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medical systems

Information Exchange Manager

Demographics (ADT) Interface Guide
IEM 10

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Abstract This guide, *Demographics (ADT) Interface Guide*, describes the demographics (ADT) interface in *Information Exchange Manager (IEM)*. It provides what options exist, the segments used and which product, ARIA Radiation Oncology or ARIA Medical Oncology, the interface supports. This guide is applicable to Information Exchange Manager 8.6.

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HIPAA Varian's products and services are specifically designed to include features that help our customers comply with the Health Insurance Portability and Accountability Act of 1996 (HIPAA). The ARIA Radiation Oncology System uses a secure login process, requiring a user name and password that supports role-based access. Users are assigned to groups, each with certain access rights, which may include the ability to edit and add data or may limit access to data. When a user adds or modifies data within the database, a record is made that includes which data were changed, the user ID, and the date and time the changes were made. This establishes an audit trail that can be examined by authorized system administrators.

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Contents

Document Revisions

This document contains specifications that will change from time to time. The history of this document is outlined below.

Version	Description	Version Date	Edited By
IEM 8.1.05	Baseline Document	03/10/2008	C. Ising
IEM 8.5	Added Inbound Support for Insurance IN1 and IN2 in Radonc	05/15/2008	C. Ising
IEM 8.5	Removed merge for RadOnc	10/02/2008	C. Ising
IEM 8.6	Non-Advanced ADT Tracking for A03	05/26/2009	K. Braun
IEM 10.0	Update for version	07/05/2010	C. Ising

1. Introduction

Varian Medical Systems is dedicated to open integration with other Health Information Systems (HIS). Information Exchange Manager (IEM) was developed by Varian to handle integration using standard and custom interfaces that run at the customer's site. This document provides both customers and 3rd party vendors with a description of the information Varian requires to design and implement these Interfaces. The HL7 standard is supported by Varian and most HIS vendors. HL7 is being used in the majority of large U.S. hospitals today.

IEM supports integration to both ARIA Radiation Oncology and ARIA Medical Oncology products. Supported Events, Segments and Fields may differ depending on the product IEM is integrating with (ARIA Radiation Oncology or ARIA Medical Oncology). Supported Events, Segments and Fields are identified within this Interface Guide.

IEM supports inbound (to ARIA Radiation Oncology or ARIA Medical Oncology) and outbound (from ARIA Radiation Oncology or ARIA Medical Oncology) processing of Patient Demographics using HL7's ADT (Admission, Discharge and Transfers) message formats. A patient demographic interface eliminates the need for the clinic staff to enter duplicate patient registrations in Varian applications and the Hospital's Registration/ADT system.

1.1. ARIA Medical Oncology

IEM in an ARIA Medical Oncology scenario can be either the source or recipient of patient information.

When ARIA Medical Oncology is the source, patient information is forwarded to the hospital's ADT system as changes occur. The receiving system will receive either a new patient or an updated patient HL7 message.

When ARIA Medical Oncology is the recipient, it is expected that the sending system captures the demographic information at the time of admission and/or whenever changes are made to the patient's information. The sending system then creates an ADT message and forwards the information to ARIA Medical Oncology via IEM.

1.2. ARIA Radiation Oncology

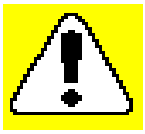
IEM in an ARIA Radiation Oncology scenario can be either the source or recipient of patient information.

When ARIA Radiation Oncology is the source, patient information is forwarded to the hospital's ADT system as changes occur. The receiving system will receive either a new patient or an updated patient HL7 message.

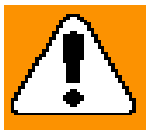
When ARIA Radiation Oncology is the recipient the sending system captures demographic information and any updates made to it. It then creates and sends either a new patient or patient update HL7 message to IEM. In this environment ADT message can automatically be processed into the ARIA Radiation Oncology system or can be manually processed through the use of the Patient Select application. Patient Select allows the ARIA Radiation Oncology user to select from accumulated HL7

messages received from the sending system.

Note: A note describes actions or conditions that can help the user obtain optimum performance from the equipment or software.



