end		
}	--- Execution end		
}			
}			
[DSC]	continuation pointer		4

355   Note: [ ] indicates optional items, { } indicates repeatable items.

3.4.4.1.2.1 MSH

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

360   **Table 3.4.4.1.2.1-1: HL7 Attribute Table - MSH - Message Header**

SEQ	LEN	DT	OPT	RP/#	TBL #	ITEM #	ELEMENT NAME
1	1	ST	R			00001	Field Separator
2	4	ST	R			00002	Encoding Characters
3	227	HD	O			00003	Sending Application
4	227	HD	O			00004	Sending Facility
5	227	HD	O			00005	Receiving Application
6	227	HD	O			00006	Receiving Facility
7	26	TS	R			00007	Date/Time Of Message
8	40	ST	O			00008	Security
9	15	MSG	R			00009	Message Type
10	20	ST	R			00010	Message Control ID

SEQ	LEN	DT	OPT	RP/#	TBL #	ITEM #	ELEMENT NAME
11	3	PT	R			00011	Processing ID
12	60	VID	R		0104	00012	Version ID
13	15	NM	O			00013	Sequence Number
14	180	ST	O			00014	Continuation Pointer
15	2	ID	O		0155	00015	Accept Acknowledgment Type
16	2	ID	O		0155	00016	Application Acknowledgment Type
17	3	ID	O		0399	00017	Country Code
18	16	ID	O	Y	0211	00692	Character Set
19	250	CE	O			00693	Principal Language Of Message
20	20	ID	O		0356	01317	Alternate Character Set Handling Scheme
21	427	EI	O	Y		01598	Message Profile Identifier

3.4.4.1.2.1.1 MSH field definitions

See HL7 Ver2.5 Section 2.15.9 "MSH – message header segment".

3.4.4.1.2.1.2 MSH-12 Version ID (VID) 00012

365 This field is matched by the receiving system to its own version to be sure the message will be interpreted correctly.

The version ID of this Protocol is designated as 2.5.

Table 3.4.4.1.2.1.2-1: HL7 Table 0104 - Version ID

Value	Description	Comment (Date)
2.0	Release 2.0	September 1988
2.0D	Demo 2.0	October 1988
2.1	Release 2.1	March 1990
2.2	Release 2.2	December 1994
2.3	Release 2.3	March 1997
2.3.1	Release 2.3.1	May 1999
2.4	Release 2.4	November 2000
2.5	Release 2.5	May 2003

370 ### 3.4.4.1.2.2 NTE

The NTE segment is defined here for inclusion in messages defined in other chapters. It is commonly used for sending notes and comments.

The technical committees define the meaning of the NTE segments within the context of the messages in their chapters. For each NTE, the description in the message attribute table should
375 include an indication of the segment associated with the NTE, for example "Notes and Comments for the PID".

Table 3.4.4.1.2.2-1: HL7 Attribute Table - NTE - Notes and Comments

SEQ	LEN	DT	OPT	RP/#	TBL#	ITEM #	ELEMENT NAME
1	4	SI	O			00096	Set ID - NTE
2	8	ID	O		0105	00097	Source of Comment
3	6553 6	FT	O	Y		00098	Comment
4	250	CE	O		0364	01318	Comment Type

3.2.4.1.2.2.1 NTE field definitions

380 See HL7 Ver2.5 Section 2.15.10 "NTE-Notes and Comments Segment".

3.4.4.1.2.3 PID

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

385 **Table 3.4.4.1.2.3-1: HL7 Attribute Table - PID - Patient Identification**

SEQ	LEN	DT	OPT	RP/#	TBL#	ITEM#	ELEMENT NAME
1	4	SI	O			00104	Set ID - PID
2	20	CX	B			00105	Patient ID
3	250	CX	R	Y		00106	Patient Identifier List
4	20	CX	B	Y		00107	Alternate Patient ID - PID
5	250	XPN	R	Y		00108	Patient Name
6	250	XPN	O	Y		00109	Mother's Maiden Name
7	26	TS	O			00110	Date/Time of Birth
8	1	IS	O		0001	00111	Administrative Sex
9	250	XPN	B	Y		00112	Patient Alias
10	250	CE	O	Y	0005	00113	Race
11	250	XAD	O	Y		00114	Patient Address
12	4	IS	B			00115	County Code
13	250	XTN	O	Y		00116	Phone Number - Home
14	250	XTN	O	Y		00117	Phone Number - Business
15	250	CE	O		0296	00118	Primary Language
16	250	CE	O		0002	00119	Marital Status
17	250	CE	O		0006	00120	Religion

SEQ	LEN	DT	OPT	RP/#	TBL#	ITEM#	ELEMENT NAME
18	250	CX	O			00121	Patient Account Number
19	16	ST	B			00122	SSN Number - Patient
20	25	DLN	B			00123	Driver's License Number - Patient
21	250	CX	O	Y		00124	Mother's Identifier
22	250	CE	O	Y	0189	00125	Ethnic Group
23	250	ST	O			00126	Birth Place
24	1	ID	O			00127	Multiple Birth Indicator
25	2	NM	O			00128	Birth Order
26	250	CE	O	Y	0171	00129	Citizenship
27	250	CE	O		0172	00130	Veterans Military Status
28	250	CE	B		0212	00739	Nationality
29	26	TS	O			00740	Patient Death Date and Time
30	1	ID	O			00741	Patient Death Indicator
31	1	ID	O			01535	Identity Unknown Indicator
32	20	IS	O	Y	0445	01536	Identity Reliability Code
33	26	TS	O			01537	Last Update Date/Time
34	241	HD	O			01538	Last Update Facility
35	250	CE	N		0446	01539	Species Code
36	250	CE	N		0447	01540	Breed Code
37	80	ST	N			01541	Strain
38	250	CE	N	2	0429	01542	Production Class Code
39	250	CWE	O	Y	0171	01840	Tribal Citizenship

3.4.4.1.2.3.1 PID field definitions

See HL7 Ver2.5 Section 3.4.2 "PID – Patient Identification Segment".

3.4.4.1.2.3.2 PID-35 Species Code (CE) 01539

390 Since this document is targeted at humans, this field is not used.

3.4.4.1.2.3.3 PID-36 Breed Code (CE) 01540

Since this document is targeted at humans, this field is not used.

3.4.4.1.2.3.4 PID-37 Strain (ST) 01541

Since this document is targeted at humans, this field is not used.

395 ### 3.4.4.1.2.3.5 PID-38 Production Class Code (CE) 01542

Since this document is targeted at humans, this field is not used.

3.4.4.1.2.4 PV1

The PV1 segment is used by Registration/Patient Administration applications to communicate information on an account or visit-specific basis. The default is to send account level data. To
400 use this segment for visit level data *PV1-51 - Visit Indicator* must be valued to "V". The value of PV-51 affects the level of data being sent on the PV1, PV2, and any other segments that are part of the associated PV1 hierarchy (e.g., ROL, DG1, or OBX).

The facility ID, the optional fourth component of each patient location field, is a HD data type that is uniquely associated with the healthcare facility containing the location. A given
405 institution, or group of intercommunicating institutions, should establish a list of facilities that may be potential assignors of patient locations. The list will be one of the institution's master dictionary lists. Since third parties other than the assignors of patient locations may send or receive HL7 messages containing patient locations, the facility ID in the patient location may not be the same as that implied by the sending and receiving systems identified in the MSH. The
410 facility ID must be unique across facilities at a given site. This field is required for HL7 implementations that have more than a single healthcare facility with bed locations, since the same <point of care> ^ <room> ^ <bed> combination may exist at more than one facility.

