

**New Diagnostic Study Order**  
**Includes profiles and XML DTDs**

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Our work in refining the electronic information healthcare standard is non-proprietary; therefore we encourage you to participate in building the profiles and XML DTDs by posting your feedback on  
<http://www.egroups.com/invite/cistern>

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## Introduction

The purpose of this document is to describe message profiles for the diagnostic study order. An HL7 message profile is a precise and unambiguous specification of a standard HL7 message that has been analyzed for use within a particular set of requirements. Use case analysis and interaction modeling provides explicit message profile documentation, which will allow interface partners to understand; what data will be exchanged, the format of the data, and the acknowledgement responsibilities of the sender receiver.

Over the last number of years, the concept of basing standards development on an information model of the application domain has evolved. Development of this approach began in the early meetings of the IEEE P1157 Committee. This led to very similar processes being developed in the American College of Radiology - National Electrical Manufacturers Association (ACR-NEMA), Health Level Seven (HL7), and in the European Committee for Standardization (CEN) standards activities. The approach is based on the recognition that, regardless of the method of communication, the subject matter for health care communications is drawn from a representation or model of health care and health care processes. It follows that a common information model of the health care domain can be used as the starting point for any communication standard.

Development of a coherent set of messages from the Information Model requires a process for mapping the structure and content of the Information Model to the syntax of the messages. This was started in IEEE P1157, has been advanced by the work of CEN TC251 and is being adopted by the HL7 committee for development of their future messaging standards. HL7 Version 3.0 will be based upon an explicit object-oriented information model.

Killdara's approach is to use an Object Oriented Design complemented by a message profile, which is based on business logic, and use case modeling. Our goal is to provide a balance between specificity and flexibility of messaging with deliverables being:

- use case model
- dynamic definition (sequence diagram, ASN.1 dynamic profile identifier)
- static definition (message profiles, segment profiles, ASN.1 static profile identifier, and user friendly XML DTDs)

In order to accomplish this we have drawn upon the work done by the Andover Working Group (AWG) now the HL7 Conformance SIG, The Specification for Message profile Content V2.1 March 9, 2000, and when needing further clarification the HL7 Standard documentation.

### Object Oriented Approach

Object-Oriented Design (OOD) has evolved over the past decade as computer programmers attempted to lessen the monotony of writing the same code multiple times. In essence, the concept of OOD is to store code in small pieces,

with the relevant piece being called when required. In addition to its elegance, OOD has several benefits for the designers and users alike:

Reduced development time. As code does not have to be rewritten multiple times in various places throughout the DTD, using an Object-Oriented approach to design greatly reduces the development time-line.

Reduced maintenance and code upgrade time. As each piece of code is written in only one place, altering the code becomes a much simpler matter of finding and replacing a single instance of the code, rather than multiple instances

Shorter orientation time for new developers. As new developers begin to work with the DTDs, their learning curve is shortened by the consistency of the code. Once developers understand what is involved in a Message Header Segment, for example, they no longer have to wade through the same code in each message. Instead, the phrase "Message Header Segment" has a single meaning throughout the DTDs.

Fields, data types and those segments which have a common structure across messages utilize OOD in the creation of XML DTDs. Therefore DTDs are constructed for the following:

1. common segment definitions (message header (MSH), message acknowledgement (MSA), error segment (ERR) and notes (NTE)
2. fields
3. datatypes

All other segment structures, serving different functions across messages, are in concert with the respective trigger message.

The reuse of code is complemented by a message profile based on business logic and use case modeling, which provides specificity of messages

We found schemas are not necessary at this point as the functionality available to us in HL7 V2.2 Conformance SIG is captured in the DTDs; Once these DTDs are registered with the HL7 Conformance SIG Registry, they will not change.

### Why Message Profiles

Achieving "plug and play" information interchange among a set of healthcare applications requires consistent semantics for the shared domain. The sheer scope of the healthcare domain requires that the method used to define and document the semantics for the shared domain be both efficient and scalable. Rapid evolution of the underlying information systems infrastructure to support Integrated Delivery Systems requires that the healthcare applications investments of suppliers and customers be insulated from that evolution. The Information Model provides an open, standards-based architectural approach to meeting these objectives.

Support for scalability and evolution of a common semantic definition of the shared domain is provided through use of an object-oriented Information Model. Insulation from evolution in the underlying infrastructure is achieved by basing applications on a single Information Model, which is mapped to various underlying information interchange paradigms. The method for development of the Information Model has been demonstrated to support large-scale development and is consistent with emerging healthcare standards. The method provides for efficiency through both leverage of those standards and through tooling which has been developed to support the method.

### Translation of message symbol definition description to XML DTD form

Please note that conditional is documented in the tabular form as conditional but is mapped into a DTD as optional and remains the application's responsibility to address it.

HL7 Conformance Form	HL7 Repetition	Minimum Cardinality	Maximum Cardinality	XML Representation
<b>R(required)</b>	No	1	1	(blank)
	Yes	1	N	*(1 or many)
<b>R/E (required/empty)</b>	No	0	1	? (0 or 1)
	Yes	0	N	+ (0 or many)
<b>X (not supported)</b>	NA	0	0	Not present in the DTD

### HL7 Acknowledgement Modes

The HL7 standard provides two kinds of acknowledgement to an initiating message.

- accept (Acc) acknowledgement (unsolicited acknowledgement message)
- application (App) acknowledgement (ORR.O02 order response message)

The AccNE (accept never) is an unsolicited acknowledgement message, which signifies that the receiver got the message only. If the application is using the AppAL (application always) message, it is redundant to use AccNE. The application acknowledgement (ORR.O02) is sent only if the dynamic profile identifier specifies it. The AccNe is also not necessary if a reliable/robust transport mechanism guarantees messages will not be lost if, for example, the power shuts down. The message is persistent when it makes sure the destination receives the message or if, when necessary, the application can regenerate the message to respond to a query.

The AccNE\_AppNE indicates to the receiver that “when you receive the message don’t bother sending me you received order accepted”; otherwise an endless cycle of “I received your message, I received your received message ...” ensues.

## Diagnostic Study Order Overview

### Introduction

The diagnostic Study Order is used for generating orders for clinical observations and diagnostic studies. It could be an order for a service, test or treatment. The message initiates the transmission of information and subsequent actions which can be taken once a new order has been placed. This includes acceptance, cancellation, discontinuation, holding, releasing, and changing the order.

### Actors

1. Ordering Provider – responsible for the order of a service, test or treatment
  - a. Clinician - Is legally responsible for signing or countersigning all orders that are considered “invasive” i.e. medications, surgery, tests, procedures. Responsible for authorizing orders.
  - b. Nursing orders – defined in Standards of Care within an organization.
  - c. Non-medical services – Admission/discharge/transfer (ADT) clerks, maintenance personnel, pharmacists, inventory and storehouse personnel.
2. Placer System (Order System) – is responsible for sending a message to the appropriate subscriber when a new diagnostic study order (ORM) is placed.
3. Filler System (Laboratory System) – is responsible for fulfilling the order based on the criteria provided by the placer in the order message. In this use case, the dynamic profile of the initiating message requires the filler to send an application acknowledgement (ORR).

### What is an order?

1. A health professional writing a note to him/herself or to another health professional to make an observation on a patient at a later date. The placer and filler of a service request may be one and the same.
2. A patient or an authorized agent:
  - a. Licensed agent - ordering laboratory tests, bedside monitoring, diagnostic imaging, electrocardiograms, and vital signs by a clinician
  - b. Allied Health Professionals – procedures, surgery, medical equipment, home visits
  - c. Clerical agent – delivers non-medical services such as meals

### Who creates the order?

Who is authorized to order needs to be carefully identified.

1. clinician
2. dentist

3. nursing orders which do not have to be countersigned by a physician
4. social worker for medical devices, splints, antiseptics

The general workflow, which defines the life cycle of a diagnostic study order, involves several trigger events, which reflect a change to an order. These events can be further specialized into the following:

1. Submission of a new Diagnostic Study Order
2. Diagnostic Study Order Accepted
3. Unable to Accept Diagnostic Study Order
4. Diagnostic Order Canceled as Requested
5. Unable to Cancel Diagnostic Study Order

For each of the above trigger events, there will be a message profile containing:

1. Use case model
2. Dynamic Definition
  - a. Sequence diagram
  - b. ASN.1 dynamic profile identifier
3. Static Definition
  - a. Message profile
  - b. Segment profile
  - c. Field profile
  - d. ASN.1 static profile identifier
  - e. XML DTD describing the static message and segment profiles

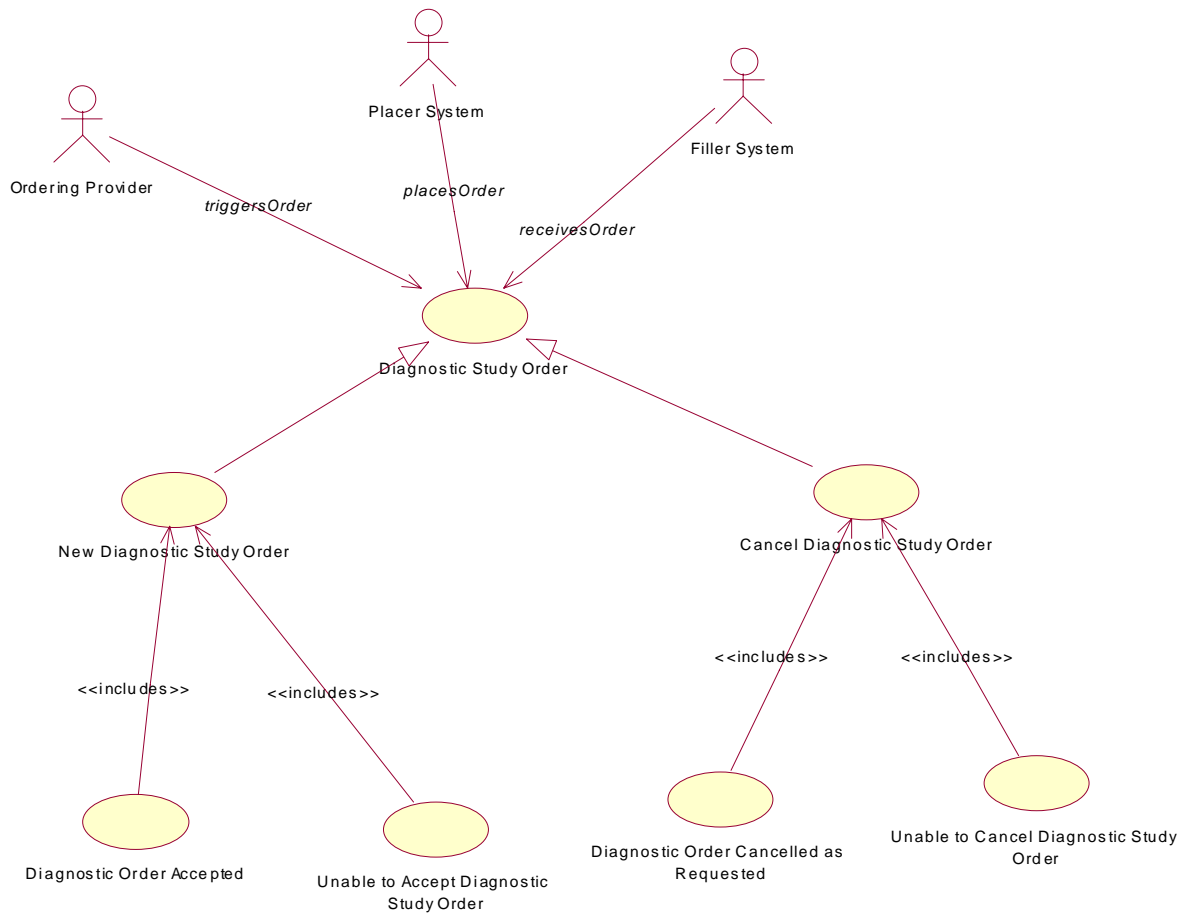
There will be separate abstract message definitions and field level definitions specified. Each order is associated with a single patient.

Order Request (ORM.O01)

Order Response (ORR.O02)



## Use Case Model - Overview



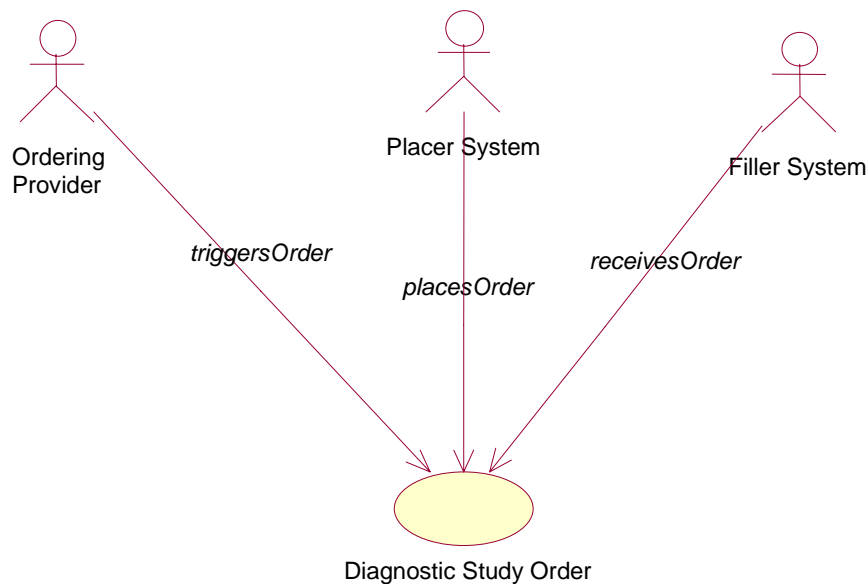
## Diagnostic Study Order (Message type ORM.O01)

### Introduction

This message requires information, which identifies the patient with whom this order is associated, as well as the patient's location. In addition, the specific test or study to perform must be specified, along with scheduling information to indicate when the test or study should be done. There may be results of previous tests or studies included with this new order, which provide supporting information, which can be used by the filler of this order.