CAUTION: A caution describes actions or conditions that can result in minor or moderate injury to personnel or can result in damage to equipment.



WARNING: A warning describes actions or conditions that can result in serious injury or death to personnel.

2. About This Document

This section describes the purpose and audience for this guide. It also describes conventions, organizations, and related documentation.

Purpose

This document describes high level requirements for the Varian ADT interface.

3. Assumptions and Rules

The following assumptions have been made concerning the implementation of the Varian HL7 ADT Demographics interface:

It is assumed that the reader of this document is familiar with the HL7 2.3 (Health Level 7) standard.

This document should be referenced in conjunction with the Varian's IEM HL7 Message Segments Guide.

The ADT Demographics Interface utilizes the HL7 Standard Version 2.3.

The HL7 interface will be processed real-time using TCP/IP sockets.

Messages will be sent using Minimal Lower Layer Protocol with the following form: <SB><HL7 Data><EB>

Where:

<SB> is the start of the block. It is indicated by a single vertical tab character.

<HL7 Data> is the HL7 message area. It must begin with a Hex 0x0B and will consist of HL7 segments. Each segment must be terminated by an ACSII 13 (x0D)

<EB> is the end block, indicated by the Hex character 0x1C (FS). The termination character (Hex) 0x0D (carriage return) must come at the end of the message.

It is assumed that the Varian client has agreed to send all required segment sequence fields as listed in the HL7 Message Segments Guide.

Only those events listed in the EVENTS section of this document are supported by the standard ADT interface. Any requested event or segment sequence field not currently supported will require additional evaluation and may require a custom interface.

In order to tie inbound requests to a patient record it is assumed that the external system will send to ARIA a unique patient identifier in the PID segment.

4. Processing

The IEM inbound ADT interface is designed to provide a means for keeping the ARIA Medical Oncology, or ARIA, database current with patient information provided by an outside system. In response to HL7 messages received through the interface, the IEM interface will add and or update patient information.

Key to this process is identifying the patient. The incoming HL7 messages must contain an identifier or identifiers that will uniquely identify the patient record. This allows updates to patient demographic information such as Name, Address, Birth Date etc. to be applied to the correct patient record. It is extremely important that these "matching" identifiers be correct and created only by the sending system through the interface. If a matching identifier is incorrect it can lead to a patient chart changing identity, as would be the case if a Name change were applied to the wrong chart.

5. Patient Related Information

ARIA Medical Oncology and ARIA Radiation Oncology do not assign, store, nor identify patient demographic, insurance, diagnosis, contact, or procedure information with particular visits. Patient visits can be created in ARIA Medical Oncology Manager if the Institution is configured as an "In Patient" institution. This is the only case where Visits will be created for A01 event messages.

All information contained on the PV1 segment is stored at the patient level.

6. Snapshot Processing

In the case where information is stored on multiple records such as Contacts, Insurance Plans, Procedures, and Diagnosis, it is expected that, according to HL7 snapshot rules, the sending system sends all the records of that type regardless of what has been added or changed in the sending system. The IEM Interface accepts this "snapshot" set of records and replaces completely the set already present in ARIA Medical Oncology or ARIA Radiation Oncology, by first deleting what is there and then adding back what is received. In this way the sending system can modify parts of a patient's record without having to specify which parts.

Both ARIA Medical Oncology and ARIA Radiation Oncology store this multiple record information at the patient level rather then a visit or encounter level.

7. Inbound Flow

The HL7 Inbound ADT Interface is activated when an HL7 message is received, and the following actions will occur:

- The HL7 message will be transmitted by the HIS using MLLP over TCP/IP. Messages transferred are sent individually and segments do not span more than one HL7 message. Messages will be acknowledged individually.

- The HIS will accept an HL7 ACK acknowledgement message, from IEM, in

response to the message sent to ARIA.

- The HL7 message is parsed and segments/data fields are checked for required elements. *IEM supports the HL7 sequence number protocol, stored in MSH 13, to ensure that the messages are received in order.*

- If a message received contains an error, the message will be stored in the IEM HL7 message log. The message is viewable through the IEM HL7 message log window using the HL7 In tab.