Table 3.4.4.1.2.4-1: HL7 Attribute Table - PV1 - Patient Visit

SEQ	LEN	DT	OPT	RP/#	TBL#	ITEM#	ELEMENT NAME
1	4	SI	O			00131	Set ID - PV1
2	1	IS	R		0004	00132	Patient Class
3	80	PL	O			00133	Assigned Patient Location
4	2	IS	O		0007	00134	Admission Type
5	250	CX	O			00135	Preadmit Number
6	80	PL	O			00136	Prior Patient Location
7	250	XCN	O	Y	0010	00137	Attending Doctor
8	250	XCN	O	Y	0010	00138	Referring Doctor
9	250	XCN	B	Y	0010	00139	Consulting Doctor
10	3	IS	O		0069	00140	Hospital Service
11	80	PL	O			00141	Temporary Location
12	2	IS	O		0087	00142	Preadmit Test Indicator
13	2	IS	O		0092	00143	Re-admission Indicator
14	6	IS	O			00144	Admit Source
15	2	IS	O	Y	0009	00145	Ambulatory Status
16	2	IS	O		0099	00146	VIP Indicator
17	250	XCN	O	Y	0010	00147	Admitting Doctor
18	2	IS	O		0018	00148	Patient Type
19	250	CX	O			00149	Visit Number
20	50	FC	O	Y	0064	00150	Financial Class
21	2	IS	O		0032	00151	Charge Price Indicator
22	2	IS	O		0045	00152	Courtesy Code

SEQ	LEN	DT	OPT	RP/#	TBL#	ITEM#	ELEMENT NAME
23	2	IS	O		0046	00153	Credit Rating
24	2	IS	O	Y	0044	00154	Contract Code
25	8	DT	O	Y		00155	Contract Effective Date
26	12	NM	O	Y		00156	Contract Amount
27	3	NM	O	Y		00157	Contract Period
28	2	IS	O		0073	00158	Interest Code
29	4	IS	O		0110	00159	Transfer to Bad Debt Code
30	8	DT	O			00160	Transfer to Bad Debt Date
31	10	IS	O		0021	00161	Bad Debt Agency Code
32	12	NM	O			00162	Bad Debt Transfer Amount
33	12	NM	O			00163	Bad Debt Recovery Amount
34	1	IS	O		0111	00164	Delete Account Indicator
35	8	DT	O			00165	Delete Account Date
36	3	IS	O		0112	00166	Discharge Disposition
37	47	DLD	O		0113	00167	Discharged to Location
38	250	CE	O		0114	00168	Diet Type
39	2	IS	O		0115	00169	Servicing Facility
40	1	IS	B		0116	00170	Bed Status
41	2	IS	O		0117	00171	Account Status
42	80	PL	O			00172	Pending Location
43	80	PL	O			00173	Prior Temporary Location
44	26	TS	O			00174	Admit Date/Time
45	26	TS	O	Y		00175	Discharge Date/Time
46	12	NM	O			00176	Current Patient Balance
47	12	NM	O			00177	Total Charges
48	12	NM	O			00178	Total Adjustments
49	12	NM	O			00179	Total Payments
50	250	CX	O			00180	Alternate Visit ID
51	1	IS	O		0326	01226	Visit Indicator
52	250	XCN	B	Y	0010	01274	Other Healthcare Provider

415 **3.4.4.1.2.4.1 PV1 field definitions**

See HL7 Ver2.5 Section 3.4.3 "PV1 – Patient Visit Segment".

3.4.4.1.2.5 ORC

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

420 ORC is mandatory in Order Acknowledgment (ORR) messages if an order detail segment is present, but is not required otherwise.

If details are needed for a particular type of order segment (e.g., Pharmacy, Dietary), the ORC must precede any order detail segment (e.g., RXO, ODS). In some cases, the ORC may be as simple as the string `ORC|OK|<placer order number>|<filler order`
425 `number>|<cr>.`

If details are not needed for the order, the order detail segment may be omitted. For example, to place an order on hold, one would transmit an ORC with the following fields completed: *ORC-1-order control* with a value of HD, *ORC-2-placer order number*, and *ORC-3-filler order number*.

There is some overlap between fields of the ORC and those in the order detail segments. These
430 are described in the succeeding sections.

Table 3.4.4.1.2.5-1: HL7 Attribute Table – ORC – Common Order

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

SEQ	LEN	DT	OPT	RP/#	TBL#	ITEM#	ELEMENT NAME
26	60	CWE	C		0552	01641	Advanced Beneficiary Notice Override Reason
27	26	TS	O			01642	Filler's Expected Availability Date/Time
28	250	CWE	O		0177	00615	Confidentiality Code
29	250	CWE	O		0482	01643	Order Type
30	250	CNE	O		0483	01644	Enterer Authorization Mode

ORC use notes:

1. placer order groups

The Standard supports a mechanism to collect several orders together in a group. Most often, this is used to represent an "ordering session" for a single patient.
An order group is a list of orders (ORCs) associated with an *ORC-4-placer group number*. A group is established when the placer supplies a placer group number with the original order. The order group consists of all the ORCs and order detail segments that have the same placer group number. Orders can be removed from the group using cancel, or added using the replacement or parent-child mechanisms. New orders cannot otherwise be added to the group.

2. duplicate fields

The ORC is intended to uniformly define the fields that are common to all orders (i.e., requested services). Some ORC fields are duplicated in some order detail segments (e.g., OBR, RXO). For example, *ORC-2-placer order number* has the same meaning and purpose as *OBR-2-placer order number* field. This promotes upward compatibility with past versions and ASTM.
The rule for using these fields is that the value must appear in the order detail segment if it does not appear in the ORC. However, it is recommended to transmit the field value in both places to avoid confusion.

3. parent/child - cancel, hold, discontinue

During transmission of a request to cancel, hold, or discontinue a parent order, the request is intended to apply recursively to the parent order and all associated child orders. For example:

a. An EKG application receives an order for three EKGs on successive mornings.

b. The EKG application creates three child orders, one for each requested EKG.

c. The first daily EKG has already been performed when a request is received to cancel the original parent order. (The parent is beyond the point of cancelation.)

d. The remaining, unperformed, children are canceled as a result of the request.

3.4.4.1.2.5.1 ORC field definitions

See HL7 Ver2.5 Section 4.5.1 "ORC-Common Order Segment".

3.4.4.1.2.6 OBR

465 The Observation Request (OBR) segment is used to transmit information specific to an order for a diagnostic study or observation, physical exam, or assessment.

The Observation Request segment defines the attributes of a particular request for diagnostic services (e.g., laboratory, EKG) or clinical observations (e.g., vital signs or physical exam). When a placer requests a given set of observations, always include an order segment. For endoscopy (e.g., the upper gastronomic tract examination), a separate order segment will usually 470 be generated for each examination.

Table 3.4.4.1.2.6-1: HL7 Attribute Table – OBR – Observation Request

SEQ	LEN	DT	OPT	RP/#	TBL#	ITEM #	ELEMENT NAME
1	4	SI	O			00237	Set ID – OBR
2	22	EI	C			00216	Placer Order Number
3	22	EI	C			00217	Filler Order Number
4	250	CE	R			00238	Universal Service Identifier
5	2	ID	B			00239	Priority – OBR
6	26	TS	B			00240	Requested Date/Time
7	26	TS	C			00241	Observation Date/Time #
8	26	TS	O			00242	Observation End Date/Time #
9	20	CQ	N			00243	Collection Volume *
10	250	XCN	N	Y		00244	Collector Identifier *
11	1	ID	N			00245	Specimen Action Code *
12	250	CE	O			00246	Danger Code
13	300	ST	O			00247	Relevant Clinical Information
14	26	TS	N			00248	Specimen Received Date/Time *
15	300	SPS	N			00249	Specimen Source
16	250	XCN	O	Y		00226	Ordering Provider
17	250	XTN	O	Y/2		00250	Order Callback Phone Number
18	60	ST	O			00251	Placer Field 1
19	60	ST	O			00252	Placer Field 2
20	60	ST	O			00253	Filler Field 1 +
21	60	ST	O			00254	Filler Field 2 +
22	26	TS	C			00255	Results Rpt/Status Chng - Date/Time +
23	40	MOC	O			00256	Charge to Practice +
24	10	ID	O		0074	00257	Diagnostic Serv Sect ID
25	1	ID	C		0123	00258	Result Status +