The NTE segments are used to provide notes related to the observation request or any of the observation results. There may be zero, one or many NTE segments.

### Use Case Model



## Description

An Ordering Provider places a new Diagnostic Study Order for a patient by interacting with the Placer System (Order). Filler System (Laboratory) will later confirm that it can complete the order.

## Actors

See [Actors](#), Diagnostic Study Overview page 7

## Preconditions

1. The Ordering Provider authorizes a Diagnostic Study Order and places an order by interacting with the Placer System.

## Flow of Events

1. The Placer System sends an order notification (ORM) to the appropriate destination (Laboratory system) for this event.
2. The Filler System sends an order confirmation (ORR), which indicates, based on the information provided in the order that the filler can complete that order.

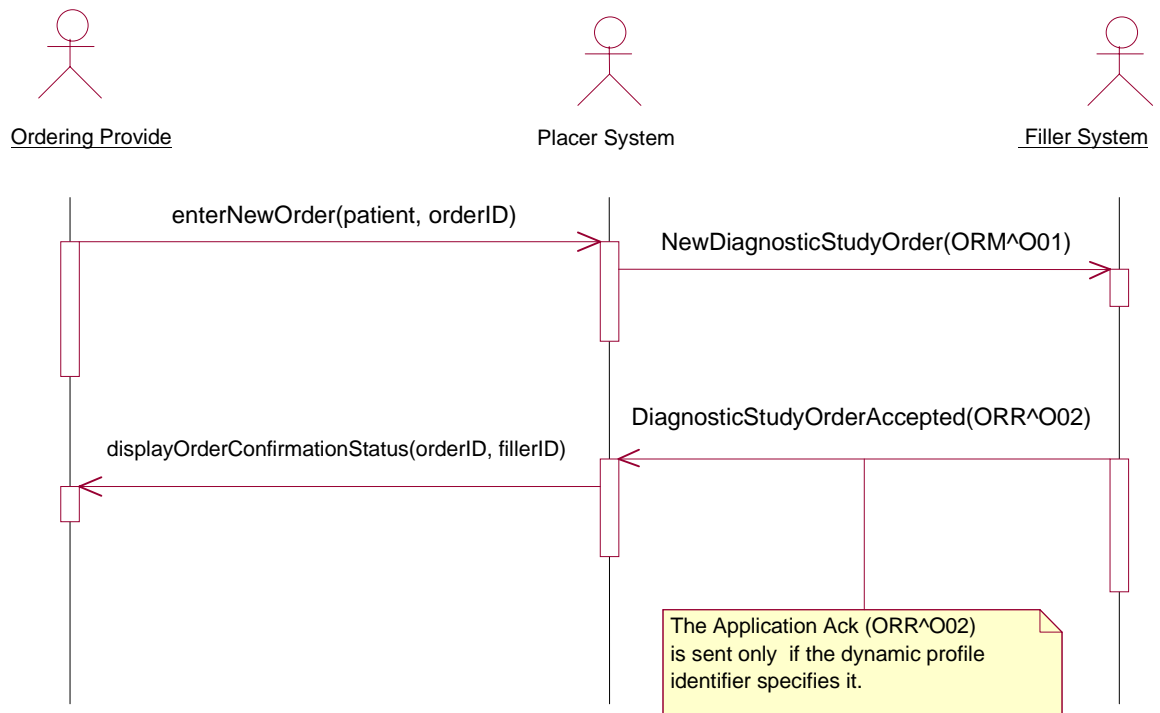
## Post Conditions

1. The Filler system was notified of a new Diagnostic Study Order.
2. The Placer System was notified that the Filler is either able to accept, unable to accept, cancels, or unable to cancel the new Diagnostic Study Order.

## Derives Events

## Dynamic Definition

## Interaction Model



### Dynamic Profile

For ORM^O01: ... AccNE\_AppAL

For ORR^O02: ... AccNE\_AppNE

For further explanation see, [HL7 Acknowledgement Modes](#), page 6

### Static Definition

#### Message Level Profile

ORM		ORM message	chapter
MSH	[1,1]	Message Header	5
PID	[1,1]	Patient Identification	6
PV1	[1,1]	Patient Visit	6
ORC	[1,1]	Common Order	6
{	[1,*]	OBR Group	
{OBR	[1,1]	Observation Request	6
{NTE}}	[0,*]	Notes	5
{	[1,*]	OBR Group	
{OBX	[1,1]	Observation/Result	6
{NTE}}}	[0,*]	Notes	5
}			
}			5

## Segment Level Profile

In the tabular representation of the fields contained within each supported segment, the type, length, and repeat count is defined. In addition, the value for each field is identified. For further information see [translation of message symbol definition description to XML DTD form](#) page 6

### MSH - Message Header Segment

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

SEQ	LEN	DT	R/O	RP/#	TBL#	ITEM#	ELEMENT NAME
1	1	ST	R			00001	Field Separator
2	4	ST	R			00002	Encoding Characters
3	40	ST	R			00003	Sending Application
4	20	ST	X			00004	Sending Facility
5	40	ST	RE			00005	Receiving Application
6	30	ST	X			00006	Receiving Facility
7	26	TS	RE			00007	Date/Time Of Message
8	40	ST	X			00008	Security
9	7	CM	R		0076	00009	Message Type
10	40	ST	R			00010	Message Control ID
11	1	ID	R		0103	00011	Processing ID
12	8	ID	R		0104	00012	Version ID
13	15	NM	X			00013	Sequence Number
14	180	ST	X			00014	Continuation Pointer
15	2	ID	R		0155	00015	Accept Acknowledgement Type
16	2	ID	R		0155	00016	Application Acknowledgement Type
17	2	ID	RE			00017	Country Code

### PID - Patient Identification

The PID segment is used in this message to communicate patient identification information.

SEQ	LEN	DT	R/O	RP/#	TBL#	ITEM#	ELEMENT NAME
1	4	ST	RE			00104	Set ID – Patient ID
2	16	CK	RE			00105	Patient ID (External ID)
3	20	CM	R	Y		00106	Patient ID (Internal ID)
4	12	ST	RE	Y		00107	Alternate Patient ID
5	48	PN	R			00108	Patient Name
6	30	ST	RE			00109	Mother's Maiden Name
7	26	TS	RE			00110	Date Of Birth
8	1	ID	RE		0001	00111	Sex
9	48	PN	RE	Y		00112	Patient Alias
10	1	ID	RE		0005	00113	Race
11	106	AD	RE	Y/3		00114	Patient Address
12	4	ID	X			00115	Country Code
13	40	TN	RE	Y/3		00116	Phone Number – Home
14	40	TN	RE	Y/3		00117	Phone Number – Business
15	25	ST	RE			00118	Primary Language
16	1	ID	RE		0002	00119	Marital Status
17	3	ID	RE		0006	00120	Religion

18	20	CK	RE			00121	Patient Account Number
19	16	ST	RE			00122	SSN Number – Patient
20	25	CM	RE			00123	Driver's Lic Num – Patient
21	20	CK	X			00124	Mother's Identifier
22	1	ID	X		0189	00125	Ethnic Group
23	25	ST	RE			00126	Birth Place
24	2	ID	X			00127	Multiple Birth indicator
25	2	NM	X			00128	Birth Order
26	3	ID	RE	Y	0171	00129	Citizenship
27	60	CE	RE		0172	00130	Veterans Military Status

### PV1 – Patient Visit

The PV1 segment is used in this message to communicate information regarding the location of the patient.

SEQ	LEN	DT	R/O	RP/#	TBL#	ITEM#	ELEMENT NAME
1	4	ST	X			00131	Set ID – Patient ID
2	1	ID	R		0004	00132	Patient Class
3	60	CM	RE			00133	Assigned Patient Location
4	2	ID	X		0007	00134	Admission Type
5	20	ST	X			00135	Preadmit Number
6	60	CM	RE			00136	Prior Patient Location
7	60	CN	X		0010	00137	Attending Doctor
8	60	CN	X		0010	00138	Referring Doctor
9	60	CN	X	Y/3	0010	00139	Consulting Doctor
10	3	ID	X		0069	00140	Hospital Service
11	60	CM	RE			00141	Temporary Location
12	2	ID	X		0087	00142	Preadmit Test Indicator
13	2	ID	X		0092	00143	Readmission Indicator
14	3	ID	X		0023	00144	Admit Source
15	2	ID	X	Y/10	0009	00145	Ambulatory Status
16	2	ID	X		0099	00146	VIP Indicator
17	60	CN	X		0010	00147	Admitting Doctor
18	2	ID	X		0018	00148	Patient Type
19	15	NM	X			00149	Visit Number (Account/Case Number)
20	60	CM	X	Y/4	0064	00150	Financial Class
21	2	ID	X		0032	00151	Charge Price Indicator
22	2	ID	X		0045	00152	Courtesy Code
23	2	ID	X		0046	00153	Credit Rating
24	2	ID	X	Y	0044	00154	Contract Code
25	8	DT	X	Y		00155	Contract Effective Date
26	12	NM	X	Y		00156	Contract Amount
27	3	NM	X	Y		00157	Contract Period
28	2	ID	X		0073	00158	Interest Code
29	1	ID	X		0110	00159	Transfer to Bad Debt Code
30	8	DT	X			00160	Transfer to Bad Debt Date
31	10	ID	X		0021	00161	Bad Debt Agency Code
32	12	NM	X			00162	Bad Debt Transfer Amount
33	12	NM	X			00163	Bad Debt Recovery Amount
34	1	ID	X		0111	00164	Delete Account Indicator
35	8	DT	X			00165	Delete Account Date
36	3	ID	X		0112	00166	Discharge Disposition
37	25	CM	X		0113	00167	Discharge to Location
38	2	ID	X		0114	00168	Diet Type
39	2	ID	X		0115	00169	Servicing Facility

40	1	ID	X		0116	00170	Bed Status
41	2	ID	X		0117	00171	Account Status
42	60	CM	RE			00172	Pending Location
43	60	CM	RE			00173	Prior Temporary Location

### ORC - Common Order Segment

The Common Order segment (ORC) is used to identify the specific order, which was accepted by the filler. ORC-1, Order Control, must be specified as "OK".

SEQ	LEN	DT	R/O	RP/#	TBL#	ITEM#	ELEMENT NAME
1	2	ID	R		0119	00215	Order Control
2	75	CM	RE			00216	Placer Order Number
3	75	CM	RE			00217	Filler Order Number
4	75	CM	RE			00218	Placer Group Number
5	2	ID	RE		0038	00219	Order Status
6	1	ID	X		0121	00220	Response Flag
7	200	TQ	RE			00221	Quantity/Timing
8	200	CM	RE			00222	Parent
9	26	TS	RE			00223	Date/Time of Transaction
10	80	CN	RE			00224	Entered By
11	80	CN	RE			00225	Verified By
12	80	CN	RE			00226	Ordering Provider
13	80	CM	RE			00227	Enterer's Location
14	40	TN	RE	Y/2		00228	Call Back Phone Number
15	26	TS	X			00229	Order Effective Date/Time
16	200	CE	RE			00230	Order Control Code Reason
17	60	CE	RE			00231	Entering Organization

### OBR – Observation Request Segment

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

SEQ	LEN	DT	R/O	RP/#	TBL#	ITEM#	ELEMENT NAME
1	4	ST	RE			00237	Set ID – Observation Request
2	75	CM	RE			00216	Placer Order Number
3	75	CM	RE			00217	Filler Order Number
4	200	CE	R			00238	Universal Service ID
5	2	ID	X			00239	Priority
6	26	TS	X			00240	Requested Date/Time
7	26	TS	RE			00241	Observation Date/Time #
8	26	TS	RE			00242	Observation End Date/Time #
9	20	CQ	RE			00243	Collection Volume *
10	60	CN	RE	Y		00244	Collector Identifier *
11	1	ID	RE		0065	00245	Specimen Action Code *
12	60	CE	RE			00246	Danger Code
13	300	ST	RE			00247	Relevant Clinical Info.
14	26	TS	RE			00248	Specimen Received Date/Time *
15	300	CM	RE		0070	00249	Specimen Source *
16	80	CN	RE	Y		00226	Ordering Provider
17	40	TN	RE	Y/2		00250	Order Callback Phone Number
18	60	ST	RE			00251	Placer field 1

19	60	ST	RE			00252	Placer field 2
20	60	ST	RE			00253	Filler Field 1 +
21	60	ST	RE			00254	Filler Field 2 +
22	26	TS	RE			00255	Results Rpt/Status Chng – Date/Time +
23	40	CM	X			00256	Charge To Practice +
24	10	ID	RE		0074	00257	Diagnostic Serv Sect ID
25	1	ID	RE		0123	00258	Result Status +
26	200	CM	RE			00259	Parent Result +
27	200	TQ	X	Y		00221	Quantity/Timing
28	150	CN	X	Y/5		00260	Result Copies To
29	150	CM	RE			00261	Parent Number +
30	20	ID	RE		0124	00262	Transportation Mode
31	300	CE	RE	Y		00263	Reason For Study

### NTE – Notes Segment

The Notes Segment (NTE) is a common format for sending notes and comments.

SEQ	LEN	DT	R/O	RP/#	TBL#	ITEM#	ELEMENT NAME
1	4	ST	RE			00096	Set ID – Notes and Comments
2	8	ID	RE		0105	00097	Source of Comment
3	64k	FT	RE	Y		00098	Comment

### OBX – Observation/Result

The Observation/Result Segment (OBX) is used to transmit a single observation or observation fragment. In this message, the OBX carries clinical information needed by the filler to interpret the observation the filler makes.

