HL7 Interface Specification

Final Release

MILLENSYS Contacts

- **Main Office**

Address : 36 Ahmed El-Zomor Street, Nasr City, Cairo, Egypt
Telephone/Fax : +20 2 22713860
+20 2 22754867
+20 2 22879403

- **Internet :**

Web site: www.millensys.com

- **Email :**

Sales Department sales@millensys.com
Support Department support@millensys.com

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1. Introduction

MILLENSYS provides a broker-less PACS/RIS interface. This means that, both the offered PACS and RIS can recognize both DICOM and HL7 messages. This document gives a brief overview of MILLENSYS' HL7 PACS/RIS Interface. The interface is based on the HL7 version 2.4 definitions. Modules communicating using previous HL7 versions should have no communication problem due to the backward compatibility nature of the HL7 standard.

1.1 Communication Protocol

The PACS/RIS communicate using TCP-IP socket interface, implementing the HL7 "Minimal Lower Layer Protocol".

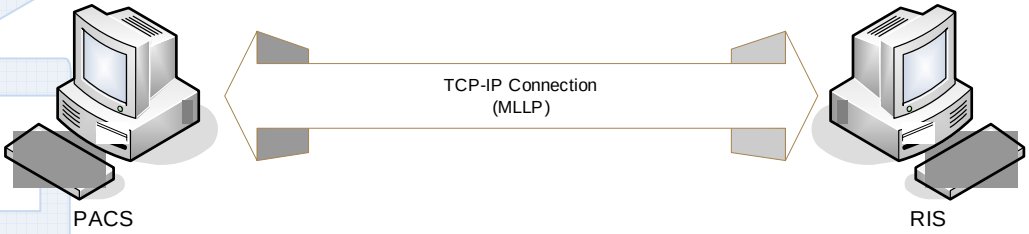

Figure 1 - HL7 Communication Model

1.2 File Sharing

The PACS/RIS communicate using Folder Sharing over the newtork, implementing the HL7,using file names *.HL7 extenstion.

1.3 Reference

Health Level Seven Version 2.3.1, 2.4

2. Message Details

2.1 Supported HL7 Message Types

HL7 supports a wide variety of hospital events. Such events include Scheduling, Reporting, Patient Administration, Patient Care, Financial Events…etc. Not every department in a health care system would be interested in sending/receiving all different kinds of events. Therefore, it is of great importance for a good HL7 interface to be smart enough to "choose" the types of events that would satisfy the health care needs of every department. A system with so many unnecessary transmitted messages would only cause high network traffic which can degrade the performance of the healthcare system.

Listed below, is a list of the message types supported by **MILLENSYS**:

Message Type	Description
ACK	**General Acknowledgment message.**
ADT	**Patient Admit/Discharge/Transfer message**
ORM	**Order message.**
ORR	**Order Acknowledgment message**
ORU	**Observation Reporting**
DFT	**Financial Managment**
All Other Messages	**As a gateway functionality**

Table 1: Supported Message Types

2.2 HL7 Message Description

An HL7 message can be described as a normal character string that is divided into segments. Each segment contains data related to a specific information category. For example, the PID segment contains a patient's basic personal information (name, sex, address,…etc.), the IN1 segment contains information related to the patient's insurance status(company, expiration data,…etc.).

Message segments can have one or more of the following characteristics:

- **Required**: This is due when the message segment contains information that always exists, and should be available for reliable healthcare information flow. For example, the PID (Patient Identification) segment contains 'always-existing' data elements (name, sex, date of birth,…etc) that must be available to link the patient to the healthcare system.

- **Optional**: This is due when the message segment contains information that either can be missing or irrelevant to certain patients. For example, a patient that doesn't suffer from any allergy will not need the allergy-related segment (AL1). An optional segment is denoted by brackets [].

- **Can Repeat**: This is due when information for a certain instance can exist more than one time. For example, a patient vulnerable to more than one allergy would use more than one AL1 (Allergy Information) segment. If a segment can repeat, it will be denoted by braces {}. If it both optional and can repeat, it will be denoted by < >.

2.2.1 - General Acknowledgment Message (ACK)

When a healthcare department sends an HL7 message, it usually needs a feedback from the host. This feedback is needed to make sure that the host received the message successfully and managed to process it correctly.