8. Outbound Flow

The HL7 Outbound ADT Interface is activated when an HL7 message is sent, and the following actions will occur:

- The HL7 message will be transmitted by IEM using MLLP over TCP/IP. Messages transferred are sent individually and segments do not span more than one HL7 message.

- The HIS will accept the ADT message and send an HL7 ACK acknowledgement message in response.

- If a message is sent and an acknowledgment is not received from the receiving HIS system, IEM will re-send the message until the acknowledgment is received.

- Messages sent by IEM will be stored in the IEM HL7 Message log and can be viewed through the IEM message log window using the HL7 Out tab.

9. Supported Events

The listing below references all supported events that can trigger a message through this interface.

A01 – Admit/Visit Notification (ARIA Medical Oncology and ARIA Radiation Oncology)

An A01 event is intended to be used for "Admitted" patients only. 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 a healthcare facility. Normally, this information is entered in the primary ADT system and broadcast to the nursing units and ancillary systems.

- IEM supports inbound A01 events for both ARIA Medical Oncology and ARIA Radiation Oncology.

- If the Patient already exists in the ARIA Database, based on a search using the configured patient ID(s), the patient will be updated (same as A08) and marked as an inpatient.

- If the Patient does not exist in the ARIA Database, based on a search using the configured patient ID(s), then the patient will be added and marked as inpatient status.

A02 – Transfer a Patient (ARIA Medical Oncology and ARIA Radiation Oncology)

An A02 event is issued as a result of a change to the patient's assigned physical location.

The new patient location should appear in PV1-3-assigned patient location while the old patient location should appear in PV1-6-prior patient location

- IEM supports inbound A02 events for both ARIA Medical Oncology and ARIA Radiation Oncology.

- If the Patient does not exist in the ARIA Database, the message will be rejected.

- The fields included with this message should only be the fields needed to communicate this event. When other fields change (i.e. PID segment) an A08 or A31 event must be used as well. Send two messages (an A02 followed by an A08). This A02 event can be used with admitted patients.

A03 – Discharge/End Visit (ARIA Medical Oncology and ARIA Radiation Oncology)

An A03 event signals the end of a patient's stay in a healthcare facility. It signals that the patient's status has changed to "discharged" and that a discharge date has been recorded. The patient is no longer in the facility. The patient's location prior to discharge should be entered in PV1-3-assigned patient location.

- IEM supports inbound A03 events for both ARIA Medical Oncology and ARIA Radiation Oncology.

- If the Patient does not exist in the ARIA Database, the message will be rejected.

- The fields included with this message should only be the fields needed to communicate this event. When other fields change (i.e. PID segment) an A08 or A31 event must be used as well. Send two messages (an A03 followed by an A08).

  MedOncology Processing

- If the Update Unit/Room/Bed Registry indicator on the processing tab of the interface base setup is checked and the patient was not previously admitted, a patient admit record will be created in the database by the interface engine. If the institution is set to Non-Advanced ADT Tracking, the admit record will not

be created. (see Interface Guide – Segments for more detail on field processing)

A04 – Register a patient (ARIA Medical Oncology and ARIA Radiation Oncology)

An A04 event signals that the patient has arrived or checked in as a one-time or recurring outpatient, and is not assigned to a bed. Note that some systems refer to these events as outpatient registrations or emergency admissions.

- IEM Interface supports inbound and outbound A04 events for both ARIA Medical Oncology and ARIA Radiation Oncology.
- If the Patient already exists in the ARIA Database, based on a search using any of the provided patient ID's then the message will be rejected unless an event flip is configured for the interface. (A04 events may be flipped and processed as A08 events in this situation.)

  MedOncology Processing

- The A04 event can be used to set the check in indicator in ARIA Medical Oncology Patient Manager.

A06 – Transfer an Outpatient to Inpatient (ARIA Medical Oncology and ARIA Radiation Oncology)

An A06 event is sent when a patient who was present for a non-admitted visit is being admitted after an evaluation of the seriousness of the patient's condition. This event changes a patient's status from non-admitted to admitted. The new patient location should appear in PV1-3-assigned patient location, while the old patient location (if different) should appear in PV1-6-prior patient location. The new patient class should appear in PV1-2-patient class.