SEQ	LEN	DT	OPT	RP/#	TBL#	ITEM #	ELEMENT NAME
26	400	PRL	O			00259	Parent Result +
27	200	TQ	B	Y		00221	Quantity/Timing
28	250	XCN	O	Y		00260	Result Copies To
29	200	EIP	O			00261	Parent
30	20	ID	O		0124	00262	Transportation Mode
31	250	CE	O	Y		00263	Reason for Study
32	200	NDL	O			00264	Principal Result Interpreter +
33	200	NDL	O	Y		00265	Assistant Result Interpreter +
34	200	NDL	O	Y		00266	Technician +
35	200	NDL	O	Y		00267	Transcriptionist +
36	26	TS	O			00268	Scheduled Date/Time +
37	4	NM	N			01028	Number of Sample Containers *
38	250	CE	N	Y		01029	Transport Logistics of Collected Sample *
39	250	CE	N	Y		01030	Collector's Comment *
40	250	CE	O			01031	Transport Arrangement Responsibility
41	30	ID	O		0224	01032	Transport Arranged
42	1	ID	O		0225	01033	Escort Required
43	250	CE	O	Y		01034	Planned Patient Transport Comment
44	250	CE	O		0088	00393	Procedure Code
45	250	CE	O	Y	0340	01316	Procedure Code Modifier
46	250	CE	O	Y	0411	01474	Placer Supplemental Service Information
47	250	CE	O	Y	0411	01475	Filler Supplemental Service Information
48	250	CWE	C		0476	01646	Medically Necessary Duplicate Procedure Reason.
49	2	IS	O		0507	01647	Result Handling

3.4.4.1.2.6.1 OBR field definitions

The daggered (+) items in this segment are created by the filler, not the placer. They are valued by the filler as needed when the OBR segment is returned as part of a report.

OBR-7-observation date/time and *OBR-8-observation end date/time* (flagged with #) are the physiologically relevant times. In the case of an observation on a specimen, they represent the start and end of the specimen collection. In the case of an observation obtained directly from a subject (e.g., BP, Chest X-ray), they represent the start and end time of the observation.

See HL7 Ver2.5 Section 4.5.3 "OBR-Observation Request Segment".

3.4.4.1.2.6.2 OBR-4   Universal Service Identifier (CE)   00238

```
Components:  <Identifier (ST)> ^ <Text (ST)> ^ <Name of Coding
             System (ID)> ^ <Alternate Identifier (ST)> ^ <Alternate
             Text (ST)> ^ <Name of Alternate Coding System (ID)>
```

485 This field contains the identifier code for the requested observation/test/battery. This can be based on local and/or "universal" codes. We recommend the "universal" procedure identifier.

For a parent order, identification codes for the purpose (e.g., "test" and "treatment") and type (e.g., "upper part" and "lower part") will be assigned. For a child order, codes indicating details will be assigned such as those indicating organs (e.g., the esophagus and the stomach), those for 490 modalities (e.g., endoscopy) and those for procedures (e.g., polypectomy).

3.4.4.1.2.6.3 OBR-5   Priority – OBR   (ID)   00239

This field has been retained for backward compatibility only. It is not used. Previously priority (e.g., STAT, ASAP), but this information is carried as the ninth component of *TQ-1-priority*.

3.4.4.1.2.6.4 OBR-6   Requested Date/Time (TS)   00240

495 *This field has been retained for backward compatibility only*. It is not used. Previously requested date/time. The requested date/time of the past must be indicated as the TQ1-7-starting date/time.

3.4.4.1.2.6.5 OBR-9   Collection Volume (CQ)   00243

For laboratory tests, the collection volume is the volume of a specimen. It is not used in 500 endoscopy.

3.4.4.1.2.6.6 OBR-10   Collector Identifier (XCN)   00244

When a specimen is required for the study, this field will identify the person, department, or facility that collected the specimen. Either name or ID code, or both, may be present. It is not used in endoscopy.

505 ### 3.4.4.1.2.6.7 OBR-11   Specimen Action Code (ID)   00245

This field identifies the action to be taken with respect to the specimens that accompany or precede this order. It is not used in endoscopy.

3.4.4.1.2.6.8 OBR-13   Relevant Clinical Information (ST)   00247

This field contains the additional clinical information about the patient or specimen. This field is 510 used to report the suspected diagnosis and clinical findings on requests for interpreted diagnostic studies. Examples include reporting the amount of inspired carbon dioxide for blood gasses, the point in the menstrual cycle for cervical pap tests, and other conditions that influence test interpretations. For some orders, this information may be sent on a more structured form as a series of OBX segments that immediately follow the order segment. Therefore, using OBX

515   segments is recommended for physical information (e.g., height, weight and vital signs) as well as for examination or medication information.

This field is used when ICD code is transferred as diagnostic information in endoscopy.

3.4.4.1.2.6.9 OBR-14   Specimen Received Date/Time   (TS)   00248

This field has been retained for backward compatibility only.

520   For observations requiring a specimen, the specimen received date/time is the actual login time at the diagnostic service. It is not used in endoscopy.

3.4.4.1.2.6.10 OBR-15   Specimen Source   (SPS)   00249

This field has been retained for backward compatibility only. This field identifies the site where the specimen should be obtained or where the service should be performed. It is not used in
525   endoscopy.

3.4.4.1.2.6.11 OBR-22   Results Rpt/Status Chng - Date/Time   (TS)   00255

```
Components:  <Time (DTM)> ^ <DEPRECATED-Degree of Precision (ID)>
```

This field specifies the date/time when the results were reported or status changed. This field is used to indicate the date and time that the results are composed into a report and released, or that
530   a status, as defined in *ORC-5 order status*, is entered or changed. Usually, the ordering service would want only those results for which the reporting date/time is greater than the date/time the inquiring application last received results. (This is not the date/time when the message is sent.)

3.4.4.1.2.6.12 OBR-28   Result Copies To   (XCN)   00260

```
Components: <ID Number (ST)> ^ <Family Name (FN)> ^ <Given Name
535             (ST)> ^ <Second and Further Given Names or Initials Thereof
            (ST)> ^ <Suffix (e.g., JR or III) (ST)> ^ <Prefix (e.g.,
            DR) (ST)> ^ <DEPRECATED-Degree (e.g., MD) (IS)> ^ <Source
            Table (IS)> ^ <Assigning Authority (HD)> ^ <Name Type Code
            (ID)> ^ <Identifier Check Digit (ST)> ^ <Check Digit Scheme
540             (ID)> ^ <Identifier Type Code (ID)> ^ <Assigning Facility
            (HD)> ^ <Name Representation Code (ID)> ^ <Name Context
            (CE)> ^ <DEPRECATED-Name Validity Range (DR)> ^ <Name
            Assembly Order (ID)> ^ <Effective Date (TS)> ^ <Expiration
            Date (TS)> ^ <Professional Suffix (ST)> ^ <Assigning
545             Jurisdiction (CWE)> ^ <Assigning Agency or Department
            (CWE)>

        Subcomponents for Family Name (FN):  <Surname (ST)> & <Own Surname
            Prefix (ST)> & <Own Surname (ST)> & <Surname Prefix From
            Partner/Spouse (ST)> & <Surname From Partner/Spouse (ST)>
550         Subcomponents for Assigning Authority (HD):  <Namespace ID (IS)> &
            <Universal ID (ST)> & <Universal ID Type (ID)>

        Subcomponents for Assigning Facility (HD):  <Namespace ID (IS)> &
            <Universal ID (ST)> & <Universal ID Type (ID)>
```

555
```
        Subcomponents for Name Context (CE): <Identifier (ST)> & <Text
            (ST)> & <Name of Coding System (ID)> & <Alternate
            Identifier (ST)> & <Alternate Text (ST)> & <Name of
            Alternate Coding System (ID)>

        Subcomponents for DEPRECATED-Name Validity Range (DR): <Range Start
            Date/Time (TS)> & <Range End Date/Time (TS)>
```
560
```
            Note subcomponent contains sub-subcomponents

        Subcomponents for Effective Date (TS): <Time (DTM)> & <DEPRECATED-
            Degree of Precision (ID)>

        Subcomponents for Expiration Date (TS): <Time (DTM)> & <DEPRECATED-
            Degree of Precision (ID)>
```
565
```
        Subcomponents for Assigning Jurisdiction (CWE): <Identifier (ST)> &
            <Text (ST)> & <Name of Coding System (ID)> & <Alternate
            Identifier (ST)> & <Alternate Text (ST)> & <Name of
            Alternate Coding System (ID)> & <Coding System Version ID
            (ST)> & <Alternate Coding System Version ID (ST)> &
```
570
```
            <Original Text (ST)>

        Subcomponents for Assigning Agency or Department (CWE): <Identifier
            (ST)> & <Text (ST)> & <Name of Coding System (ID)> &
            <Alternate Identifier (ST)> & <Alternate Text (ST)> & <Name
            of Alternate Coding System (ID)> & <Coding System Version
```
575
```
            ID (ST)> & <Alternate Coding System Version ID (ST)> &
            <Original Text (ST)>
```

This field identifies the people who are to receive copies of the results. By local convention, either the ID number or the name may be absent. The department name or hospital ward can be specified as the address of the report in this field.