Message Direction

Input / Output

Message Structure

Segment	Description
MSH	Message Header
MSA	Message Acknowledgment
[ERR]	Error

Table 2: ACK Message Structure

2.2.2 - Patient Admit/Discharge/Transmit (ADT)

ADT messages are related to events concerning patient administration events. Such events include patient admittance, transfer, discharge, tracking, and information update. The Supported ADT messages are described below.

2.2.2.1- Admit/Visit Notification (Event A01)

An A01 event is sent as a result of a patient undergoing the admission process which assigns the patient to a bed. It signals the beginning of a patient's stay in the healthcare facility.

Message Direction

Input

Message Structure

Segment	Description
MSH	Message Header
EVN	Event Type
PID	Patient Identification
<NK1>	Next Of Kin
PV1	Patient Visit
<OBX>	Observation
<AL1>	Allergy Information
<PR1>	Procedures
<IN1>	Insurance

Table 3: ADTA01 Message Structure

2.2.2.2 - Transfer a patient (event A02)

An A02 event is issued as a result of the patient changing his or her assigned physical location.

Message Direction

Input

Message Structure

Segment	Description
MSH	Message Header

EVN	Event Type
PID	Patient Identification
PV1	Patient Visit
<OBX>	Observation

Table 4: ADTA02 Message Structure

2.2.2.3 - Discharge/end visit (Event A03)

An A03 event signals the end of a patient's stay in the healthcare facility. It signals that the patient has completed the discharge process.

Message Direction

Input

Message Structure

Segment	Description
MSH	Message Header
EVN	Event Type
PID	Patient Identification
PV1	Patient Visit
<PR1>	Procedures
<OBX>	Observation

Table 5: ADTA03 Message Structure

2.2.2.4 - Register a patient (Event A04)

An A04 event signals that the patient has arrived or checked in as an outpatient, and is not assigned to a bed.

Message Direction

Input / Output

Message Structure

Segment	Description
MSH	Message Header
EVN	Event Type
PID	Patient Identification

<NK1>	Next Of Kin
PV1	Patient Visit
<OBX>	Observation
<AL1>	Allergy Information
<PR1>	Procedures
<IN1>	Insurance

Table 6: ADTA04 Message Structure

2.2.2.5 - Change an Outpatient to an Inpatient (Event A06)

An A06 event is sent when it is decided that a registered patient is to be admitted. This situation usually occurs after an evaluation of the seriousness of the patient's condition.

Message Direction

Input

Message Structure

Segment	Description
MSH	Message Header
EVN	Event Type
PID	Patient Identification
MRG	Merge Patient Information
<NK1>	Next Of Kin
PV1	Patient Visit
<OBX>	Observation
<AL1>	Allergy Information
<PR1>	Procedures
<IN1>	Insurance

Table 7: ADTA06 Message Structure

2.2.2.6 - Change an Inpatient to an Outpatient (Event A07)

An A07 event is sent when a patient who was admitted changes his/her status to "no longer admitted" but is still being seen for this episode of care.

Message Direction

Input

Message Structure

Segment	Description
MSH	Message Header

EVN	Event Type
PID	Patient Identification
MRG	Merge Patient Information
<NK1>	Next Of Kin
PV1	Patient Visit
<OBX>	Observation
<AL1>	Allergy Information
<PR1>	Procedures
<IN1>	Insurance

Table 8: ADTA07 Message Structure

2.2.2.7 - Update Patient Information (Event A08)

This trigger event is used when any patient information has changed. For example, an A08 event can be used to notify the receiving systems of a change of address or a name change. This message can not be used to notify of information associated with other trigger events.

Message Direction

Input / Output

Message Structure

Segment	Description
MSH	Message Header
EVN	Event Type
PID	Patient Identification
MRG	Merge Patient Information
<NK1>	Next Of Kin
PV1	Patient Visit
<OBX>	Observation
<AL1>	Allergy Information
<PR1>	Procedures
<IN1>	Insurance

Table 9: ADTA08 Message Structure

2.2.2.8 - Patient Departing - tracking (Event A09)

The A09 event is used when there is a temporary change in a patient's physical location. This does not include a change in the patient's assigned bed.