- IEM Interface supports inbound A06 events for both ARIA Medical Oncology and ARIA Radiation Oncology.
- An A06 event is otherwise processed as an A01.

A07 – Transfer an Inpatient to an Outpatient (ARIA Medical Oncology and ARIA Radiation Oncology)

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. This event changes a patient from an "admitted" to a "non-admitted" status. The new patient location should appear in PV1-3-assigned patient location, while the old patient location (if different) should appear in PV1-6-prior patient location

- IEM Interface supports inbound A07 events for both ARIA Medical Oncology and ARIA Radiation Oncology.

- The A07 event is otherwise processed as an A03.

A08 – Update Patient Information (ARIA Medical Oncology and ARIA Radiation Oncology)

An A08 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. IEM Interface updates (overwrites) the database with any information received in the A08 message.

- IEM Interface supports inbound and outbound A08 events for both ARIA Medical Oncology and ARIA Radiation Oncology.

- If the Patient does not exist in the ARIA Database, based on a search using any of the provided Patient ID's, the message will be rejected unless an event flip is configured for the interface. (A08 events may be flipped and processed as A04 events in this situation.)

  MedOncology Processing

- The A08 event can be used to set the check in indicator in ARIA Medical Oncology Manager.

A10 – Patient Arriving - Tracking Information (ARIA Medical Oncology and ARIA Radiation Oncology)

The A10 event is used to indicate the arrival of patient at a new location in the healthcare facility. The A10 event is used when there is a change in a patient's physical location but NOT a change in the official census bed location.

- IEM supports inbound and outbound A10 events for ARIA Medical Oncology.

- IEM supports inbound A10 events for ARIA Radiation Oncology

- The fields included with this message should only be the fields needed to communicate this event. When other fields change (i.e. PID segment) an A08 or A31 event must be used. (Send two messages; an A10 followed by an A08).

  ARIA Radiation Oncology Processing

- Receiving an A10 sets the check in for all activities scheduled for the day of the admit (PV1.44). Other required field values are:
  -The hospital name to be sent in assigned patient location – facility (PV1.3.4)
  - Venue id to be sent in assigned patient location – point of care (PV1.3.1) (this is used to check the patient into a specific venue).

Outbound MedOncology Processing

- An A10 message is sent out via the Patient Tracking screen in ARIA Medical Oncology Manager when the patient is initially assigned to a location, or removed entirely from all locations at the health care facility. Moving a patient from one location to another location does not trigger an A10 event.

- The Advanced Patient Tracking indicator on the General tab, and the Send ADT Message (A10) indicator must be checked on the Scheduling tab for associated Institutions on the Institutions Settings screen in ARIA Medical Oncology Security for the trigger to be created.

A11 – Cancel Admit/Visit Notification (ARIA Medical Oncology Only)

For "admitted" patients, 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 after all.

- IEM Interface supports inbound A11 events for ARIA Medical Oncology.

- If the Patient does not exist in the ARIA Medical Oncology Database, based on a search using any of the provided Patient ID's then the message will be rejected.

- The fields included with this message should only be the fields needed to communicate this event. When other fields change (i.e. PID segment) an A08 or A31 event must be used as well. (Send two messages: an A11 followed by an A08.)

A12 – Cancel Transfer (ARIA Medical Oncology Only)

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 after all. PV1-3-assigned patient location must show the location of the patient prior to the original transfer.

- IEM Interface supports inbound A12 events for ARIA Medical Oncology.

- If the Patient does not exist in the MedOncology Database, based on a search using any of the provided Patient ID's then the message will be rejected.

- The fields included with this message should only be the fields needed to communicate this event. When other fields change (i.e. PID segment) an A08 or A31 event must be used as well. (Send two messages: an A12 followed by an A08.)

A13 – Cancel Discharge/End Visit (ARIA Medical Oncology Only)

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 after all. PV1-3-assigned location should reflect the

location of the patient after the cancellation has been processed. Note that this location may be different from the patient's location prior to the erroneous discharge. Prior Location could be used to show the location of the patient prior to the erroneous discharge.