580 ### 3.4.4.1.2.6.13 OBR-29   Parent (EIP) 00261

```
        Components: <Placer Assigned Identifier (EI)> ^ <Filler Assigned
            Identifier (EI)>

        Subcomponents for Placer Assigned Identifier (EI): <Entity
            Identifier (ST)> & <Namespace ID (IS)> & <Universal ID
```
585
```
            (ST)> & <Universal ID Type (ID)>

        Subcomponents for Filler Assigned Identifier (EI): <Entity
            Identifier (ST)> & <Namespace ID (IS)> & <Universal ID
            (ST)> & <Universal ID Type (ID)>
```

This field is identical to ORC-8-parent. However, the OBR-36 included in ORU message (the
590 patient / result arrival notification) is same as ORC-2 (and ORC-3) in the OMG message. It is required when the order is a child. The field has two components. The first component includes the patient's Placer Order Number. The second component is an option, including the patient's Filler Order Number. The field has accessory components consisting of Placer Order Number and Filler Order Number.

595 3.4.4.1.2.6.14 OBR-37   Number of Sample Containers   (NM)   01028

This field identifies the number of containers for a given sample. This field is not used in endoscopy.

3.4.4.1.2.6.15 OBR-38   Transport Logistics of Collected Sample   (CE)   01029

This field is the means by which a sample reaches the diagnostic service provider. This field is
600 not used in endoscopy.

3.4.4.1.2.6.16 OBR-39   Collector's Comment   (CE)   01030

This field is for reporting additional comments related to the sample. This field is not used in endoscopy.

3.4.4.1.2.6.17 OBR-44   Procedure Code   (CE)   00393

605 In Endoscopy, this field is used to send the CPT code of the performed procedure.

3.4.4.1.2.6.18 OBR-46   Placer Supplemental Service Information   (CE)   01474

```
Components:  <Identifier (ST)> ^ <Text (ST)> ^ <Name of Coding
             System (ID)> ^ <Alternate Identifier (ST)> ^ <Alternate
             Text (ST)> ^ <Name of Alternate Coding System (ID)>
```

610 This field contains supplemental service information sent from the placer system to the filler system for the universal procedure code reported in *OBR-4 Universal Service ID*. This field will be used to provide ordering information detail that is not available in other, specific fields in the OBR segment. Multiple supplemental service information elements may be reported. Refer to *User-defined Table 0411 - Supplemental service information values*.

615 This field can be used to describe details such as whether study is to be done on the right or left, for example where the study is of the arm and the order master file does not distinguish right from left or whether the study is to be done with or without contrast (when the order master file does not make such distinctions).

In Endoscopy, it is recommended that types and organs should be encoded into OBR-4 Universal
620 Service ID.

3.4.4.1.2.7 OBX

The OBX segment is used to transmit a single observation or observation fragment. It represents the smallest indivisible unit of a report. The OBX segment can also contain encapsulated data, e.g., a CDA[2] document or a DICOM[3] image.

---

[2] CDA is the registered trademark of Health Level Seven International.

[3] DICOM is the registered trademark of the National Electrical Manufacturers Association for its standards publications relating to digital communications of medical information.

625 Its principal mission is to carry information about observations in report messages. But the OBX can also be part of an observation order (see Section 4.4, "Order Message Definitions"). In this case, the OBX carries clinical information needed by the filler to interpret the observation the filler makes.

Examples of comments for observation results

630 Comments including supplements to study materials, methodology and results as well as explanations of reasons for items unstudied should be described in the OBX following observation result OBX. The value type of the comment is typically set to "ST" or "TX," but the value type may be "CE (comment type)" by the agreement between two parties when it is only manageable/possible with the comment code. Use of free text with the fewest bars to the adding

635 of comment contents is recommended.

Table 3.4.4.1.2.7-1: HL7 Attribute Table – OBX – Observation/Result

SEQ	LEN	DT	OPT	RP/#	TBL#	ITEM#	ELEMENT NAME
1	4	SI	O			00569	Set ID – OBX
2	2	ID	C		0125	00570	Value Type
3	250	CE	R			00571	Observation Identifier
4	20	ST	C			00572	Observation Sub-ID
5	99999[4]	varies	C	Y[5]		00573	Observation Value
6	250	CE	O			00574	Units
7	60	ST	O			00575	References Range
8	5	IS	O	Y	0078	00576	Abnormal Flags
9	5	NM	O			00577	Probability
10	2	ID	O	Y		00578	Nature of Abnormal Test
11	1	ID	R		0085	00579	Observation Result Status
12	26	TS	O			00580	Effective Date of Reference Range
13	20	ST	O			00581	User Defined Access Checks
14	26	TS	O			00582	Date/Time of the Observation
15	250	CE	O			00583	Producer's ID
16	250	XCN	O	Y		00584	Responsible Observer
17	250	CE	O	Y		00936	Observation Method
18	22	EI	O	Y		01479	Equipment Instance Identifier
19	26	TS	O			01480	Date/Time of the Analysis

---

[4] The length of the observation field is variable, depending upon value type. See *OBX-2 value type*.

[5] May repeat for multipart, single answer results with appropriate data types, e.g., CE, TX, and FT data types.

3.4.4.1.2.7.1 OBX field definitions

See HL7 Ver2.5 Section 7.4.2 "OBX-Observation/Result Segment".

640 ### 3.4.4.1.2.7.2 OBX-1   Set ID - OBX   (SI)   00569

Serial number from 1 is set in the same OBR segment.

3.4.4.1.2.7.3 OBX-3   Observation Identifier   (CE)   00571

```
Components:  <Identifier (ST)> ^ <Text (ST)> ^ <Name of Coding
             System (ID)> ^ <Alternate Identifier (ST)> ^ <Alternate
645          Text (ST)> ^ <Name of Alternate Coding System (ID)>
```

This field contains a unique identifier for the observation.

In most systems, the identifier will **point** to a master observation table that will provide other attributes of the observation that may be used by the receiving system to process the observations it receives. The relation of an observation ID to a master observation table is analogous to the
650 relationship between a charge code (in a billing record) and the charge master.

3.4.4.1.2.7.4 OBX-4   Observation Sub-ID   (ST)   00572

This field is used to distinguish between multiple OBX segments with the same observation ID organized under one OBR. For example, a chest X-ray report might include three separate diagnostic impressions. The standard requires three OBX segments, one for each impression. By
655 putting a 1 in the Sub-ID of the first of these OBX segments, 2 in the second, and 3 in the third, we can uniquely identify each OBX segment for editing or replacement.