Message Direction

Input

Message Structure

Segment	Description
MSH	Message Header
EVN	Event Type
PID	Patient Identification
PV1	Patient Visit
<OBX>	Observation

Table 10: ADTA09 Message Structure

2.2.2.9 - Patient Arriving - tracking (Event A10)

The A10 event is sent when a patient arrives at a new location in the healthcare facility.

Message Direction

Input

Message Structure

Segment	Description
MSH	Message Header
EVN	Event Type
PID	Patient Identification
PV1	Patient Visit
<OBX>	Observation

Table 11: ADTA10 Message Structure

2.2.2.10 - Cancel Admit / Visit Notification (Event A11)

The A11 event is sent when an A01 (admit/visit notification) event is canceled, either because of an erroneous entry of the A01 event, or because of a decision not to admit the patient.

Message Direction

Input

Message Structure

Segment	Description
MSH	Message Header
EVN	Event Type
PID	Patient Identification
PV1	Patient Visit
<OBX>	Observation

Table 12: ADTA11 Message Structure

2.2.2.11 - Cancel Transfer (Event A12)

The A12 event is sent when an A02 (transfer a patient) event is canceled, either because of erroneous entry of the A02 event or because of a decision not to transfer the patient.

Message Direction

Input

Message Structure

Segment	Description
MSH	Message Header
EVN	Event Type
PID	Patient Identification
PV1	Patient Visit
<OBX>	Observation

Table 13: ADTA12 Message Structure

2.2.2.12 - Cancel Discharge / End Visit (Event A13)

The A13 event is sent when an A03 (discharge/end visit) event is canceled, either because of erroneous entry of the A03 event or because of a decision not to discharge or end the visit of the patient.

Message Direction

Input

Message Structure

Segment	Description
MSH	Message Header

EVN	Event Type
PID	Patient Identification
<NK1>	Next Of Kin
PV1	Patient Visit
<OBX>	Observation
<AL1>	Allergy Information
<PR1>	Procedures
<IN1>	Insurance

Table 14: ADTA13 Message Structure

2.2.2.13 - Swap Patients (Event A17)

The A17 is used when it is decided that two patients will exchange beds.

Message Direction

Input

Message Structure

Segment	Description
MSH	Message Header
EVN	Event Type
PID	Patient 1 Identification
PV1	Patient 1 Visit
<OBX>	Patient 1 Observation
PID	Patient 2 Identification
PV1	Patient 2 Visit
<OBX>	Patient 2 Observation

Table 15: ADTA17 Message Structure

2.2.2.14 - Merge Patient Information (Event A18)

The A18 event is used to merge patient information related to the same patient that is linked to two different identification numbers: This is required, for example, when a previous patient is registered under a new patient identification number because of an error, or because the actual patient identification number was not determined. The

merge event is used to combine the information under either the new or the old identifier.

Message Direction

Input

Message Structure

Segment	Description
MSH	Message Header
EVN	Event Type
PID	Patient Identification
MRG	Merge Patient Information
PV1	Patient Visit

Table 16: ADTA18 Message Structure

2.2.2.15 - Merge Person Information (Event A30)

An A30 event can be used to merge a person's information in an MPI (Master Patient Index).

Message Direction

Input

Message Structure

Segment	Description
MSH	Message Header
EVN	Event Type
PID	Patient Identification
MRG	Merge Patient Information

Table 17: ADTA30 Message Structure

2.2.2.16 - Update Person Information (Event A31)

An A31 event can be used to update person information on an MPI. It can also be used for backloading MPI information for the person, or for backloading person and historical information.

Message Direction

Input

Message Structure

Segment	Description
MSH	Message Header
EVN	Event Type
PID	Patient Identification
<NK1>	Next Of Kin
PV1	Patient Visit
<OBX>	Observation
<AL1>	Allergy Information
PR1	Procedures
IN1	Insurance

Table 18: ADTA31 Message Structure

2.2.2.17 - Cancel Patient Arriving - tracking (Event A32)

The A32 event is sent when an A10 (patient arriving-tracking) event is canceled, either because of erroneous entry of the A10 event or because of a decision not to receive the patient.