- IEM Interface supports inbound A13 events for ARIA Medical Oncology.
- If the Patient does not exist in the MedOncology Database, based on a search using any of the Patient ID's then the message will be rejected.
- The fields included with this message should only be the fields needed to communicate this event. When other fields change (i.e. PID segment) an A08 or A31 event must be used as well. (Send two messages: an A13 followed by an A08.)

A17 – Swap Patients (ARIA Medical Oncology and ARIA Radiation Oncology)

The A17 is used when it is decided that two patients will exchange beds. The patient ID and visit data are repeated for the two patients changing places.

- IEM Interface supports inbound A17 events for ARIA Medical Oncology and ARIA Radiation Oncology.
- If the Patient does not exist in the Database based on a search using any of the provided Patient ID's then the message will be rejected.
- Internally the A17 is stored and processed as two A02 messages.

A18 – Merge patient info - (A18, A34, A35, A36, A39, A40, A41) (ARIA Medical Oncology)

These older merge events signal that two distinct patient records have been combined together into a single record with a single set of identifiers. The MRG segment contains the identifier of the old patient record. The PID identifies the new (surviving) patient record.

- IEM Interface supports inbound merge events for ARIA Medical Oncology.
- When both patient records are found in the ARIA Database, a warning message identifying the merge situation is placed in the Interface message log and optionally messages are placed in both of the patients' records within ARIA Medical Oncology.
  - The HL7 message is marked as processed normally.
  - This situation requires that a merge of the two patients should take place manually using Patient Manager Product.
- If the patient record described on the PID is not present in the database and the patient record described in the MRG segment is present, the patient record is changed to reflect the identifiers provided on the PID.
  - The HL7 message is marked as an error and an informational message is placed in the log.

- If the patient record described on the PID segment is present and the patient record on the MRG segment is not present in the database, an informational message identifying the situation is placed in the Interface message log.
  - Optionally, a message is placed on the PID patient record within ARIA.
  - The HL7 message is marked as processed.

- If the patient record described on the PID and MRG segment is not present in the ARIA Database, a message identifying the situation is placed in the Interface message log.
  - Optionally, a message is placed on the MRG patient record within ARIA.
  - The HL7 message is marked as an error.

- The fields included with this message should only be the fields needed to communicate this event. When other fields change (i.e. PID segment) an A08 or A31 event must be used as well. (Send two messages: an A18 followed by an A08.)

  MedOncology Processing

In ARIA Medical Oncology the non-surviving patients ID's will be added to the surviving patient' record so that transactions from other interfaces will correctly find the surviving patient record.

Note: This functionality requires that the system performing the merge will not send any other ADT updates for the non surviving patient that could affect the surviving patient record.

The Merge Patient event is not supported in a CCS environment.

A19 – Patient Query ADT Response (ARIA Medical Oncology and ARIA Radiation Oncology)

The A19 event is sent in response to a QRY (a query from another system) message asking for ADT information for a patient.

- IEM Interface supports outbound A19 events from ARIA Medical Oncology which are initiated by receiving a QRY- Q01 from a requesting system.

- IEM Interface supports inbound A19 events into ARIA Radiation Oncology which are initiated by sending a QRY- Q01 to an ADT system using the IEM Patient Select Application.

- For more information see the *IEM Query Interface Guide.*

A28 – Add Person Information (ARIA Medical Oncology and ARIA Radiation Oncology)

The A28 event is not supported specifically. IEM provides the ability to flip an inbound A28 event into an A04 event.

A29 – Delete Person Information (ARIA Medical Oncology Only)

An A29 event can be used to invalidate a patient record. This event 'undoes' an A28 (add person information event). This event is used, for example, when adding of a patient was performed in error and one wants to purge the person from the database.

- When an A29 is received the patient's ID's are marked as not valid or current, the patient's last name is changed to X-whatever the last name was (i.e. X-Smith) and the patient is marked as an error/test patient.

The A29 event is not supported in a CCS environment.

A31 – Update patient information (ARIA Medical Oncology and ARIA Radiation Oncology)

IEM processes this event in the same manner as an A08. The A31 event exists in the interface definition so that A31 specific pre-processing can be defined in the same manner as is allowed for other supported events.