SEQ	LEN	DT	R/O	RP /#	TBL#	ITEM#	ELEMENT NAME
1	4	ST	RE			00569	Set ID – Observational Sample
2	2	ID	R		0125	00570	Value Type
3	80	CE	R			00571	Observation Identifier
4	20	ST	RE			00572	Observation Sub-ID
5	65536	*	C			00573	Observation Value
6	60	CE	RE			00574	Units
7	60	ST	RE			00575	References Range
8	10	ID	RE	Y/3	0078	00576	Abnormal Flags
9	5	NM	X			00577	Probability
10	5	ID	X		0080	00578	Nature of Abnormal Test
11	2	ID	R		0085	00579	Observ Result Status
12	26	TS	X			00580	Date Last Obs Normal Values
13	20	ST	X			00581	User Defined Access Checks
14	26	TS	RE			00582	Date/Time of the Observation
15	60	CE	RE			00583	Producer's ID
16	60	CN	RE			00584	Responsible Observer



Field Level Profile

[Fields.dtd](#) – see Appendix E

[Value sets](#) - see Appendix G

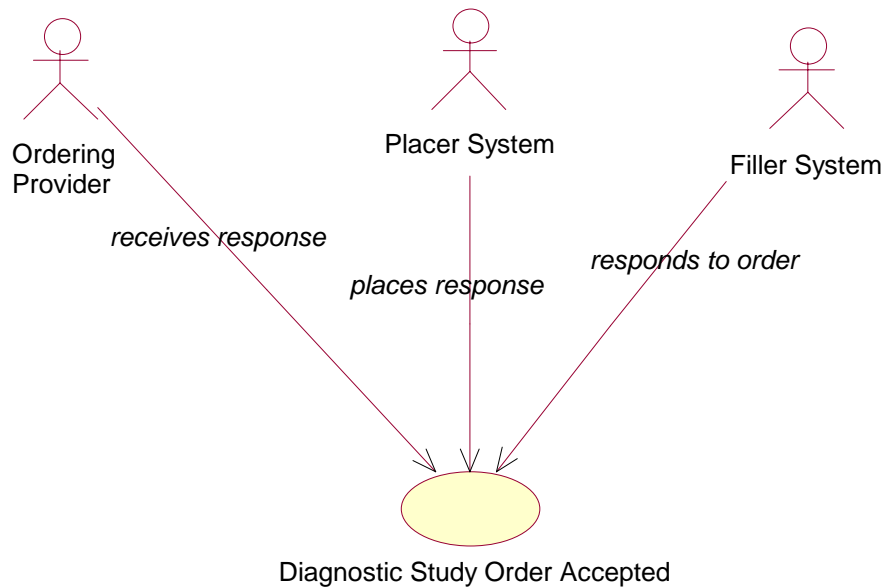
ASN.1 Static Profile ID (to be determined)

[ORM.O01 Order Message DTD](#) – (see Appendix A)

## Diagnostic Study Order Accepted (Message Type ORR.O02)

The purpose of this message is to respond to a New Diagnostic Study Order message. It indicates that the filler application received the order request and was able to accept the requested order. The PID segment is used to identify the patient with whom the order is associated. The ORC segment identifies the order that was accepted.

### Use Case Model



### Description:

The Filler System (laboratory) has received the order and accepts the order requested.

### Actors

See [Actors](#), Diagnostic Study Overview, page 7

### Preconditions

1. The Filler System receives an order.

### Flow of Events

1. The Placer System sends an order notification (ORM) to the appropriate destination (Laboratory system) for this event.
2. The Filler System sends an order confirmation (ORR), which indicates that, based on the information provided in the order, the filler can complete that order.

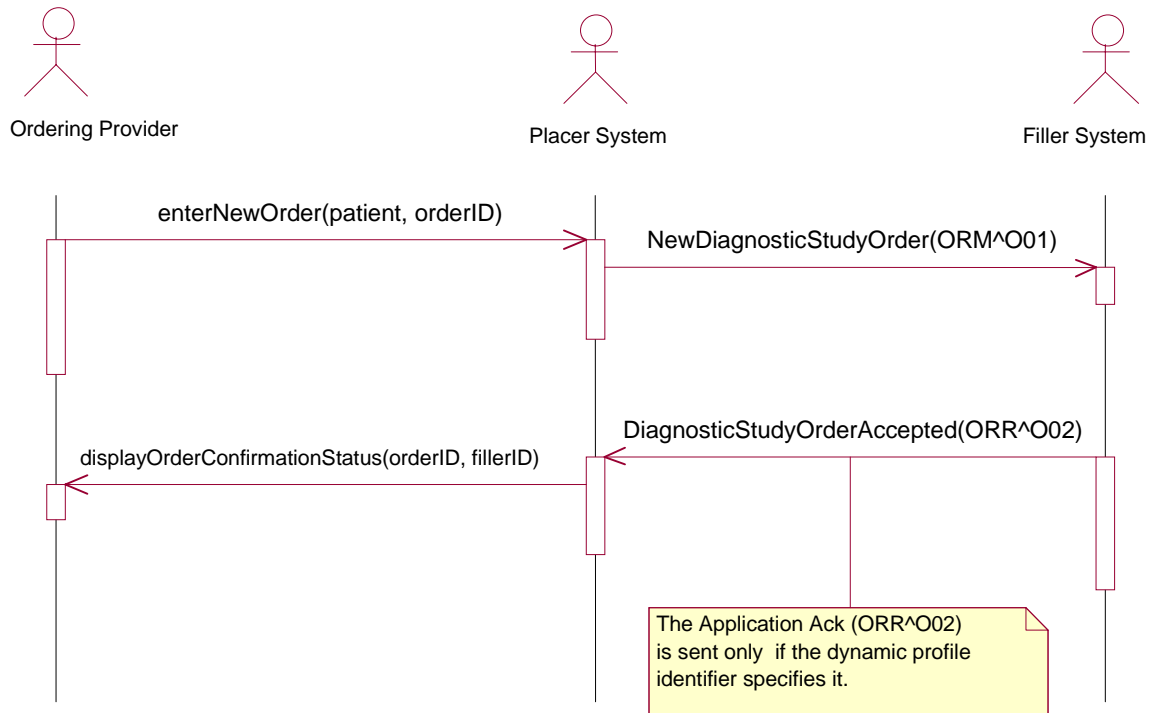
### Post Conditions

1. The Filler system was notified of a new Diagnostic Study Order.
2. The Placer system was notified that the Filler accepts and is able to fulfill the new Diagnostic Study Order.

### Derives Events

### Dynamic Definition

### Interaction Model



### Dynamic Profile

For ORM^O01: AccNE\_AppAL

For ORR^O02: AccNE\_AppNE

For further explanation see, [HL7 Acknowledgement Modes](#) ,page 6

### Static Profile Definition

ORR.O02 {(static profile ID to be defined by Conformance SIG Registry)}

### Message Level Profile

ORM		ORM message	chapter
MSH	[1,1]	Message Header	5
MSA	[1,1]	Message Acknowledgement	5
PID	[1,1]	Patient Identification	6
ORC	[1,1]	Common Order	6

### Segment Level Profile

In the tabular representation of the fields contained within each supported segment, the type, length, and repeat count is defined. In addition, the value for each field is identified. For further information see [translation of message symbol definition description to XML DTD form](#), page 6

### MSH - Message Header Segment

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

SEQ	LEN	DT	R/O	RP/#	TBL#	ITEM#	ELEMENT NAME
1	1	ST	R			00001	Field Separator
2	4	ST	R			00002	Encoding Characters
3	40	ST	R			00003	Sending Application
4	20	ST	X			00004	Sending Facility
5	40	ST	RE			00005	Receiving Application
6	30	ST	X			00006	Receiving Facility
7	26	TS	RE			00007	Date/Time Of Message
8	40	ST	X			00008	Security
9	7	CM	R		0076	00009	Message Type
10	40	ST	R			00010	Message Control ID
11	1	ID	R		0103	00011	Processing ID
12	8	ID	R		0104	00012	Version ID
13	15	NM	X			00013	Sequence Number
14	180	ST	X			00014	Continuation Pointer
15	2	ID	R		0155	00015	Accept Acknowledgement Type
16	2	ID	R		0155	00016	Application Acknowledgement Type
17	2	ID	RE			00017	Country Code

### MSA - Message Acknowledgement Segment

The MSA segment contains information sent while acknowledging another message.

SEQ	LEN	DT	R/O	RP/#	TBL#	ITEM#	ELEMENT NAME
1	2	ID	R		0006	00018	Acknowledgement Code
2	20	ST	R			00010	Message Control ID
3	80	ST	X			00020	Text Message
4	15	NM	X			00021	Expected Sequence Number
5	1	ID	X		0102	00022	Delayed Acknowledgement Type
6	100	CE	RE			00023	Error Condition

### PID - Patient Identification

The PID segment is used in this message to communicate patient identification information.

SEQ	LEN	DT	R/O	RP/#	TBL#	ITEM#	ELEMENT NAME
1	4	ST	RE			00104	Set ID – Patient ID
2	16	CK	RE			00105	Patient ID (External ID)
3	20	CM	R	Y		00106	Patient ID (Internal ID)
4	12	ST	RE	Y		00107	Alternate Patient ID
5	48	PN	R			00108	Patient Name
6	30	ST	RE			00109	Mother's Maiden Name
7	26	TS	RE			00110	Date Of Birth
8	1	ID	RE		0001	00111	Sex
9	48	PN	RE	Y		00112	Patient Alias
10	1	ID	RE		0005	00113	Race

11	106	AD	RE	Y/3		00114	Patient Address
12	4	ID	X			00115	Country Code
13	40	TN	RE	Y/3		00116	Phone Number – Home
14	40	TN	RE	Y/3		00117	Phone Number – Business
15	25	ST	RE			00118	Primary Language
16	1	ID	RE		0002	00119	Marital Status
17	3	ID	RE		0006	00120	Religion
18	20	CK	RE			00121	Patient Account Number
19	16	ST	RE			00122	SSN Number – Patient
20	25	CM	RE			00123	Driver's Lic Num – Patient
21	20	CK	X			00124	Mother's Identifier
22	1	ID	X		0189	00125	Ethnic Group
23	25	ST	RE			00126	Birth Place
24	2	ID	X			00127	Multiple Birth indicator
25	2	NM	X			00128	Birth Order
26	3	ID	RE	Y	0171	00129	Citizenship
27	60	CE	RE		0172	00130	Veterans Military Status

### ORC - Common Order Segment

The Common Order segment (ORC) is used to identify the specific order, which was accepted by the filler. ORC-1, Order Control, must be specified as "OK".

SEQ	LEN	DT	R/O	RP/#	TBL#	ITEM#	ELEMENT NAME
1	2	ID	R		0119	00215	Order Control
2	75	CM	RE			00216	Placer Order Number
3	75	CM	RE			00217	Filler Order Number
4	75	CM	RE			00218	Placer Group Number
5	2	ID	RE		0038	00219	Order Status
6	1	ID	X		0121	00220	Response Flag
7	200	TQ	RE			00221	Quantity/Timing
8	200	CM	RE			00222	Parent
9	26	TS	RE			00223	Date/Time of Transaction
10	80	CN	RE			00224	Entered By
11	80	CN	RE			00225	Verified By
12	80	CN	RE			00226	Ordering Provider
13	80	CM	RE			00227	Enterer's Location
14	40	TN	RE	Y/2		00228	Call Back Phone Number
15	26	TS	X			00229	Order Effective Date/Time
16	200	CE	RE			00230	Order Control Code Reason
17	60	CE	RE			00231	Entering Organization

Field Level Profile

[Fields.dtd](#) see Appendix E

[Value sets](#) see Appendix G

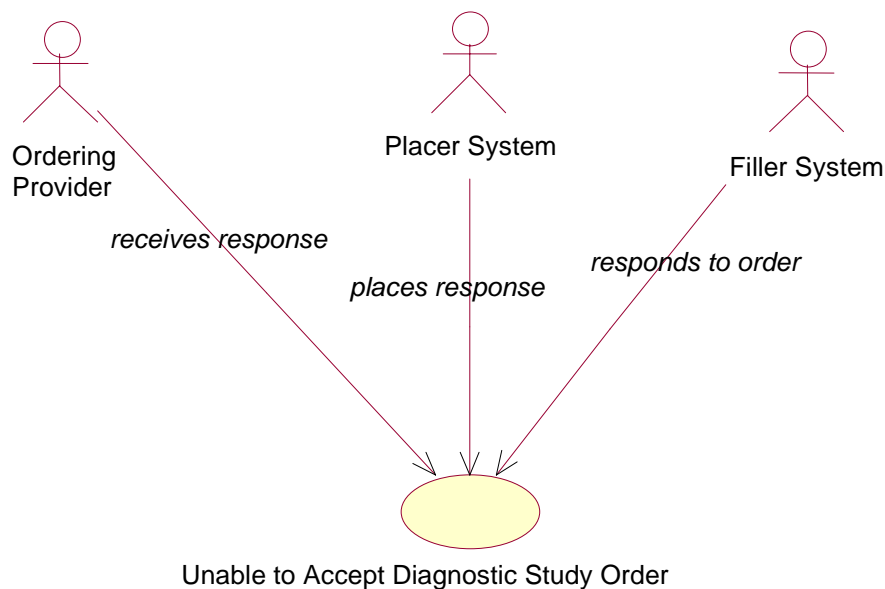
ASN.1 Static Profile ID (to be determined)

[ORR.002 Order Response Accepted DTD](#), (see Appendix B)

## Unable to Accept Diagnostic Study Order (Message Type ORR.O02)

This is the response message sent from the filler to indicate that the diagnostic study order identified in this message could not be accepted as specified. The order filler application may not be able to accept the new order for a number of reasons, including not having sufficient resources available to perform the requested order, there may be a conflict in the scheduling of the order relative to other existing orders, or the filler may not be capable of performing the requested order. In these cases, the filler application would respond to the new order request, specifying the new order, which cannot be accepted (in the ORC segment) and providing the reason why the order was not accepted (error condition MSA-6).