Message Direction

Input

Message Structure

Segment	Description
MSH	Message Header
EVN	Event Type
PID	Patient Identification
PV1	Patient Visit
<OBX>	Observation

Table 19: ADTA32 Message Structure

2.2.2.18 - Cancel Patient Departing - tracking (Event A33)

The A33 event is sent when an A09 (patient departing-tracking) event is canceled.

Message Direction

Input

Message Structure

Segment	Description
MSH	Message Header
EVN	Event Type
PID	Patient Identification
PV1	Patient Visit
<OBX>	Observation

Table 20: ADTA33 Message Structure

2.2.2.19 - Merge patient information - Patient ID only (event A34)

An A34 event is intended for merging or changing patient identifiers. It would be used to change patient identifiers on all of this patient's existing accounts.

Message Direction

Input

Message Structure

Segment	Description
MSH	Message Header
EVN	Event Type
PID	Patient Identification
MRG	Merge Patient Information

Table 21: ADTA34 Message Structure

2.2.2.20 - Merge patient information - Patient ID only (event A40)

An A40 event is intended for merging or changing patient identifiers. It would be used to change patient identifiers on all of this patient's existing accounts.

Message Direction

Input/Output

Message Structure

Segment	Description
MSH	Message Header
EVN	Event Type
PID	Patient Identification
MRG	Merge Patient Information

Table 22: ADTA40 Message Structure

2.2.3 - Order Messages (ORM)

Order messages are used to transmit orders or information about orders between healthcare departments that need the order and those that fulfill the order, and other applications as needed. An order is a request for material or services, usually for a specific patient. Examples can be films from radiology, linens from housekeeping, supplies from central supply…etc.

2.2.3.1 - General Order Message (Event O01)

The function of this message is to initiate the transmission of information about an order. This includes placing new orders, cancellation of existing orders, discontinuation, holding, etc. The trigger event for this message is any change to an order. Such changes include submission of new orders, cancellations, updates, patient and nonpatient-specific orders, etc.

Message Direction

Input / Output

Message Structure

Segment	Description
MSH	Message Header
[PID]	Patient Identification
[PV1]	Patient Visit
<IN1>	Insurance
<AL1>	Allergy Information
{ORC}	Common Order
{OBR}	Observation Request
<NTE>	Notes and Comments
<OBX>	Observation
<FT1>	Financial Transaction
[BLG]	Billing

Table 23: ORMO01 Message Structure

2.2.3.2 - General Order Response Message (Event ORRO02)

The function of this message is to respond to an ORM message. i.e. It is the application acknowledgment to an ORM message

Message Direction

Input

Message Structure

Segment	Description
MSH	**Message Header**
MSA	**Message Acknowledgement**
[PID]	**Patient Identification**
{ORC}	**Common Order**
{OBR}	**Observation Request**
<NTE>	**Notes and Comments**

Table 24: ORRO02 Message Structure

2.2.4 - Observation Reporting (ORU)

The main goal of observation reporting is to send structured patient-oriented clinical data from one computer system to another. Such data may be observations and results of diagnostic studies from the producing system (e.g., laboratory, image viewing station…etc), to the ordering system (e.g., HIS order entry, physician's office) or to archival medical record systems.

2.2.4.1 – Observation Reporting Message (Event ORUR01)

A clinical report is sent in the ORUR01 message. It is formed as a three-level hierarchy, with the PID (Patient Identification) segment at the upper level, an order record (OBR) at the next level and one or more observation records (OBX) at the bottom. One result segment (OBX) is transmitted for each component of a diagnostic report,

The message will be sent if the patient's report is Verified.

Message Direction

Output

Message Structure

Segment	Description
MSH	**Message Header**
[PID]	**Patient Identification**
[PV1]	**Patient Visit**
<ORC>	**Common Order**
{OBR}	**Observation Request**
<NTE>	**Notes and Comments**
<OBX>	**Observation**

Table 25: ORUR01 Message Structure

2.2.5 - DFT-Detail Financial Transaction(DFT-P03)

The DFT message describes a financial transaction that is sent to a billing system and is used for patient accounting purposes. This message might include things like ancillary charges or patient deposits, and is sent between the DSS/Order Filler and the Charge Processor. The DSS/Order Filler would then verify that the procedure had been completed.