- IEM Interface supports inbound A31 events for ARIA Medical Oncology and ARIA Radiation Oncology.

A34, A35, A36 – Merge Patient Information (MedOncology)

IEM processes this event in the same manner as an A18. The A34, A35, and A36 events exist in the interface definition so that specific pre-processing can be defined in the same manner as is allowed for other supported events.

- IEM Interface supports inbound A34, A35, and A36 events for ARIA Medical Oncology.

The Merge Patient event is not supported in a CCS environment.

A39, A40, A41 – Change Patient Information (MedOncology)

IEM processes this event in the same manner as an A18. The A39, A40, and A41 events exist in the interface definition so that specific pre-processing can be defined in the same manner as is allowed for other supported events.

- IEM Interface supports inbound A39, A40, and A41 events for ARIA Medical Oncology.

A44 – Move Billing Account Number information (ARIA Medical Oncology Only)

An A44 event is used to signal a move of accounting records (MRG-3 prior patient account number) from the "incorrect source internal identifier" identified in the MRG segment (MRG-1-prior patient ID-internal) to the "correct target internal identifier" identified in the PID segment (PID-3-patient ID internal ID). A message is always

written to the interface log.

- IEM Interface supports inbound A44 events for ARIA Medical Oncology.
- The fields included with this message should only be the fields needed to communicate this event. When other fields change (i.e. PID segment) an A08 or A31 event must be used as well. (Send two messages: an A44 followed by an A08.)

A46 – Change External ID (ARIA Medical Oncology and ARIA Radiation Oncology)

An A46 event is used to signal that the current external ID is now incorrect. The incorrect identifier is sent in the MRG segment (MRG-4-prior patient ID – external) and the correct identifier is sent in the PID segment (PID-2-Patient ID External ID).

- IEM Interface supports inbound A46 events for ARIA Medical Oncology and ARIA Radiation Oncology.
- The External ID can be removed using this event by sending in an empty value or double quotes for the correct Identifier (PID.2). The historical External ID values are left marked as valid.
- The fields included with this message should only be the fields needed to communicate this event. When other fields change (i.e. PID segment) an A08 or A31 event must be used as well. (Send two messages: an A46 followed by an A08.)

A47 – Change Internal ID (ARIA Medical Oncology and ARIA Radiation Oncology)

An A47 event is used to signal that the current internal ID is now incorrect. The incorrect identifier is sent in the MRG segment (MRG-1-prior patient ID – internal) and the correct identifier is sent in the PID segment (PID-3-Patient ID Internal ID).

- IEM Interface supports inbound A47 events for ARIA Medical Oncology and ARIA Radiation Oncology.
- The Internal ID can be removed using this event by sending in an empty value or double quotes for the correct identifier (PID.3). The historical Internal ID values are left marked as valid.
- The fields included with this message should only be the fields needed to communicate this event. When other fields change (i.e. PID segment) an A08 or A31 event must be used as well. (Send two messages: an A47 followed by an A08.)

A48 – Change Alternate ID (ARIA Medical Oncology and ARIA Radiation Oncology)

An A48 event is used to signal that the alternate id originally sent was incorrect. The incorrect identifier is sent in the MRG segment (MRG-2-prior patient ID – alternate) and the correct identifier is sent in the PID segment (PID-4-Patient ID Alternate ID).

- IEM Interface supports inbound A48 events for ARIA Medical Oncology and ARIA Radiation Oncology.

- The Alternate ID can be removed using this event by sending in an empty value or double quotes for the correct identifier (PID.4). The historical Alternate ID values are left marked as valid.

- The fields included with this message should only be the fields needed to communicate this event. When other fields change (i.e. PID segment) an A08 or A31 event must be used as well. (Send two messages: an A48 followed by an A08.)

10.Segments

The following table outlines the segments used by the IEM Interface. Non-supported segments are ignored.

