RESOURCE AND PATIENT MANAGEMENT SYSTEM

Laboratory Reference

(LR)

Laboratorian Guide

Version 5.2 Patch 1027
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Preface

The purpose of this guide is to provide the lab manager with documentation that will aid in his/her use of the enhancements and/or updates of Indian Health Service Lab Patch 1027.

Patch 1027 is required for Electronic Health Record certification and/or meaningful use.

Section 1 General Enhancements

1.0 Introduction

Patch 1027 is required for Electronic Health Record (EHR) certification and/or meaningful use.

Indian Health Service (IHS) Lab Patch 1027 incorporates changes and/or enhancements to the IHS Lab Package that have either corrected issues that had arisen or implemented requests.

IHS Lab Patch 1027 also includes numerous Veterans Administration (VA) Lab Patches in order to increase functionality.

The first section of this guide provides IHS laboratorians with descriptions of the changes and/or enhancements, testing steps, and a testing checklist. The second section of this guide provides detailed information about the reference laboratory interface changes and setup.

A summary of some of the important changes is listed below:

1.1 Laboratory

1. Estimated average glucose. A delta check has been added for calculating and displaying estimated average glucose (eAG) whenever a Hemoglobin A1c is reported. It is important that the estimated average glucose be included as a member of a panel in order for the result to cross to PCC (Section 3.1.1). This is an optional feature.

2. The entry of the semicolon (**;**) and colon (**:**) characters is prevented when defining or modifying a data name using menu options Add a new data name [LRWU5] and modify an existing data name [LRWU6] (Section 3.1.3).

3. Display of laboratory results has been modified to display units and reference ranges associated with results at the time of verification rather than those stored in the Laboratory Test file.

4. Results that are derived from a set of codes will be reported using the external value for Set of Codes Type data.

5. The verification process has been enhanced to display the ordering provider's phone number and paging information if that information is included in the New Person file.

6. The EM Enter/Modify/Verify Data (Modify) and **EA Enter/Verify Data (Auto Instrument)** options display the patient's sex and age at time of specimen collection date/time during result verification.

7. A correction has been applied that prevents errors when running the LEDI Turnaround Time Report and the Worksheet Accession List.

8. Mailman error messages generated by the **POC** button in EHR have been fixed.

1.2 Microbiology/Anatomic Pathology

1. A problem has been corrected with running a Supervisor's Extended Summary Report for Microbiology and Anatomical Pathology. The report formerly generated an error if an antibiotic susceptibility result was removed during result entry. In anatomical pathology, the report generated an error if no entry was made in the specimen login field **SPECIMEN SUBMITTED BY**.

2. A correction has been made that allows printing of the Antimicrobial Trend Report by division.

3. An error has been corrected when user verifies Microbiology data.

4. An error generated when typing a caret (^) while entering antibiotic susceptibility results in Microbiology result entry has been addressed.

1.3 Reference Laboratory Interface Related

1. The site code of the reference laboratory location is now displayed in the EHR Lab tab as well as traditional RPMS interim reports.

2. Send Out Laboratory Results are now displayed in EHR as well as traditional RPMS interim reports as transmitted, including reference ranges, abnormal flags, and units adjacent to test results.

3. The verification process has been enhanced to allow specifying the performing laboratory. A default reference laboratory may be specified in the Load/Worklist file.

4. Electronic receipt of amended reports from a reference laboratory will trigger an alert and mailman bulletin.

5. Amended reports may now be processed using the **EM Enter/Verify/Modify Data** option to *electronically* overlay previously verified results.

6. A new field has been added to the site/specimen multiple of the Laboratory Test file: **Use for Reference Testing**. A blank field or **NO** indicates that current entries in that site/specimen multiple will not be used for reference laboratory test results. During manual result entry, the user will be prompted for reference ranges, critical values, abnormal flags, units, and performing laboratory. If results are received electronically from a reference laboratory interface, the reference ranges, abnormal flags, critical values and units in the result message will be stored instead of those in the site/specimen multiple. By setting **Use for Reference Testing** to blank or **NO**, the system is told to ignore the entries in that site/specimen multiple for ranges and either prompt the user during manual entry of results or accept the ranges from the reference laboratory.

7. The **STORE ABNORMAL FLAG** field in the auto instrument file has been renamed to **NOTIFY ABNORMAL FLAGS** field to meet CAP requirements for HL7 messages received from reference laboratories that will always use/store abnormal flags sent by the producer of results. This renamed field is used to determine if an alert and bulletin should be created when results are processed with an associated abnormal flag.

8. Three new bulletins have been added:

   a. Notification for receipt of abnormal results

   b. Receipt of new results that may have been added on by the reference laboratory

   Notification for receipt of amended results

Note:	Responsible parties at each facility should review all new features and software corrections that are available in LR Laboratory V5.2 Patch 1027. Sites should then decide which of those features are applicable to their testing and business processes. Validation of those features should be performed following established procedures and regulatory specifications. Not performing validation testing of new features and software corrections used at your facility may result in compromised patient care due to erroneous or inaccurate laboratory data.

2.0 Changes/Enhancements

2.1 Laboratory

2.1.1 Estimated Average Glucose (eAG) Delta Check

A study published in 2008 in *Diabetes Care* (A1c-Derived Average Glucose, or ADAG), (Nathan DM, et al. Diabetes Care. 2008;31 1473–1478) provided evidence of a linear relationship between HbA1c and average blood glucose levels. Numerous groups, including the American Diabetes Association and the American Association for Clinical Chemistry (AACC), are urging labs to provide eAG calculations alongside A1c measurements, arguing that it will make life easier for patients and clinicians and, they hope, improve diabetes management.

Note: The calculation used to determine the eAG is:

$$eAG_{mg/dl} = 28.7 \times A1C - 46.7$$

$$eAG_{mmol} = 1.59 \times A1C - 2.59$$

The IHS Laboratory Professional Specialty Group (PSG) had requested an EAG Delta Check be added to the Resource and Patient Management System (RPMS) Laboratory module as an enhancement. Additional information concerning estimated average glucose values can be found at the following Web site:
http://care.diabetesjournals.org/content/31/8/1473.full

2.1.1.1 Delta Check Creation

During the post install phase of LR*5.2*1027, the creation of an EAG Delta Check will be attempted.

> **Note**: If there is no A1C test in the Laboratory Test File, the Delta Check cannot be created and a warning will be displayed during the post installation process.

2.1.1.2 Requirements

In order for the eAG to work:

1. Create a Data Name with the name ESTIMATED AVERAGE GLUCOSE. Be sure that it is defined as numeric, with a minimum value of 1 and a maximum value of 1000, with a single decimal place.
2. A test must be created in the LABORATORY TEST (# 60) file that uses the ESTIMATED AVERAGE GLUCOSE Data Name.
3. The HEMOGLOBIN A1C test in the LABORATORY TEST (# 60) file must have the **SITE/SPECIMEN** field **TYPE OF DELTA CHECK** set to EAG and the **DELTA VALUE** field must be 3.
4. The HEMOBLOBIN A1C and ESTIMATED AVERAGE GLUCOSE tests need to be defined into a panel; e.g. A1C+eAG *Note that if you move the Hemoglobin A1C test into a panel, be sure to reset the Panel/Test pointer in the IHS Lab CPT Code to point to the new test panel rather than just the Hemoglobin A1C.*

Note:	In order to pass results for both the Hemoglobin A1C and Estimated Average Glucose tests to PCC, they must be included in the same panel.

2.1.1.3 Testing Steps

1. Complete setup steps as listed above.
2. Place an order for the HEMOGLOBIN A1C test panel.
3. Result the HEMOGLOBIN A1C test. An ESTIMATED AVERAGE GLUCOSE result should appear in the result entry session.
4. Manually calculate or verify online that the ESTIMATED AVERAGE GLUCOSE calculated result is correct.
5. Verify that the A1C and the ESTIMATED AVERAGE GLUCOSE results appear on both RPMS and EHR reports and pass to Patient Care Component (PCC) as expected.

2.1.2 VA Patch LA*5.2*69: Lab Utility APIs

Provides the VA Clinical Case Registries package with Application Program Interfaces (APIs) to extract specific laboratory data.

This patch is a required for the installation of the LEDI III software. It does not impact the RPMS Laboratory system.

This patch contains the following enhancements and problem resolutions:

- Creates a laboratory API that returns Microbiology data for a given patient over a specified date range
- Creates a laboratory API that returns Surgical Pathology data for a given patient over a specified date range
- Creates a laboratory API that returns Cytopathology data for a given patient over a specified date range
- Call GCPR^LA7QRY for Specific Lab Data

Note: No testing in RPMS Laboratory is required.

2.1.3 VA Patch LR*5.2*316: Set of Codes Problem

This patch will prevent a user from entering the semicolon (**;**) and colon (**:**)characters when defining or modifying a data name using menu options Add a new data name [LRWU5] and modify an existing data name [LRWU6].

When Should this Test Plan be Performed? This test plan should be performed by all facilities that create or modify laboratory tests that utilize Data Names.

Summary of Issue. The system allowed for a colon (:) and semicolon (;) to be entered and stored for Set of Codes in the Data Name definition. This caused the result to appear incorrectly for the test.

2.1.3.1 Testing Steps:

1. Define a new or modify an existing entry in Data Name in CORE/Laboratory DHCP Menu (LR)/IHS Short Lab Liaison Menu (LL)/Add a New Data Name (or Modify an Existing Data Name).
2. At the “Enter data type for test: (N)umeric, (S)et of Codes, or (F)ree text?” prompt, type **S** for Set of Codes.
3. At the “INTERNALLY STORED CODE:” prompt, type a semicolon (**;**) or a colon (**:**).

2.1.3.2 Expected Outcome (Message Displayed to User)

```
INTERNALLY-STORED CODE: // :
: and ; not allowed
Nothing has been added.
```

Figure 2-1: Message displayed to user

Results that are derived from a Set of Codes displayed as the internal value of the set of codes unless a string of MUMPS code was entered as a print code to convert the internal value to the correct display value. The internal value of the Set of Codes was passed to PCC.

2.1.3.3 Testing Steps

1. Create a new test with a set of codes type of data name or remove the print code from a test with a Set of Codes type data name. For example, the data name for a Urine Pregnancy Test is defined with a Data Name: Set of Codes

   N will stand for NEGATIVE

   P will stand for POSITIVE

2. Order and result the Set of Codes test.

3. Confirm that the result displays on the Interim Report as NEGATIVE or POSITIVE as opposed to N or P.

4. If using EHR, open the Lab tab and confirm that the result is displayed as NEGATIVE or POSITIVE as opposed to N or P.

5. Review the PCC visit display or browse a health summary to be sure that the result displays as POSITIVE or NEGATIVE as opposed to N or P.

2.1.4 VA Patch LR*5.2*358: Fix Problems with LEDI Turnaround Time Report and Worksheet Accession List

This patch corrects problems with the LEDI Turnaround Time Report and the Worksheet Accession List.

- Laboratory tests tied to a workload suffix of .0000 are not showing up on the LEDI Turnaround Time Report. The logic in routine LRTT5P1 was corrected.

- When the Worksheet Accession List is run, it does not kill the array LRTSTS. This causes an <UNDEF> error if user then goes into an option that calls LREXPD. The routine LRWRKS was modified to kill the array (LRTSTS) upon exit.

When Should this Test Plan be Performed? This test plan should be performed if the facility has configured and is using RPMS workload reporting. A Workload Suffix is assigned to laboratory tests and LEDI Turnaround Time Reports are utilized. Similarly, if Workload Suffix is associated to laboratory tests and Work List by Accession Number, reports are utilized

Summary of Issue. LEDI Turnaround Time Reports are inaccurate because tests with workload suffixes of .0000 are not included.

Set Up. Use the Print File Entries report to determine if any laboratory tests are associated with a Workload Suffix of ".0000"

1. Select VA FileMan option Print File Entries
2. OUTPUT FROM WHAT FILE: WKLD SUFFIX CODES//
3. SORT BY: NAME//
4. START WITH NAME: FIRST//
5. FIRST PRINT FIELD: .01 NAME
6. WKLD SUFFIX THEN PRINT FIELD: 1 CODE
7. Determine if any test codes are associated with a Workload Suffix Code of .0000.

Note example below:

DSS ACC
.9999
DTC_TEST Example
.0000
DU PONT ACA
.3035

If test(s) have been identified, such as in the example, proceed to the Testing Steps procedure.

2.1.4.1 Testing Steps

Printing a LEDI Turnaround Time report

1. Accession and result a test identified as being associated with a Workload Suffix of .0000.
2. Print a LEDI Turnaround Time Report.
   a. Expected Outcome: The test should display on the LEDI Turnaround Time report.

Printing a Worksheet Accession Report

1. Accession and result a test identified as being associated with a Workload Suffix of .0000.

2. Print a Worksheet Accession Report.

   Expected Outcome. The test should appear on the report.

   No errors are generated when calling the report.

2.1.5 VA Patch LR*5.2*341: Correct LRUMD Print Options Bug

This patch updates the menu option Print/display preselected laboratory tests [LRUMD] to only include patients in the requested sorting group when printing the data by test list.

When Should this Test Plan be Performed? If your facility generates patient list utilizing sort groups, the test plan should be performed.

Summary of the Issue. The problem arises when a patient list is defined and that list has sorting groups. When the option to **Print By Test List** is selected and a sorting group is selected, all patients that satisfy the test list requirement display on the list regardless of their sorting group. This problem does not occur when the option to print by patient list is selected.

Testing Steps. Print an existing patient list by test group and ensure it honors the restrictions. (If you do not use this feature there is no need to test, as it is self-contained).

Expected Outcome. Patient list is generated that honors sorting group.

2.1.6 VA Patch LR*5.2*347: Execute Delta Check in Batch Data Entry

This patch corrects a problem with Batch Data Entry where executable code in a delta check is not executed.

This process for batch entering results with delta checks is a VA procedure only and does not need to be tested in RPMS.

Note: No testing in RPMS laboratory required.

2.1.7 VA Patch LR*5.2*348: Correct Issue with LR*5.2*340

This patch corrects a MUMPS coding error introduced in LR*5.2*340 that caused valid laboratory results not to display.

Note: No testing in RPMS Laboratory required.

2.1.8 VA Patch LR*5.2*344: Fix Problems with Reference Ranges on Lab Reports

This patch corrects problems with the way reference ranges are displayed in search options and also fixes a bug that generates a SYNTAX error in the **LRSORA (Search for High/Low Values of a Test)** option. The patch also fixes a problem with the Microbiology Trend Report where no data is printed when specific locations are selected (see Section 2.2.2 for testing of the Microbiology Trend Report).