Trigger events for the DFT-P03 message include:

Procedure ordered

Procedure scheduled

Procedure completed

Future will define Report events for professional fees

Message Direction

output

Message Structure

Segment	Description
MSH	**Message Header**
SCH	**Scheduling Activity Information**
PID	**Patient Identification**
[PV1]	**Patient Visit**
FT1	**Financial transaction**
[PR1]	**Procedures**
[IN1]	**Insurance**

Table 26: P03 Message Structure

3. Example Segments

Next, we give a few examples of the structures of some data segments used. The table headers are described below:

SEQ: Sequence number of the data component in the segment.

Element Name: The name of the segment data component.

DT: HL7 defined data type used to hold the element

OPT: Optionality field. It can take one of the following values:

R: HL7 Required Field
R1: Optional, but is recommended.
O: Optional

RPT: Indicates if a field can repeat

3.1 MSG Segment

SEQ	LEN	DT	R/O	ELEMENT NAME	Desciption
1	1	ST	R	Field separator	|
2	4	ST	R	Encoding characters	^~\&
3	180	HD	O	Sending application	**Application Sending Message (Mandatory)**
4	180	HD	O	Sending facility	**Facility Sending Message (Mandatory)**
5	180	HD	O	Receiving application	**Application Receiving Message (Mandatory)**
6	180	HD	O	Receiving facility	**Facility Receiving Message (Mandatory)**
7	26	TS	O	Date/Time of message	Message Date Time
8	40	ST	O	Security	Not Used
9	7	CM	R	Message type	**Message type (Mandatory) Table below**
10	20	ST	R	Message control ID	**Unique ID for each Message (Mandatory)**
11	3	PT	R	Processing ID	Process Type (Debug, Training, Production) Phase
12	8	ID	R	Version ID	2.3.1
13	15	NM	O	Sequence number	Not Used
14	180	ST	O	Continuation pointer	Not Used
15	2	ID	O	Accept acknowledgement type	Not Used
16	2	ID	O	Application acknowledgement type	Not Used
17	2	ID	O	Country code	Not Used
18	6	ID	O	Character Set	Not Used
19	60	CE	O	Principal Language of Message	Not Used

Table 27: MSG field definitions

3.2 PID - Patient Identification Segment

SEQ	LEN	DT	R/O	ELEMENT NAME	Description
1	4	SI	O	Set ID - Patient ID	Not Used
2	20	CX	O	Patient ID (External ID)	Not Used
3	20	CX	R	Patient ID (Internal ID)	**Patient ID (Mandatory)**
4	20	CX	O	Alternate Patient ID	Not Used
5	48	XPN	R	Patient Name	**Patient Name in English (Mandatory)**
6	48	XPN	O	Mother's Maiden Name	Not Used
7	26	TS	O	Date of Birth	**Date of Birth (Optional)**
8	1	IS	O	Sex	**Patient Sex (Optional)**
9	48	XPN	O	Patient Alias	**Patient Name in Local Language** (Ex: Arabic Name) **(Optional)**
10	1	IS	O	Race	Not Used
11	106	XAD	O	Patient Address	**Patient Address (Optional)**
12	4	IS	B	County code	Not Used
13	40	XTN	O	Phone Number - Home	**Home Phone Number (Optional)**
14	40	XTN	O	Phone Number - Business	**Business Phone Number (Optional)**
15	60	CE	O	Language - Patient	Not Used
16	1	IS	O	Marital Status	**Defined in Marital Status Table below (Optional)**
17	3	IS	O	Religion	**Religion (Optional)**
18	20	CX	O	Patient Account Number	Account Number
19	16	ST	O	SSN Number	**Social Security Number (Optional)**
20	25	DLN	O	Driver's License Num	**Driver License (Optional)**
21	20	CX	O	Mother's Identifier	Not Used
22	3	IS	O	Ethnic Group	Not Used
23	60	ST	O	Birth Place	Not Used
24	2	ID	O	Multiple Birth Indicator	Not Used
25	2	NM	O	Birth Order	Not Used
26	4	IS	O	Citizenship	Not Used
27	60	CE	O	Veterans Military Status	Not Used
28	80	CE	O	Nationality	**Nationality (Optional)**
29	26	TS	O	Patient Death Date and Time	Not Used
30	1	ID	O	Patient Death Indicator	Not Used