Segment	Segment Name and events	MedOncology	ARIA Radiation Oncology
MSH	Message Header All events	I/B and O/B	I/B and O/B
EVN	Event Type All events	I/B and O/B	I I/B and O/B
PID	Patient Identification All events	I/B and O/B	I/B and O/B
[PD1]	Additional Demographics A01, A04, A08, A19, A28, A31	O/B and O/B	I I/B and O/B
[MRG]	Merge Information A18, A34, A35, A36, A39, A40, A41,A46,A47,A48	I/B	I/B
[ENC]	Patient Account Info [MedOncology Internal] A01,A04,A08,A28,A31	I/B and O/B	I I/B and O/B
[{ NK1 }]	Next of Kin / Associated Parties A01,A04,A08,A28,A31	I/B and O/B	I I/B and O/B
PV1	Patient Visit A01, A02, A03, A04, A06, A07, A08, A10, A12, A13, A19, A28, A31	I/B and O/B	I I/B and O/B
[{ OBX }]	Observation/Result A01, A04, A08, A19, A28, A31	O/B	
[{AL1}]	Allergy Information	I/B and O/B	
[{ DG1 }]	Diagnosis Information A01, A04, A08, A19, A28, A31	I/B and O/B	I/B and O/B
[{ PR1]	Procedures A01, A04, A08, A19, A28, A31	I/B and O/B	I I/B and O/B
[{ GT1 }]	Guarantor Information A01, A04, A08, A19, A28, A31	I/B and O/B	
[			
{ IN1	Insurance Information A01, A04, A08, A19, A28, A31	I/B and O/B	I/B and O/B
[IN2]	Insurance Information - Additional Info. A01, A04, A08, A19, A28, A31	I/B and O/B	I/B and O/B
}]			

O/B denotes Outbound. I/B denotes Inbound

11.Examples

Text files containing message examples are available on request.

A01 - Add Patient

```
MSH|^~\&|SENDS||RECS||200804030929||ADT^A01|000000123|P|2.3|||||
||
EVN|A01|200804030929^S||||
PID||01010244|||Doe^John^M|""|19780404|F|""|""|""^""^""^CA^""^2^
""^^""^||""^HP^^""|""|""^""|""|""|||||""|""||||||""|N
PV1|1|""|F5^303^001^00010^^^^^""|||||U1122^Fredrick^Bill^^^^^^^^
^^ID^00000||||||||||||""||||||||||||||||||||||200804030929|""|
||||||
```

A02 - Transfer Patient

```
MSH|^~\&|SENDS||RECS||200809100929||ADT^A02|000000123|P|2.3|||||
||
EVN|A02|200809100929^S||||200809101430
PID|1|5555221816|5555221816||Testing|""|19450101|M|""|""|""^""^"
"^""^""^2^""^^""^||""^HP^^""|""|""^""|""|""||999999999|||""|""||
||||""|""
PV1|1|I|F5^304^002^00010|||||U1122^Fredrick^Bill^^^^^^^^^^ID^000
00|||||||||||""||||||||||||||||||||200809101030|||||||
PV2|||||||||||||||||||||Clinic-01
```

A03 – Discharge Patient

```
MSH|^~\&|SENDS||RECS||200806090929||ADT^A03|000000123|P|2.3|||||
||
EVN|A03|200806090929^S||||
PID||MR1234|||Demo^patient^M|""|19451212|F|""|""|""^""^""^CA^""^
2^""^^""^||""^HP^^""|""|""^""|""|""|||||""|""||||||""|N
PV1|1|I|F5^303^001^00010|||||U1122^Fredrick^Bill^^^^^^^^^^ID^000
00|||||||||||""||||||||||||||||||||200806081200|20080609102
9|||||||
```

A08 – Update patient information

```
MSH|^~\&|SENDS||RECS||200809100929||ADT^A08|000000123|P|2.3|||||
||
EVN|A08|200809100929^S||||
PID|1|7774661|7774661||Testing-10_Phone format^other phone
format-
10^Q|""|19450524|M|""|""|""^""^""^""^""^2^""^^""^||2045894458|20
42960804|""^""|""|""||99999669999|||""|""||||||""|""
PV1|1|""|""^""^""^00010^^^^^""||||U1122^Fredrick^Bill^^^^^^^^^^
00000|U2233^O'Riley^Angela^^^^^^^^^^00000|||||||||100||""|||||
|||||||||||||||||""|||||||""
```