2.1.8.1 Testing Steps:

1. Review the reference ranges and critical values for the test HEMOGLOBIN as defined in your laboratory test file.

```
LABTEST IEN: 3                          NAME: HEMOGLOBIN
 TYPE: BOTH
 SUBSCRIPT: CHEM, HEM, TOX, SER, RIA, ETC.
 LOCATION (DATA NAME): CH;386;1        UNIQUE ACCESSION #: NO
 UNIQUE COLLECTION SAMPLE: YES         LAB COLLECTION SAMPLE:
BLOOD/LAV
 FIELD: DD(63.04,386,                  HIGHEST URGENCY ALLOWED: STAT
 REQUIRED TEST: YES                    FORCED URGENCY: ROUTINE
 COMBINE TEST DURING ORDER: YES        PRINT NAME: HGB
 PRINT ORDER: 1.3                      DATA NAME: HGB
 SITE/SPECIMEN: BLOOD
 REFERENCE LOW: $S(SEX="M":14,1:12)
 REFERENCE HIGH: $S(SEX="M":18,1:16)
 CRITICAL LOW: 7
 CRITICAL HIGH: 18.0                   UNITS: g/dL
 TYPE OF DELTA CHECK: HGB              DELTA VALUE: 3
 LOINC CODE: 718-7
```

Figure 2-2: The laboratory test file definition for HEMOGLOBIN

2. Use the **Fast Bypass Data Entry/Verify** option to enter a critical result for a Test Patient, noting the sex and/or age of the patient.

```
GUMP,FOREST  HRCN: 989898      LOC: SURG
Practitioner: CURTIS,A CLAY

ACCESSION:                                    HE 0516 1
                                            05/16 0915d
HEMOGLOBIN //5.0  L*CRITICAL LOW!!
Select COMMENT:

GUMP,FOREST  HRCN: 989898      LOC: SURG
Practitioner: CURTIS,A CLAY

ACCESSION:                                    HE 0516 1
                                            05/16 0915d
```

```
HEMOGLOBIN                                  5.0 L* g/dL  CRITICAL
LOW!!
SELECT ('E' to Edit, 'C' for Comments, 'W' Workload )
Approve for release by entering your initials: DKR
```

Figure 2-3: Using the Fast Bypass Data Entry/Verify option

3. Use the **Search for Critical Value Flagged Tests** option to be sure that the reference ranges and critical ranges displayed for this critical test result display as defined for male or female patients or the age patient age tested.

```
CHOOSE 1-3: 2  Search for critical value flagged tests
Date to START with: TODAY//  (MAY 16, 2010)
Date to END  with: T-1//  (MAY 15, 2010)


    Select one of the following:
         Y         YES
               N         NO

Do you want to select accession areas (YES or NO) : NO//

    Select one of the following:

         P         PATIENT
         L         LOCATION

Sort by PATIENT or by LOCATION: P// ATIENT
Select PATIENT NAME: All//
Select LOCATION: All//
DEVICE: HOME//   Virtual
SPECIAL REPORT: SEARCHING FOR CRITICAL FLAGS  05/16/10 09:17    Pg 1
For date range: 05/15/10 to 05/16/10
ÄÄÄ
```

1. The Critical Value Report currently prints the first seven characters of the test name on the report. This can be deceiving, as the test for URINE KETONES may show up as URINE K. The routine LRSORC1A was modified to use the test PRINT NAME on the report. This will be more specific in identifying the test.

2. The Workload Code List Report errors off with an <UNDEF> error when a caret (^) is entered at the "Print report sorted by" prompt. Also, when a caret (^) is entered at the "Select local accession area" prompt, the option is not exited but continues on. The LRCAPD2 was modified to exit appropriately when a caret (^) is entered at prompts.

3. The List of Lab Orders Not Collected report errors after a couple of screens when printing to the screen. Routine LRNDLST was modified to not error off when printing to the screen.

When Should this Test Plan be Performed? This test plan should be performed if the report, Search for Critical Value Flagged Tests, is utilized at a facility.

Summary of Issue #1. The Critical Value Report currently prints the first seven characters of the test name on the report. This can be deceiving, as the test for URINE KETONES may show up as URINE K.

Set Up. Verify that test has value entered in PRINT NAME in File 60 for given test

2.1.9.1 Testing Steps

1. Order given test on test patient and accession order

2. Result test with critical value

3. Call “Search for critical value flagged tests”

Expected Outcome. Reports print with the value that is entered for PRINT NAME for given test in File 60.

Issue 2. **When should this test plan be performed?** If the Workload Code List Report is utilized at facility. The report does not use a caret (^) to exit the option.

Set Up. None

2.1.9.2 Testing Steps

1. Enter Workload Code List Report option.

2. Enter a caret (^) at the Print Report Sorted By option.

Expected Outcome. Routine exits appropriately when a caret (^) is entered.

Issue 3. When should this test plan be performed? If your facility prints List of Lab Orders Not Collected to a screen instead of a hard copy.

Set Up. Order a test to be drawn at the next routine lab collection time.

2.1.9.3 Testing Steps

1. Select **Print a List of Lab Orders Not Collected** option
2. Call this report to the screen instead of a hard copy (printer) by typing **0**.

Expected Outcome. Routine will not error.

2.1.10 LR*5.2*338: Ward Collect Order and Sum Accessions Report Printing Corrections

This patch corrects two report print problems with Reprint a Ward Collect Order and with Sum of Accessions by Date–AP.

- Ward Remarks in the Collection Sample field of the Laboratory Test file (60) are not printing on the order requisition. LROW2P was modified so the requisition gets all of the ward remarks.
- The Sum of Accessions by Date, ANAT PATH report prints the subscript name rather than the accession area name. The LRAPA routine was modified so that the header would reflect the correct accession area name.

When Should this Test Plan be Performed? Any facility that is using Ward Remarks.

Set Up. Verify test has an entry for COLLECTION SAMPLE defined in Laboratory Test (File 60).

Verify test has text entered in WARD REMARKS field under the Collection Sample in Laboratory Test (File 60)

2.1.10.1 Testing Steps

1. Order given test on a test patient
2. Use the menu option to Reprint a Ward/Clinic Collect Order
3. Enter test patient name

4. Enter date of order
5. Enter Collect Order No.
6. Select Print Device

Reprint of order should include field WARD REMARKS with complete text printed in the Ward Instructions field.

Expected Outcome. Ward Instructions field appears on order requisition when "Reprint a Ward/Clinic Collect Order" function is used.

2.1.11 VA Patch LR*5.2*357: AX5 MUMPS Cross Reference Not Updating Properly

This patch will correct a problem with the AX5 cross reference not updating properly when deleting a SYNONYM (Field #2) for a LABORATORY TEST record (File #60). It will also allow a search for laboratory test results with values not equal to null.

Note: No testing in RPMS Laboratory required.

2.1.12 VA Patch LR*5.2*361: Adding New Lab Test with Double Quotes

This patch will correct a problem. When a user adds a new laboratory test with its name in double quotes at the "LABORATORY TEST NAME" prompt, the system encounters the following error: <UNDEFINED>E^DICM.

Note: No testing in RPMS Laboratory required.

2.1.13 VA Patch LR*5.2*372: Fixes Lab Package Report Issues

Patch LR*5.2*356 made changes to the way the Reference Range and the Therapeutic Range are displayed with laboratory results on the Labs tab of VA Computerized Patient Record System (CPRS) GUI. This patch will make further modifications to the way these ranges are displayed on the Lab tab and also update the VA CPRS Cover Sheet.

When Should this Test Plan be Performed? If a test is defined with only a high reference range or high therapeutic range, the result will display as –range. For example, if the reference range for protein is a high of 5.0 and no low is defined, it would appear in RPMS EHR and on the EHR cover sheet as -5.0, which might lead the provider to believe the reference range is negative 5.0.

Summary of Issue. Some laboratory tests have only the high value of the reference range defined. These tests currently will display the data in this manner: Reference range:–100. This single value can be incorrectly interpreted as a negative.

Set Up. Create or identify a test in File 60 that has an upper range only for normal and/or therapeutic. For example:

```
LABTEST IEN: 9999594
NAME: TEST1
TYPE: BOTH
SUBSCRIPT: CHEM, HEM, TOX, SER, RIA, ETC.
LOCATION (DATA NAME): CH;2582304;1
LAB COLLECTION SAMPLE: CLOT ACTIVATOR
FIELD: DD(63.04,2582304,
HIGHEST URGENCY ALLOWED: ROUTINE
REQUIRED TEST: YES
PRINT NAME: TEST1
DATA NAME: TEST1
SITE/SPECIMEN: BLOOD
REFERENCE HIGH: 100
THERAPEUTIC HIGH: 200
INSTITUTION: DEMO INDIAN HOSPITAL
ACCESSION AREA: CHEM SENDOUTS
```

Figure 2-5: Identifying a test in File 60 with only an upper range for normal or therapeutic

2.1.13.1 Testing Steps

1. Using an appropriate order method, such as EHR or Multi Purpose Accessioning, order and accession the identified test on a Demo patient.
2. Using EM, enter results for the accession.
3. Ensure reference ranges display on the RPMS Interim report and PCC as expected. (Ref: <=100)
4. Launch EHR and select the Demo patient.
5. Select the Lab tab and view your result. Note the ranges should display as follows without the leading hyphen. (Ref: <=100)
6. Select the Cover Sheet tab.
7. On the Lab Orders section of the Cover Sheet, double click the laboratory order from Step 2.
8. Note the ranges should display as follows without the leading hyphen. (Ref: <=100)

2.1.14 Logic Corrected for Address Page on Interim Report

The LRRP1 interim report routine was looking for a **YES** or a **NO** in the **Interim Report Address Page** field in the BLR Master Control file, not a blank. If the field is **YES**, the address page prints. If the field is **NO**, the location addresses print at the bottom of each page and no address page prints. The LRRP1 routine was modified so that a blank could now be interpreted as a NO (Standard RPMS logic).

When Should this Test Plan be Performed. If your facility utilizes the Interim Report functionality.

Summary of Issue: In the BLR Master Control file, there is an INTERIM REPORT ADDRESS PAGE field. If the field was left blank, the location address printed at the bottom of the Interim report.

2.1.14.1 Testing Steps

1. In the BLR Master Control File, leave the **INTERIM REPORT ADDRESS PAGE** field blank.

   Expected Outcome. The location address does not print at the bottom of each page.

2. In the BLR Master Control File, type **NO** in the **INTERIM REPORT ADDRESS PAGE** field.

   Expected Outcome. The location address does not print at the bottom of each page.

3. In the BLR Master Control File, type **YES** in the **INTERIM REPORT ADDRESS PAGE** field.

   Expected Outcome. The location address is printed at the bottom of each page.

2.1.15 POC Sign/Symptom Error Message

When using the Point of Care button within EHR, a PCC error bulletin (transaction message 714) is generated indicating the sign/symptom contained an invalid character of “^”.

When Should this Test Plan be Performed: This test plan only applies to users using the POC EHR button.

Summary of Issue. It was reported by a user that POC entries are causing an error in the laboratory transaction log due to a caret (^) in signs/symptoms field

2.1.15.1 Testing Steps

1. Log into EHR and select a DEMO patient and create or select a visit.
2. Click the **POC** button.
3. Order a POC test from the drop down, selecting or entering a sign/symptom.
4. Save the order and result.
5. Log into RPMS and confirm the following:
6. The data from the order and result are in PCC as evidenced by a Health Data Summary.
7. Go into MAILMAN and confirm there are no errors of the type:

   An entry in the IHS Lab Transaction Log could not be created because of missing or invalid data.
   IHS Lab Transaction Log ERROR:
   Error code = 714
   Data for Field SIGN OR SYMPTOM in File IHS LAB TRANSACTION LOG contains an '^'.

   Expected Outcome: No error message 714, data in PCC.

2.2 Microbiology (MI Subscripted Tests)/Anatomic Pathology

2.2.1 VA Patch LR*5.2*355: Subscript Error in Surgical Pathology Search

This patch corrects a SUBSCRIPT error caused by a missing SNOMED code when executing option **LRAP** and performing a SURGICAL PATHOLOGY search by MORPHOLOGY code.

> **Note**: No testing in RPMS Laboratory required. SNOMED codes are required when defining a new topography entry or morphology code in File 61 or 61.1

2.2.2 VA Patch LR*5.2*257: Multidivisional Antimicrobial Trend Report

This patch provides the ability to print an Antimicrobial Trend Report by division.

Patch LR*5.2*257 also corrects two typographical errors. The query portion of the Microbiology Trend Entry routine has two typographical errors. The word "susceptability" is misspelled as "susceptibility." In addition, the misspelled word "procede" should be "proceed."

When Should this Test Plan be Performed? If your site has the need to print Antimicrobial Trend Report reports by division.

2.2.2.1 Summary of Issue

Microbiology Trend Report

The Microbiology Trend Report [LRMITS] option is enhanced to sort the Antimicrobial Trend Report by DIVISION. This report is used to compare counts of organisms and patterns of antibiotic susceptibility. Different types of Antimicrobial Trend Report by division can be generated. The Microbiology Trend Report [LRMITS] option is located on the Laboratory DHCP Menu [LRMENU] (locked with LRLAB security key), Microbiology Menu [LRMI] (locked with LRMICRO security key), and Microbiology Print Menu [LRMIP] option.

The Antimicrobial Trend Report can be generated by DIVISION using the Microbiology Trend Report [LRMITS] option by the following categories:

- Organism
- Specimen
- Collection sample
- Patient
- Physician
- Location

The Antimicrobial Trend Report can be generated by DIVISION using the Microbiology Trend Report [LRMITS] option by specified criteria:

- Types of organisms
- Isolates collected after a specified time from admission
- Merge criteria
- Antibiotic patterns
- Detailed reports

The 'Antimicrobial Trend Report' can be printed by the following DIVISIONS:

- (A)ll Divisions
- (S)elected Divisions
- (N)o Division Report? No

> **Note**: Defaults for the Antimicrobial Trend Report types can be defined in the LABORATORY SITE file (#69.9). Reports can be restricted to specific types of values (i.e., specific patients, specific specimens, etc.). The reports can be restricted to criteria that affect all types of reports.

The user selects the comprehensive criteria and types of Antimicrobial Trend Reports. The time range is forced to months. The report is forced to be queued, preferably to be run during off-hours. The Antimicrobial Trend Reports extracts data from LAB DATA file (#63) and temporarily stores the data in a ^TMP global. The format of the ^TMP global is indexed similar to the outputs of the requested reports. Once the data has been collected, it is reprocessed; counted, and merged using the specified criteria selected. Data merges can be done so that isolates from the same patient and same organism and consistent antibiotic patterns will only be counted once depending on being isolated from the same specimen, collection sample, or any sample. A detailed Antimicrobial Trend Report showing each isolate values can be used to confirm the counts reported. The data is reported by simply displaying the values of the ^TMP global.

2.2.2.2 Testing Steps

1. No testing required for typographical correction.

   Referring to 2.1.8: the Expected Outcome. Antimicrobial trend report generates data.

2. Access the [LRMITS] menu option

   Outcome. New prompt is displayed.

```
MICROBIOLOGY TREND REPORT
Report by: DIVISION
(A)ll Divisions, (S)elected Divisions, or (N)o Division Report? No//
Generate a report for All, Selected, and No Division
```

Figure 2-6: New prompt displays

Expected Outcome. The report does not error, is sorted as requested, and contains data.

2.2.3 VA Patch LR*5.2*323: Undefined Variable While Verifying Micro Data

During the verification of Micro Data (RE–Result Entry, VT–Verification by Tech, or VS–Verification by Supervisor), an undefined error has occurred at line APP+5^LRMIUT1. This patch corrects this defect.

When Should this Test Plan be Performed. This test plan should be performed if Tests are defined under the MI Subscript in the Laboratory test file (60) and if sensitivities are recorded during result entry in the Microbiology module of RPMS.

Summary of Issue. During the verification of Micro Data, an undefined error has occurred at line APP+5^LRMIUT1.

2.2.3.1 Set Up

- Verify that appropriate configuration is present in 62.1 ETIOLOGY FIELD.
- Verify sensitivities have been correctly configured in 62.06.
- Verify the type of Micro Approval Method used in File 64.5. File 64.5 can be defined as RE–Result Entry, VT–Verification by Tech, or VS–Verification by Supervisor. This must match the Micro Approval method configured in File 64.2 if the Auto Instrument File is being used.