### Use Case Model



### Description

The Filler System (laboratory) has received the order and is unable to accept the order requested.

### Actors

See [Actor](#), Diagnostic Study Overview, page 7

### Preconditions

The Filler system receives an order.

### Flow of Events

1. The Placer System sends an order notification (ORM) to the appropriate destination for this event.
2. The Filler System sends an order confirmation (ORR), which indicates, based on the information provided in the order that the filler is unable to complete that order.

### Post Conditions

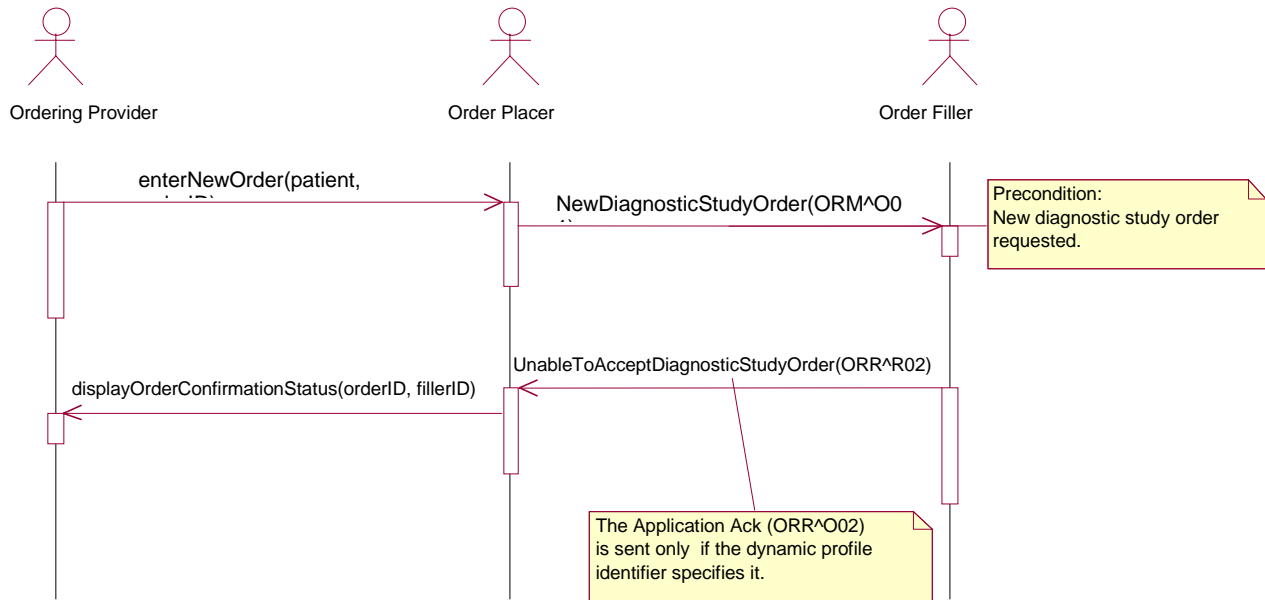
1. The Filler System was notified of a new Diagnostic Study Order.
2. The Placer System was notified that the Filler is unable to fulfill the new Diagnostic Study Order.

### Derives Events



## Dynamic Definition

### Interaction Model



### Dynamic Profile

For ORM^O01: AccNE\_AppAL

For ORR^O02: AccNE\_AppNE

For further explanation see, [HL7 Acknowledgement Modes](#), page 6

### Static Profile Definition

ORR^O02 {(static profile ID to be defined by Conformance SIG Registry)}

### Message Level Profile

ORM		ORM message	chapter
MSH	[1,1]	Message Header	5
MSA	[1,1]	Message Acknowledgement	5
ORC	[1,1]	Common Order	6

### Segment Level Profile

In the tabular representation of the fields contained within each supported segment, the type, length, and repeat count is defined. In addition, the value for each field is identified. For further information see [translation of message symbol definition description to XML DTD form](#), page 6

### MSH - Message Header Segment

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

SEQ	LEN	DT	R/O	RP/#	TBL#	ITEM#	ELEMENT NAME
1	1	ST	R			00001	Field Separator
2	4	ST	R			00002	Encoding Characters
3	40	ST	R			00003	Sending Application
4	20	ST	X			00004	Sending Facility
5	40	ST	RE			00005	Receiving Application
6	30	ST	X			00006	Receiving Facility
7	26	TS	RE			00007	Date/Time Of Message
8	40	ST	X			00008	Security
9	7	CM	R		0076	00009	Message Type
10	40	ST	R			00010	Message Control ID
11	1	ID	R		0103	00011	Processing ID
12	8	ID	R		0104	00012	Version ID
13	15	NM	X			00013	Sequence Number
14	180	ST	X			00014	Continuation Pointer
15	2	ID	R		0155	00015	Accept Acknowledgement Type
16	2	ID	R		0155	00016	Application Acknowledgement Type
17	2	ID	RE			00017	Country Code

### MSA - Message Acknowledgement Segment

The MSA segment contains information sent while acknowledging another message.

SEQ	LEN	DT	R/O	RP/#	TBL#	ITEM#	ELEMENT NAME
1	2	ID	R		0006	00018	Acknowledgement Code
2	20	ST	R			00010	Message Control ID
3	80	ST	X			00020	Text Message
4	15	NM	X			00021	Expected Sequence Number
5	1	ID	X		0102	00022	Delayed Acknowledgement Type
6	100	CE	RE			00023	Error Condition

### ORC - Common Order Segment

The Common Order segment (ORC) is used to identify the specific order, which was accepted by the filler. ORC-1, Order Control, must be specified as "OK".

SEQ	LEN	DT	R/O	RP/#	TBL#	ITEM#	ELEMENT NAME
1	2	ID	R		0119	00215	Order Control
2	75	CM	RE			00216	Placer Order Number
3	75	CM	RE			00217	Filler Order Number
4	75	CM	RE			00218	Placer Group Number
5	2	ID	RE		0038	00219	Order Status
6	1	ID	X		0121	00220	Response Flag
7	200	TQ	RE			00221	Quantity/Timing
8	200	CM	RE			00222	Parent
9	26	TS	RE			00223	Date/Time of Transaction
10	80	CN	RE			00224	Entered By

11	80	CN	RE			00225	Verified By
12	80	CN	RE			00226	Ordering Provider
13	80	CM	RE			00227	Enterer's Location
14	40	TN	RE	Y/2		00228	Call Back Phone Number
15	26	TS	X			00229	Order Effective Date/Time
16	200	CE	RE			00230	Order Control Code Reason
17	60	CE	RE			00231	Entering Organization

Field Level Profile

[Fields.dtd](#) see Appendix E

[Value sets](#) see Appendix G

ASN.1 Static Profile ID (to be determined)

[ORR.002 Unable to Accept Order Response DTD](#) (see Appendix C)

## Appendix A

### ORM.O01 Order Message DTD

```
<!ENTITY % Common_Segments SYSTEM "Common_Segments.dtd">
%Common_Segments;
```

```
<!ELEMENT DiagnosticStudyOrder (MessageHeaderSegment , PatientIdentification ,
PatientVisit , CommonOrder )>
```

```
<!ATTLIST DiagnosticStudyOrder HL7Name CDATA #FIXED 'ORM.O01' >
```

```
<!ELEMENT PatientIdentification (SetID-PatientID? , PatientId-ExternalID? , PatientID-
InternallID+ , AlternatePatientID* , PatientName , MothersMaidenName? , DateOfBirth? , Sex? ,
PatientAlias* , Race? , PatientAddress* , PhoneNumber-Home* , PhoneNumber-Business* ,
PrimaryLanguage? , MaritalStatus? , Religion? , PatientAccountNumber? , SSNNumber-Patient?
, DriversLicNum-Patient? , BirthPlace? , Citizenship* , VeteransMilitaryStatus? )>
```

```
<!ATTLIST PatientIdentification HL7Name CDATA #FIXED 'PID' >
```

```
<!ELEMENT PatientVisit (PatientClass , AssignedPatientLocation? , PriorPatientLocation? ,
TemporaryLocation? , PendingLocation? , PriorTemporaryLocation? )>
```

```
<!ATTLIST PatientVisit HL7Name CDATA #FIXED 'PV1' >
```

```
<!ELEMENT CommonOrder (ObservationRequest , OrderControl , PlacerOrderNumber? ,
FillerOrderNumber? , PlacerGroupNumber? , OrderStatus? , QuantityTiming? , Parent? ,
DateTimeOfTransaction? , EnteredBy? , VerifiedBy? , OrderingProvider? , EnterersLocation? ,
CallbackPhoneNumber* , OrderControlCodeReason? , EnteringOrganization? )>
```

```
<!ATTLIST CommonOrder HL7Name CDATA #FIXED 'ORC' >
```

```
<!ELEMENT ObservationRequest (ObservationResult , Notes , SetID-ObservationRequest? ,
PlacerOrderNumber? , FillerOrderNumber? , UniversalServiceID , ObservationDateTime? ,
ObservationEndDateTime? , CollectionVolume? , CollectorIdentifier* , SpecimenActionCode? ,
DangerCode? , RelevantClinicalInfo? , SpecimenReceivedDateTime? , OBR-SpecimenSource? ,
OrderingProvider* , OrderCallbackPhoneNumber* , PlacerField1? , PlacerField2? , FillerField1? ,
FillerField2? , ResultsRptStatusChngDateTime? , DiagnosticServSectID? , ResultStatus? , OBR-
ParentResult? , ParentNumber? , TransportationMode? , ReasonForStudy* )>
```

```
<!ATTLIST ObservationRequest HL7Name CDATA #FIXED 'OBR' >
```

```
<!ELEMENT ObservationResult (Notes , SetID-ObservationalSimple? , ValueType ,
ObservationIdentifier , ObservationSub-ID? , ObservationValue? , Units? , ReferencesRange? ,
AbnormalFlags* , ObservResultStatus , DateTimeOfTheObservation? , ProducersID? ,
ResponsibleObserver? )>
```

```
<!ATTLIST ObservationResult HL7Name CDATA #FIXED 'OBX' >
```

## Appendix B

### ORR.O02 Order Accept Response DTD

```
<!ENTITY % Common_Segments SYSTEM "Common_Segments.dtd">
%Common_Segments;
```

```
<!ELEMENT DiagnosticStudyOrderAccepted (MessageHeaderSegment ,
MessageAcknowledgement , PatientIdentification , CommonOrder )>
<!ATTLIST DiagnosticStudyOrderAccepted HL7Name CDATA #FIXED 'ORR.O02' >
```

```
<!ELEMENT PatientIdentification (PatientId-ExternalID? , PatientID-InternalID+ , PatientName ,
MothersMaidenName? , DateOfBirth? , Sex? , PatientAddress* , SSNNumber-Patient? ,
BirthPlace? )>
<!ATTLIST PatientIdentification HL7Name CDATA #FIXED 'PID' >
```

```
<!ELEMENT CommonOrder (OrderControl , PlacerOrderNumber? , FillerOrderNumber? )>
<!ATTLIST CommonOrder HL7Name CDATA #FIXED 'ORC' >
```

## Appendix C

### ORR.002 Unable to Accept Diagnostic Study Order DTD

```
<!ENTITY % Common_Segments SYSTEM "Common_Segments.dtd">  
%Common_Segments;
```

```
<!ELEMENT UnableToAcceptDiagnosticStudyOrder (MessageHeaderSegment ,  
MessageAcknowledgement , CommonOrder )>  
<!ATTLIST UnableToAcceptDiagnosticStudyOrder HL7Name CDATA #FIXED 'ORR.002' >
```

```
<!ELEMENT CommonOrder (OrderControl , PlacerOrderNumber? , FillerOrderNumber? )>  
<!ATTLIST CommonOrder HL7Name CDATA #FIXED 'ORC' >
```

## Appendix D

### Common Segments DTD

```
<!ENTITY % Profile_Fields SYSTEM "Profile_Fields.dtd">
%Profile_Fields;
```

```
<!ELEMENT ErrorInformation (ErrorCodeAndLocation+ )>
<!ATTLIST ErrorInformation HL7Name CDATA #FIXED 'ERR' >
```

```
<!ELEMENT MessageAcknowledgement (AcknowledgementCode , MessageControlID ,
ErrorCondition )>
<!ATTLIST MessageAcknowledgement HL7Name CDATA #FIXED 'MSA' >
```

```
<!ELEMENT MessageHeaderSegment (FieldSeparator , EncodingCharacters ,
SendingApplication , ReceivingApplication? , DateTimeOfMessage? , MessageType ,
MessageControlID , ProcessingID , VersionID , AcceptAcknowledgementType ,
ApplicationAcknowledgementType , CountryCode? )>
<!ATTLIST MessageHeaderSegment HL7Name CDATA #FIXED 'MSH' >
```

```
<!ELEMENT Notes (SetID-NotesAndComments? , SourceOfComment? , Comment* )>
<!ATTLIST Notes HL7Name CDATA #FIXED 'NTE' >
```

