

HiTrack HL7 Compatibility Overview

The ability for data systems to communicate using a standard format is an essential requirement for data integration and interoperability. This document provides details about HiTrack's HL7 communication functionality.

HL7 is an electronic messaging format used by hospital and state data systems to exchange health information. Electronic messaging using HL7 can be thought of as "email" for healthcare data systems. Email allows people to exchange information with each other using a standardized format with message elements such as a "from" address with "name@something.com", a "to" field, a subject line, a message field and a way to send attachments. Additionally, email requires configuration for sending and receiving servers.

HL7 messages are also made up of elements called segments. Some examples include header segments, patient information segments, "next of kin" segments, observation segments and note segments.

Like email HL7 messages are transmitted electronically from server to server. Information technology staff will generally not have to worry about "how" this transmission occurs (TCP, LLP, etc.) but, like email, receiving and sending servers need to be configured so that the messages can be transmitted.

Support Details

HiTrack utilizes open source software called Mirth Connect 2.1.1 as its HL7 sending and receiving message server. After downloading and installing Mirth Connect, inbound and outbound Mirth channel files should be obtained from the HiTrack Help desk so they can be imported and configured to best suit your sites environment. More information about Mirth Connect can be found at: <http://www.mirthcorp.com/products/mirth-connect>

HiTrack supports incoming HL7 2.x admissions messages and also transmits a subset of hearing screening information for other systems to receive. Support for HL7 3.x is planned in the near future.

Incoming Messages

By default HiTrack receives all Admission/Discharge/Transfer ("ADT"), messages. Site specific filtering will be required to ensure that HiTrack receives the types of messages used by your sites existing HL7 compatible systems.

Incoming HL7 messages are loaded into HiTrack's Merge system where they wait to be merged. Although messages must be imported a specific HiTrack Facility and Merge Source, the records will show up under the birth location in addition to the merging Facility.

The merge process for the incoming data can be manually started by clicking the "Resume All" button on the pending merge page. Sites already using the HiTrack Web Companion can use HiTrack Merge Web Service to merge incoming data automatically. Contact the HiTrack Help Desk for web service configuration details.

Incoming message data is merged into HiTrack using weighted match rules to locate potential matches. Records that meet an established set of criteria will be automatically combined. Partial matches are left in HiTrack's Pending Merge tool for manual user resolution. Incoming data that does not match existing records are added as new records.

Supported incoming fields:

Field	Coding	Note
Baby name		
Medical ID		Because HL7 provides multiple ID fields, the import channel may need to be configured to load the appropriate site specific ID field.
DOB		Patients over a year old are flagged as a warning.
Birth Facility	Site specific*	
Alternate Rec #		
Multiple Birth indicator		
Physician Name		Detects contact coded with 'PED' relationship.
Contact Name		
Sex		

DOB		
Language	Site specific*	
Relationship	Site specific*	Mother contact is detected from a 'MTH' relationship code.
Race	Site specific*	
Ethnic Group	Site specific*	
Address line 1 & 2		
City, State, Zip, County.		
Phone 1 & 2		
Baby Notes		

* Site specific fields will need to be configured to conform to local coding schemes.

Outgoing Messages

By default, HiTrack generates outgoing Observation Result ("ORU") messages. This will need to be configured to best match site specific message needs.

HiTrack and Mirth work together using internal logic to determine when records should be sent for specific Facility or Facility Group. New and updated records will be automatically transmitted as HL7 messages.

The following Outgoing HL7 message fields are provided by HiTrack:

Field	Coding	Note
Baby name		
Medical ID		Because HL7 provides multiple ID fields, the outgoing channel may need to be configured to send the appropriate site specific ID field.
DOB		
Birth Facility	HiTrack*	
Alternate Rec #		
Multiple Birth indicator		
Physician Name and Organization		

Primary Contact Name		
Sex		
DOB		
Language	HiTrack*	
Relationship	HiTrack*	
Race	HiTrack*	
Ethnic Group	HiTrack*	
Address line 1 & 2		
City, State, Zip, County.		
Phone 1 & 2		
Baby Notes		
Positive JCIH Hearing Loss Risk Indicators	LOINC**	
Inpatient Left Hearing Screening Method and Result	LOINC**	The method and result for Hearing Screening Results are grouped together using an Observation Sub-ID.
Inpatient Right Hearing Screening Method and Result	LOINC**	""
Outpatient Left Hearing Screening Method and Result	LOINC**	""
Outpatient Right Hearing Screening Method and Result	LOINC**	""
Overall Hearing Inpatient Outcome	HiTrack*	
Overall Hearing Outpatient Outcome	HiTrack*	
Left Ear Hearing Loss Disposition	HiTrack*	
Right Ear Hearing Loss Disposition	HiTrack*	
Sound Field Hearing Loss Disposition	HiTrack*	

* HiTrack's coding system is used by default.

**LOINC coding system suggested by National Library of Medicine.

Sample Scenario Diagram