2.2.3.2 Testing Steps

1. Order a culture that is associated with a sensitivity.
2. Result the accession number.
3. Verify the microbiology result based on the configuration entered in File 64.5, MICRO APPROVAL METHOD.

   Expected Outcome. No errors should be generated.

2.2.4 VA Patch LR*5.2*339: Correct Undefined Error from LRMIBUG

This patch updates the RE/Results entry option found in the LRMI/Microbiology menu. The patch corrects an error if the caret (^) is used during the result entry process to delete a result for an antibiotic.

When Should this Test Plan be Performed? This test plan should be performed if Test Codes are defined under the MI Subscript in the Laboratory test file (60) and if sensitivities are recorded in the Microbiology function in RPMS.

2.2.4.1 Set Up

- Verify that appropriate configuration is present in 62.1 ETIOLOGY FIELD.
- Verify sensitivities have been correctly configured in 62.06.

Summary of Issue #1. The patch corrects an error in the Results Delete process. This process begins when entering a caret (^) while entering antibiotic sensitivities.

2.2.4.2 Testing Steps Issue #1

1. Order a culture that is associated with a sensitivity.
2. While entering results for the sensitivity panel use the caret (^) and the at sign (@) key in various combinations. Attempt to navigate between fields using the caret (^).

   Expected Outcome. No errors should be generated.

Summary of Issue #2. The patch corrects a problem sites have encountered installing Patch LR*5.2*257 because a routine is missing an asterisk (*) in the second line of the routine.

2.2.4.3 Testing Issue #2

1. Verify that updates load correctly.

   Expected Outcome: Updates to the system populate with out incident.

2.2.5 VA Patch LR*5.2*318: Summary List Report Fixes

This patch fixes two problems with the Summary List Report.

1. When an antibiotic sensitivity result is incorrectly input into the system and subsequently deleted, the associated interpretation will still display on the Summary List report.
2. When the order entry clerk fails to make an entry at the **SPECIMEN SUBMITTED BY** field when prompted to do so using the **Log-In Anatomic Path** option, a <SUBSCRIPT> error occurs.

When Should this Test Plan be Performed for Issue #1. This test plan should be performed if Tests are defined under the MI Subscript in the Laboratory test file (60) and if sensitivities are recorded during result entry in the Microbiology module of RPMS.

Summary of the Issue #1. When an antibiotic sensitivity result is incorrectly input into the system and then subsequently deleted, the associated interpretation will still display on the Summary List report.

2.2.5.1 Set Up

- Verify that appropriate configuration is present in 62.1 ETIOLOGY FIELD
- Verify sensitivities have been correctly configured in 62.06 ANTIMICROBIAL SUSCEPTIBILITY

2.2.5.2 Testing Steps

1. Order a culture that is associated with a sensitivity.
2. Result the culture and finalize the culture. Ensure that a sensitivity has been entered and exit the application.
3. Access the order a second time in Microbiology result entry. Delete the result of a previously resulted antibiotic.
4. Call a Summary List (extended supervisors') report for the Microbiology section.

   Expected Outcome. The deleted antibiotic should not display on the Summary List (extended supervisors') report. All other antibiotics should display appropriately. No errors should be generated.

When Should this Test Plan be Performed for Issue #2? This test plan should be performed if the facility performs Anatomical Pathology.

Summary of the Second Issue #2. If the order entry clerk fails to make an entry at the SPECIMEN SUBMITTED BY field when prompted to do so using the Log-In Anatomic Path (LRAPLG) option and then the summary report (Summary List [extended supervisors']) is executed, the program fails when the record with the blank collection person is processed. This results in a Null Subscript error.

2.2.5.3 Testing Steps Issue #2

1. Under the Anatomical Pathology menu, under Log-In Menu (Anatomical Pathology) leave the “Specimen Submitted by” prompt blank.
2. Enter Select Specimen since this is a required field, then return and exit the application. Call a Summary List (extended supervisors') report.

   Expected Outcome. The specimen received is viewable on the report. No errors should be generated when calling the report.

2.2.6 VA Patch LR*5.2*316: Fix Problem with LRMIBUG Routine

When new antibiotics are added to the list of resulted antibiotics in a panel, a new subfile is created for the additional antibiotics. Code was added to routine LRMIBUG to correct the problem with interpretive results not being removed when a sensitivity result is deleted.

Note: No testing in RPMS Laboratory required.

2.3 Interface Related Software Changes

VA Patch LR*5.2*356: Change Display of Reference, Critical, and Therapeutic Range

Issue # 1. Some laboratories store embedded MUMPS code for reference ranges whose values are based on the patient's sex, the patient's age, or both the patient's sex and age. This is currently being displayed as straight MUMPS code in EHR, but is not useful to the users who are unable to read MUMPS code. Currently, it might display in this manner:

- Example # 1, based on patient's sex:

  Reference range: $S(SEX="M":39.8,1:34.9) - $S(SEX="M":53,1:46.0)

- Example # 2, based on patient's age:

  Reference range: $S(AGE<65:">4.0",AGE=65:">4.0",1:">3.5")

The routine LR7OR4 displays this data as well.

Test Steps Issue #1

1. Find a test definition in File 60 that uses mumps code to define multiple reference ranges for age and/or sex (examples: WBC, HGB)
2. Place an order for the test and result the test in RPMS Lab
3. In the EHR, Lab tab, Most Recent view, review the test result and confirm that the reference ranges are as expected.

Issue # 2. This is an issue discovered by the test sites during testing. The modification of the reference range display for the vertical cumulative reports had the side effect of making the horizontal cumulative report lab test headers to be crowded and unreadable.

Issue # 3: This is an issue discovered by the test sites during testing. The Miscellaneous test section of the cumulative report was not printing with the new formatting. In addition, if the laboratory test only had the high reference range value defined, it did not print.

2.3.1.1 Test Steps

1. Using an appropriate order method, such as EHR or Multi Purpose accessioning, order and accession a test with age or sex related reference ranges on a Demo patient.
2. Using EM, enter results for the accession.
3. Launch EHR and select the Demo patient.
4. Select the Lab tab and view your result.

   Note: The ranges should display without the leading hyphen.

5. Select the Cover Sheet tab.
6. On the Lab Orders section of the Cover Sheet, double click the laboratory order from Step 1.

   Note: The ranges should display without the leading hyphen.

7. Repeat steps in RPMS.
8. Repeat steps with a test that contains a calculated normal range.

Expected Outcome. Results display with normal ranges, not MUMPS code

2.3.2 Other Interface Related Software Changes

Please see the second section of this guide, Supplemental Information for Laboratory Patch 27 Reference Laboratory Interface Enhancements, for descriptions of the interface-related software changes and test scripts.

2.4 Patient Chart Application to be Decommissioned

The Patient Chart (BPC) application is comprised of multiple RPMS components, including a graphical interface to view PCC V Lab data and to order laboratory tests. It also includes a graphical interface to the Data Entry module of the Behavioral Health System (BHS). While the majority of Patient Chart users are Behavioral Heath providers, laboratory technicians at some facilities do use the Lab features in Patient Chart.

A new version of the Behavioral Health System (AMH) was released in July 2010. Patient Chart will be decommissioned and no longer supported by the Office of Information Technology (OIT). BHS Version 4.0 does not include a graphical interface to PCC laboratory data or the ability to order laboratory tests. Laboratory data will be viewable on the Health Summary. Because of changes made to the display of reference ranges, *the Patient Chart application should no longer be used for review of laboratory results*.

3.0 Modified Routines

Several routines have been modified in order to prevent errors and/or correct issues.

This routine…	Was modified to…
BLRALBA	Modified logic to ensure Accession exists prior to setting variables.
BLRLINK1	Added logic to use incoming reference laboratory reference ranges for those tests performed at a reference laboratory
BLRLINK2	Corrected logic error during the attempt to set the **CREATED BY** entry in the PCC Visit file during Lab visits
BLRLINK3	Corrected logic error during the attempt to set the **CREATED BY** entry in the PCC Visit file during Lab visits
BLRPCCBD	Modified to display more useful information
BLRPCCVC	Added subroutine RESETDUZ to attempt to use more logic to set the **CREATED BY** entry in the PCC Visit file correctly
BLRNFLTL	Modified to prevent EHR Point-of-Care accession creation from adding in an extraneous character (the caret [^]) to the Lab test's Purpose of Visit variable, thus preventing PCC errors from being generated. The routine was also modified to highlight transactions with missing or malformed Purpose of Visit variables by giving bulletins a specific "FROM" name ("714 Error") when generating MailMan messages.
BLRPOC	Modified to prevent <UNDEFINED> error when EHR POC is installed but Lab has never run before and there is no ROLLOVER date in the LABORATORY SITE file. Modified to prevent <UNDEFINED> error when Collection Date/Time has no time; i.e., when it is precisely at midnight.
BLRPST	Modified Header routine to display more useful information
BLRUTIL	Removed E-SIG Info subroutine due to BLRUTIL becoming too large
BLRUTIL3	Adding E-SIG Info subroutine removed from BLRUTIL
LRAC9	Modified to prevent <UNDEFINED> errors during the printing of the CUMULATIVE report.
LRCKPTR	Modified to prevent invalid entries from being created in the Lab Data File due to Patient Merge
LRDAGE	Modified to return valid age if a patient really is greater than 99 years old.
LRLABLIO	Modified routine to new variables DOB and SEX during printing a test lab label so as to not interfere with other routines that use those variables.

This routine…	Was modified to…
LRMIBL	Modified to prevent <UNDEFINED> errors when LRPARAM variable not defined.
LRPHSET2	Modified line to remove Naked Reference that could cause <UNDEFINED> error
LRRP2	Modified to correct issue when reading BLR MASTER FILE's INTERIM REPORT PAGE field.
LRUPAC	Modified to correct an issue with not clearing the ^TMP global prior to processing data.
LRUPACA	Modified to use the ^TMP global instead of an array due to the size constraints of an array.
LRWRKLS1	Modified to correct logic flaw determining if an order exists
LA7VCN1A	Added data to XQADATA & XQAROU variables
LA7VIN1A	Added data to XQADATA & XQAROU variables
LA7VLN1A	Added data to XQADATA & XQAROU variables
LA7VQN1A	Added data to XQADATA & XQAROU variables
LA7VRN1A	Added data to XQADATA & XQAROU variables

4.0 New Routines

Two routines will be added to the IHS Lab module.

New Routine	Description
BLRPRE27	IHS Lab PATCH 1027 Environment/Post Install Routine
BLRPR27P	IHS Lab PATCH 1027 Environment Post Install Routine. It attempts to create the eAG Delta Check

5.0 BLR Reference Lab Modifications

See Supplemental Information for Laboratory Patch 27–Reference Laboratory Interface Enhancements.

6.0 Glossary

API

Application Program Interfaces. APIs are utilized by a software program which enables it to interact with other software.

CPRS

The VA's GUI EHR Application (*Computerized Patient Record System*).

File

A set of related records or entries treated as a single unit.

FileMan

The database management system for RPMS.

Global

In MUMPS, global refers to a variable stored on disk (global variable) or the array to which the global variable may belong (global array).

IEN

Internal Entry Number. A unique number used to identify an entry within a file.

IHS

Indian Health Service

LEDI

The Veterans Health Information Systems and Architecture (VistA) Laboratory Electronic Data Interchange

Meaningful Use Criteria

Implements the provisions of the American Recovery and Reinvestment Act of 2009 (ARRA) (Pub. L. 111-5) that provide incentive payments to eligible professionals (EPs), eligible hospitals and critical access hospitals (CAHs) participating in Medicare and Medicaid programs that adopt and successfully demonstrate meaningful use of certified electronic health record (EHR) technology

Menu

A list of choices for computing activity. A menu is an option designed to identify a series of items (other options) for presentation to the user for selection. When displayed, menu-type options are preceded by the word “Select” and followed by the word “option” as in “Select Menu Management option” (the menu’s select prompt).

MUMPS

Massachusetts General Hospital Utility Multiprogramming System. It is a procedural, interpreted general-purpose programming language oriented towards database applications.

Parameter

A name in a function or subroutine definition that is replaced by, or bound to, the corresponding actual argument when the function or subroutine is called.

<PARAMETER>

A Caché error caused by the number of parameters passed to a labeled routine by a user-written function reference or a DO command exceeding the number of formal parameters declared for the labeled line.

Routine

A sequence of computer instructions for performing a particular task

RPMS

Resource and Patient Management System. A suite of software applications used at IHS facilities to support administrative, clerical, and clinical functions.

<SYNTAX>

A Caché error caused by the malformation of a language construct, such as a misspelled or missing keyword.

<UNDEFINED>

A Caché error caused by a reference to an undefined variable.

7.0 Testing Checklist

Section	Test Date	Description	PASS	FAIL
2.1.1		Estimated Average Glucose (eAG)		
2.1.3		Set of Codes Problem		
2.1.3.1		Set of Codes External Value		
2.1.4		LEDI Turnaround Time Report And Worksheet Accession List		
2.1.5		Correct LRUMD Print Options Bug		
2.1.8		Fix Problems with Reference Ranges on Lab Reports (The way reference ranges are displayed in search options and also fixes a bug which generates a SYNTAX error in option LRSORA)		
2.1.9		Corrects Issues with Three Reports In Lab Package		
2.1.10		Ward Collect Order and Sum Accessions Report Printing Corrections		
2.1.14		Site Addresses Do Not Print on Interim Report if the INTERIM REPORT ADDRESS PAGE Field of the BLR MASTER CONTROL File Is Blank		
2.1.15		POC Sign/Symptom error message		
2.2.2		Multidivisional Antimicrobial Trend Report		
2.2.3		Undefined Variable While Verifying Micro Data		
2.2.4		Correct Undefined Error from LRMIBUG		
2.2.5		Summary List Report Fixes		
2.3.1		Change Display of Reference, Critical, and Therapeutic Range		
2.3.2		Other Interface Related Software Changes		

Section 2: Reference Laboratory Interface Enhancements

Preface

The purpose of this guide is to provide Laboratory and other Indian Health Service (IHS)/Tribal/Urban (I/T/U) staff with an overview to changes to the Resource and Patient Management System (RPMS) Laboratory Package Reference Laboratory Interface introduced in Patch 27. Those who have never used the RPMS Reference Laboratory interface are referred to Laboratory Patch 21 documentation. In addition, instructions are provided on how to prepare for and configure the software to submit electronic billing information for sites that wish the reference laboratory to do billing for testing performed. It must be noted that in order to implement the LabCorp Third Party Billing options, the facility must have GIS V3.01 Patch 16 installed.

Note: This patch contains software that allows submission of electronic billing information to Laboratory Corporation of America (LabCorp) from facilities maintaining a bidirectional interface with this reference laboratory. Currently, the IHS Laboratory Package does not have the capability to submit electronic billing information to any other reference laboratory.

8.0 Introduction

Patch 27 to the Laboratory Package contains a number of changes to the Reference Laboratory Interface software that was originally distributed in August 2006 in Laboratory Patch 21 and GIS Patch 13. Listed below are the changes included in this patch.