The sub-identifier is also used to group related components in reports such as surgical pathology. It is traditional for surgical pathology reports to include all the tissues taken from one surgical procedure in one report. Consider, for example, a single surgical pathology report that describes
660 the examination of gallbladder and appendix tissue. This report would be transmitted roughly as shown in Figure 3.4.4.1.2.7.4-1.

```
        OBR|1||1234^LAB|88304&SURG PATH REPORT|...<cr>
        OBX|1|CE|88304&ANT|1|T57000^GALLBLADDER^SNM|...<cr>
665     OBX|2|TX|88304&GDT|1|THIS IS A NORMAL GALLBLADDER|...<cr>
        OBX|3|TX|88304&MDT|1|MICROSCOPIC EXAM SHOWS HISTOLOGICALLY
             NORMAL GALLBLADDER TISSUE|...<cr>
        OBX|4|CE|88304&IMP|1|M-00100^NML^SNM|...<cr>
        OBX|5|CE|88304&ANT|2|T66000^APPENDIX^SNM|...<cr>
670     OBX|6|TX|88304&GDT|2|THIS IS A RED, INFLAMED, SWOLLEN, BOGGY APPENDIX|...<cr>
        OBX|7|TX|88304&MDT|2|INFILTRATION WITH MANY PMN's - INDICATING INFLAMMATORY
        CHANGE|...<cr>
        OBX|8|CE|88304&IMP|2|M-40000^INFLAMMATION NOS^SNM|...<cr>
```

Figure 3.4.4.1.2.7.4-1: Example of sub-identifier usage

675

The example in Figure 3.4.4.1.2.7.4-1 has two segments for each component of the report, one for each of the two tissues. Thus, there are two 88304&ANT segments; there are two 88304&GDT segments, and there are two 88304&MDT segments. Segments that apply to the gallbladder all have the sub-identifier 1. Segments that apply to the appendix all have sub-
680 identifier 2.

3.4.4.1.2.7.5 OBX-5   Observation Value   (varies)   00573

This field contains the value observed by the observation producer. *OBX-2-value type* contains the data type for this field according to which observation value is formatted. It is not a required field because some systems will report only the normalcy/abnormalcy (*OBX-8*), especially in
685 product experience reporting. The length of the observation field is variable, depending upon *OBX-3-value type*. This field may repeat for multipart, single answer results with appropriate data types, e.g., CE, TX, and FT data types.

Representation

This field contains the value of *OBX-3-observation identifier* of the same segment. Depending
690 upon the observation, the data type may be a number (e.g., a respiratory rate), a coded answer (e.g., a pathology impression recorded as SNOMED), or a date/time (the date/time that a unit of blood is sent to the ward). An observation value is always represented as the data type specified in *OBX-2-value type* of the same segment. Whether numeric or short text, the answer shall be recorded in ASCII text.

695 When the observation results are presented in numeric values with comparative operators or postfix, note that the description can be different between "ST"(String) and "SN"(Structured Numeric) value types. For example, ">100"" 2+" in ST type can be described ">^100"" ^2^+" in SN type. When possible, SN type should be chosen.

Reporting logically independent observations

700 The main sections of dictated reports, such as endoscopic studies or history and physicals, are reported as separate OBX segments. In addition, each logically independent observation should be reported in a separate OBX segment, i.e., one OBX segment should not contain the **result** of more than one logically independent observation. This requirement is included to assure that the contents of *OBX-6-units*, *OBX-8-abnormal flags*, and *OBX-9-probability* can be interpreted
705 unambiguously. The electrolytes and vital signs batteries, for example, would each be reported as four separate OBX segments. Two diagnostic impressions, e.g., congestive heart failure and pneumonia, would also be reported as two separate OBX segments whether reported as part of a discharge summary or chest X-ray report. Similarly, two bacterial organisms isolated in a single bacterial culture would be reported as two separate OBX segments.

710 Though two independent diagnostic **statements** cannot be reported in one OBX segment, multiple categorical responses are allowed (usually as CE data types separated by repeat delimiters), so long as they are fragments (modifiers) that together construct one diagnostic statement. Right upper lobe (recorded as one code) and pneumonia (recorded as another code), for example, could be both reported in one OBX segment. Such multiple "values" would be
715 separated by repeat delimiters.

Multiple OBX segments with the same observation ID and Sub ID

720

725

In some systems, a single observation may include **fragments** of more than one data type. The most common example is a numeric result followed by coded comments (CE). In this case, the logical observation can be sent in more than one OBX segment. For example, one segment of numeric or string data type for the numeric result and another segment of CE data type for coded comments. If the producer was reporting multiple coded comments, they would all be sent in one OBX segment separated by repeat delimiters because they all modified a single logical observation. Multiple OBX segments with the same observation ID and sub ID should always be sent in sequence with the most significant OBX segment (the one that has the normal flag/units and or reference range and status flag) first. The value of *OBX-6 through 12* should be null in any following OBX segments with the same *OBX-3-observation identifier* and *OBX-4-observation sub-ID*. For the purpose of replacement or deletion, multiple OBX segments with the same observation ID and sub ID are treated as a unit. If any are replaced or deleted, they all are replaced.

730 **Coded values**

735

When an OBX segment contains values of CE data types, the observations are stored as a combination of codes and/or text. In HL7 Section 7.8.3, "CSS - Clinical Study Data Schedule Segment," examples of results that are represented as CE data types are shown in the first and second OBX segments of OBR 1 and the first and second OBX segments of OBR 2. The observation may be an observation battery ID (for recommended studies), a diagnostic code or finding (for a diagnostic impression), or an anatomic site for a pathology report, or any of the other kinds of coded results.

740

It is not necessary to always encode the information stored within a coded observation. For example, a chest X-ray impression could be transmitted as pure text even though it has a CE data type. In this case, the test must be recorded as the second component of the **result code,** e.g.,

```
OBX|1|CE|71020&IMP|1|^CONGESTIVE HEART FAILURE.|...<cr>
```

745

However, separate impressions, recommendations, etc., even if recorded as pure text, should be recorded in separate result segments. That is, congestive heart failure and pneumonia should not be sent as:

```
OBX|1|CE|71020&IMP|1|^CONGESTIVE HEART FAILURE AND PNEUMONIA|...<cr>
```

but as:

750

```
OBX|1|CE|71020&IMP|1|^CONGESTIVE HEART FAILURE|...<cr>
OBX|2|CE|71020&IMP|2|^PNEUMONIA|....<cr>
```

Even better would be fully-coded results that include computer understandable codes (component 1) instead of, or in addition to, the text description (component 2). One may include multiple values in a CE value and these can be mixtures of code and text, but only when they are

755 needed to construct one diagnosis, impression, or concept. When text follows codes as an independent value it would be taken as a modifier or addenda to the codes, for example:

```
OBX|1|CE|710120&IMP^CXR|1|428.0^CONGESTIVE HEART FAILURE^I9C~^MASSIVE
HEART|...<cr>
```

760 The text in component 2 should be an accurate description of the code in component 1. Likewise, if used, the text in component 5 should be an accurate description of the code in component 4.

Insertion of CDA within an OBX:

CDA documents are to be exchanged in the OBX segment. The value of *OBX-2-Value Type* should be set to 'ED'. *OBX-5-Observation Value* contains the MIME package encoded as an
765 encapsulated data type. The components should be valued as follows:

- Set the value of *OBX-5.2-Type of Data* to 'multipart'.

- Set the value of *OBX-5.3-Data Subtype* to 'x-hl7-cda-level-one'

- Set the value of *OBX-5.4-Encoding* to 'A'. (Note that a MIME package is not itself Base64-encoded. Rather entities within the MIME package are Base64-encoded. A
770 MIME package is sent as ASCII text. Therefore, the correct value is 'A' not 'Base64'.

- Set the value of *OBX-5.5-Data* to equal the MIME package. Every entity within the MIME package must be Base64-encoded. As stated in Chapter 2, "the data component must be scanned before transmission for HL7 delimiter characters (and other non-printing ASCII or non-ASCII characters such as LineFeed), and any found must be escaped by
775 using the HL7 escape sequences defined in HL7 Section 2.7 'Use of escape sequences in text fields'. On the receiving application, the data field must be de-escaped after being parsed". As a result, CR/LF sequences required in the MIME package need to be escaped (i.e., converted to '\X0D0A\') prior to transmission. The content type of the first MIME entity is set to 'application/x-hl7-cda-level-one+xml', and should contain the CDA
780 document itself. Multimedia objects referenced by the CDA document that need to be transmitted within the CDA document are to be placed in successive entities of the MIME package.

3.4.4.1.2.7.6 OBX-7   References Range   (ST)   00575

When the observation quantifies the amount of a toxic substance, then the upper limit of the
785 range identifies the toxic limit. This field is not used in endoscopy.

3.4.4.1.2.7.7 OBX-8   Abnormal Flags   (IS)   00576

This field contains a table lookup indicating the normalcy status of the result. It is used as a flag to draw attention to the normality or otherwise of observation results.

