Introduction

This section of the Client Server Training Reference Guide (TRG) demonstrates how to setup your HL7 Version 2.5 Laboratory, Microbiology, Pathology, and Blood Bank Results interface within the LAB application. This section of the TRG is used in conjunction with the MIS section of the TRG during your training call.

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I. Specifications

- Reports Outbound
  R1828: MEDITECH HL7 2.5 Results Reporting to Other Vendor System for Laboratory, Microbiology, Pathology, and Blood Bank
II. Message Format and Overview

Result data will be passed from MEDITECH’s Laboratory system to the other vendor system as discrete or textual messages. Pathology results will only be sent in textual format. A single message may contain multiple variable length data transactions referred to as Segments. The number, type and content of segments in a given message will be determined based upon the type of message being sent. Each segment will begin with a 3-character code known as the Segment ID, followed by a number of fields which are delimited by the Field Separator character. Each segment will be terminated with a carriage return.

RESULT MESSAGES FROM MEDITECH

Messages will be passed from the MEDITECH Laboratory system to the other vendor system when:

1. A result is entered and verified on the MEDITECH Laboratory system.
2. A result is changed or deleted, and the new result subsequently verified, on the MEDITECH Laboratory system for a result that had been previously transmitted to the other vendor system.

In each case, a Result Message (ORU) will be sent. Each result message will be restricted to one patient.

A Result Message will be composed of these segments:

<table>
<thead>
<tr>
<th>Segment</th>
<th>Description</th>
<th>Number of segments per message</th>
</tr>
</thead>
<tbody>
<tr>
<td>MSH</td>
<td>Message Header</td>
<td>Only 1 Per Message</td>
</tr>
<tr>
<td>SFT</td>
<td>Software Segment</td>
<td>Only 1 Per Message</td>
</tr>
<tr>
<td>PID</td>
<td>Patient Identification</td>
<td>Only one Patient per message</td>
</tr>
<tr>
<td>NK1</td>
<td>Next of Kin</td>
<td>Optional can be multiple</td>
</tr>
<tr>
<td>PV1</td>
<td>Patient Visit</td>
<td>Only one patient per message</td>
</tr>
<tr>
<td>PV2</td>
<td>Patient Visit Additional Info</td>
<td>Only one patient per message</td>
</tr>
<tr>
<td>ORC</td>
<td>Common Order Data</td>
<td>Only one patient per message</td>
</tr>
<tr>
<td>OBR</td>
<td>Observation Request</td>
<td>Can be multiple</td>
</tr>
<tr>
<td>NTE</td>
<td>Notes and Comments</td>
<td>Optional can be multiple</td>
</tr>
<tr>
<td>TQ1</td>
<td>Timing Quantity</td>
<td>Single</td>
</tr>
<tr>
<td>OBX</td>
<td>Observation Result</td>
<td>Multiple</td>
</tr>
<tr>
<td>SPM</td>
<td>Specimen</td>
<td>Single</td>
</tr>
</tbody>
</table>

MEDITECH expects an Acknowledgment Message (ACK) from the Other Vendor System upon receipt of the Result message. MEDITECH will not accept any Deferred Acknowledgment Messages from the Other Vendor System, as may be defined in the HL7 v2.3 specifications.
III. HL7 2.5 Additions

The 2.5.1 version L/M/B/P results outbound interface has several additions from previous versions. The following are the newly added segments and data elements:

**SFT Segment:** This segment will contain the Software Detail information including:
- Component 1: Software Vendor Organization
- Component 2: Software Certified Version or Release Number
- Component 3: Software Product Name
- Component 4: Software Binary ID
- Component 5: Software Product Information
- Component 6: Software Install Date

**SPM Segment:** This segment will contain the Specimen information including:
- Specimen ID
- Specimen Parent IDs
- Specimen Type
- Specimen Collection Method
- Specimen Collection Date/Time
- Specimen Receive Date/Time
- Number of Specimen Containers
- Container Type

**TQ1 Segment:** This segment will contain the Specimen Priority

**LOINC Codes:** LOINC Codes: LOINC is an HL7 approved code system for the Observation identifier. It covers observations and measurements, such as Laboratory tests, Physical findings, Radiology studies, and Claims attachments and can be obtained from the LOINC website. For more information, please see Logical Observation Identifiers Names and Codes (LOINC®) (link in the Supporting Documentation section below).

IV. Pre Delivery Setup

**Important DTS’ & DDP’s for HL7 version 2.5+ Lab Results Outbound Interface:**
(Internal)

<table>
<thead>
<tr>
<th>DDP Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>DDP # 13058</td>
<td>INFCE: Laboratory exchange using HL7 2.5.1 messaging</td>
</tr>
<tr>
<td>DDP # 13082</td>
<td>CCHIT/ARRA2011: Patient Audit Logging Actions</td>
</tr>
</tbody>
</table>
V) Dictionary Setup for Lab Results Outbound

A. LIS LAB Site Dictionary

LAB - Dictionaries - LIS A-L - Lab Site - Enter/Edit

You may want to create a lab site that is specific to the interface. For instance, if the OV is Labcorp, create a lab site called Labcorp. This will make it easier to track in test.

*It is not a requirement that a new LAB site is created specifically for the interface, any existing Lab site can be used. Dictionary setup for the interface is limited to page 3.
The following list of fields must be defined:

- **Results to Recipient** - This field is a look up to the interface that has been delivered. In order for result messages to go from this Lab site to the delivered interface this link needs to be made.

- **Modules** - This is a free text field. This will determine what types of orders will go to the interface. Please enter "L" for Laboratory, "M" for Microbiology, “B” for Blood Bank, or “P” for Pathology.