- A site parameter has been added to allow entry of multiple client account numbers if a facility has more than one client account number with a reference laboratory. If a site has more than one client account number, the user will be prompted to enter the desired client account number when tests are accessioned.
- A site parameter has been added to allow printing the patient's telephone number on the shipping manifest. This information may be relayed to an on-call provider by the reference laboratory if a critical result is called to that provider after clinic hours.
- A site parameter has been added to customize the name of the reference laboratory as it appears on the shipping manifest, e.g. DLO dba QUEST instead of QUEST.
- A site parameter has been added to the BLR Master Control file to transmit National Provider Identifier (NPI) numbers instead of Unique Provider Identification Numbers (UPINs) for ordering providers. (Note that each facility must confirm that their reference laboratory is capable of processing NPI numbers instead of UPINs and a date for conversion must be agreed upon.)
- A site parameter has been added to the BLR Master Control file to allow selection of billing type. The choices include:
  - **Client**
  - **Patient**
  - **Third Party** (may only be used by facilities with bidirectional interfaces with LabCorp at this time and facility must have installed GIS V3.01 Patch 16.)
- If a facility chooses Third Party, each time a test or tests are accessioned, the user will be prompted to enter International Classification of Diseases, Ninth Revision (ICD-9) diagnoses. Insurance information will be passed to the reference laboratory based on sequencing of insurers during registration.
- The outbound order message for sites that choose the **Third Party** option will contain:
  - One or more Insurer (IN1) segments
  - One or more Diagnosis (DG1) segments
  - A Guarantor (GT1) segment

- The shipping manifest at facilities that choose Patient or Third Party billing options will display all relevant diagnoses, diagnoses text, insurance, and guarantor information.
- An option has been added to purge old shipping manifests based on the number of days identified for retention.
- The E60 option has been modified to allow entry of Lab Processing Instructions under the Collection Sample multiple. These processing directions will print on the reference laboratory shipping manifest for each test with an entry in this field.
- An option has been added to the reference laboratory menu to set reference laboratory site parameters for each facility using the interface. This could only be accomplished using Veterans Administration (VA) Fileman in the past.
- Unidirectional interface capability for Munson Healthcare in Traverse City, Michigan has been added.
- The ability to support both unidirectional and bidirectional interfaces for facilities sharing the same RPMS server has been added.
- The Chem multiple of the Auto Instrument file has been modified to permit storage of units as well as reference ranges if a **YES** is entered in the **Store Units** field.
- Incorporation of the VA LEDI functionality will permit storage and display of reference ranges, abnormal flags, and units for reference laboratory tests on reports similar to those tests performed on site.
- Three new mail bulletins have been implemented:
  - Abnormal/Critical Results Received
  - Amended/Corrected Results Received
  - Order/test status changed
- The ability to electronically overlay previously verified reference laboratory results has been implemented.
- The ability to enter reference ranges, critical values, abnormal flags, and performing site has been added to the enter/verify/modify data (manual) (EM) option when reference laboratory results must be manually entered.
- The ability to correctly post the site code for the reference laboratory.
- The number of test entries in the Auto Instrument file has been increased from 999 to 1500.
- If order comments are entered on more than one test as required comments, those comments will print on the shipping manifest under each test as entered.
- The RPMS-generated shipping manifest has been modified to suppress the display of the patient's Social Security Number (SSN), except for the last four digits.

- For RML clients, the OBX.7 field, Result flag, has been modified to display Result Flag instead of Normalcy Status on RPMS reports.

9.0 Preinstallation Directions

9.1 Existing Bidirectional Client Bill Sites

1. Determine whether your reference laboratory would prefer National Provider Identifier (NPI) numbers or Unique Personal Identification Numbers (UPINs) to be transmitted for ordering providers. Request your Business Office to confirm that all providers have a UPIN or NPI number, depending on selection.
2. Determine whether you have more than one client account number you would like to use.
3. Determine whether you wish to print patient telephone numbers on your shipping manifests.
4. Following installation of the patch, refer to Section 10.2 to edit your reference laboratory site parameters.

9.2 Existing Unidirectional Sites

1. Determine whether your reference laboratory would prefer NPI numbers or UPINs to be transmitted for ordering providers. Request your Business Office to confirm that all providers have a UPIN or NPI number, depending on selection.
2. Determine whether you have more than one client account number you would like to use.
3. Following installation of the patch, refer to Section 10.2 to edit your reference laboratory site parameters.

9.3 Bidirectional Sites with LabCorp Third Party Billing

Prerequisite: In order to implement the LabCorp Third Party Billing options, the facility must have GIS V3.01 Patch 16 installed.

1. Determine whether your reference laboratory would prefer NPI numbers or UPINs to be transmitted for ordering providers. Request your Business Office to confirm that all providers have a UPIN or NPI number, depending on selection.
2. Determine whether you have more than one client account number you would like to use.

3. Determine whether you wish to print patient telephone numbers on your shipping manifests.
4. Notify your LabCorp Client Service representative that you will be using a RPMS Bidirectional interface with LabCorp doing third-party billing.
5. Use VA Fileman to create an Excel spreadsheet of your insurers. See instructions in Section 8.b.
6. Request your Business Office to review the Excel file of insurers and delete any insurers on the Excel spreadsheet that are not used at your facility.
7. Submit the Excel file of insurers to your LabCorp Client Service Representative for assignment of LCA Carrier Codes (2–5 digit codes that identify payer categories for LabCorp).
8. When the Excel file of insurers with LCA Carrier codes has been returned, use VA Fileman to edit the insurer file and enter the LCA Carrier Code into the **EXTERNAL ID 3 (REF LAB)** field. See instructions in Section 12.2.
9. Notify Registration staff that when they register a patient or when checking in a patient and updating insurance information, they *must* sequence insurers, even if there is only one.
10. If you do not already have several DEMO,PATIENTS available for EHR or other RPMS training activities, request your Medical Records Department to either register new DEMO, PATIENTS or update insurance files for existing DEMO,PATIENTS as follows. These patients will be used to ensure your initial billing functionality before working with real patients.
    a. Patient 1–No Insurance–No CHS–Patient Bill
    b. Patient 2–CHS and Direct–Client Bill
    c. Patient 3–Medicare Part B
    d. Patient 4–Medicaid
    e. Patient 5–Private Insurance
    f. Patient 6–HMO
    g. Patient 7–Medicare and Private Insurance

10.0 Postinstallation Instructions

A checklist of postinstallation configuration steps is contained in Appendix A. The site manager or other individual with VA Fileman and/or programmer access should work with the Laboratory Supervisor in completing these steps.

10.1 New Interface Sites

Please follow interface set up and configuration directions as defined in the Reference Lab Activation Guide (lr__0520.027o.pdf) before following these directions.

10.2 Existing Bidirectional Client Bill Sites

10.2.1 Edit Reference Laboratory Site Parameters

This option will be used to specify:

- Which client account numbers you wish to use for your reference laboratory
- Whether you wish to use NPI numbers or UPINs for provider identification
- What type of billing you wish to use (remember–only LabCorp can currently provide Third Party Billing as an option, and if the facility wishes to use this functionality it must have installed GIS V3.01 Patch 16.)

  You may also use this option to change the device that you use for printing your shipping manifests.

  Other than those parameters, you will not change any of the settings; just press Enter at each field as it is displayed.

> **Note**: Even if you do not wish to make changes to your existing interface, you still must step through this option to confirm your selections. Do not use the settings displayed in Figure 10.1; they are for illustration only.
>
> *At multidivisional sites, this option should only be used for the primary facility*; you may use VA Fileman to edit the BLR Master Control file for each additional facility using the interface. See Figure 10-1.

```
LAB   Laboratory DHCP Menu
```

```
BLR    IHS Lab Main Support Menu
REFL   Reference Lab Main Menu ...
SIT   Edit Reference Lab Parameters

Select Reference Lab Main Menu Option: SIT  Reference Lab Site
Parameter Add/Edit
Now setting up reference lab parameters..
Setup Parameters for which Reference Lab: QUEST (or LabCorp,  RML,
Interpath, or MGH)

Now setting up GIS HL7 Message Parameters..
SENDING APPLICATION: IHS//<ENTER>
SENDING FACILITY: 46621//<ENTER>
RECEIVING APPLICATION: QUEST//<ENTER>
RECEIVING FACILITY: TDA//<ENTER>
Add this Reference Lab to which Site: DEMO  DEMO HOSPITAL
REF LAB DEV FOR SHIP MANIFEST: ← Specify the printer that will be
used to print shipping manifests.
REF LAB CLIA NUMBER:
REF LAB LAB MANAGER:
REF LAB EXPORT DIRECTORY:
REF LAB RES FILE NAME PREFIX:
REF LAB STORAGE DIRECTORY
REF LAB HL7 FILE FORMAT:
REF LAB ORDERING LOCATION:
REF LAB HOLD LABS FOR VERIF:
REF LAB DAYS TO KEEP FILES:
REF LAB DEF ORDERING LOCATION:
REF LAB IMPORT DIRECTORY:
REF LAB PASS CPT CODES:
REF LAB BILLING TYPE: Client <- Choices are T for Third Party
                        C for Client
                        P for Patient
By selecting C for Client, you will never be prompted for
payer source when ordering reference laboratory tests.

REF LAB PRT SHP MAN BY STORAGE: <-This functionality is not
implemented in this patch. <ENTER>

REF LAB PRT PT PHONE MANIFEST: YES <- Yes if you wish to print
patient phone number on shipping manifest, No, if you do not.

REF LAB BI/UNIDIRECTIONAL: BIDIRECTIONAL//
REF LAB NPI OR UPIN ON ORDER: NPI//<- NPI or UPIN

REF LAB NAME FOR SHIP MANIFEST: QUEST//<- May be changed as
 desired and agreed upon by your reference laboratory.

REF LAB USE INSURANCE SEQ: <-An entry should be made in this
field only if T for Third Party Billing has been selected.  An
entry of 'YES' submits insurers to the reference laboratory
in the order specified when the insurers were sequenced.  An
entry of 'NO' means that the individual accessioning tests
will have to select the order of insurers. A recommendation is
made to answer this question with 'YES'.

Select REF LAB CLIENT ACCOUNT NUMBER: 46621// Enter all client
account numbers that are used by this facility, e.g. if you
```

```
have one for Cytology/Pathology and another for Clinical work,
enter both here. If you have a multidivisional reference
laboratory interface, do not enter client account numbers for
all of your facilities here.  Instead use this menu option to
specify parameters for each of your facilities, one at a time.

Select REF LAB ACCESSION AREA: SENDOUTS// If you have more than one
accession area that uses this interface at a single facility, add
each accession area.  If this is part of a multidivisional
environment, only enter accession areas associated with each
division as you edit that division.

Now setting up Lab HL7 Message Parameter File..

Now activating Reference Lab Interface..

Generation for message: HL IHS LAB O01
QUEST.................................
..............................................

The following scripts were generated:
    Generated: HL IHS LAB O01 QUEST-O


Compiling Script: Generated: HL IHS LAB O01 QUEST-O

MUMPS section....
DATA
section.........................................................


END section.

Compile completed with 0 warnings and 0 errors.
Linking...  Filing generated routines...
Linking...  Filing generated routines...

Routine IS00015    ...Filed
Routine IS00015A   ...Filed
Routine IS00015B   ...Filed
Routine IS00015C   ...Filed
Routine IS00015D   ...Filed
```

Figure 10-1: Editing reference laboratory site parameters

10.2.2 Send a Test Order

In order to confirm that all interface settings are functional, it is highly recommended that you contact your reference laboratory client service representative to perform a functionality test. Generate an order for a DEMO,PATIENT and confirm that a Message ID (MID) prints on the shipping manifest. Confirm that the shipping manifest contains any data that may have been added, e.g. patient telephone number, NPI number, processing instructions, or order comment. Request that test results be returned and confirm that they post correctly.

10.2.3 Purge Shipping Manifest File

This option may be used to purge shipping manifests that have been retained in the BLR Reference Laboratory Shipping Manifest file since implementation of the interface. It is recommended that no more than 90 days worth of shipping manifests be retained.

```
LAB    Laboratory DHCP Menu
BLR     IHS Lab Main Support Menu
REFL    Reference Lab Main Menu ...
PSM     Purge Shipping Manifest File

Purge Shipping Manifests older than how many days :  (1-365): 90//
<ENTER>
```

Figure 10-2: The Purge Shipping Manifest File option

10.3 Existing Unidirectional Sites

10.3.1 Edit Reference Laboratory Site Parameters

This option will be used to specify:

- Which client account numbers you wish to use for your reference laboratory
- Whether you wish to use NPI numbers or UPINs for provider identification
- What type of billing you wish to use (remember–only LabCorp can currently provide Third Party Billing as an option and the facility must have installed GIS V3.01 Patch 16.)

Other than those parameters, you will not change any of the settings; just press Enter at each field as it is displayed.

Note: Even if you do not wish to make changes to your existing interface, you still must step through this option to confirm your selections. Do not use the settings displayed in Figure 10-3; they are for illustration only.

At multidivisional sites, this option should only be used for the primary facility; you may use VA Fileman to Edit the BLR Master Control file for each additional facility using the interface. See Figure 10-3.

```
LAB    Laboratory DHCP Menu
BLR     IHS Lab Main Support Menu
```

```
REFL   Reference Lab Main Menu ...
SIT   Edit Reference Lab Parameters

Select Reference Lab Main Menu Option: SIT  Reference Lab Site
Parameter Add/Edit
Now setting up reference lab parameters..
Setup Parameters for which Reference Lab: QUEST (or LabCorp,  RML,
Interpath, or MGH)

Now setting up GIS HL7 Message Parameters..
SENDING APPLICATION: IHS//<ENTER>
SENDING FACILITY: 46621//<ENTER>
RECEIVING APPLICATION: QUEST//<ENTER>
RECEIVING FACILITY: TDA//<ENTER>
Add this Reference Lab to which Site: DEMO  DEMO HOSPITAL
REF LAB DEV FOR SHIP MANIFEST:
REF LAB CLIA NUMBER:
REF LAB LAB MANAGER:
REF LAB EXPORT DIRECTORY:
REF LAB RES FILE NAME PREFIX:
REF LAB STORAGE DIRECTORY
REF LAB HL7 FILE FORMAT:
REF LAB ORDERING LOCATION:
REF LAB HOLD LABS FOR VERIF:
REF LAB DAYS TO KEEP FILES:
REF LAB DEF ORDERING LOCATION:
REF LAB IMPORT DIRECTORY:
REF LAB PASS CPT CODES:
REF LAB BILLING TYPE:
REF LAB PRT SHP MAN BY STORAGE:
REF LAB PRT PT PHONE MANIFEST:
REF LAB BI/UNIDIRECTIONAL: UNIDIRECTIONAL//<ENTER>
REF LAB NPI OR UPIN ON ORDER: NPI//← NPI or UPIN
REF LAB NAME FOR SHIP MANIFEST:
REF LAB USE INSURANCE SEQ:
Select REF LAB CLIENT ACCOUNT NUMBER: 46621// Enter all client
account numbers that are used by this facility, e.g. if you
have one for Cytology/Pathology and another for Clinical work,
enter both here. If you have a multidivisional reference
laboratory interface, do not enter client account numbers for
all of your facilities here.  Instead use this menu option to
specify parameters for each of your facilities, one at a time.
Select REF LAB ACCESSION AREA: SENDOUTS// If you have more than one
accession area that uses this interface at a single facility, add
each accession area.  If this is part of a multidivisional
environment, only enter accession areas associated with each
division as you edit that division.

Now setting up Lab HL7 Message Parameter File..

Now activating Reference Lab Interface..

Generation for message: HL IHS LAB O01
QUEST.................................



The following scripts were generated:
```

```
    Generated: HL IHS LAB O01 QUEST-O


Compiling Script: Generated: HL IHS LAB O01 QUEST-O

MUMPS section....
DATA
section.............................................................


END section.

Compile completed with 0 warnings and 0 errors.
Linking...  Filing generated routines...
Linking...  Filing generated routines...

Routine IS00015    ...Filed
Routine IS00015A   ...Filed
Routine IS00015B   ...Filed
Routine IS00015C   ...Filed
Routine IS00015D   ...Filed
```

Figure 10-3: Editing reference laboratory site parameters

10.3.2 Send a Test Order

In order to confirm that all interface settings are functional, it is highly recommended that you contact your reference laboratory client service representative to perform a functionality test. Generate an order for a DEMO,PATIENT and confirm that results post back to PCC with results, units, reference ranges, abnormal flags, and the correct ordering provider.