## Appendix E

### Fields DTD

```
<!ENTITY % Profile_DataTypes SYSTEM "Profile_DataTypes.dtd">
%Profile_DataTypes;

<!ELEMENT FieldSeparator (#PCDATA )>
<!ATTLIST FieldSeparator HL7Name CDATA #FIXED 'MSH.1' >

<!ELEMENT EncodingCharacters (#PCDATA )>
<!ATTLIST EncodingCharacters HL7Name CDATA #FIXED 'MSH.2' >

<!ELEMENT SendingApplication (String )>
<!ATTLIST SendingApplication HL7Name CDATA #FIXED 'MSH.3' >

<!ELEMENT ReceivingApplication (String )>
<!ATTLIST ReceivingApplication HL7Name CDATA #FIXED 'MSH.5' >

<!ELEMENT DateTimeOfMessage (TimeStamp )>
<!ATTLIST DateTimeOfMessage HL7Name CDATA #FIXED 'MSH.7' >

<!ELEMENT MessageType (Composite )>
<!ATTLIST MessageType HL7Name CDATA #FIXED 'MSH.9' >

<!ELEMENT MessageControlID (String )>
<!ATTLIST MessageControlID HL7Name CDATA #FIXED 'MSH.10' >

<!ELEMENT AcceptAcknowledgementType (CodedValuesForHL7Tables )>
<!ATTLIST AcceptAcknowledgementType HL7Name CDATA #FIXED 'MSH.15' >

<!ELEMENT ApplicationAcknowledgementType (CodedValuesForHL7Tables )>
<!ATTLIST ApplicationAcknowledgementType HL7Name CDATA #FIXED 'MSH.16' >

<!ELEMENT SetID-PatientID (SequenceID )>
<!ATTLIST SetID-PatientID HL7Name CDATA #FIXED 'PID.1' >

<!ELEMENT PatientId-ExternalID (CompositeIDWithCheckDigit )>
<!ATTLIST PatientId-ExternalID HL7Name CDATA #FIXED 'PID.2' >

<!ELEMENT PatientID-InternalID (Composite )>
<!ATTLIST PatientID-InternalID HL7Name CDATA #FIXED 'PID.3' >

<!ELEMENT AlternatePatientID (String )>
<!ATTLIST AlternatePatientID HL7Name CDATA #FIXED 'PID.4' >

<!ELEMENT PatientName (PersonName )>
<!ATTLIST PatientName HL7Name CDATA #FIXED 'PID.5' >

<!ELEMENT MothersMaidenName (String )>
<!ATTLIST MothersMaidenName HL7Name CDATA #FIXED 'PID.6' >

<!ELEMENT DateOfBirth (TimeStamp )>
<!ATTLIST DateOfBirth HL7Name CDATA #FIXED 'PID.7' >
```



```

<!ELEMENT Sex (CodedValuesForHL7Tables )>
<!ATTLIST Sex HL7Name CDATA #FIXED 'PID.8' >

<!ELEMENT PatientAlias (PersonName )>
<!ATTLIST PatientAlias HL7Name CDATA #FIXED 'PID.9' >

<!ELEMENT Race (CodedValuesForHL7Tables )>
<!ATTLIST Race HL7Name CDATA #FIXED 'PID.10' >

<!ELEMENT PatientAddress (Address )>
<!ATTLIST PatientAddress HL7Name CDATA #FIXED 'PID.11' >

<!ELEMENT PhoneNumber-Home (TelephoneNumber )>
<!ATTLIST PhoneNumber-Home HL7Name CDATA #FIXED 'PID.13' >

<!ELEMENT PhoneNumber-Business (TelephoneNumber )>
<!ATTLIST PhoneNumber-Business HL7Name CDATA #FIXED 'PID.14' >

<!ELEMENT PrimaryLanguage (String )>
<!ATTLIST PrimaryLanguage HL7Name CDATA #FIXED 'PID.15' >

<!ELEMENT MaritalStatus (CodedValuesForHL7Tables )>
<!ATTLIST MaritalStatus HL7Name CDATA #FIXED 'PID.16' >

<!ELEMENT Religion (CodedValuesForHL7Tables )>
<!ATTLIST Religion HL7Name CDATA #FIXED 'PID.17' >

<!ELEMENT PatientAccountNumber (CompositeIDWithCheckDigit )>
<!ATTLIST PatientAccountNumber HL7Name CDATA #FIXED 'PID.18' >

<!ELEMENT SSNNumber-Patient (String )>
<!ATTLIST SSNNumber-Patient HL7Name CDATA #FIXED 'PID.19' >

<!ELEMENT DriversLicNum-Patient (Composite )>
<!ATTLIST DriversLicNum-Patient HL7Name CDATA #FIXED 'PID.20' >

<!ELEMENT BirthPlace (String )>
<!ATTLIST BirthPlace HL7Name CDATA #FIXED 'PID.23' >

<!ELEMENT Citizenship (CodedValuesForHL7Tables )>
<!ATTLIST Citizenship HL7Name CDATA #FIXED 'PID.26' >

<!ELEMENT VeteransMilitaryStatus (CodedElement )>
<!ATTLIST VeteransMilitaryStatus HL7Name CDATA #FIXED 'PID.27' >

<!ELEMENT PatientClass (CodedValuesForHL7Tables )>
<!ATTLIST PatientClass HL7Name CDATA #FIXED 'PV1.2' >

<!ELEMENT AssignedPatientLocation (Composite )>
<!ATTLIST AssignedPatientLocation HL7Name CDATA #FIXED 'PV1.3' >

<!ELEMENT PriorPatientLocation (Composite )>
<!ATTLIST PriorPatientLocation HL7Name CDATA #FIXED 'PV1.6' >

<!ELEMENT TemporaryLocation (Composite )>
<!ATTLIST TemporaryLocation HL7Name CDATA #FIXED 'PV1.11' >

```

```

<!ELEMENT PendingLocation (Composite )>
<!ATTLIST PendingLocation HL7Name CDATA #FIXED 'PV1.42' >

<!ELEMENT PriorTemporaryLocation (Composite )>
<!ATTLIST PriorTemporaryLocation HL7Name CDATA #FIXED 'PV1.43' >

<!ELEMENT OrderControl (CodedValuesForHL7Tables )>
<!ATTLIST OrderControl HL7Name CDATA #FIXED 'ORC.1' >

<!ELEMENT FillerOrderNumber (Composite )>
<!ATTLIST FillerOrderNumber HL7Name CDATA #FIXED 'ORC.3' >

<!ELEMENT PlacerGroupNumber (Composite )>
<!ATTLIST PlacerGroupNumber HL7Name CDATA #FIXED 'ORC.4' >

<!ELEMENT OrderStatus (CodedValuesForHL7Tables )>
<!ATTLIST OrderStatus HL7Name CDATA #FIXED 'ORC.5' >

<!ELEMENT QuantityTiming (TimingQuantity )>
<!ATTLIST QuantityTiming HL7Name CDATA #FIXED 'ORC.7' >

<!ELEMENT OrderParent (Composite )>

<!ELEMENT DateTimeOfTransaction (TimeStamp )>
<!ATTLIST DateTimeOfTransaction HL7Name CDATA #FIXED 'ORC.9' >

<!ELEMENT EnteredBy (CompositeIDWithNumberAndName )>
<!ATTLIST EnteredBy HL7Name CDATA #FIXED 'ORC.10' >

<!ELEMENT VerifiedBy (CompositeIDWithNumberAndName )>
<!ATTLIST VerifiedBy HL7Name CDATA #FIXED 'ORC.11' >

<!ELEMENT EnterersLocation (Composite )>
<!ATTLIST EnterersLocation HL7Name CDATA #FIXED 'ORC.13' >

<!ELEMENT CallbackPhoneNumber (TelephoneNumber )>
<!ATTLIST CallbackPhoneNumber HL7Name CDATA #FIXED 'ORC.14' >

<!ELEMENT OrderEffectiveDateTime (DegreeOfPrecision )>
<!ATTLIST OrderEffectiveDateTime HL7Name CDATA #FIXED 'ORC.15' >

<!ELEMENT OrderControlCodeReason (CodedElement )>
<!ATTLIST OrderControlCodeReason HL7Name CDATA #FIXED 'ORC.16' >

<!ELEMENT EnteringOrganization (CodedElement )>
<!ATTLIST EnteringOrganization HL7Name CDATA #FIXED 'ORC.17' >

<!ELEMENT SetID-ObservationRequest (SequenceID )>
<!ATTLIST SetID-ObservationRequest HL7Name CDATA #FIXED 'OBR.1' >

<!ELEMENT UniversalServiceID (CodedElement )>
<!ATTLIST UniversalServiceID HL7Name CDATA #FIXED 'OBR.4' >

<!ELEMENT ObservationDateTime (TimeStamp )>
<!ATTLIST ObservationDateTime HL7Name CDATA #FIXED 'OBR.7' >

```

```

<!ELEMENT ObservationEndDateTime (TimeStamp)>
<!ATTLIST ObservationEndDateTime HL7Name CDATA #FIXED 'OBR.8' >

<!ELEMENT CollectionVolume (CompositeQuantityWithUnits)>
<!ATTLIST CollectionVolume HL7Name CDATA #FIXED 'OBR.9' >

<!ELEMENT CollectorIdentifier (CompositeIDWithNumberAndName)>
<!ATTLIST CollectorIdentifier HL7Name CDATA #FIXED 'OBR.10' >

<!ELEMENT SpecimenActionCode (CodedValuesForHL7Tables)>
<!ATTLIST SpecimenActionCode HL7Name CDATA #FIXED 'OBR.11' >

<!ELEMENT DangerCode (CodedElement)>
<!ATTLIST DangerCode HL7Name CDATA #FIXED 'OBR.12' >

<!ELEMENT RelevantClinicalInfo (String)>
<!ATTLIST RelevantClinicalInfo HL7Name CDATA #FIXED 'OBR.13' >

<!ELEMENT SpecimenReceivedDateTime (TimeStamp)>
<!ATTLIST SpecimenReceivedDateTime HL7Name CDATA #FIXED 'OBR.14' >

<!ELEMENT OBR-SpecimenSource (Composite)>

<!ELEMENT OrderingProvider (CompositeIDWithNumberAndName)>
<!ATTLIST OrderingProvider HL7Name CDATA #FIXED 'OBR.16' >

<!ELEMENT OrderCallbackPhoneNumber (TelephoneNumber)>
<!ATTLIST OrderCallbackPhoneNumber HL7Name CDATA #FIXED 'OBR.17' >

<!ELEMENT PlacerField1 (String)>
<!ATTLIST PlacerField1 HL7Name CDATA #FIXED 'OBR.18' >

<!ELEMENT PlacerField2 (String)>
<!ATTLIST PlacerField2 HL7Name CDATA #FIXED 'OBR.19' >

<!ELEMENT FillerField1 (String)>
<!ATTLIST FillerField1 HL7Name CDATA #FIXED 'OBR.20' >

<!ELEMENT FillerField2 (String)>
<!ATTLIST FillerField2 HL7Name CDATA #FIXED 'OBR.21' >

<!ELEMENT ResultsRptStatusChngDateTime (TimeStamp)>
<!ATTLIST ResultsRptStatusChngDateTime HL7Name CDATA #FIXED 'OBR.22' >

<!ELEMENT DiagnosticServSectID (CodedValuesForHL7Tables)>
<!ATTLIST DiagnosticServSectID HL7Name CDATA #FIXED 'OBR.24' >

<!ELEMENT ResultStatus (CodedValuesForHL7Tables)>
<!ATTLIST ResultStatus HL7Name CDATA #FIXED 'OBR.25' >

<!ELEMENT OBR-ParentResult (Composite)>

<!ELEMENT ParentNumber (Composite)>
<!ATTLIST ParentNumber HL7Name CDATA #FIXED 'OBR.29' >

<!ELEMENT TransportationMode (CodedValuesForHL7Tables)>
<!ATTLIST TransportationMode HL7Name CDATA #FIXED 'OBR.30' >

```

```

<!ELEMENT ReasonForStudy (CodedElement )>
<!ATTLIST ReasonForStudy HL7Name CDATA #FIXED 'OBR.31' >

<!ELEMENT SetID-ObservationalSimple (SequenceID )>
<!ATTLIST SetID-ObservationalSimple HL7Name CDATA #FIXED 'OBX.1' >

<!ELEMENT ValueType (CodedValuesForHL7Tables )>
<!ATTLIST ValueType HL7Name CDATA #FIXED 'OBX.2' >

<!ELEMENT ObservationIdentifier (CodedElement )>
<!ATTLIST ObservationIdentifier HL7Name CDATA #FIXED 'OBX.3' >

<!ELEMENT ObservationSub-ID (String )>
<!ATTLIST ObservationSub-ID HL7Name CDATA #FIXED 'OBX.4' >

<!ELEMENT ObservationValue EMPTY>
<!ATTLIST ObservationValue HL7Name CDATA #FIXED 'OBX.5' >

<!ELEMENT ReferencesRange (String )>
<!ATTLIST ReferencesRange HL7Name CDATA #FIXED 'OBX.7' >

<!ELEMENT AbnormalFlags (CodedValuesForHL7Tables )>
<!ATTLIST AbnormalFlags HL7Name CDATA #FIXED 'OBX.8' >

<!ELEMENT ObservResultStatus (CodedValuesForHL7Tables )>
<!ATTLIST ObservResultStatus HL7Name CDATA #FIXED 'OBX.11' >

<!ELEMENT DateTimeOfTheObservation (TimeStamp )>
<!ATTLIST DateTimeOfTheObservation HL7Name CDATA #FIXED 'OBX.14' >

<!ELEMENT ProducersID (CodedElement )>
<!ATTLIST ProducersID HL7Name CDATA #FIXED 'OBX.15' >

<!ELEMENT ResponsibleObserver (CompositeIDWithNumberAndName )>
<!ATTLIST ResponsibleObserver HL7Name CDATA #FIXED 'OBX.16' >

<!ELEMENT SetID-NotesAndComments (SequenceID )>
<!ATTLIST SetID-NotesAndComments HL7Name CDATA #FIXED 'NTE.1' >

<!ELEMENT SourceOfComment (CodedValuesForHL7Tables )>
<!ATTLIST SourceOfComment HL7Name CDATA #FIXED 'NTE.2' >

<!ELEMENT Comment (CodedValuesForHL7Tables )>
<!ATTLIST Comment HL7Name CDATA #FIXED 'NTE.3' >

<!ELEMENT AcknowledgementCode (#PCDATA )>
<!ATTLIST AcknowledgementCode HL7Name CDATA #FIXED 'MSA.1' >

<!ELEMENT ErrorCondition (CodedElement )>
<!ATTLIST ErrorCondition HL7Name CDATA #FIXED 'MSA.6' >

<!ELEMENT ErrorCodeAndLocation (Composite )>
<!ATTLIST ErrorCodeAndLocation HL7Name CDATA #FIXED 'ERR.1' >

<!ELEMENT Quantity-Timing (TimingQuantity )>
<!ATTLIST Quantity-Timing HL7Name CDATA #FIXED 'RXE.1' >