3.4.4.1.2.7.8 OBX-9   Probability   (NM)   00577

790 This field contains the probability of a result being true for results with categorical values. This field is not used in endoscopy.

3.4.4.1.2.7.9 OBX-10   Nature of abnormal test   (ID)   00578

This field contains the nature of the abnormal test. This field is not used in endoscopy.

3.4.4.1.2.7.10 OBX-11   Observation Result Status   (ID)   00579

795 This field contains the observation result status. Refer to *HL7 Table 0085 - Observation result status codes interpretation* for valid values. This field reflects the current completion status of the results for one Observation Identifier.

The status of O shall be used to indicate that the OBX segment is used for a dynamic specification of the required result. An OBX used for a dynamic specification must contain the
800 detailed examination code, units, etc., with *OBX-11* valued with O, and *OBX-2* and *OBX-5* valued with null.

In Endoscopy, only the value "O" is used in the observation order message. However, the value "F" is used even in the observation order message for the information required for the observation, such as profile information, to indicate that it is information based on a performed
805 observation.

Table 3.4.4.1.2.7.10-1: HL7 Table 0085 - Observation result status codes interpretation

Value	Description	Comment
C	Record coming over is a correction and thus replaces a final result	
D	Deletes the OBX record	
F	Final results; can only be changed with a corrected result.	
I	Specimen in lab; results pending	
N	Not asked; used to affirmatively document that the observation identified in the OBX was not sought when the universal service ID in OBR-4 implies that it would be sought.	
O	Order detail description only (no result)	
P	Preliminary results	
R	Results entered -- not verified	
S	Partial results	
X	Results cannot be obtained for this observation	
U	Results status change to final without retransmitting results already sent as 'preliminary.' For example, radiology changes status from preliminary to final.	
W	Post original as wrong, e.g., transmitted for wrong patient.	

3.4.4.1.2.7.11 OBX-12   Effective Date of Reference Range   (TS)   00580

This field contains the date (and optionally, the time) on which the values in *OBX-7-reference*
810 *range* went into effect. This field is not used in endoscopy.

3.4.4.1.2.7.12 OBX-13   User Defined Access Checks   (ST)   00581

This field permits the producer to record results-dependent codes for classifying the observation at the receiving system. This field is not used in endoscopy.

3.4.4.1.2.7.13 OBX-14   Date/Time of the Observation   (TS)   00582

815   `Components:  <Time (DTM)> ^ <DEPRECATED-Degree of Precision (ID)>`

In endoscopy, the observation date-time is the date-time that the observation was performed.

3.4.4.1.2.7.14 OBX-17   Observation Method   (CE)   00936

This optional field can be used to transmit the method or procedure by which an observation was obtained when the sending system wishes to distinguish among one measurement obtained by 820 different methods and the distinction is not implicit in the test ID. This field is not used in endoscopy.

3.4.4.1.2.7.15 OBX-19   Date/Time of the Analysis   (TS)   01480

This field is used to transfer the time stamp associated with generation of the analytical result by the instrument specified in Equipment Instance Identifier (see above). This field is not used in 825 endoscopy.

3.4.4.1.2.8 TQ1

The TQ1 segment is used to specify the complex timing of events and actions such as those that occur in order management and scheduling systems. This segment determines the quantity, frequency, priority, and timing of a service. By allowing the segment to repeat, it is possible to 830 have service requests that vary the quantity, frequency and priority of a service request over time.

The TQ1 segment is a required segment in endoscopy order. It describes priority of the order.

Table 3.4.4.1.2.8-1: HL7 Attribute Table – TQ1 – Timing/Quantity

SEQ	LEN	DT	OPT	RP/#	TBL#	ITEM#	ELEMENT NAME
1	4	SI	O			01627	Set ID - TQ1
2	20	CQ	O			01628	Quantity
3	540	RPT	O	Y	0335	01629	Repeat Pattern
4	20	TM	O	Y		01630	Explicit Time
5	20	CQ	O	Y		01631	Relative Time and Units
6	20	CQ	O			01632	Service Duration
7	26	TS	O			01633	Start date/time
8	26	TS	O			01634	End date/time
9	250	CWE	O	Y	0485	01635	Priority
10	250	TX	O			01636	Condition text
11	250	TX	O			01637	Text instruction

SEQ	LEN	DT	OPT	RP/#	TBL#	ITEM#	ELEMENT NAME
12	10	ID	C		0427	01638	Conjunction
13	20	CQ	O			01639	Occurrence duration
14	10	NM	O			01640	Total occurrence's

3.4.4.1.2.8.1 TQ1 field definitions

See HL7 Ver2.5 Section 4.5.4 "TQ1-Timing/Quantity Segment".

3.4.4.1.2.8.2 TQ1-9   Priority (CWE) 01635

```
Components:  <Identifier (ST)> ^ <Text (ST)> ^ <Name of Coding
             System (ID)> ^ <Alternate Identifier (ST)> ^ <Alternate
             Text (ST)> ^ <Name of Alternate Coding System (ID)> ^
             <Coding System Version ID (ST)> ^ <Alternate Coding System
             Version ID (ST)> ^ <Original Text (ST)>
```

This field describes the urgency of the request. The priority values are shown as follows. If the priority is not specified, the default R should necessarily be assigned.

Example

R

S^Emergency

Table 3.4.4.1.2.8.2-1: User-Defined Table 0485 – Extended Priority Codes

Value	Description	Comment
S	Stat	With highest priority
A	ASAP	Fill after S orders
R	Routine	Default
P	Preop	
C	Callback	
T	Timing critical	A request implying that it is critical to come as close as possible to the requested time, e.g., for a trough anti-microbial level.
TS<integer>		Timing critical within <integer> seconds.
TM<integer>		Timing critical within <integer> minutes.
TH<integer>		Timing critical within <integer> hours.
TD<integer>		Timing critical within <integer> days.
TW<integer>		Timing critical within <integer> weeks.
TL<integer>		Timing critical within <integer> months.
PRN	As needed	

850 ### 3.4.4.1.2.9 ZE1 - Performed Data Segment

The ZE1 segment is information relating to implementation of the endoscopy including "Procedure Information", "Healthcare Practitioner Information", and "Material Information". When multiple instances of performed data arise for a single observation order, multiple ZE1 segments will be present.

855 **Table 3.4.4.1.2.9-1: Attribute Table – ZE1- Performed Data Segment**

SEQ	LEN	DT	OPT	RP/#	ITEM#	ELEMENT NAME
1	4	SI	R		ZE001	Set ID
2	20	IS	R		ZE002	Control code Scheduled/Performed
3	483	CWE	R		ZE003	Procedure
4	16	NM	O		ZE004	Number of procedures
5	483	CWE	O		ZE005	Supplemental billing information
6	292	JCC	N		ZE006	Healthcare practitioner category Physician/Endoscopy technician/Nurse
7	3002	XCN	O	Y	ZE007	Healthcare practitioner
8	20	IS	N		ZE008	Material category Drug/Instrument/Material
9	250	ZRD	N	Y	ZE009	Material used
10	850	XTN	O		ZE010	Contact information
11	199	ST	O		ZE011	Implementation field
12	199	ST	O		ZE012	Accounting field

3.4.4.1.2.9.1 ZE1 Field Definitions

3.4.4.1.2.9.2 ZE1-1   Set ID   (SI)   ZE001

The serial number from 1 given to ZE1 segments in the same group.

860 Note: It is not a serial number for each message.

3.4.4.1.2.9.3 ZE1-2   Control code   (IS)   ZE002

Whether the information is for a scheduled observation or one already performed.

Mainly used for RS (results) only.

Table 3.4.4.1.2.9.3-1: Table Control code

Value	Description	Comment
PL	Scheduled	

Value	Description	Comment
RS	Results	

865

3.4.4.1.2.9.4 ZE1-3 Procedure (CWE) ZE003

Procedures used to implement the endoscopy.

Example: In response to an order for routine upper GI endoscopy with biopsy collection, if biopsy collection was performed from the esophagus and stomach, different values can be set for
870 each in two ZE1 segments.

3.4.4.1.2.9.5 ZE1-4 Number of procedures (NM) ZE004

The number of procedures specified in ZE1-3.