10.4 Bidirectional Sites with LabCorp Third Party Billing

Note: Do not switch to Client Billing without first making arrangements with your reference laboratory for implementing this change, developing a test plan to ensure that insurance information is being properly transmitted, and training staff on how to use the bidirectional interface with billing.

10.4.1 Edit Reference Laboratory Site Parameters

This option will be used to specify:

- Which client account numbers you wish to use for your reference laboratory
- Whether you wish to use NPI numbers or UPINs for provider identification

- What type of billing you wish to use (remember that only LabCorp can currently provide Third Party Billing as an option and the facility must have installed GIS V3.01 Patch 16.)

You may also use this option to change the device that you use for printing your shipping manifests.

Other than adding the updates to those parameters in the three bullet points listed above, *you will not change any of the other settings*; just press Enter at each field as it is displayed without making any modifications.

> **Note**: Even if you do not wish to make changes to your existing interface, you still must step through this option to confirm your selections.
>
> *At multidivisional sites, this option should only be used for the primary facility*; you may use VA Fileman to edit the BLR Master Control file for each additional facility using the interface. See Figure 10-4

```
LAB    Laboratory DHCP Menu
BLR     IHS Lab Main Support Menu
REFL    Reference Lab Main Menu ...
SIT    Edit Reference Lab Parameters

Select Reference Lab Main Menu Option: SIT  Reference Lab Site
Parameter Add/Edit
Now setting up reference lab parameters..
Setup Parameters for which Reference Lab: LABCORP

Now setting up GIS HL7 Message Parameters..
SENDING APPLICATION: IHS//<ENTER>
SENDING FACILITY: 46621//<ENTER>
RECEIVING APPLICATION: QUEST//<ENTER>
RECEIVING FACILITY: TDA//<ENTER>
Add this Reference Lab to which Site: DEMO  DEMO HOSPITAL
REF LAB DEV FOR SHIP MANIFEST: ← Specify the printer that will be
used to print shipping manifests.
REF LAB CLIA NUMBER:
REF LAB LAB MANAGER:
REF LAB EXPORT DIRECTORY:
REF LAB RES FILE NAME PREFIX:
REF LAB STORAGE DIRECTORY
REF LAB HL7 FILE FORMAT:
REF LAB ORDERING LOCATION:
REF LAB HOLD LABS FOR VERIF:
REF LAB DAYS TO KEEP FILES:
REF LAB DEF ORDERING LOCATION:
REF LAB IMPORT DIRECTORY:
REF LAB PASS CPT CODES:
REF LAB BILLING TYPE: T Third Party ← Choices are
T for Third Party
```

```
                      C for Client
                      P for Patient

REF LAB PRT SHP MAN BY STORAGE: ← This functionality is not
implemented in this patch. <ENTER>

REF LAB PRT PT PHONE MANIFEST: YES ← Yes if you wish to print
patient phone number on shipping manifest, No, if you do not.

REF LAB BI/UNIDIRECTIONAL: BIDIRECTIONAL
REF LAB NPI OR UPIN ON ORDER: NPI//← NPI or UPIN

REF LAB NAME FOR SHIP MANIFEST: LABCORP//← May be changed as
 desired and agreed upon by your reference laboratory.

REF LAB USE INSURANCE SEQ: ← An entry should be made in this
field only if T for Third Party Billing has been selected.  An
entry of 'YES' submits insurers to the reference laboratory
in the order specified when the insurers were sequenced.  An
entry of 'NO' means that the individual accessioning tests
will have to select the order of insurers. A recommendation is
made to answer this question with 'YES'.

Select REF LAB CLIENT ACCOUNT NUMBER: 46621// Enter all client
account numbers that are used by this facility, e.g. if you
have one for Cytology/Pathology and another for Clinical work,
enter both here. If you have a multidivisional reference
laboratory interface, do not enter client account numbers for
all of your facilities here.  Instead use this menu option to
specify parameters for each of your facilities, one at a time.

Select REF LAB ACCESSION AREA: SENDOUTS// If you have more than one
accession area that uses this interface at a single facility, add
each accession area.  If this is part of a multidivisional
environment, only enter accession areas associated with each
division as you edit that division.

Now setting up Lab HL7 Message Parameter File..

Now activating Reference Lab Interface..

Generation for message: HL IHS LAB O01
LABCORP.................................

The following scripts were generated:
    Generated: HL IHS LAB O01 LABCORP-O

Compiling Script: Generated: HL IHS LAB O01 LABCORP-O

MUMPS section....
DATA section.....

END section.

Compile completed with 0 warnings and 0 errors.
Linking...  Filing generated routines...
Linking...  Filing generated routines...
```

```
Routine IS00015    ...Filed
Routine IS00015A   ...Filed
Routine IS00015B   ...Filed
Routine IS00015C   ...Filed
Routine IS00015D   ...Filed
```

Figure 10-4: Editing reference laboratory site parameters

10.4.2 Send a Test Order

In order to confirm that all interface settings are functional, you *must* contact your reference laboratory client service representative to perform a functionality test. Obtain the list of demo patients with different insurer types that have been prepared by your registration staff. Generate an order containing one or more tests for each billing type.

- Confirm that a MID prints on the shipping manifest.
- Confirm that the shipping manifest contains any data that may have been added, e.g. patient telephone number, provider NPI, processing instructions, or order comments.
- Confirm that diagnoses, the primary insurer, and the guarantor information all print on the shipping manifest for each billing type.
- Request that test results be returned and confirm that they post correctly.
- Confirm with LabCorp client services that insurers have filed appropriately in their system.

10.4.3 Purge Shipping Manifest File

This option may be used to purge shipping manifests that have been retained in the BLR Reference Laboratory Shipping Manifest file since implementation of the interface. It is recommended that no more than 90 days worth of shipping manifests be retained.

```
LAB   Laboratory DHCP Menu
BLR    IHS Lab Main Support Menu
REFL   Reference Lab Main Menu ...
PSM    Purge Shipping Manifest File

Purge Shipping Manifests older than how many days :  (1-365): 90//
<ENTER>
```

Figure 10-5: The **Purge Shipping Manifest File** option

10.5 Multidivisional Sites

There are several additional steps to be completed by facilities that operate the reference laboratory in multidivisional mode.

1. Edit the BLR Master Control file for each of the facilities that operate reference laboratory interfaces.
2. If a different sendout accession area is used by each facility in the multidivisional environment, a shipping configuration must be made for each individual facility.
   a. Sign on under each division and run the **LSU** option (Figure 11-6) for that facility.
   b. Sign on under each division and create a Shipping Configuration for each facility. Be sure to clearly identify the Shipping Configuration for each facility, e.g. Facility A to Quest, Facility B to Quest, Facility C to Quest.
3. Identify the default reference laboratory under each profile in the Sendout Load/Worklist defined for each facility.

10.5.1 Using VA Fileman to Edit BLR Master Control file

If your reference laboratory interface is used by more than one facility, VA Fileman must be used to update the new reference laboratory related fields for other facilities using the interface. The **SIT** option should only be used for the primary site as described in the preceding sections.

For each additional facility using the interface, use VA Fileman as follows in Figure 10-6. Be sure to insert the appropriate entry for each highlighted field.

```
Select VA FileMan Option: ENter or Edit File Entries


INPUT TO WHAT FILE: V LAB// BLR MASTER CONTROL    (4 entries)
EDIT WHICH FIELD: ALL//

Select BLR MASTER CONTROL SITE: DEMO2 HEALTH CENTER       BEMIDJI
RED LAKE
       30                       MN  OCS       498
         ...OK? Yes//   (Yes)

SITE: DEMO2 HEALTH CENTER//
LAB LOG TRANSACTION: YES//
LAB LOG TO PCC: YES//
LOG PAT DATA ONLY: YES//
*DEFAULT DIRECTORY PATH:
START PROCESSING DATE: JUL 14, 2005//
START EVENT DATE: JUL 14, 2005//
DAYS TO KEEP TRANSACTIONS: 90//
```

```
STOP PROCESSOR:
TAKE SNAPSHOTS: YES//
ERROR OVERFLOW LIMIT:
PATH INST:
PATH NAME:
PATH TITLE:
PATH ADDR1:
PATH ADDR2:
PATH CITY:
PATH STATE:
PATH ZIP:
PATH PHONE:
INTERIM REPORT LINE 1:
INTERIM REPORT LINE 2:
INTERIM REPORT DO NOT FILE:
INTERIM REPORT ADDRESS PAGE:
LOINC EXPORT DESTINATION IP:
LOINC EXPORT DEST. FOLDER:
LOINC LOCAL DESTINATION:
LOINC DAYS TO KEEP EXPORT LOG:
LOINC LOG IN ID:
LOINC LOG IN PASSWORD:
ACCESSION TEST GROUP TEMPLATE:
Select EVENT DATE:
Select PROCESSING DATE:
Select LAB APPLICATION PLUG-IN:
REFERENCE LAB: QUEST
REF LAB DEV FOR SHIP MANIFEST: ← Enter name of printer where
shipping manifests should print for this location.
REF LAB CLIA NUMBER:
REF LAB LAB MANAGER:
REF LAB EXPORT DIRECTORY:
REF LAB RES FILE NAME PREFIX:
REF LAB STORAGE DIRECTORY:
REF LAB HL7 FILE FORMAT:
REF LAB ORDERING LOCATION:
REF LAB HOLD LABS FOR VERIF:
REF LAB DAYS TO KEEP FILES:
REF LAB DEF ORDERING LOCATION:
REF LAB IMPORT DIRECTORY:
REF LAB PASS CPT CODES:
REF LAB BILLING TYPE: C  Client
REF LAB PRT SHP MAN BY STORAGE:
REF LAB PRT PT PHONE MANIFEST: N  NO
REF LAB BI/UNIDIRECTIONAL: BI  BIDIRECTIONAL
REF LAB NPI OR UPIN ON ORDER: NPI  NPI
REF LAB NAME FOR SHIP MANIFEST: QUEST
REF LAB USE INSURANCE SEQ:
Select REF LAB CLIENT ACCOUNT NUMBER: 456789
  Are you adding '456789' as
    a new REF LAB CLIENT ACCOUNT NUMBER (the 1ST for this BLR
MASTER CONTROL)? No// Y
Select REF LAB CLIENT ACCOUNT NUMBER:
Select REF LAB ACCESSION AREA:  TWO SENDOUTS
```

Figure 10-6: Editing the BLR Master Control File

11.0 LEDI Implementation for Bidirectional Sites

The following files and functions have been altered to support the LEDI functionality in this patch. A full description of how to set up and test each functionality will be provided in this section. Please read these instructions carefully and be prepared to make alterations and test.

- A new field in the site/specimen multiple in the Laboratory Test file (#60), **USE FOR REFERENCE TESTING**
- A new field in the profile multiple in the Load/Worklist file (#68.2), **DEFAULT REFERENCE LABORATORY**:
- A new field in the CHEM TEST multiple of the Auto Instrument file (#62.4) to STORE UNITS and modification of an existing field from **STORE ABNORMAL FLAGS** to **NOTIFY ABNORMAL FLAGS**
- The addition of three new bulletins alerting members of the LAB MESSAGING mail group of amended/corrected results, critical or abnormal values, and additions to existing orders
- Modification of the LA7 MESSAGE PARAMETER file (#62.48) to support LEDI functionality for incoming results

11.1 LA7 Message Parameter File–LEDI Implementation

Modification of the reference laboratory entry in the LA7 Message Parameter file (#62.48) allows implementation of the features described in this section. The two entries that will be changed for each reference laboratory are highlighted below. Do not make this change until the following sections have been read and the appropriate actions taken.

11.1.1 Quest Diagnostics

```
VA FileMan Version 22.0


Enter or Edit File Entries
Print File Entries
Search File Entries
Modify File Attributes
Inquire to File Entries
Utility Functions ...
Data Dictionary Utilities ...
Transfer Entries
Other Options ...
```

```
Select VA FileMan Option: ENter or Edit File Entries
INPUT TO WHAT FILE: V LAB// 62.48  LA7 MESSAGE PARAMETER
                                          (5 entries)
EDIT WHICH FIELD: ALL//

Select LA7 MESSAGE PARAMETER CONFIGURATION: QUEST
CONFIGURATION: QUEST//
PROTOCOL: HEALTH LEVEL SEVEN//
STATUS: ACTIVE//
GRACE PERIOD FOR MESSAGES:
LOG ERRORS: ON//
PROCESS IN: D QUE^LA7VQIN
PROCESS DOWNLOAD:
HL7 NON-DHCP APPLICATION:
MULTIPLE ORDERS:
INTERFACE TYPE: LEDI
Select ALERT CONDITION:
```

Figure 11-1: LEDI configuration for Quest in File 62.48

11.1.2 LabCorp

```
Select VA FileMan Option: ENter or Edit File Entries
INPUT TO WHAT FILE: V LAB// 62.48  LA7 MESSAGE PARAMETER
                                          (5 entries)
EDIT WHICH FIELD: ALL//

Select LA7 MESSAGE PARAMETER CONFIGURATION: LABCORP
CONFIGURATION: LABCORP/
PROTOCOL: HEALTH LEVEL SEVEN//
STATUS: ACTIVE//
GRACE PERIOD FOR MESSAGES:
LOG ERRORS: ON//
PROCESS IN: D QUE^LA7VLIN
PROCESS DOWNLOAD:
HL7 NON-DHCP APPLICATION:
MULTIPLE ORDERS:
INTERFACE TYPE: LEDI
Select ALERT CONDITION:
```

Figure 11-2: LEDI configuration for LabCorp in File 62.48

11.1.3 RML

```
Select VA FileMan Option: Enter or Edit File Entries
INPUT TO WHAT FILE: V LAB// 62.48  LA7 MESSAGE PARAMETER
                                          (5 entries)
EDIT WHICH FIELD: ALL//

Select LA7 MESSAGE PARAMETER CONFIGURATION: RML
CONFIGURATION: RML//
```

```
PROTOCOL: HEALTH LEVEL SEVEN//
STATUS: ACTIVE//
GRACE PERIOD FOR MESSAGES:
LOG ERRORS: ON//
PROCESS IN: D QUE^LA7VRIN
PROCESS DOWNLOAD:
HL7 NON-DHCP APPLICATION:
MULTIPLE ORDERS:
INTERFACE TYPE: LEDI
Select ALERT CONDITION:
```