```

```

<!ELEMENT GiveCode (CodedElement )>
<!ATTLIST GiveCode HL7Name CDATA #FIXED 'RXE.2' >

<!ELEMENT GiveAmountMinimum (Numeric )>
<!ATTLIST GiveAmountMinimum HL7Name CDATA #FIXED 'RXE.3' >

<!ELEMENT GiveAmountMaximum (Numeric )>
<!ATTLIST GiveAmountMaximum HL7Name CDATA #FIXED 'RXE.4' >

<!ELEMENT GiveUnits (CodedElement )>
<!ATTLIST GiveUnits HL7Name CDATA #FIXED 'RXE.5' >

<!ELEMENT ProvidersAdministrationInstructions (CodedElement )>
<!ATTLIST ProvidersAdministrationInstructions HL7Name CDATA #FIXED 'RXE.7' >

<!ELEMENT PharmacyTreatmentSuppliersSpecialDispensingInstructions (CodedElement )>
<!ATTLIST PharmacyTreatmentSuppliersSpecialDispensingInstructions HL7Name CDATA
#FIXED 'RXE.' >

<!ELEMENT Route (CodedElement )>
<!ATTLIST Route HL7Name CDATA #FIXED 'RXR.1' >

<!ELEMENT QueryDateTime (DegreeOfPrecision )>
<!ATTLIST QueryDateTime HL7Name CDATA #FIXED 'QRD.1' >

<!ELEMENT QueryFormatCode (CodedValuesForHL7Tables )>
<!ATTLIST QueryFormatCode HL7Name CDATA #FIXED 'QRD.2' >

<!ELEMENT QueryPriority (CodedValuesForHL7Tables )>
<!ATTLIST QueryPriority HL7Name CDATA #FIXED 'QRD.3' >

<!ELEMENT QueryID (#PCDATA )>
<!ATTLIST QueryID HL7Name CDATA #FIXED 'QRD.4' >

<!ELEMENT QuantityLimitedRequest (Quantity_Value , Units )>
<!ATTLIST QuantityLimitedRequest HL7Name CDATA #FIXED 'QRD.7' >

<!ELEMENT WhoSubjectFilter (#PCDATA )>
<!ATTLIST WhoSubjectFilter HL7Name CDATA #FIXED 'QRD.8' >

<!ELEMENT WhatSubjectFilter (CodedValuesForHL7Tables )>
<!ATTLIST WhatSubjectFilter HL7Name CDATA #FIXED 'QRD.9' >

<!ELEMENT WhatDepartmentDataCode (#PCDATA )>
<!ATTLIST WhatDepartmentDataCode HL7Name CDATA #FIXED 'QRD.10' >

<!ELEMENT WhereSubjectFilter (#PCDATA )>
<!ATTLIST WhereSubjectFilter HL7Name CDATA #FIXED 'QRF.1' >

<

!ELEMENT WhenDataStartDateTime (DegreeOfPrecision )>
<!ATTLIST WhenDataStartDateTime HL7Name CDATA #FIXED 'QRF.2' >

<!ELEMENT WhenDataEndDateTime (DegreeOfPrecision )>
<!ATTLIST WhenDataEndDateTime HL7Name CDATA #FIXED 'QRF.3' >

```

<!ELEMENT WhichDateTimeQualifier (CodedValuesForHL7Tables )>  
<!ATTLIST WhichDateTimeQualifier HL7Name CDATA #FIXED 'QRF.6' >

<!ELEMENT WhichDateTimeStatusQualifier (CodedValuesForHL7Tables )>  
<!ATTLIST WhichDateTimeStatusQualifier HL7Name CDATA #FIXED 'QRF.7' >

## **Appendix F**

### Field Definitions

Under construction, field definitions to be added

## **Appendix G**

HL7 Value sets

Under construction, HL7 tables to be added



## Appendix H

### Segment optionality descriptors

- R** Required. A conforming sending application must provide a valid value for all “R” fields. The value must be of the specified type and within the range specified for the field.
- RE** Required, but may be empty. A conforming sending application must be capable of providing a valid value for all “RE” fields. If the conforming sending application knows the value for this field, then the field value must be provided of the specified type and within the range specified for the field. If the conforming sending application does not know the value for this field, then the field value must be specified as empty. For HL7 Encoding Rules, empty is a distinguished value.
- C** Conditional. There is a predicate associated with this field, which identifies the conditions under which the value of the field should be specified. The predicate must be based on other field values within this message. This predicate may be expressed as a mathematical expression or in text and may utilize operators such as equivalence, logical AND, and logical OR. The conforming sending application must evaluate the predicate. If the predicate is satisfied, then the conforming sending application must provide a value of the specified type and within the range specified for the field. If the predicate is not satisfied, then the field value should be specified as empty.
- CE** Conditional, but may be empty. There is a predicate associated with this field which identifies the conditions under which the value of the field should be specified. The predicate must be based on other field values within this message. This predicate may be expressed as a mathematical expression or in text and may utilize operators such as equivalence, logical AND, and logical OR. The conforming sending application must evaluate the predicate. If the predicate is satisfied and the conforming sending application knows the value for the field, then the conforming sending application must provide a value of the specified type and within the range specified for the field. If the predicate is satisfied but the conforming sending application does not know the value for this field, then the field value should be specified as empty. If the predicate is not satisfied, then the field value should be specified as empty.
- X** Not used, these fields will NOT be supported. A conforming sending application will not be able to create a message with a value for these fields. A conforming receiving application will not obtain the value of this field contained within the message. In the case of HL7 Encoding Rules, these fields are expected to be empty.

## Appendix I

### Data Types DTD

In order to limit the number of levels of redirection in the DTD, any datatype which refers only to one of the base alphanumeric datatypes (ie. those datatypes which have #PCDATA as their sole datatype) has been directed to #PCDATA. Numeric base datatypes have been left as a level of redirection to allow for future alterations to the XML schema.

```
<!ELEMENT CodedElement (Identifier , Text_Value , NameOfCodingSystem ,  
AlternateIdentifier? , AlternateText? , NameOfAlternateCodingSystem? )>  
<!ATTLIST CodedElement HL7Name CDATA #FIXED 'CE' >
```

```
<!ELEMENT CodedElement_2 (Identifier? , Text_Value , NameOfCodingSystem? ,  
AlternateIdentifier? , AlternateText? , NameOfAlternateCodingSystem? )>  
<!ATTLIST CodedElement_2 HL7Name CDATA #FIXED 'CE_2' >
```

```
<!ELEMENT Identifier (#PCDATA )>  
<!ATTLIST Identifier HL7Name CDATA #FIXED 'CE.1' >
```

```
<!ELEMENT Text_Value (#PCDATA )>  
<!ATTLIST Text_Value HL7Name CDATA #FIXED 'CE.2' >
```

```
<!ELEMENT NameOfCodingSystem (#PCDATA )>  
<!ATTLIST NameOfCodingSystem HL7Name CDATA #FIXED 'CE.3' >
```

```
<!ELEMENT AlternateIdentifier (#PCDATA )>  
<!ATTLIST AlternateIdentifier HL7Name CDATA #FIXED 'CE.4' >
```

```
<!ELEMENT AlternateText (#PCDATA )>  
<!ATTLIST AlternateText HL7Name CDATA #FIXED 'CE.5' >
```

```
<!ELEMENT NameOfAlternateCodingSystem (#PCDATA )>  
<!ATTLIST NameOfAlternateCodingSystem HL7Name CDATA #FIXED 'CE.6' >
```

```
<!ELEMENT CompositeQuantityWithUnits (Quantity_Value , Units )>  
<!ATTLIST CompositeQuantityWithUnits HL7Name CDATA #FIXED 'CQ' >
```

```
<!ELEMENT Quantity_Value (Numeric )>  
<!ATTLIST Quantity_Value HL7Name CDATA #FIXED 'CQ.1' >
```

```
<!ELEMENT Units (#PCDATA )>  
<!ATTLIST Units HL7Name CDATA #FIXED 'CQ.2' >
```

```
<!ELEMENT Location (PointOfCare? , Room? , Bed? , Facility? , BedStatus? )>  
<!ATTLIST Location HL7Name CDATA #FIXED 'LN' >
```

```
<!ELEMENT PointOfCare (#PCDATA )>  
<!ATTLIST PointOfCare HL7Name CDATA #FIXED 'LN.1' >
```

```
<!ELEMENT Room (#PCDATA )>
```

```
<!ATTLIST Room HL7Name CDATA #FIXED 'LN.2' >  
<!ELEMENT Bed (#PCDATA )>
```

```

<!ATTLIST Bed HL7Name CDATA #FIXED 'LN.3' >
<!ELEMENT Facility (#PCDATA )>

<!ATTLIST Facility HL7Name CDATA #FIXED 'LN.4' >
<!ELEMENT BedStatus (#PCDATA )>

<!ATTLIST BedStatus HL7Name CDATA #FIXED 'LN.5' >
<!ELEMENT OrderNumber (UniqueID , ApplicationID? )>

<!ATTLIST OrderNumber HL7Name CDATA #FIXED 'ON' >
<!ELEMENT UniqueID (#PCDATA )>

<!ATTLIST UniqueID HL7Name CDATA #FIXED 'ON.1' >
<!ELEMENT ApplicationID (#PCDATA )>

<!ATTLIST ApplicationID HL7Name CDATA #FIXED 'ON.2' >
<!ELEMENT Parent (ParentPlacerOrderNumber? , ParentFillerOrderNumber? )>

<!ATTLIST Parent HL7Name CDATA #FIXED 'PA' >
<!ELEMENT ParentPlacerOrderNumber (OrderNumber )>

<!ATTLIST ParentPlacerOrderNumber HL7Name CDATA #FIXED 'PA.1' >
<!ELEMENT ParentFillerOrderNumber (OrderNumber )>
<!ATTLIST ParentFillerOrderNumber HL7Name CDATA #FIXED 'PA.2' >

<!ELEMENT PersonName (FamilyName? , GivenName? , MiddleName? , Suffix? , Prefix? ,
Degree? )>
<!ATTLIST PersonName HL7Name CDATA #FIXED 'PN' >

<!ELEMENT FamilyName (#PCDATA )>
<!ATTLIST FamilyName HL7Name CDATA #FIXED 'PN.1' >

<!ELEMENT GivenName (#PCDATA )>
<!ATTLIST GivenName HL7Name CDATA #FIXED 'PN.2' >

<!ELEMENT MiddleName (#PCDATA )>
<!ATTLIST MiddleName HL7Name CDATA #FIXED 'PN.3' >

<!ELEMENT Suffix (#PCDATA )>
<!ATTLIST Suffix HL7Name CDATA #FIXED 'PN.4' >

<!ELEMENT Prefix (#PCDATA )>
<!ATTLIST Prefix HL7Name CDATA #FIXED 'PN.5' >

<!ELEMENT Degree (#PCDATA )>
<!ATTLIST Degree HL7Name CDATA #FIXED 'PN.6' >

<!ELEMENT ParentResult (ParentObservationID , ParentObservationSubID? ,
ParentObservationValue? )>
<!ATTLIST ParentResult HL7Name CDATA #FIXED 'PR' >

<!ELEMENT ParentObservationID (CodedElement )>
<!ATTLIST ParentObservationID HL7Name CDATA #FIXED 'PR.1' >

<!ELEMENT ParentObservationSubID (#PCDATA )>
<!ATTLIST ParentObservationSubID HL7Name CDATA #FIXED 'PR.2' >

```

```

<!ELEMENT ParentObservationValue (CodedElement )>
<!ATTLIST ParentObservationValue HL7Name CDATA #FIXED 'PR.3' >

<!ELEMENT SpecimenSource (SpecimenSourceName? , Additives? , FreeText? , BodySite? ,
SiteModifier? )>
<!ATTLIST SpecimenSource HL7Name CDATA #FIXED 'SS' >

<!ELEMENT SpecimenSourceName (CodedElement )>
<!ATTLIST SpecimenSourceName HL7Name CDATA #FIXED 'SS.1' >

<!ELEMENT Additives (#PCDATA )>
<!ATTLIST Additives HL7Name CDATA #FIXED 'SS.2' >

<!ELEMENT FreeText (#PCDATA )>
<!ATTLIST FreeText HL7Name CDATA #FIXED 'SS.3' >

<!ELEMENT BodySite (CodedElement )>
<!ATTLIST BodySite HL7Name CDATA #FIXED 'SS.4' >

<!ELEMENT SiteModifier (CodedElement )>
<!ATTLIST SiteModifier HL7Name CDATA #FIXED 'SS.5' >

<!ELEMENT TimingQuantity (Quantity? , RepeatPattern? , ExplicitTimeInterval* , Duration? ,
StartDateTime? , EndDateTime? , Priority? , Condition? , Text_Value? , Conjunction? ,
SequenceResultsFlag? , PlacerOrderNumber? , PlacerFillerNumber? ,
SequenceConditionValue? , MaximumNumberOfRepeats? )>
<!ATTLIST TimingQuantity HL7Name CDATA #FIXED 'TQ' >

<!ELEMENT Quantity (CompositeQuantityWithUnits )>
<!ATTLIST Quantity HL7Name CDATA #FIXED 'TQ.1' >

<!ELEMENT RepeatPattern (#PCDATA )>
<!ATTLIST RepeatPattern HL7Name CDATA #FIXED 'TQ.2' >

<!ELEMENT ExplicitTimeInterval (#PCDATA )>
<!ATTLIST ExplicitTimeInterval HL7Name CDATA #FIXED 'TQ.3' >

<!ELEMENT Duration (#PCDATA )>
<!ATTLIST Duration HL7Name CDATA #FIXED 'TQ.4' >

<!ELEMENT StartDateTime (TimeStamp )>
<!ATTLIST StartDateTime HL7Name CDATA #FIXED 'TQ.5' >

<!ELEMENT EndDateTime (TimeStamp )>
<!ATTLIST EndDateTime HL7Name CDATA #FIXED 'TQ.6' >

<!ELEMENT Priority (#PCDATA )>
<!ATTLIST Priority HL7Name CDATA #FIXED 'TQ.7' >

<!ELEMENT Condition (#PCDATA )>
<!ATTLIST Condition HL7Name CDATA #FIXED 'TQ.8' >

<!ELEMENT Conjunction (#PCDATA )>
<!ATTLIST Conjunction HL7Name CDATA #FIXED 'TQ.10' >

<!ELEMENT SequenceResultsFlag (#PCDATA )>
<!ATTLIST SequenceResultsFlag HL7Name CDATA #FIXED 'TQ.11' >