3.4.4.1.2.9.6 ZE1-5 Supplemental billing information (CWE) ZE005

The supplemental billing information.

875 This field is not used for endoscopy.

3.4.4.1.2.9.7 ZE1-6 Healthcare practitioner category (JCC) ZE006

Job title and employment status of the healthcare practitioners involved.

This field is not used for endoscopy.

3.4.4.1.2.9.8 ZE1-7 Healthcare practitioner (XCN) ZE007

880 Names of the health practitioners involved. Written as a set with the health practitioner category. Repetition is possible.

This field is not used for endoscopy.

3.4.4.1.2.9.9 ZE1-8 Material category (IS) ZE008

Category of materials used for the observation.

885 This field is not used for endoscopy.

3.4.4.1.2.9.10 ZE1-9 Material used (ZRD) ZE009

Materials used for the observation.

This field is not used for endoscopy.

3.4.4.1.2.9.11 ZE1-10 Contact information (XTN) ZE010

890 Contact information.

3.4.4.1.2.9.12 ZE1-11   Implementation field   (ST)   ZE011

Set comments concerning implementation.

3.4.4.1.2.9.13 ZE1-12   Accounting field   (ST)   ZE012

Set comments concerning accounting.

895 ## 3.4.4.1.3 Expected Actions

The Order Placer and Order Filler are not required to acknowledge this message or parse the contents.

3.4.5 Security Considerations

This transaction may contain patient information in PID.

900 ## 3.4.5.1 Security Audit Considerations

This transaction is not associated with an ATNA Trigger Event.

Add Section 3.5

3.5 Fill Endoscopy Order [ENDO-5]

905 This transaction corresponds to transaction [ENDO-5] of the IHE Technical Framework. Transaction [ENDO-5] is used by the actors: Order filler and Performed Procedure Reporter.

3.5.1 Scope

This transaction is the endoscopy order filling message from the Order Filler to the Performed Procedure Reporter.
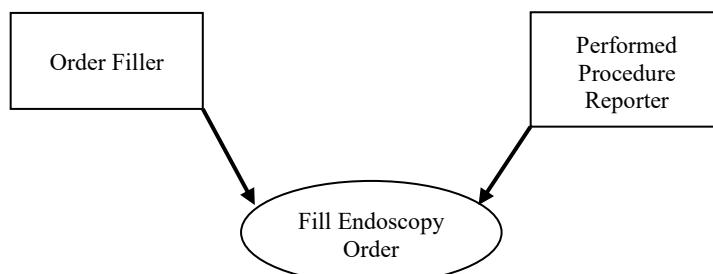
910 ## 3.5.2 Actor Roles

Figure 3.5.2-1: Use Case Diagram

Table 3.5.2-1: Actor Roles

Actor:	Order Filler
Role:	Provide endoscopy order filling information.
Actor:	Performed Procedure Reporter
Role:	Receive endoscopy order filling information.

915

3.5.3 Referenced Standards

HL7 Ver2.5 Chapter 4.4

3.5.4 Interaction Diagram
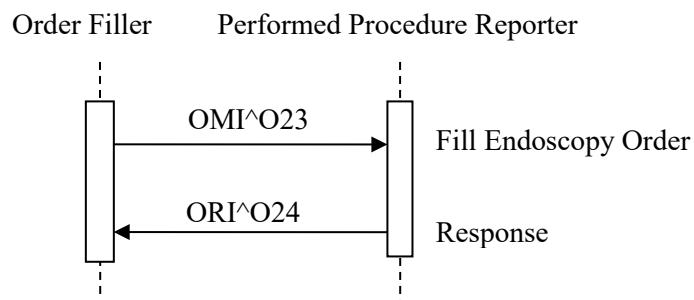
920

Figure 3.5.4-1: OMI Interaction Diagram

3.5.4.1 OMI^O23

An imaging order message (endoscopy notification) (023) is an event that notifies
925 endoscopy/procedure information.

3.5.4.1.1 Trigger Events

O23: Imaging order

3.5.4.1.2 Message Semantics

OMI^O23^OMI_O23	Imaging Order Message	Status	Chapter
MSH	Message Header		2
[{ NTE }]	Notes and Comments (for Header)		2

OMI^O23^OMI_O23	Imaging Order Message	Status	Chapter
PID	Patient Identification		3
[{ NTE }]	Notes and Comments (for Patient ID)		2
PV1	Patient Visit		3
[PV2]	Patient Visit- Additional Info		3
[{ AL1 }]	Allergy Information		3
{	--- ORDER begin		
ORC	Common Order		4
{	--- TIMING begin		
TQ1	Timing/Quantity		4
[{ TQ2 }]	Timing/Quantity Order Sequence		4
}	--- TIMING end		
OBR	Observation		4
[{ NTE }]	Notes and Comments (for Detail)		2
[{	--- OBSERVATION begin		
OBX	Observation/Result		7
[{ NTE }]	Notes and Comments (for Results)		2
}]	--- OBSERVATION end		
{ IPC }	Imaging Procedure Control		4
}	--- ORDER end		

930   Note: [ ] indicates optional items, { } indicates repeatable items.

3.5.4.1.2.1 IPC

The IPC segment contains information about tasks that need to be performed in order to fulfill the request for imaging service. The information includes location, type and instance

935   identification of equipment (acquisition modality) and stages (procedure steps).

Table 3.5.4.1.2.1-1: HL7 Attribute Table – IPC – Imaging Procedure Control Segment

SEQ	LEN	DT	OPT	RP/#	TBL#	ITEM #	ELEMENT NAME
1	80	EI	R			01330	Accession Identifier
2	22	EI	R			01658	Requested Procedure ID
3	70	EI	R			01659	Study Instance UID
4	22	EI	R			01660	Scheduled Procedure Step ID
5	16	CE	O			01661	Modality

SEQ	LEN	DT	OPT	RP/#	TBL#	ITEM #	ELEMENT NAME
6	250	CE	O	Y		01662	Protocol Code
7	22	EI	O			01663	Scheduled Station Name
8	250	CE	O	Y		01664	Scheduled Procedure Step Location
9	16	ST	O			01665	Scheduled AE Title

3.5.4.1.2.1.1 IPC field definitions

See HL7 Ver2.5 Section 4.5.6 "IPC-Imaging Procedure Control Segment".

3.5.4.1.2.1.2 IPC-1 Accession Identifier (EI) 01330

```
Components:  <Entity Identifier (ST)> ^ <Namespace ID (IS)> ^
             <Universal ID (ST)> ^ <Universal ID Type (ID)>
```

A workflow-management EOF generated number that identifies the Filler Order for an Imaging Service (Imaging Service Request). This identifier corresponds one-to-one to the Order Filler number but is used in internal tracking of the work by the EOF and in communication between EOF within the department. It also has specific requirements to assure its compatibility with DICOM. It is a case of the Entity Identifier data type (Section 2.A.28). Its first component is a string that identifies the Imaging Service Request. A limit of sixteen (16) characters is required to allow compatibility with DICOM. See DICOM Standard Part 3 for further details on DICOM Attribute (0008,0050) that conveys information identical to the component one of this field.

3.5.4.1.2.1.3 IPC-2 Requested Procedure ID (EI) 01658

```
Components:  <Entity Identifier (ST)> ^ <Namespace ID (IS)> ^
             <Universal ID (ST)> ^ <Universal ID Type (ID)>
```

This field is the identifier of the Requested Procedure that the workflow management EOF selected to perform as a part of the order for the imaging service. The first component of this field is a string that identifies the Requested Procedure. A limit of sixteen (16) characters is required to allow compatibility with DICOM. This string must uniquely identify the Requested Procedure within the scope of the order (as specified by accession number). This uniqueness must persist over time. See DICOM Standard Part 3 for further details on DICOM Attribute (0040,0001) that conveys information identical to the component one of this field.

The second through fourth components contain the ID of the workflow management EOF, in the form of the HD data type (see Section 2.A.36, "HD - hierarchic designator"). The second component is a user-defined coded value that uniquely defines the application from other applications on the network. A limit of five (5) characters is suggested but not required. The second component of the Requested Procedure number always identifies the actual filler of an order.