Figure 11-3: LEDI configuration for RML in File 62.48

11.1.4 Marquette General

```
Select VA FileMan Option: Enter or Edit File Entries
INPUT TO WHAT FILE: V LAB// 62.48  LA7 MESSAGE PARAMETER
                                        (5 entries)
EDIT WHICH FIELD: ALL//

Select LA7 MESSAGE PARAMETER CONFIGURATION: MGH
CONFIGURATION: MGH//
PROTOCOL: HEALTH LEVEL SEVEN//
STATUS: ACTIVE//
GRACE PERIOD FOR MESSAGES:
LOG ERRORS: ON//
PROCESS IN: D QUE^LA7VMIN
PROCESS DOWNLOAD:
HL7 NON-DHCP APPLICATION:
MULTIPLE ORDERS:
INTERFACE TYPE: LEDI
Select ALERT CONDITION:
```

Figure 11-4: LEDI configuration for MGH in File 62.48

11.1.5 Interpath

```
Select VA FileMan Option: Enter or Edit File Entries
INPUT TO WHAT FILE: V LAB// 62.48  LA7 MESSAGE PARAMETER
                                        (5 entries)
EDIT WHICH FIELD: ALL//

Select LA7 MESSAGE PARAMETER CONFIGURATION: INTERPATH
CONFIGURATION: INTERPATH//
PROTOCOL: HEALTH LEVEL SEVEN//
STATUS: ACTIVE//
GRACE PERIOD FOR MESSAGES:
LOG ERRORS: ON//
PROCESS IN: D QUE^LA7VIIN
PROCESS DOWNLOAD:
HL7 NON-DHCP APPLICATION:
MULTIPLE ORDERS:
```

```
INTERFACE TYPE: LEDI
Select ALERT CONDITION:
```

Figure 11-5: LEDI configuration for Interpath in File 62.48

11.2 Laboratory Test File–Use for Reference Testing

This new field allows those using the **EM Enter/Verify/Modify Data (Manual)** option to enter results manually from a reference laboratory using the reference ranges, units, and abnormal flags specified on the reference laboratory report. Those values will be stored with the results of the test in the Laboratory Data file. IHS recommends that tests sent to reference laboratories *do not* have entries in the reference low, reference high, critical low, and critical high fields in the site/specimen multiple of the laboratory test file, as this may result in a discrepancy between results viewed on the Lab tab of EHR using a cumulative format versus an interim report format. Instead IHS recommends that these fields be left blank and that the **USE FOR REFERENCE TESTING** field should be left blank or set to **NO**. If results come over an interface, the reference ranges, units, and abnormal flags received with the results will be stored and posted with the test results. If reference ranges, critical values, and units are already defined for a reference laboratory test, do not remove them as previous results may no longer display with their reference ranges, abnormal flags, and units. Instead use the **USE FOR REFERENCE TESTING TO** field to "tag" new incoming results to use the data in the result message instead of the data in the laboratory test file.

```
Laboratory DHCP Menu
11  Supervisor menu
Edit atomic tests

Select LABORATORY TEST NAME: FERRITIN Q457
NAME: FERRITIN Q457//
Select SYNONYM: 55059300//
TYPE: BOTH//
SUBSCRIPT: CHEM, HEM, TOX, SER, RIA, ETC.//
DATA NAME: FERRITIN Q457//
Select SITE/SPECIMEN: BLOOD//
 SITE/SPECIMEN: BLOOD//
 REFERENCE LOW: 210//
 REFERENCE HIGH: 340//
 CRITICAL LOW: 45//
 CRITICAL HIGH: 500//
 INTERPRETATION:
 1>
 UNITS: ng/mL//
 TYPE OF DELTA CHECK:
 DELTA VALUE:
 DEFAULT VALUE:
 USE FOR REFERENCE TESTING: NO <-
```

Figure 11-6: Setting **USE FOR REFERENCE TESTING** field to **NO**

If results of reference laboratory tests are not received via an electronic interface, the user may enter reference low, reference high, critical low, critical high, units, and performing site during the result entry process as shown below.

```
Select Process data in lab menu Option: EM  Enter/verify/modify
data (manual)

Do you want to review the data before and after you edit? YES//
<ENTER>
Do you wish to see all previously verified results? NO//<ENTER>

    Select one of the following:

         1         Accession Number
         2         Unique Identifier (UID)

Verify by: 1// <ENTER>  Accession Number
Select Accession: SO 119
SENDOUTS  (MAY 23, 2010)  119
Select Performing Laboratory: DEMO HOSPITAL// QUEST DIAGNOSTICS-
IRVING
                              TX            999
TEST,CASE FOUR                105555   LOC:LAB


Sample: BLOOD
Specimen: BLOOD
1  FERRITIN Q457
Pat Info:                          Sex: FEMALE   Age: 25yr as of
May 20, 2010
Provider: THOMPSON,MOHAMMAD              Voice pager:
  Phone: 218-679-3912                 Digital pager:

ACCESSION:                                   SO 10 119
                                            05/20 0800d


For test FERRITIN Q457
UNITS: ng/dL
REFERENCE LOW: 200
REFERENCE HIGH: 330
CRITICAL LOW: 50
CRITICAL HIGH: 450
Result's Abnormality: Calculate from entered values// <ENTER>
FERRITIN Q457 //388
Select COMMENT:
Pat Info:                          Sex: FEMALE   Age: 25yr as of
May 20, 2010
Provider: THOMPSON,MOHAMMAD              Voice pager:
  Phone: 218-679-3912                 Digital pager:

ACCESSION:                                   SO 10 119
                                            05/20 0800d
FERRITIN Q457                                     388 H  ng/dL
SELECT ('E' to Edit, 'C' for Comments, 'W' Workload):
```

```
Approve for release by entering your initials: DR
```

Figure 11-7: Manually entering reference low, reference high, critical low, critical high, units, and performing site

The report displays as follows:

```
DEMO HOSPITAL (497)  HWY 1 BOX 497  DEMO, MN 56671

TEST,CASE FOUR                    Date/Time Printed: 05/23/10@09:05
    HRCN:105555         SEX:F     DOB:Jan 17, 1985   CURRENT AGE:25
Accession [UID]: SO 10 119 [6010000119]
    Provider: THOMPSON,MOHAMMAD
Specimen:BLOOD                        Spec Collect
Date/Time:05/20/10@08:00
                          Res
               Result   Flg units       Ref.   range     Site
Result Dt/Time
FERRITIN Q457        388  H  ng/dL      200 - 330      [7737]
05/23/10@09:04
=====================================================================
 KEY: L=Abnormal low, H=Abnormal high, *=Critical value,
TR=Therapeutic Range


[497]  DEMO HOSPITAL   HWY 1 BOX 497   DEMO, MN 56671
[7737] QUEST DIAGNOSTICS-IRVING   4770 REGENT BLVD.   IRVING, TX
75063
```

Figure 11-8: Sample report for manually entered reference laboratory results

> **Note**: If results are entered manually for nonnumeric results that cannot be flagged appropriately, you may choose to set the **USE FOR REFERENCE TESTING** field to **YES**, so that you will not be prompted for reference low, reference high, critical low, critical high, and normalcy status. Examples of tests where this option may be exercised include Newborn Metabolic Screening tests, HIV Screens, etc.

11.3 Default Reference Laboratory

There are four separate places where the default reference laboratory may be identified and stored with the results. In the cases of 2, 3, and 4 shown below, additional configuration must be performed to allow display of a default reference laboratory with its site code beside the test result.

11.3.1 Options for Displaying Performing Reference Laboratory

1. When received in NTE segments as part of the result. The reference laboratory is displayed in the report comment field. However, the site code displayed beside the test result is that of the collecting facility.

```
              DEMO HOSPITAL (497)  HWY 1 BOX 497  DEMO, MN 56671

TEST,CASE FOUR                                Date/Time Printed:
05/23/10@12:58
    HRCN:105555         SEX:F     DOB:Jan 17, 1985   CURRENT AGE:25
Accession [UID]: SO 10 51 [6010000051]
    Provider: THOMPSON,MOHAMMAD
    Specimen:SERUM                       Spec Collect
Date/Time:03/31/10@14:17
                        Res
                Result  Flg units       Ref.   range     Site
Result Dt/Time
VIT B12              125  L  pg/mL       200 - 1100     [497]
04/01/10@13:20
Comment:
        Test Performed at:
        QUEST DIAGNOSTICS-IRVING
        4770 REGENT BLVD.
        IRVING, TX  75063     SUZANNE H. KREISBERG, MD
=====================================================================
 KEY: L=Abnormal low, H=Abnormal high, *=Critical value,
TR=Therapeutic Range
```

Figure 11-9: Testing Laboratory displayed via comments

2. When set up as the default reference laboratory in the **PROFILE** field of the Load/Worklist used for the contracted reference laboratory.

```
VA FileMan 22.0


Select OPTION: ENTER OR EDIT FILE ENTRIES


INPUT TO WHAT FILE: UNIVERSAL INTERFACE// LOAD/WORK LIST
                                          (16 entries)
EDIT WHICH FIELD: ALL// PROFILE    (multiple)
  EDIT WHICH PROFILE SUB-FIELD: ALL//
THEN EDIT FIELD:


Select LOAD/WORK LIST NAME:    SENDOUTS
Select PROFILE: SENDOUTS//
 PROFILE: SENDOUTS//
 Select TEST: GLUCOSE (R)//
   TEST: GLUCOSE (R)//
   SPECIMEN:
   POC WKLD METHOD:
   POC COLLECTION SAMPLE:
```

```
 Select TEST:
 ACCESSION AREA: SENDOUTS//
 UID VERIFICATION:
 STORE DUPLICATE COMMENTS:
 DEFAULT REFERENCE LABORATORY: QUEST DIAGNOSTICS-IRVING
                               TX            999
```

Figure 11-10: Setting default reference laboratory in Load/Worklist

When results are entered using EA Enter/Verify Data (Auto Instrument), this entry becomes the default after selecting the Load/Worklist.

```
Select Process data in lab menu Option: EA  Enter/verify data (auto
instrument)

Select LOAD/WORK LIST NAME:    SENDOUTS
Select Performing Laboratory: QUEST DIAGNOSTICS-IRVING//
                              TX            999
Would you like to see the list ? No// <ENTER>  NO

                      Do you wish to modify the test list
            i.e., would you like to add or subtract ATOMIC tests?

Enter Yes or No: No// <ENTER>
```

Figure 11-11: Default performing laboratory using EA Enter/Verify Data (Auto Instrument)

This reference laboratory is then stored with the results. The Internal Entry Number (IEN) of the reference laboratory in the Institution file becomes the site code displayed beside the test result. The site code, reference laboratory name, and address are displayed in the legend at the bottom of the interim report. See below.

```
DEMO HOSPITAL (497)  HWY 1 BOX 497  DEMO, MN 56671

GIBBS,KEITH COCHISE                Date/Time Printed: 05/23/10@12:33
    HRCN:100650         SEX:M     DOB:Feb 03, 1919   CURRENT AGE:91
Accession [UID]: SO 10 101 [6010000101]
    Provider: ADAJAR,KATHRYN A
    Specimen:BLOOD                       Spec Collect
Date/Time:05/04/10@16:51
                         Res
Result   Flg units       Ref.   range     Site  Result Dt/Time
GLUCOSE (R)          130  H  mg/dL       65 - 99       [7737]
5/05/10@17:20
Comment:
         Fasting reference interval
        Test Performed at:
        QUEST DIAGNOSTICS-IRVING
        4770 REGENT BLVD.
        IRVING, TX  75063     SUZANNE H. KREISBERG, MD
=====================================================================
 KEY: L=Abnormal low, H=Abnormal high, *=Critical value,
TR=Therapeutic Range
```

```
[7737] QUEST DIAGNOSTICS-IRVING   4770 REGENT BLVD.   IRVING, TX
75063
```

Figure 11-12: Interim report display using a default reference laboratory

3. When the **STORE PRODUCER'S ID** field is set to **YES** in the CHEM TEST multiple of the Auto/Instrument file.

   This option is *not* recommended at this time as it appears to provide a duplicate display of the reference laboratory on the laboratory report.

```
VA FileMan 22.0

Select OPTION: ENTER OR EDIT FILE ENTRIES
INPUT TO WHAT FILE: AUTO INSTRUMENT            (113 entries)
EDIT WHICH FIELD: ALL// CHEM TESTS    (multiple)
  EDIT WHICH CHEM TESTS SUB-FIELD: ALL// STORE PRODUCER'S ID
  THEN EDIT CHEM TESTS SUB-FIELD:
THEN EDIT FIELD:

Select AUTO INSTRUMENT NAME:    QUEST
Select TEST: _ISOLATE 1//
 STORE PRODUCER'S ID: YES
```

Figure 11-13: STORE PRODUCER'S ID field as YES in Auto Instrument file

4. When entered as the Performing Laboratory when test results are entered using either EM Enter/Verify/Modify Data (Manual) or EA Enter/Verify Data (Auto Instrument).

```
Select Process data in lab menu Option: EA  Enter/verify data (auto
instrument)

Select LOAD/WORK LIST NAME:    SENDOUTS
Select Performing Laboratory: DEMO HOSPITAL// QUEST DIAGNOSTICS-
IRVING
                              TX            999
Would you like to see the list ? No// <ENTER>  NO

                      Do you wish to modify the test list
            i.e., would you like to add or subtract ATOMIC tests?


Enter Yes or No: No//  <ENTER> NO
```

Figure 11-14: Entering Performing Laboratory during EA Enter/verify data (Auto Instrument).

The report is identical to that displayed under Option 2, above, where the default reference laboratory has been selected.

11.3.2 Setting Up Reference Laboratory for Default Display

There are two steps required to set up a reference laboratory so that it may be used as a default performing laboratory:

1. Add the reference laboratory to the Institution file
2. Set up the reference laboratory in the Laboratory Shipping Configuration

11.3.2.1 Adding a Reference Laboratory to the Institution File

Use VA Fileman to create a new entry in the Institution file for your reference laboratory as is demonstrated below for Quest Diagnostics. Be sure to specify that the **STATUS** is Local and that the **AGENCY CODE** is **OTHER**.

```
VA FileMan 22.0

Select OPTION: ENTER OR EDIT FILE ENTRIES

INPUT TO WHAT FILE: INSTITUTION  (3834 entries)
EDIT WHICH FIELD: ALL// <ENTER>
Select INSTITUTION NAME: QUEST DIAGNOSTICS  Are you adding QUEST
DIAGNOSTICS as a new INSTITUTION (the 3835TH)? No//YES
NAME: QUEST DIAGNOSTICS  Replace
STATE: TEXAS
DISTRICT:
SHORT NAME: QUEST
VA TYPE CODE:
REGION:
STREET ADDR. 1: 4770 REGENT BLVD.
STREET ADDR. 2:
CITY: IRVING
ZIP: 75063
Select CONTACT:
ST. ADDR. 1 (MAILING): 4770 REGENT BLVD.
ST. ADDR. 2 (MAILING):
CITY (MAILING): IRVING
STATE (MAILING): TEXAS
ZIP (MAILING): 75063
MULTI-DIVISION FACILITY:
STATUS: Local
FACILITY TYPE:
Select ASSOCIATIONS:
NPI: ^95  AGENCY CODE
AGENCY CODE: OTHER
```

Figure 11-15: Using VA Fileman to create a new entry in the Institution file for the reference laboratory

11.3.2.2 Creating a New Shipping Configuration

In order to correctly identify the relationship between the collecting facility and the host facility (reference laboratory), some rudimentary entries must be created using the Laboratory Shipping Management menu. Each step is shown below with an example of setting up Sonora Quest as the HOST FACILITY for Phoenix Indian Medical Center as the COLLECTING FACILITY. You will be setting up as the Collecting Facility with your reference laboratory as the HOST FACILITY.