Table 28: PID field definitions

3.3 AL1- Patient Allergy Information Segment

SEQ	ELEMENT NAME	DT	OPT	RPT
1	Set ID - AL1	SI	R	
2	Allergy Type	IS	O	
3	Allergy Code/Mnemonic/Description	CE	R	
4	Allergy Severity	IS	O	
5	Allergy Reaction	ST	O	Y
6	Identification Date	DT	O	

Table 29: AL1 Field Definitions

3.4 MRG - Patient Merge Information Segment

SEQ	ELEMENT NAME	DT	OPT	RP/#
1	Prior Patient Identifier List	CX	R	Y
2	Prior Alternate Patient ID	CX	O	Y
3	Prior Patient Account Number	CX	O	
4	Prior Patient ID	CX	O	
5	Prior Visit Number	CX	O	
6	Prior Alternate Visit ID	CX	O	
7	Prior Patient Name	XPN	R1	Y

Table 30: MRG Field Definitions

3.6 PV1 – Visit Segment

SEQ	LEN	DT	R/O	ELEMENT NAME	Description
1	4	SI	O	Set ID PV1	Not Used
2	1	IS	R	Patient Class	**Using Table Below**
3	80	PL	O	Assigned Patient Location	Enter patient location
6	80	PL	O	Prior Patient Location	Prior patient location
7	60	XCN	C	Attending Doctor	Attending Physcian
8	60	XCN	C	Referring Doctor	Referring Physician
In between not used					
16	20	CX	R	VIP Indicator	
19	20	CX	R	Visit Number	**Visit ID (Mandatory)**
In between not used					
44	26	TS	O	Admit Date/Time	Admission Date\Time
45	26	TS	O	Discharge Date/Time	Visit Discharge Date\Time

Table 31: PV1 Field Definitions

Patient Class Table

Item	Description
E	Emergency
I	Inpatient
O	Outpatient
P	Preadmit
R	Recurring Patient
B	Obstetrics
D	Day Hospital
W	Week Hospital
K	Newborn

Table 32: Patient class table

3.5 ORC – Common Order Segment

SEQ	LEN	DT	R/O	ELEMENT NAME	Description
1	2	ID	R	Order Control	Defined in Order Control ID Table Below (Mandatory)
2	22	EI	C	Placer Order Number	Placer Order Number
3	22	EI	C	Filler Order Number	Accession Number –Study ID
4	22	EI	O	Placer Group Number	Can be configured to act as Placer Order Number
5	2	ID	O	Order Status	**In case Order Control is SC (Table below)**
6	1	ID	O	Response Flag	Not Used
7	200	TQ	O	Quantity/Timing	**Order Start Time**
8	200	CM	O	Parent	Not Used

9	26	TS	O	Date/Time of Transaction	Not Used
10	120	XCN	O	Entered By	mapped **to Receptionist Name (Optional)**
11	120	XCN	O	Verified By	Not Used
12	120	XCN	O	Ordering Provider	Not Used
13	80	PL	O	Enterer's Location	Not Used
14	40	XTN	O	Call Back Phone Number	Not Used
15	26	TS	O	Order Effective Date/Time	Not Used
16	200	CE	O	Order Control Code Reason	mapped **to order commets (Optional)**
17	60	CE	O	Entering Organization	Enterning Orgainization as defined in Borker settings
18	60	CE	O	Entering Device	Enterning Orgainization ID as defined in Borker settings
19	120	XCN		Action by	Not Used

Table 33: ORC Field Definitions

Order Control ID Table

Item	Description	Action taken
NW	New Order	Create new order
CA	Cancel Order	Change status to Cancelled if not started yet
DC	Discontinue Order Request	Change status to Discontinued
SC	Order Status Changed	Change Status
OC	Order Cancelled	Change status to Cancelled if not started yet
XO	Order Status Changed	Change Status