```

```

<!ELEMENT PlacerOrderNumber (Composite )>
<!ATTLIST PlacerOrderNumber HL7Name CDATA #FIXED 'TQ.12' >

<!ELEMENT PlacerFillerNumber (Composite )>
<!ATTLIST PlacerFillerNumber HL7Name CDATA #FIXED 'TQ.13' >

<!ELEMENT SequenceConditionValue (#PCDATA )>
<!ATTLIST SequenceConditionValue HL7Name CDATA #FIXED 'TQ.14' >

<!ELEMENT MaximumNumberOfRepeats (IN )>
<!ATTLIST MaximumNumberOfRepeats HL7Name CDATA #FIXED 'TQ.15' >

<!-- Alphanumeric datatypes -->

<!ELEMENT String (#PCDATA )>
<!ATTLIST String HL7Name CDATA #FIXED 'ST' >

<!ELEMENT Text (#PCDATA )>
<!ATTLIST Text HL7Name CDATA #FIXED 'TX' >

<!ELEMENT FormattedText (#PCDATA )>
<!ATTLIST FormattedText HL7Name CDATA #FIXED 'FT' >

<!-- Numerical datatypes -->

<!ELEMENT Money (Quantity_Value , Denomination )>
<!ATTLIST Money HL7Name CDATA #FIXED 'MO' >

<!ELEMENT Numeric (#PCDATA )>
<!ATTLIST Numeric HL7Name CDATA #FIXED 'NM' >

<!ELEMENT SequenceID (#PCDATA )>
<!ATTLIST SequenceID HL7Name CDATA #FIXED 'SI' >

<!ELEMENT StructuredNumeric (Comparator , Num_1 , SeparatorSuffix , Num_2 )>
<!ATTLIST StructuredNumeric HL7Name CDATA #FIXED 'SN' >

<!ELEMENT Denomination (#PCDATA )>
<!ATTLIST Denomination HL7Name CDATA #FIXED 'MO.1' >

<!ELEMENT Comparator (#PCDATA )>
<!ATTLIST Comparator HL7Name CDATA #FIXED 'SN.1' >

<!ELEMENT Num_1 (Numeric )>
<!ATTLIST Num_1 HL7Name CDATA #FIXED 'SN.2' >

<!ELEMENT SeparatorSuffix (#PCDATA )>
<!ATTLIST SeparatorSuffix HL7Name CDATA #FIXED 'SN.3' >

<!ELEMENT Num_2 (Numeric )>

<!ATTLIST Num_2 HL7Name CDATA #FIXED 'SN.4' >

<!-- Identifier datatypes -->

<!ELEMENT CodedValuesForHL7Tables (#PCDATA )>
<!ATTLIST CodedValuesForHL7Tables HL7Name CDATA #FIXED 'ID' >

```

```

<!ELEMENT CodedValuesForUserDefinedTables (#PCDATA )>
<!ATTLIST CodedValuesForUserDefinedTables HL7Name CDATA #FIXED 'IS' >

<!ELEMENT VersionIdentifier (VersionID , InternalizationCode , InternalVersion )>
<!ATTLIST VersionIdentifier HL7Name CDATA #FIXED 'VID' >

<!ELEMENT HierarchicDesignator (NameSpaceID , UniversalID , UniversalIDType )>
<!ATTLIST HierarchicDesignator HL7Name CDATA #FIXED 'HD' >

<!ELEMENT EntityDesignator (EntityIdentifier , NameSpaceID , UniversalID , UniversalIDType )>
<!ATTLIST EntityDesignator HL7Name CDATA #FIXED 'ED' >

<!ELEMENT ReferencePointer (Pointer , ApplicationID , TypeOfData , SubType )>
<!ATTLIST ReferencePointer HL7Name CDATA #FIXED 'RP' >

<!ELEMENT PersonLocation (PointOfCare , Room , Bed , Facility , LocationStatus ,
PersonLocationType , Building , Floor , LocationDescription )>
<!ATTLIST PersonLocation HL7Name CDATA #FIXED 'PL' >

<!ELEMENT ProcessingType (ProcessingID , ProcessingMode )>
<!ATTLIST ProcessingType HL7Name CDATA #FIXED 'PT' >

<!ELEMENT VersionID (#PCDATA )>
<!ATTLIST VersionID HL7Name CDATA #FIXED 'VID.1' >

<!ELEMENT InternalizationCode (CodedElement )>
<!ATTLIST InternalizationCode HL7Name CDATA #FIXED 'VID.2' >

<!ELEMENT InternalVersion (CodedElement )>
<!ATTLIST InternalVersion HL7Name CDATA #FIXED 'VID.3' >

<!ELEMENT NameSpaceID (#PCDATA )>
<!ATTLIST NameSpaceID HL7Name CDATA #FIXED 'HD.1' >

<!ELEMENT UniversalID (#PCDATA )>
<!ATTLIST UniversalID HL7Name CDATA #FIXED 'HD.2' >

<!ELEMENT UniversalIDType (#PCDATA )>
<!ATTLIST UniversalIDType HL7Name CDATA #FIXED 'HD.3' >

<!ELEMENT EntityIdentifier (#PCDATA )>
<!ATTLIST EntityIdentifier HL7Name CDATA #FIXED 'EI.1' >

<!ELEMENT Pointer (#PCDATA )>
<!ATTLIST Pointer HL7Name CDATA #FIXED 'RP.1' >

<!ELEMENT SubType (#PCDATA )>
<!ATTLIST SubType HL7Name CDATA #FIXED 'RP.4' >

<!ELEMENT LocationStatus (#PCDATA )>
<!ATTLIST LocationStatus HL7Name CDATA #FIXED 'PL.5' >

<!ELEMENT PersonLocationType (#PCDATA )>
<!ATTLIST PersonLocationType HL7Name CDATA #FIXED 'PL.6' >

<!ELEMENT Building (#PCDATA )>
<!ATTLIST Building HL7Name CDATA #FIXED 'PL.7' >

```

```

<!ELEMENT Floor (#PCDATA )>
<!ATTLIST Floor HL7Name CDATA #FIXED 'PL.8' >

<!ELEMENT LocationDescription (#PCDATA )>
<!ATTLIST LocationDescription HL7Name CDATA #FIXED 'PL.9' >

<!ELEMENT ProcessingID (#PCDATA )>
<!ATTLIST ProcessingID HL7Name CDATA #FIXED 'PT.1' >

<!ELEMENT ProcessingMode (#PCDATA )>
<!ATTLIST ProcessingMode HL7Name CDATA #FIXED 'PT.2' >

<!-- Date Time datatypes -->

<!ELEMENT Date (#PCDATA )>
<!ATTLIST Date HL7Name CDATA #FIXED 'DT' >

<!ELEMENT Time (#PCDATA )>
<!ATTLIST Time HL7Name CDATA #FIXED 'TM' >

<!ELEMENT TimeStamp (Date , Time , DegreeOfPrecision )>
<!ATTLIST TimeStamp HL7Name CDATA #FIXED 'TS' >

<!ELEMENT DegreeOfPrecision (#PCDATA )>
<!ATTLIST DegreeOfPrecision HL7Name CDATA #FIXED 'TS.3' >

<!-- Code Values datatypes -->

<!ELEMENT CompositeIDWithCheckDigit (IDNumber , CheckDigit ,
CodIdentifyingTheCheckDigitSchemeEmployed , AssigningAuthority )>
<!ATTLIST CompositeIDWithCheckDigit HL7Name CDATA #FIXED 'CK' >

<!ELEMENT CompositeIDWithNumberAndName (IDNumber , FamilyName , GivenName ,
MiddleInitialOrName , Suffix , Prefix , Degree , SourceTable , AssigningAuthority )>
<!ATTLIST CompositeIDWithNumberAndName HL7Name CDATA #FIXED 'CN' >

<!ELEMENT ExtendedCompositeIDWithCheckDigit (CompositeIDWithCheckDigit ,
IdentifierTypeCode , AssigningFacility )>
<!ATTLIST ExtendedCompositeIDWithCheckDigit HL7Name CDATA #FIXED 'CX' >
<!ELEMENT ExtendedCompositeIDNumberAndName (CompositeIDWithNumberAndName ,
LastNamePrefix? , NameTypeCode , IdentifierCheckDigit ,
CodIdentifyingTheCheckDigitSchemeEmployed , IdentifierTypeCode , AssigningFacility ,
NameRepresentationCode )>
<!ATTLIST ExtendedCompositeIDNumberAndName HL7Name CDATA #FIXED 'XCN' >
<!ELEMENT IDNumber (#PCDATA )>
<!ATTLIST IDNumber HL7Name CDATA #FIXED 'CK.1' >

<!ELEMENT CheckDigit (Numeric )>
<!ATTLIST CheckDigit HL7Name CDATA #FIXED 'CK.2' >

<!ELEMENT CodIdentifyingTheCheckDigitSchemeEmployed (#PCDATA )>
<!ATTLIST CodIdentifyingTheCheckDigitSchemeEmployed HL7Name CDATA #FIXED 'CK.3'
>

<!ELEMENT AssigningAuthority (HierarchicDesignator )>
<!ATTLIST AssigningAuthority HL7Name CDATA #FIXED 'CK.4' >

```

```

<!ELEMENT MiddleInitialOrName (#PCDATA )>
<!ATTLIST MiddleInitialOrName HL7Name CDATA #FIXED 'CN.3' >

<!ELEMENT SourceTable (#PCDATA )>
<!ATTLIST SourceTable HL7Name CDATA #FIXED 'CN.7' >

<!ELEMENT IdentifierTypeCode (#PCDATA )>
<!ATTLIST IdentifierTypeCode HL7Name CDATA #FIXED 'CX.5' >

<!ELEMENT AssigningFacility (HierarchicDesignator )>
<!ATTLIST AssigningFacility HL7Name CDATA #FIXED 'CX.6' >

<!ELEMENT LastNamePrefix (#PCDATA )>
<!ATTLIST LastNamePrefix HL7Name CDATA #FIXED 'XCN.3' >

<!ELEMENT NameTypeCode (#PCDATA )>
<!ATTLIST NameTypeCode HL7Name CDATA #FIXED 'XCN.11' >

<!ELEMENT IdentifierCheckDigit (#PCDATA )>
<!ATTLIST IdentifierCheckDigit HL7Name CDATA #FIXED 'XCN.12' >

<!-- Generic datatypes -->

<!ELEMENT Composite (#PCDATA )>
<!ATTLIST Composite HL7Name CDATA #FIXED 'CM' >

<!-- Demographics datatypes -->

<!ELEMENT Address (StreetAddress , OtherDesignation , City , StateOrProvince ,
ZipOrPostalCode , Country , AddressType , OtherGeographicDesignation )>
<!ATTLIST Address HL7Name CDATA #FIXED 'AD' >

<!ELEMENT TelephoneNumber (#PCDATA )>
<!ATTLIST TelephoneNumber HL7Name CDATA #FIXED 'TN' >

<!ELEMENT ExtendedAddress (Address , CountyParishCode , CensusTract ,
AddressRepresentationCode )>
<!ATTLIST ExtendedAddress HL7Name CDATA #FIXED 'XAD' >

<!ELEMENT ExtendedPersonName (PersonName , NameOrTypeCode ,
NameRepresentationCode )>
<!ATTLIST ExtendedPersonName HL7Name CDATA #FIXED 'XPN' >

<!ELEMENT ExtendedCompositeNameAndIDNumberForOrganizations (OrganizationName ,
OrganizationNameTypeCode , CompositeIDWithCheckDigit , IdentifierTypeCode ,
AssigningFacilityID , NameRepresentationCode )>
<!ATTLIST ExtendedCompositeNameAndIDNumberForOrganizations HL7Name CDATA
#FIXED 'XON' >

<!ELEMENT ExtendedTelecommunicationsNumber (TelephoneNumber ,
TelecommunicationUseCode , TelecommunicationEquipmentType , EmailAddress , CountryCode
, AreaCityCode , PhoneNumber , Extension , AnyText )>
<!ATTLIST ExtendedTelecommunicationsNumber HL7Name CDATA #FIXED 'XTN' >

<!ELEMENT StreetAddress (#PCDATA )>
<!ATTLIST StreetAddress HL7Name CDATA #FIXED 'AD.1' >