Step 1: LEDI Setup

```
Select IHS Core Option: LR  Laboratory RPMS Menu

Select Laboratory RPMS Menu Option: 11  Supervisor menu

Select Supervisor menu Option: LAB Liaison menu


   ANT    Add a new internal name for an antibiotic
   BCF    Lab Bar Code Label Formatter
   BCZ    Lab Zebra Label Utility
   DATA   Add a new data name
   LNC    LOINC Main Menu ...
   MOD    Modify an existing data name
   SMGR   Lab Shipping Management Menu ...
          Add a new WKLD code to file
          AP Microfiche Archive
          Archiving Menu ...
          Check files for inconsistencies
          Check patient and lab data cross pointers
          Download Format for Intermec Printer
          Edit atomic tests
          Edit cosmic tests
          File list for lab
          LAB ROUTINE INTEGRITY MENU ...
          LIM workload menu ...
          Manually compile WKLD and workload counts
          OE/RR interface parameters ...
          Outline for one or more files
          Re-index Antimicrobial Suscept File (62.06)
          Restart processing of instrument data
          Turn on site workload statistics
          Turn on workload stats for accession area
          User selected lab test/patient list edits ...

Select Lab liaison menu Option: SMGR  Lab Shipping Management Menu


   CFE    Edit Shipping Configuration
   CTE    Edit Shipping Container
   CME    Edit Shipping Method
   CDE    Edit Shipping Condition
   LSU    LEDI Setup
   CAT    Electronic Catalog Menu ...

Select Lab Shipping Management Menu Option: LSU LEDI Setup
```

```
---------------------------------------------------------------------
                                    LEDI Setup
---------------------------------------------------------------------

COLLECTION Labs:  Use option #1 to setup HOST labs.
  HOST Labs    :  Use option #2 to setup COLLECTION labs.


1.   Add/Edit HOST Lab
2.   Add/Edit COLLECTION Lab


---------------------------------------------------------------------
HOST Lab(s)
---------------------------------------------------------------------


1.   SONORA QUEST LABORATORIES  (LA7V HOST PHX)
2.   Add HOST Lab


---------------------------------------------------------------------
HOST Lab(s)
---------------------------------------------------------------------


1. HOST Lab:   SONORA QUEST LABORATORIES  (Uneditable)
2. Logical Link:
3. Message Configuration: LA7V HOST PHX
4. Auto Instrument: LA7V HOST PHX
```

Figure 11-16: Step 2: Editing a Shipping Configuration

```
   CFE    Edit Shipping Configuration
   CTE    Edit Shipping Container
   CME    Edit Shipping Method
   CDE    Edit Shipping Condition
   LSU    LEDI Setup
   CAT    Electronic Catalog Menu ...

Select Lab Shipping Management Menu Option: CFE  Edit Shipping
Configuration
Select SHIPPING CONFIGURATION: PIMC TO SONORA QUEST  Are you adding
PIMC to SONORA QUEST as a new SHIPPING CONFIGURATION, the 3rd for
this site?

     Select one of the following:

          1         Collecting facility
          2         Host facility

Are you editing this entry as the: 1  Collecting facility
NAME: PIMC TO SONORA QUEST
COLLECTING FACILITY: PHOENIX INDIAN MED CTR
COLLECTING FACILITY'S SYSTEM: PHOENIX INDIAN MED CTR

HOST FACILITY: SONORA QUEST LABORATORIES
```

```
HOST FACILITY'S SYSTEM: SONORA QUEST LABORATORIES

OTHER SYSTEM IDENTIFIER:
ACCOUNT NUMBER: A58301
TEST CODING SYSTEM: NON-VA
SPECIMEN CODING SYSTEM:
STATUS: ACTIVE
LAB MESSAGING LINK:
SHIPPING METHOD:
BARCODE MANIFEST:
MANIFEST RECEIPT:
INCLUDE UNCOLLECTED SPECIMENS:
Select TEST/PROFILE:
```

Figure 11-17: Creating a Laboratory Shipping Configuration; the Laboratory Shipping Management menu

11.4 Setting Up Lab Messaging Bulletins

As indicated before, there are three new VA View Alerts and Bulletins that may be of interest to laboratory staff. In order to receive these bulletins, designated staff must be added to the Mail Group, LAB MESSAGING, which has been installed with this patch. Once the mail group has been established, it may be attached to the bulletins.

11.4.1 Creating a Mail Group for LAB MESSAGING

```
Select OPTION NAME: MAILMAN MASTER MENU  XMMASTER     MailMan Master
Menu

   XMM    Manage Mailman ...
   XMN    Network Management ...
   XMU    MailMan Menu ...

Select MailMan Master Menu Option: XMM  Manage Mailman


          Check MailMan Files for Errors
          Create a Mailbox for a user
          Disk Space Management ...
          Group/Distribution Management ...
          Local Delivery Management ...
          MailMan Site Parameters
          Network Management ...
          New Features for Managing MailMan
          Remote MailLink Directory Menu ...
          Super Search Message File

Select Manage Mailman Option: GROUP/Distribution Management


          Bulletin edit
          Edit Distribution List
```

```
          Enroll in (or Disenroll from) a Mail Group
          Mail Group Coordinator's Edit
          Mail Group Coordinator's Edit W/Remotes
          Mail Group Edit

Select Group/Distribution Management Option: MAIL GRoup Edit

Select MAIL GROUP NAME: LAB MESSAGING
MAIL GROUP NAME: LAB MESSAGING//
Select MEMBER: STUDENT,THREE// STUDENT,FOUR <- Add staff who should
be getting bulletins
     1   STUDENT,FOUR       NK          181ZZZ
     2   STUDENT,FOURTEEN       S14          195ZZZ
CHOOSE 1-2: 1  STUDENT,FOUR     NK          181ZZZ
  Are you adding 'STUDENT,FOUR' as a new MEMBER (the 20TH for this
MAIL GROUP)?
No// Y  (Yes)
  TYPE:
Select MEMBER: STUDENT,FIVE       PDH          112ZZZ
  Are you adding 'STUDENT,FIVE' as a new MEMBER (the 21ST for this
MAIL GROUP)?
No// Y  (Yes)
  TYPE:
Select MEMBER:
DESCRIPTION:
  No existing text
  Edit? NO//
TYPE: public <- Very Important
ALLOW SELF ENROLLMENT?:
ORGANIZER: JONES,TESTING//
COORDINATOR: JONES,TESTING//
Select AUTHORIZED SENDER:
Select MEMBER GROUP NAME:
Select REMOTE MEMBER:
Select DISTRIBUTION LIST:

Do you wish to forward past mail group messages
to the user(s) you just added to the mail group(s)? No//<ENTER>   NO
```

Figure 11-18: Creating a mail group for LAB MESSAGING

11.4.2 Attaching the Mail Group to the Bulletin

```
Select OPTION NAME: MAILMAN MASTER MENU  XMMASTER     MailMan Master
Menu

   XMM    Manage Mailman ...
   XMN    Network Management ...
   XMU    MailMan Menu ...

Select MailMan Master Menu Option: XMM  Manage Mailman


          Check MailMan Files for Errors
          Create a Mailbox for a user
```

```
          Disk Space Management ...
          Group/Distribution Management ...
          Local Delivery Management ...
          MailMan Site Parameters
          Network Management ...
          New Features for Managing MailMan
          Remote MailLink Directory Menu ...
          Super Search Message File

Select Manage Mailman Option: GROUP/Distribution Management


          Bulletin edit
          Edit Distribution List
          Enroll in (or Disenroll from) a Mail Group
          Mail Group Coordinator's Edit
          Mail Group Coordinator's Edit W/Remotes
          Mail Group Edit

Select Group/Distribution Management Option: BULLETIN edit

Select BULLETIN NAME: LA7
    1   LA7 ABNORMAL RESULTS RECEIVED
    2   LA7 AMENDED RESULTS RECEIVED
    3   LA7 ORDER STATUS CHANGED
    4   LA7 UNITS/NORMALS CHANGED
CHOOSE 1-4: 1  LA7 ABNORMAL RESULTS RECEIVED
NAME: LA7 ABNORMAL RESULTS RECEIVED  Replace
SUBJECT: LAB ABNORMAL/CRITICAL RESULTS RECEIVED  Replace
Select MAIL GROUP: LAB MESSAGING
RETENTION DAYS:
DESCRIPTION:
 1>Mail bulletin created by Laboratory package when processing a
LEDI
 2>interface type HL7 result (ORU) message which contains laboratory
 3>testing results that are flagged as critical or abnormal.  Values
 4>that are critical will always trigger the alert and bulletin.
Values
 5>that are abnormal low or high will be triggered when site has
flagged
 6>the corresponding test in AUTO INSTRUMENT file (#62.4), NOTIFY
ABNORMAL
 7>FLAGS field (#22) within the CHEM TEST multiple (#30) for the
interface.

Continue on and set up the 2nd, and 3rd bulletins as well.

Select Group/Distribution Management Option:  Bulletin edit

Select BULLETIN NAME: LA7
    1   LA7 ABNORMAL RESULTS RECEIVED
    2   LA7 AMENDED RESULTS RECEIVED
    3   LA7 ORDER STATUS CHANGED
    4   LA7 UNITS/NORMALS CHANGED
CHOOSE 1-4: 2  LA7 AMENDED RESULTS RECEIVED
NAME: LA7 AMENDED RESULTS RECEIVED  Replace
SUBJECT: LAB AMENDED RESULTS RECEIVED  Replace
Select MAIL GROUP: LAB MESSAGING
RETENTION DAYS:
```

```
DESCRIPTION:
 1>Mail bulletin created by Laboratory package when processing a
LEDI
 2>interface type HL7 result (ORU) message which contains laboratory
 3>testing results that are flagged as amended.
EDIT Option:

Select BULLETIN NAME: LA7
    1   LA7 ABNORMAL RESULTS RECEIVED
    2   LA7 AMENDED RESULTS RECEIVED
    3   LA7 ORDER STATUS CHANGED
    4   LA7 UNITS/NORMALS CHANGED
CHOOSE 1-4: 3  LA7 ORDER STATUS CHANGED
NAME: LA7 ORDER STATUS CHANGED  Replace
SUBJECT: LAB ORDER STATUS CHANGED  Replace
Select MAIL GROUP: LAB MESSAGING//
RETENTION DAYS:
DESCRIPTION:
 1>Mail bulletin created by Laboratory package when processing a
LEDI
 2>interface type HL7 message.
 3>
 4>If an order acknowledgment (ORR) message which contains
laboratory test
 5>order status changes that indicate the order is not correct or
cannot
 6>be performed/completed.
 7>
 8>If an order result (ORU) message and it indicates that a
laboratory
 9>test has been added by the reference laboratory to the original
order.
```

Figure 11-19: Attaching the mail group to the bulletin

11.5 Notify Abnormal Flags

If a facility has decided to set up a bidirectional interface with bulletins notifying the LAB MESSAGING mail group that abnormal or critical results have been received, the Chem Test multiple for each test for that reference laboratory must have an entry in the **NOTIFY ABNORMAL FLAGS** field. If the facility does not choose to receive abnormal flag alerts and bulletins but does choose to receive notification of critical flags, no entry needs to be made in this field. The bulletin for critical results will be triggered regardless of the entry in the **NOTIFY ABNORMAL FLAG** field.

In previous versions of RPMS Laboratory, this field was named **STORE ABNORMAL FLAG**S, but now is named **NOTIFY ABNORMAL FLAGS** and it has a new purpose. If the field is set to **YES**, it will create alerts and bulletins if an incoming Reference Lab result is flagged abnormal.

> **Note**: Even if the field is set to **NO**, the results and the abnormal flag are stored into the Lab Data file–no data are lost.

11.5.1 Setting Up Notify Abnormal Flag Field

An entry must be made in the CHEM TEST multiple of the AUTO INSTRUMENT file using VA Fileman for each test where notification of an abnormal result is desired. If the volume of laboratory testing is high, the facility may choose not to receive a notification for each abnormal result but instead use the default notification for Critical results only.

```
VA FileMan 22.0

Select OPTION: ENTER OR EDIT FILE ENTRIES

INPUT TO WHAT FILE: LA7 MESSAGE PARAMETER// AUTO INSTRUMENT

                                          (113 entries)
EDIT WHICH FIELD: ALL// CHEM TESTS    (multiple)
  EDIT WHICH CHEM TESTS SUB-FIELD: ALL// NOTIFY ABNORMAL FLAGS
  THEN EDIT CHEM TESTS SUB-FIELD:
THEN EDIT FIELD:


Select AUTO INSTRUMENT NAME:    QUEST
Select TEST: _ISOLATE 1// FERRITIN Q457
        ...OK? Yes//   (Yes)
 NOTIFY ABNORMAL FLAGS: YES
```

Figure 11-20: Choosing to be notified of abnormal flags

The process can be continued for each test. You may wish to use the VA Fileman ^LOOP functionality that is demonstrated in Section 11.7.1.

11.5.2 Viewing Alerts and Bulletins for Abnormal/Critical Results

If the facility chooses to use this flag, members of the LAB MESSAGING mail group will see the following when they sign on to the RPMS after receipt of a result with an abnormal flag.

```
  1      Phlebotomy menu ...
  2      Accessioning menu ...
  3      Process data in lab menu ...
  4      Quality control menu ...
  5      Results menu ...
  6      Information-help menu ...
  7      Ward lab menu ...
  8      Anatomic pathology ...
```

```
  9      Blood bank ...
  10     Microbiology menu ...
  11     Supervisor menu ...
  BLR    IHS Lab Main Support Menu ...
  LSM    Lab Shipping Menu ...

Lab Messaging - Reference Lab Abnormal Results received from QUEST
         Enter  "VA to jump to VIEW ALERTS option
```

Figure 11-21: RPMS prompts to display “VA VIEW ALERTS”

The ALERTS may be viewed as follows:

```
Select Laboratory DHCP Menu Option: VA <ENTER>


1.   Lab Messaging - Reference Lab Abnormal Results received from
QUEST
2.   TEST,CASE (T1055): Labs resulted - [PREGNANCY TEST]
3.   TEST,CASE (T1170): Labs resulted - [VITAMIN B-12  Q927]
         Select from 1 to 3
         or enter ?, A, F, S, P, M, R, or ^ to exit: 1


Patient Name:GIBBS,KEITH COCHISE
UID:6010000120
TEST:GLUCOSE [25000000]
```

Figure 11-22: Viewing the alerts

The MailMan Bulletin may also be viewed by accessing New Mail, as shown below.

```
Select Reference Lab Main Menu Option: MAILMAN Menu

VA MailMan 8.0 service for RUSSELL.DOROTHY@DEMO-HO.BEM.IHS.GOV
You last used MailMan: 05/23/10@09:55
You have 4 new messages.


 NML    New Messages and Responses
 RML    Read/Manage Messages
 SML    Send a Message
        Query/Search for Messages
 AML    Become a Surrogate (SHARED,MAIL or Other)
        Personal Preferences ...
        Other MailMan Functions ...
        Help (User/Group Info., etc.) ...


You have 2 PENDING ALERTS
        Enter  "VA to jump to VIEW ALERTS option
Select MailMan Menu Option: NML  New Messages and Responses

Subj: LAB ABNORMAL/CRITICAL RESULTS RECEIVED  [#302] 05/13/10@08:09
24 lines
```

```
From: LAB PACKAGE  In 'IN' basket.   Page 1  *New*
-------------------------------------------------------------------------
Laboratory results on the following patient have been received via a
HL7 interface that indicate the results are critical or abnormal.
Please use the appropriate laboratory option to review these results
on this system.


     Interface: QUEST
   File #62.49: 52

  Patient Name: GIBBS,KEITH COCHISE
    Patient ID: 485543463

   Specimen ID: 6010000101
Collection D/T: Feb 09, 2010@13:23
  Test/analyte: GLUCOSE [25000000]
      Producer: QUEST DIAGNOSTICS-IRVING
     Producer's ID: DL085584T
    -----------
         Value: 130
         Units: mg/dL
     Ref range: 65-99
         Flags: Above high normal
```

Figure 11-23: Accessing New Mail to display the MailMan Bulletin for an abnormal result

11.6 Amended Results

No special file set up is required to receive ALERTS or Bulletins for amended results once the initial bulletin and mail groups have been set up, as described in Section 11.4.