- **Send All** - This prompt determines whether or not the outbound result interface is in overwrite mode or update mode.

Overwrite mode (Send All = Y) means that the interface sends the messages with the results as they currently are for the specimen. The vendor should be replacing everything they have for that specimen with what is now in the message. Deleted tests are not included in the message because they are no longer on the specimen and thus would not have an OBX segment. Changed tests would indicate the current status of those changed results (IE: OBX|11 = F or P). All current test results would appear in OBX segments.

Update mode (Send All = N) means that the interface only sends the test result information pertaining to those tests that have been changed/deleted from the specimen. The vendor in this case should only be updating what they have with what is now in the message. The message would indicate which tests (OBX segments) were changed and how they changed (IE: OBX|11 = D for deleted or C for corrected). For example, if an ordered test has multiple results and only 2 of the results were changed, then only those 2 results would be indicated in the message.

**Int Comm? (Internal Comments)** - If you wish internal comments to be sent in the interface message enter "Y", "N" will prevent internal comments from being sent.

An internal comment is any comment prefaced by an (@) ampersand. Please speak with you LAB specialist if you have questions regarding this LAB function.

- **LAB** - This field determines whether LAB results will be textual or discrete. Y=textual. N=discrete.

- **MIC** - This field determines whether MIC results will be textual or discrete. Y=textual. N=discrete.

- **BBK** - This field determines whether BBK results will be textual or discrete. Y=textual. N=discrete.

- **Report** - This field is a look-up into the report dictionary (Dictionaries - Report - Report - Enter/Edit). This will be the report format used for all modules that are set to “Y” to send textual results above. This will also define the report format used for Pathology reports.

  *Note: If this field is not defined, the internally stored report layout (.INQUIRY) will be used.*

**B). LIS Lab Test Dictionary**
A value other than the test mnemonic can be sent by the interface. This is done by entering the value for the Ref codes on page 2 of this dictionary. This is generally done when the other vendor uses a value other than the MEDITECH test mnemonic. The following fields need to be populated:

- **Lab Site**: Enter the value for the LAB site you created in the LAB Site Dictionary
- **Res Code**: Enter the OV LAB code that should be mapped to this LAB test

Note: The values used in the Res Code prompts are typically the same.

**C). Considerations**

Inform your specialist if the OV requires specific information sent in the MSH section of the message, specifically for the following fields:

Sending Application (MSH:3)
Sending Facility (MSH:4)
Receiving Application (MSH:5)
Receiving Facility (MSH:6)

**D). LOINC Codes:**
**LOINC Terms Dictionary**

The first step in setting up the LOINC codes is loading the LOINC codes into the LOINC Terms dictionary.

**LAB - Dictionaries - LIS A-L - LOINC Term - Enter/Edit**

![LOINC Terms Dictionary Screenshot]

**Number: This will be the LOINC number used for this particular term.**

Once all of the LOINC Terms have been loaded in the LOINC Term Dictionary the LOINC Terms can be added to the individual, Laboratory/Microbiology/Pathology/Blood bank tests and procedures.
LAB Test Dictionary

LAB - Dictionaries - LAB - Test - Enter/Edit - Select Test - Page 6

Method LOINC: This will be the LOINC code used if the particular test is resulted using the specified method.

Default LOINC: This will be the default LOINC code sent out for this particular test if one has not been entered at the Method level, or if one of the specified methods was not used.
**MIC Procedure Dictionary:**

**Method LOINC:** This will be the LOINC code used if the particular test is resulted using the specified method.

**Default LOINC:** This will be the default LOINC code sent out for this particular test if one has not been entered at the Method level, or if one of the specified methods was not used.
MIC Antibiotic Dictionary:
LAB - Dictionaries - MIC - Antibiotic - Enter/Edit - Select Antibiotic - Page 2

M.I.C. LOINC: This will be the default LOINC code sent out for this particular antibiotic.
KB LOINC: This will be the KB LOINC code sent out for this particular antibiotic.
MIC Organism Dictionary:

LAB - Dictionaries - MIC - Organism - Enter/Edit - Select Organism - Page 3

LOINC: This will be the LOINC code sent out for this particular organism.
Pathology Data Section Dictionary:

LAB – Dictionaries – PTH – Data Section – Enter/Edit – Select Data Section – Page 2

LOINC: This will be the LOINC code sent out for this particular data section.
BBK Test Dictionary:

LAB - Dictionaries - BBK - Test - Enter/Edit - Select Test - Page 4

Method LOINC: This will be the LOINC code used if the particular test is resulted using the specified method.

Default LOINC: This will be the default LOINC code sent out for this particular test if one has not been entered at the Method level, or if one of the specified methods was not used.
VI. Interface Set-up

This section outlines interface setup required for MEDITECH to create and send ORU result messages:

Interface Configuration:
Once the Outbound LAB/MIC/PATH/BBK Reports interface is delivered, your MEDITECH Interoperability Specialist will need the following information:

- What Hard coded values, if any, will be sent in MSH 3, 4, 5, and 6 for outgoing interfaces
- "2.5" will need to be added to the "HL7 Version" Generator parameter

Establishing Connectivity:
The Outbound Reports Delivery Service's IP Address and IP Port must be defined in the Enter/Edit Delivery Service Data Routine in Interface Manager before any messages can be sent.

For additional information on defining IP/Port data please see Knowledge Base (KB) 23191. The KB article can be accessed at the Interoperability Group Product and Resources homepage at: http://www.meditech.com/kb/Custsearch.asp