3.5.4.1.2.1.4 IPC-3   Study Instance UID   (EI)   01659

```
Components: <Entity Identifier (ST)> ^ <Namespace ID (IS)> ^
            <Universal ID (ST)> ^ <Universal ID Type (ID)>
```

970   Globally unique identifier assigned by the workflow management EOF to the Imaging Study under which all images and other DICOM objects produced in the course of the Requested Procedure shall be collected. It is a case of the Entity Identifier data type (Section 2.A.28). Its first component is a string that identifies the Study. A limit of sixty-four (64) characters is required to allow compatibility with DICOM. See DICOM Standard Part 3 for further details on
975   DICOM Attribute (0020,000D) that conveys information identical to component one of this field. The second through fourth components contain the ID of the workflow management EOF, in the form of the HD data type (see Section 2.A.36, "HD - hierarchic designator"). The second component is a user-defined coded value that uniquely defines the application from other applications on the network. A limit of five (5) characters is suggested but not required. The
980   second component of the Study Instance UID always identifies the actual filler of an order.

3.5.4.1.2.1.5 IPC-4   Scheduled Procedure Step ID   (EI)   01660

```
Components: <Entity Identifier (ST)> ^ <Namespace ID (IS)> ^
            <Universal ID (ST)> ^ <Universal ID Type (ID)>
```

This field is the identifier of a particular Procedure Step (sub-procedure) of the Requested
985   Procedure that the workflow management EOF selected to perform as a part of the order for imaging service. It is a case of the Entity Identifier data type (Section 2.A.28). Its first component is a string that identifies the Procedure Step. A limit of sixteen (16) characters is required to allow compatibility with DICOM. This string must uniquely identify the Procedure Step within the scope of the Requested Procedure. This uniqueness must persist over time. See
990   DICOM Standard Part 3 for further details on DICOM Attribute (0040,0009) that conveys information identical to the component one of this field.

The second through fourth components contain the ID of the workflow management EOF, in the form of the HD data type (see Section 2.A.36, "HD - hierarchic designator"). The second component is a user-defined coded value that uniquely defines the application from other
995   applications on the network. A limit of five (5) characters is suggested but not required. The second component of the Requested Procedure number always identifies the actual filler of an order.

3.5.4.1.3 Expected Actions

Section not applicable.

1000   ### 3.5.4.2 ORI^O24 Imaging Order Response

An imaging order response message (024) is an event where a response to an endoscopy order message.

3.5.4.2.1 Trigger Events

O24: Imaging order response message to any OMI.

1005 **3.5.4.2.2 Message Semantics**

ORI^O24^ORI_O24	Imaging Order Acknowledgment Message	Status	Chapter
MSH	Message Header		2
MSA	Message Acknowledgment		2
[{ ERR }]	Error		2
[{ NTE }]	Notes and Comments (for Header)		2
[	--- RESPONSE begin		
PID	Patient Identification		3
[{ NTE }]	Notes and Comments (for Patient ID)		2
{	--- ORDER begin		
ORC	Common Order		4
[{	--- TIMING begin		
TQ1	Timing/Quantity		4
[{ TQ2 }]	Timing/Quantity Order Sequence		4
}]	--- TIMING end		
OBR	Observation		4
[{ NTE }]	Notes and Comments (for Detail)		2
{ IPC }	Imaging Procedure Control		4
}	--- ORDER end		
]	--- RESPONSE end		

Note: [ ] indicates optional items, { } indicates repeatable items.

3.5.4.2.3 Expected Actions

1010 Section not applicable

3.5.5 Security Considerations

Section not applicable

3.5.5.1 Security Audit Considerations

Section not applicable

1015

Appendices

None

Volume 2 Namespace Additions

1020 | *Add the following terms to the IHE General Introduction Appendix G:*

None

1025

Volume 3 – Content Modules

This section is not applicable.

5 Namespaces and Vocabularies

Add to Section 5 Namespaces and Vocabularies

1030   Not applicable

6 Content Modules

No content modules defined by this profile.

Appendices

None

1035

Volume 3 Namespace Additions

Add the following terms to the IHE Namespace:

None

1040

Volume 4 – National Extensions

1045   # 4 National Extensions

4.1 National Extensions for Japan

4.1.1 MSH

Optionality of MSH segment is defined as follows. It is based on the actual implementation in Japan.

1050

Table 4.1.1-1: MSH optionality

Field	Original	Japan
MSH-18	O	R
MSH-20	O	C

4.1.2 PID

Optionality of PID segment is defined as follows. It is based on the actual implementation in Japan.

1055

Table 4.1.2-1: PID optionality

Field	Original	Japan
PID-6	O	N
PID-7	O	RE
PID-8	O	RE
PID-9	B	N
PID-10	O	N
PID-12	B	N
PID-15	O	N
PID-17	O	N
PID-19	B	N
PID-20	B	N
PID-22	O	N
PID-23	O	N
PID-24	O	N
PID-25	O	N
PID-26	O	N
PID-27	O	N
PID-35	C	N
PID-36	C	N
PID-37	O	N

Field	Original	Japan
PID-38	O	N
PID-39	O	N

4.1.3 PV1

Optionality of PV1 segment is defined as follows. It is based on the actual implementation in Japan.

1060

Table 4.1.3-1: PV1 optionality

Field	Original	Japan
PV1-1	O	N
PV1-5	O	N
PV1-6	O	N
PV1-9	B	N
PV1-10	O	N
PV1-11	O	N
PV1-12	O	N
PV1-13	O	N
PV1-14	O	N
PV1-17	O	N
PV1-18	O	N
PV1-19	O	N
PV1-20	O	N
PV1-21	O	N
PV1-22	O	N
PV1-23	O	N
PV1-24	O	N
PV1-25	O	N
PV1-26	O	N
PV1-27	O	N
PV1-28	O	N
PV1-29	O	N
PV1-30	O	N
PV1-31	O	N
PV1-32	O	N
PV1-33	O	N
PV1-34	O	N
PV1-35	O	N
PV1-36	O	N

Field	Original	Japan
PV1-37	O	N
PV1-38	O	N
PV1-39	O	N
PV1-40	B	N
PV1-41	O	N
PV1-42	O	N
PV1-43	O	N
PV1-46	O	N
PV1-47	O	N
PV1-48	O	N
PV1-49	O	N
PV1-50	O	N
PV1-51	O	N
PV1-52	B	N

4.1.4 ORC

Optionality of ORC segment is defined as follows. It is based on the actual implementation in Japan.

1065

Table 4.1.4-1: ORC optionality

Field	Original	Japan
ORC-2	C	R
ORC-7	B	X
ORC-8	O	C
ORC-9	O	R
ORC12	O	R
ORC13	O	R

4.1.5 OBR

Optionality of OBR segment is defined as follows. It is based on the actual implementation in Japan.

1070

Table 4.1.5-1: OBR optionality

Field	Original	Japan
OBR-2	C	R
OBR-6	B	O

Field	Original	Japan
OBR-7	C	O
OBR-9	O	N
OBR-10	O	N
OBR-11	O	N
OBR-14	B	N
OBR-15	B	N
OBR-22	C	O
OBR-25	C	O
OBR-29	O	C
OBR-37	O	N
OBR-38	O	N
OBR-39	O	N

4.1.6 OBX

Optionality of OBX segment is defined as follows. It is based on the actual implementation in Japan.

1075

Table 4.1.6-1: OBX optionality

Field	Original	Japan
OBX-2	C	R
OBX-5	C	R
OBX-7	O	N
OBX-9	O	N
OBX-10	O	N
OBX-12	O	N
OBX-13	O	N
OBX-17	O	N
OBX-19	O	N

4.1.7 TQ1

Optionality of TQ1 segment is defined as follows. It is based on the actual implementation in Japan.

1080

Table 4.1.7-1: TQ1 optionality

Field	Original	Japan
TQ1-7	O	C
TQ1-9	O	R

4.1.8 IPC

Optionality of IPC segment is defined as follows. It is based on the actual implementation in Japan.

Table 4.1.8-1: IPC optionality

Field	Original	Japan
IPC-2	R	O
IPC-4	R	O
IPC-5	O	R