Table 34: Order Control ID table

Order Status Table

Item	Description	Action Taken
CM	Completed Studies (Report was Verified)	Change status to Examined
DC or HD	Discontinued	Change status to Discontinued
SC or IP	In Progress	Change status to Inprogress
A	Reported Study (Compete Report and not Verified)	
OD	Order Discontinued	Change status to Discontinued
CA	Cancelled Order or	

Table 35: Order Status table

3.6 OBR – Observation Request Segment

SEQ	LEN	DT	ELEMENT NAME	Description
1	4	SI	Set ID Observation Request	Not Used
2	22	EI	Placer Order Number	Placer Order Number
3	22	EI	Filler Order Number	Accession Number – Study ID
4	200	CE	Universal Service ID	Procedure Information **Procedure Code^ Procedure Name^**
5	2	ID	Priority	**Study Priority**
6	26	TS	Requested Date/time	**Procedure Start Date time (Mandatory)**
7	26	TS	Observation Date/Time	Not Used

8	26	TS	Observation End Date/Time	Not Used
9	20	CQ	Collection Volume	Not Used
10	60	XCN	Collector Identifier	Not Used
11	1	ID	Specimen Action Code	Not Used
12	60	CE	Danger Code	**Patient allergies**
13	300	ST	Relevant Clinical Info.	Not Used
14	26	TS	Specimen Received Date/Time	Not Used
15	300	CM	Specimen Source	Not Used
16	80	XCN	Ordering Provider	**Referral User Name (Optional)**
17	40	XTN	Order Call back Phone Number	Not Used
18	60	ST	Placer field 1	Accession Number – Study ID
19	60	ST	Placer field 2	Study ID
20	60	ST	Filler Field 1	Study ID^Machine Name^Machine AET
21	60	ST	Filler Field 2	Not Used
22	26	TS	Results Rpt/Status Chang - Date/Time +	Not Used
23	40	CM	Charge to Practice	Not Used
24	10	ID	Diagnostic Service Sect ID	**Modality Name** (ex: MR,CT,US,NM) **(Mandatory)**
25	1	ID	Result Status +	Not Used
26	400	CM	Parent Result	Not Used
27	200	TQ	Quantity/Timing	**Procedure Start Date time**
28	150	XCN	Result Copies To	Not Used
29	150	CM	Parent Number	Not Used
30	20	ID	Transportation Mode	Not Used
31	300	CE	Reason for Study	Study Reason
32	200	CM	Principal Result Interpreter +	Not Used
33	200	CM	Assistant Result Interpreter	Not Used
34	200	CM	Technician +	**Radiologist Name (Optional)**
35	200	CM	Transcriptionist +	Not Used
36	26	TS	Scheduled Date/Time	Not Used
37	4	NM	Number of Sample Containers	Not Used
38	60	CE	Transport Logistics of Collected Sample	Not Used
39	200	CE	Collector's Comment	Not Used
40	60	CE	Transport Arrangement Responsibility	Not Used
41	30	ID	Transport Arranged	Not Used
42	1	ID	Escort Required	Not Used
43	200	CE	Planned Patient Transport Comment	Not Used
44	80	CE	Procedure Code	-(To PACS) Procedure Code and Description

Table 36: OBR Field Definitions

3.7 OBX – Result (Observation) Segment

SEQ	LEN	DT	ELEMENT NAME	Description
1	4	SI	Set ID - Observational Simple	Not Used
2	2	ID	Value Type	**TX (Report Type) (Mandatory)**
3	80	CE	Observation Identifier	Not Used
4	20	ST	Observation Sub-ID	Not Used
5			Observation Value	**Report Written (Manadatory)**
6	60	CE	Units	Not Used
7	60	ST	References Range	Not Used
8	10	ID	Abnormal Flags	Not Used
9	5	NM	Probability	0
10	5	ID	Nature of Abnormal Test	Not Used
11	2	ID	Observation Result Status	F (Final Report)
12	26	TS	Date Last Obs Normal Values	Not Used
13	20	ST	User Defined Access Checks	Not Used
14	26	TS	Date/Time of the Observation	Date and time of the report
15	60	CE	Producer's ID	Not Used
16	60	XCN	Responsible Observer	Doctor Name
17	60	CE	Observation Method	Not Used

Table 37: OBX Field Definitions