```



```

<!ELEMENT OtherDesignation (#PCDATA )>
<!ATTLIST OtherDesignation HL7Name CDATA #FIXED 'AD.2' >

<!ELEMENT City (#PCDATA )>
<!ATTLIST City HL7Name CDATA #FIXED 'AD.3' >

<!ELEMENT StateOrProvince (#PCDATA )>
<!ATTLIST StateOrProvince HL7Name CDATA #FIXED 'AD.4' >

<!ELEMENT ZipOrPostalCode (#PCDATA )>
<!ATTLIST ZipOrPostalCode HL7Name CDATA #FIXED 'AD.5' >

<!ELEMENT Country (#PCDATA )>
<!ATTLIST Country HL7Name CDATA #FIXED 'AD.6' >

<!ELEMENT AddressType (#PCDATA )>
<!ATTLIST AddressType HL7Name CDATA #FIXED 'AD.7' >

<!ELEMENT OtherGeographicDesignation (#PCDATA )>
<!ATTLIST OtherGeographicDesignation HL7Name CDATA #FIXED 'AD.8' >

<!ELEMENT CountyParishCode (#PCDATA )>
<!ATTLIST CountyParishCode HL7Name CDATA #FIXED 'XAD.9' >

<!ELEMENT CensusTract (#PCDATA )>
<!ATTLIST CensusTract HL7Name CDATA #FIXED 'XAD.10' >

<!ELEMENT AddressRepresentationCode (#PCDATA )>
<!ATTLIST AddressRepresentationCode HL7Name CDATA #FIXED 'XAD.11' >

<!ELEMENT NameOrTypeCode (#PCDATA )>
<!ATTLIST NameOrTypeCode HL7Name CDATA #FIXED 'XPN.8' >

<!ELEMENT NameRepresentationCode (#PCDATA )>
<!ATTLIST NameRepresentationCode HL7Name CDATA #FIXED 'XPN.9' >

<!ELEMENT OrganizationName (#PCDATA )>
<!ATTLIST OrganizationName HL7Name CDATA #FIXED 'XON.1' >

<!ELEMENT OrganizationNameTypeCode (#PCDATA )>
<!ATTLIST OrganizationNameTypeCode HL7Name CDATA #FIXED 'XON.2' >

<!ELEMENT AssigningFacilityID (HierarchicDesignator )>
<!ATTLIST AssigningFacilityID HL7Name CDATA #FIXED 'XON.8' >

<!ELEMENT TelecommunicationUseCode (#PCDATA )>
<!ATTLIST TelecommunicationUseCode HL7Name CDATA #FIXED 'XTN.2' >

<!ELEMENT TelecommunicationEquipmentType (#PCDATA )>
<!ATTLIST TelecommunicationEquipmentType HL7Name CDATA #FIXED 'XTN.3' >
<!ELEMENT EmailAddress (#PCDATA )>
<!ATTLIST EmailAddress HL7Name CDATA #FIXED 'XTN.4' >

<!ELEMENT CountryCode (Numeric )>
<!ATTLIST CountryCode HL7Name CDATA #FIXED 'XTN.5' >

```

```

<!ELEMENT AreaCityCode (Numeric )>
<!ATTLIST AreaCityCode HL7Name CDATA #FIXED 'XTN.6' >

<!ELEMENT PhoneNumber (Numeric )>
<!ATTLIST PhoneNumber HL7Name CDATA #FIXED 'XTN.7' >

<!ELEMENT Extension (Numeric )>
<!ATTLIST Extension HL7Name CDATA #FIXED 'XTN.8' >

<!ELEMENT AnyText (#PCDATA )>
<!ATTLIST AnyText HL7Name CDATA #FIXED 'XTN.9' >

<!-- Speciality Chapter Specific datatypes -->

<!-- Waveform datatypes -->

<!ELEMENT ChannelDefinition (ChannelIdentifier , ChannelNumber , ChannelName ,
ElectrodeNames , ChannelSensitivityUnits , CalibrationParameters , SamplingFrequency ,
MinimumMaximumDataValues )>
<!ATTLIST ChannelDefinition HL7Name CDATA #FIXED 'CD' >

<!-- The addition of the following .LST elements became necessary to ensure that the lists were
seen as single elements. -->

<!ELEMENT MultiplexedArray (MA.LST+ )>

<!ELEMENT MA.LST (#PCDATA )>
<!ATTLIST MA.LST HL7Name CDATA #FIXED 'MA'

    Sample CDATA #REQUIRED

    Channel CDATA #REQUIRED >

<!ELEMENT NumericArray (NA.LST+ )>

<!ELEMENT NA.LST (#PCDATA )>
<!ATTLIST NA.LST HL7Name CDATA #FIXED 'NA'

    ValueNumber CDATA #REQUIRED >

<!ELEMENT EncapsulatedData (SourceApplication , TypeOfData , DataSubType , Encoding ,
Data )>
<!ATTLIST EncapsulatedData HL7Name CDATA #FIXED 'ED' >

<!ELEMENT ChannelIdentifier EMPTY>
<!ATTLIST ChannelIdentifier HL7Name CDATA #FIXED 'CD.1' >

<!ELEMENT ChannelNumber (Numeric )>
<!ATTLIST ChannelNumber HL7Name CDATA #FIXED 'CD.2' >

<!ELEMENT ChannelName (#PCDATA )>
<!ATTLIST ChannelName HL7Name CDATA #FIXED 'CD.3' >

```

```

<!ELEMENT ElectrodeNames EMPTY>
<!ATTLIST ElectrodeNames HL7Name CDATA #FIXED 'CD.4' >

<!ELEMENT ChannelSensitivityUnits EMPTY>
<!ATTLIST ChannelSensitivityUnits HL7Name CDATA #FIXED 'CD.5' >

<!ELEMENT CalibrationParameters EMPTY>
<!ATTLIST CalibrationParameters HL7Name CDATA #FIXED 'CD.6' >

<!ELEMENT SamplingFrequency (Numeric )>
<!ATTLIST SamplingFrequency HL7Name CDATA #FIXED 'CD.7' >

<!ELEMENT MinimumMaximumDataValues EMPTY>
<!ATTLIST MinimumMaximumDataValues HL7Name CDATA #FIXED 'CD.8' >

<!ELEMENT SourceApplication (HierarchicDesignator )>
<!ATTLIST SourceApplication HL7Name CDATA #FIXED 'ED.1' >

<!ELEMENT TypeOfData (#PCDATA )>
<!ATTLIST TypeOfData HL7Name CDATA #FIXED 'ED.2' >

<!ELEMENT DataSubType (#PCDATA )>
<!ATTLIST DataSubType HL7Name CDATA #FIXED 'ED.3' >

<!ELEMENT Encoding (#PCDATA )>
<!ATTLIST Encoding HL7Name CDATA #FIXED 'ED.4' >

<!ELEMENT Data (#PCDATA )>
<!ATTLIST Data HL7Name CDATA #FIXED 'ED.5' >

<!-- Price Data datatypes-->

<!ELEMENT CompositePrice (Price , PriceType , FromValue , ToValue , RangeUnits ,
RangeType )>
<!ATTLIST CompositePrice HL7Name CDATA #FIXED 'CP' >

<!ELEMENT Price (Money )>
<!ATTLIST Price HL7Name CDATA #FIXED 'CP.1' >

<!ELEMENT PriceType (#PCDATA )>
<!ATTLIST PriceType HL7Name CDATA #FIXED 'CP.2' >

<!ELEMENT FromValue (Numeric )>
<!ATTLIST FromValue HL7Name CDATA #FIXED 'CP.3' >

<!ELEMENT ToValue (Numeric )>
<!ATTLIST ToValue HL7Name CDATA #FIXED 'CP.4' >

<!ELEMENT RangeUnits (CodedElement )>
<!ATTLIST RangeUnits HL7Name CDATA #FIXED 'CP.5' >

<!ELEMENT RangeType (#PCDATA )>
<!ATTLIST RangeType HL7Name CDATA #FIXED 'CP.6' >

<!-- Patient Administration/ Financial Information -->

```

```

<!ELEMENT FinancialClass (FinancialClass_Value , EffectiveDate )>
<!ATTLIST FinancialClass HL7Name CDATA #FIXED 'FC' >

<!ELEMENT FinancialClass_Value (#PCDATA )>

<!ELEMENT EffectiveDate (TimeStamp )>
<!ATTLIST EffectiveDate HL7Name CDATA #FIXED 'FC.2' >

<!-- Extended Queries datatypes -->

<!ELEMENT QuerySelectionCriteria (SegmentFieldName , RelationalOperator , Value ,
RelationalConjunction )>
<!ATTLIST QuerySelectionCriteria HL7Name CDATA #FIXED 'QSC' >

<!ELEMENT QueryInputParameterList (SegmentFieldName , Parameter+ )>
<!ATTLIST QueryInputParameterList HL7Name CDATA #FIXED 'QIP' >

<!ELEMENT Parameter (#PCDATA )>
<!ATTLIST Parameter ParameterNumber CDATA #REQUIRED >

<!ELEMENT RowColumnDefinition (SegmentFieldName , HL7DataType ,
MaximumColumnWidth )>
<!ATTLIST RowColumnDefinition HL7Name CDATA #FIXED 'RCD' >

<!ELEMENT SegmentFieldName (#PCDATA )>
<!ATTLIST SegmentFieldName HL7Name CDATA #FIXED 'QSC.1' >

<!ELEMENT RelationalOperator (#PCDATA )>
<!ATTLIST RelationalOperator HL7Name CDATA #FIXED 'QSC.2' >

<!ELEMENT Value (#PCDATA )>
<!ATTLIST Value HL7Name CDATA #FIXED 'QSC.3' >

<!ELEMENT RelationalConjunction (#PCDATA )>
<!ATTLIST RelationalConjunction HL7Name CDATA #FIXED 'QSC.4' >

<!ELEMENT HL7DataType (#PCDATA )>
<!ATTLIST HL7DataType HL7Name CDATA #FIXED 'RCD.2' >

<!ELEMENT MaximumColumnWidth (Numeric )>
<!ATTLIST MaximumColumnWidth HL7Name CDATA #FIXED 'RCD.3' >

<!-- Master Files datatypes -->

<!ELEMENT DriversLicenseNumber (LicenseNumber , IssuingStateProvinceCountry ,
ExpirationDate )>
<!ATTLIST DriversLicenseNumber HL7Name CDATA #FIXED 'DLN' >

<!ELEMENT JobCodeClass (JobCode , JobClass )>
<!ATTLIST JobCodeClass HL7Name CDATA #FIXED 'JCC' >

<!ELEMENT VisitingHours (StartDayRange , EndDayRange , StartHourRange , EndHourRange
)>
<!ATTLIST VisitingHours HL7Name CDATA #FIXED 'VH' >

```

```

<!ELEMENT LicenseNumber (#PCDATA )>
<!ATTLIST LicenseNumber HL7Name CDATA #FIXED 'DLN.1' >

<!ELEMENT IssuingStateProvinceCountry (#PCDATA )>
<!ATTLIST IssuingStateProvinceCountry HL7Name CDATA #FIXED 'DLN.2' >

<!ELEMENT ExpirationDate (Date )>
<!ATTLIST ExpirationDate HL7Name CDATA #FIXED 'DLN.3' >

<!ELEMENT JobCode (#PCDATA )>
<!ATTLIST JobCode HL7Name CDATA #FIXED 'JCC.1' >

<!ELEMENT JobClass (#PCDATA )>
<!ATTLIST JobClass HL7Name CDATA #FIXED 'JCC.2' >

<!ELEMENT StartDayRange (#PCDATA )>
<!ATTLIST StartDayRange HL7Name CDATA #FIXED 'VH.1' >

<!ELEMENT EndDayRange (#PCDATA )>
<!ATTLIST EndDayRange HL7Name CDATA #FIXED 'VH.2' >

<!ELEMENT StartHourRange (Time )>
<!ATTLIST StartHourRange HL7Name CDATA #FIXED 'VH.3' >

<!ELEMENT EndHourRange (Time )>
<!ATTLIST EndHourRange HL7Name CDATA #FIXED 'VH.4' >

<!-- Medical Records/ Information Management datatypes -->

<!ELEMENT PerformingPersonTimeStamp (ExtendedCompositeIDNumberAndName ,
DateDateTimeActionPerformed )>
<!ATTLIST PerformingPersonTimeStamp HL7Name CDATA #FIXED 'PPN' >

<!ELEMENT DateDateTimeActionPerformed (TimeStamp )>
<!ATTLIST DateDateTimeActionPerformed HL7Name CDATA #FIXED 'PPN.16' >

<!-- Time Series datatypes -->

<!ELEMENT DateDateTimeRange (RangeStartDateTime , RangeEndDateTime )>
<!ATTLIST DateDateTimeRange HL7Name CDATA #FIXED 'DR' >

<!ELEMENT RepeatInterval (RepeatPattern , ExplicitTimeInterval )>
<!ATTLIST RepeatInterval HL7Name CDATA #FIXED 'RI' >

<!ELEMENT SchedulingClassValuePair (ParameterClass , ParameterValue )>
<!ATTLIST SchedulingClassValuePair HL7Name CDATA #FIXED 'SCV' >

<!ELEMENT RangeStartDateTime (TimeStamp )>
<!ATTLIST RangeStartDateTime HL7Name CDATA #FIXED 'DR.1' >

<!ELEMENT RangeEndDateTime (TimeStamp )>
<!ATTLIST RangeEndDateTime HL7Name CDATA #FIXED 'DR.2' >

<!ELEMENT ParameterClass (#PCDATA )>
<!ATTLIST ParameterClass HL7Name CDATA #FIXED 'SCV.1' >

```

```
<!ELEMENT ParameterValue (#PCDATA )>  
<!ATTLIST ParameterValue HL7Name CDATA #FIXED 'SCV.2' >  
  
<!ELEMENT IN (#PCDATA )>
```