11.6.1 Viewing ALERTS and Bulletins for Amended Results

Upon receipt of an amended report, a recipient of the Amended Report Bulletin will see the following ALERT and Bulletin.

The ALERT may be viewed by typing **VA** at the **Select Option** prompt.

```
VA View Alerts

Select Laboratory DHCP Menu Option: VA <ENTER>


1.Lab Messaging – Amended results received from QUEST
Enter 1, ?, A, F, S, P, M, or ^ to exit: 1

Patient Name: TEST,CASE TWO
      UID: 6010000114
      TEST:=> BILIRUBIN, TOTAL [25001700]
```

Figure 11-24: Viewing alerts

When accessing new mail, as shown in Section 11.5.2, an amended report bulletin may be displayed.

```
Subj: LAB AMENDED RESULTS RECEIVED  [#314] 05/21/10@11:46  57 lines
From: LAB PACKAGE  In 'IN' basket.   Page 1  *New*
-------------------------------------------------------------------
Laboratory results on the following patient have been received via a
HL7 interface that indicate the results have been amended. Please
use the appropriate laboratory option to amend these results on this
system.


Action: Record coming over is a correction and thus replaces a final
result


     Interface: QUEST
   File #62.49: 67

  Patient Name: TEST,CASE FOUR
    Patient ID: 604567238

   Specimen ID: 6010000117
Collection D/T: May 21, 2010@06:42
  Test/analyte: =>RPR (DX) W/REFL TITER AND CONFIRMATORY TESTING
[40015700]      Producer: QUEST DIAGNOSTICS-IRVING
 Producer's ID: DL085829T
   Observation
    -----------
         Value: REACTIVE
         Units:
     Ref range: "NON-REACTIVE"
         Flags: Abnormal


Comments:

FOR CONFIRMATION OF POSITIVE RPR
SCREENING TEST, REFER TO RPR
CONFIRMATION RESULT ON THIS REPORT.

=> INDICATES CHANGED RESULT(S)
PLEASE DISREGARD RESULTS BELOW:
The results below were originally reported on 05/21/2010 at 11:40
AM)
   NON-REACTIVE

Test Performed at:
QUEST DIAGNOSTICS-IRVING
4770 REGENT BLVD.
IRVING, TX  75063     SUZANNE H. KREISBERG, MD
```

Figure 11-25: A sample amended report bulletin

11.6.2 Releasing Amended Results

Amended results may not be released using the **EA Enter/Verify Data (Auto Instrument)** option. If one attempts to do so, a message is displayed as follows:

```
Select Process data in lab menu Option: EA  Enter/verify data (auto
instrument)
Select LOAD/WORK LIST NAME:    SONORA QUEST
Select PROFILE: WASSAJA       WASSAJA SONORA QUEST
Select Performing Laboratory: WASSAJA HEALTH CENTER// SONORA QUEST
LABORATORIES
                              AZ
Would you like to see the list ? No//   NO

                      Do you wish to modify the test list
            i.e., would you like to add or subtract ATOMIC tests?

Enter Yes or No: No//   NO
You have selected 20 tests to work with.
Do you want to review the data before and after you edit? YES//

    Select one of the following:

         1         Accession Number
         2         Unique Identifier (UID)

Verify by: 1//   Accession Number
Accession Date: TODAY//  (MAY 11, 2010)
Accession NUMBER: 27// 26
DEMO,PATIENT                  999999
ORDER #: 12192
 Seq #: 33742 Accession: WSQ 10 26      Results received: May 11,
2010@07:08                   UID: 3210000026          Last updated:
May 11, 2010@19:01

Amended results exist for this accession. Please process these
first using option Enter/verify/modify data (manual) [LRENTER]
```

Figure 11-26: Message displayed when attempting to verify amended report via EA Enter/verify data (Auto Instrument)

One must then use the **EM, Enter/Verify/Modify Data (Manual)** option to release the results of the amended report. The amended report will electronically overlay the original report when the **Edit** option is chosen, as indicated below.

```
Select Process data in lab menu Option: EM  Enter/verify/modify data
(manual)

Do you want to review the data before and after you edit? YES//
<ENTER>
Do you wish to see all previously verified results? NO// <ENTER>

    Select one of the following:

         1         Accession Number
```

```
         2         Unique Identifier (UID)

Verify by: 1//  <ENTER> Accession Number
Select Accession: WSQ
WASSAJA SONORA QUEST
 Accession Date: TODAY// <ENTER> (MAY 11, 2010)
Select Performing Laboratory: WASSAJA HEALTH CENTER// SONORA QUEST
LABORATORIES
                              AZ
Accession NUMBER: 27// 26
DEMO,PATIENT                  999999   LOC:WBARR


Sample: BLOOD
These results have been approved by RUSSELL,DOROTHY on 05/10 at 0810
Specimen: SERUM
1  T3 TOTAL [SQ]          verified
Pat Info: UNI                       Sex: FEMALE   Age: 50yr as of May
06, 2010
Provider: BARR,DEMETRA D                 Voice pager:
  Phone: 480.837.5074                Digital pager:

ACCESSION:                                   WSQ 10 26
                                            05/06 1620d
T3 TOTAL [SQ]                                      40 L  ng/dL
COMMENTS:
COMMENTS: Test Performed at:
COMMENTS: Sonora Quest Laboratories
COMMENTS: 1255 W. Washington
COMMENTS: Tempe, AZ 85281

If you need to change something, enter your initials: DKR

SELECT ('E' to Edit, 'C' for Comments, 'W' Workload): Edit
T3 TOTAL [SQ]       40 ← Note that this result posts
electronically.

Amended result: 52    flag: L    units: ng/dL
Accept amended results: Yes// <ENTER>
Inst Comments: CORRECTED REPORT

Select COMMENT: CORRECTED REPORT//
 COMMENT: CORRECTED REPORT//
Select COMMENT:
Pat Info: UNI                       Sex: FEMALE   Age: 50yr as of May
06, 2010
Provider: BARR,DEMETRA D                 Voice pager:
  Phone: 480.837.5074                Digital pager:

ACCESSION:                                   WSQ 10 26
                                            05/06 1620d
T3 TOTAL [SQ]                                      52 L  ng/dL
COMMENTS:
COMMENTS: Test Performed at:
COMMENTS: Sonora Quest Laboratories
COMMENTS: 1255 W. Washington
COMMENTS: Tempe, AZ 85281
COMMENTS: CORRECTED REPORT
```

```
If you need to change something, enter your initials:

Approve update of data by entering your initials: DKR


T3 TOTAL [SQ] reported incorrectly as 40 by [2694].
Changed to 52 on May 11, 2010@19:13 by [2694].
```

Figure 11-27: Releasing the results of the amended report using the **EM Enter/modify/verify data (manual)** option

The interim report subsequently reflects both the amended result and the date and time of the amendment. These changes display both in traditional RPMS as well as the EHR.

Note that the units, reference range, and abnormal flag displayed are those transmitted from the reference laboratory with the result and are stored with the result.

```
    WASSAJA HEALTH CENTER (6616)  P.O. BOX 17779  FOUNTAIN HILLS, AZ
85269

DEMO,PATIENT                                Date/Time Printed:
05/11/10@19:14
    HRCN:999999         SEX:F     DOB:Jan 01, 1960   CURRENT AGE:50
Accession [UID]: WSQ 10 26 [3210000026]
    Provider: BARR,DEMETRA D
    Specimen:SERUM                       Spec Collect
Date/Time:05/06/10@16:20

Test name          Result    units      Ref.   range     Site
Result Dt/Time
T3 TOTAL [SQ]         52 L   ng/dL       80 - 200      [7974]
05/10/10@08:10
Comment:
        Test Performed at:
        Sonora Quest Laboratories
        1255 W. Washington
        Tempe, AZ 85281
        CORRECTED REPORT
        T3 TOTAL [SQ] reported incorrectly as 40 by [2694].
        Changed to 52 on May 11, 2010@19:13 by [2694].
====================================================================
 KEY: L=Abnormal low, H=Abnormal high, *=Critical value,
TR=Therapeutic Range

[7974] SONORA QUEST LABORATORIES   1255 W. WASHINGTON   TEMPE, AZ
85281
```

Figure 11-28: Sample interim report showing amended report

11.7 Display of Reference Laboratory Reference Ranges, Abnormal Flags, and Units

The implementation of LEDI III into Laboratory Patch 27 permits the storage and display of reference ranges, abnormal flags, and units transmitted in the HL7 result message from the reference laboratory adjacent to the test results instead of in the **Comment** field. In order to activate this feature, two files must be reviewed–the Laboratory test file (#60) Site/Specimen **USE FOR REFERENCE TESTING** field, and the fields under the CHEM TEST multiple in the AUTO INSTRUMENT file. The settings are shown for these files in Figures 11-29 and 11-30 below. Once file setup has been confirmed, verify correct display of reference ranges, units, and abnormal flags in the Interim Report in RPMS, PCC (Visit Display or Health Summary), and the EHR Lab Tab. See Figures 11-31, 11-32, and 11-33.

11.7.1 File Set Up

Note that the LOOP function may be used in VA Fileman to expedite the population of the fields, Notify Abnormal Flag and Store Units. The script in Figure 11-29 shows how to set this up to edit just these fields.

> **Note**: Just change the name of the auto instrument to correspond to your reference laboratory.

```
Select VA FileMan Option: ENter or Edit File Entries


INPUT TO WHAT FILE: AUTO INSTRUMENT//
EDIT WHICH FIELD: ALL// CHEM TESTS    (multiple)
   EDIT WHICH CHEM TESTS SUB-FIELD: ALL// NOTIFY ABNORMAL FLAGS
   THEN EDIT CHEM TESTS SUB-FIELD: STORE UNITS
   THEN EDIT CHEM TESTS SUB-FIELD:
THEN EDIT FIELD:


Select AUTO INSTRUMENT NAME: ^LOOP
EDIT ENTRIES BY: NAME//
START WITH NAME: FIRST// QUEST
GO TO NAME: LAST// QUEST
  WITHIN NAME, EDIT ENTRIES BY: CHEM TESTS    (multiple)
  CHEM TESTS SUB-FIELD: TEST
  START WITH TEST: FIRST//

WITHIN TEST, EDIT ENTRIES BY:


   QUEST
Select TEST: 10-OH CARBAZ Q36637//
  NOTIFY ABNORMAL FLAGS: YES// n  NO
  STORE UNITS: y  YES
```

```
   QUEST
Select TEST: A-1-ANTITRYPSIN Q235//
  NOTIFY ABNORMAL FLAGS: YES// N  NO
  STORE UNITS: Y  YES

   QUEST
Select TEST: A/G RATIO//
  NOTIFY ABNORMAL FLAGS: YES// N  NO
  STORE UNITS: YES//
```

Figure 11-29: Auto Instrument: store reference range, abnormal flags, and units

If you wish to use the entries for reference ranges, critical values, and units defined in the Laboratory test file, the **USE FOR REFERENCE TESTING** field must be set to **YES**. Leaving this field blank indicates that the reference ranges, critical values, and units transmitted by the reference laboratory will be used for results posted in RPMS.

```
Select OPTION: ENTER OR EDIT FILE ENTRIES

INPUT TO WHAT FILE: LABORATORY TEST//
EDIT WHICH FIELD: ALL// SITE/SPECIMEN    (multiple)
  EDIT WHICH SITE/SPECIMEN SUB-FIELD: ALL// USE FOR REFERENCE
TESTING
  THEN EDIT SITE/SPECIMEN SUB-FIELD:
THEN EDIT FIELD:

Select LABORATORY TEST NAME:    VITAMIN B-12  Q927
Select SITE/SPECIMEN: SERUM//
 USE FOR REFERENCE TESTING: <- If you wish to use and store
reference  laboratory reference ranges, abnormal flags, and units as
transmitted, be  sure that this field is left blank or has “NO”
entered.
 CPT CODE:
 PANEL (CPT):
 Select FOREIGN COMPUTER SYSTEM:
```

Figure 11-30: Laboratory Test File: Use for Reference Testing field

11.7.2 Result Display

To ensure that this feature works correctly, you may either compare the RPMS report to the reference laboratory report provided by the reference laboratory, or use the menu option to Display a Lab Universal Interface Message in the Laboratory Supervisor’s Menu, Laboratory Interface, Display a Lab Universal Interface Message. Note the reference ranges, units, and abnormal flags displayed.

```
MSH|^~\&||TDA||46621|201003311733|TOPNET2NEON|ORU^R01|20100331184513
000|P|2.3||AL||CR|
PID|1|DL084468T|105555|6010000051|TEST^CASE^FOUR^^^||19850117|F||```
```||||46621|604567238|||||CR
ORC|RE|6010000125|DL084468T||CM||||^THOMPSON^MOHAMMAD^^^^^^^|CR|
```
```

```
OBR|1|6010000125|DL084468T|^^^927^VITAMIN
B12^||201003311417||^|||201003311621|
S|^THOMPSON^MOHAMMAD^^^^^^^||^^|IG^QUEST DIAGNOSTICS-IRVING^4770
REGENT BLVD.^IR
VING^TX^75063^SUZANNE H. KREISBERG,
MD|201003311700||F||||||||||||CR|
OBX|1|TX|^^^55057200^VITAMIN B12^||125|pg/mL|200-
1100|L||F||201003311700|IG||CR|
NTE|1||CR
NTE|2||Test Performed at:|CR
NTE|3||QUEST DIAGNOSTICS-IRVING|CR
NTE|4||4770 REGENT BLVD.|CR
NTE|5||IRVING, TX  75063     SUZANNE H. KREISBERG, MD|CR
NTE|6||CR
```

Figure 11-31: Display a Lab Universal Interface Message

Print or Display an RPMS Interim Report to confirm correct display of reference ranges, abnormal flag, and units.

```
             DEMO HOSPITAL (497)  HWY 1 BOX 497  DEMO, MN 56671

TEST,CASE FOUR                              Date/Time Printed:
06/03/10@08:36
    HRCN:105555         SEX:F     DOB:Jan 17, 1985   CURRENT AGE:25
Accession [UID]: SO 10 125 [6010000125]
    Provider: THOMPSON,MOHAMMAD
    Specimen:BLOOD                      Spec Collect
Date/Time:06/03/10@08:34
                        Res
Result   Flg units       Ref.   range   Site  Result Dt/Time
VIT B12  125  L  pg/mL      200 - 1100    [7737]  06/03/10@08:35
Comment:
        Test Performed at:
        QUEST DIAGNOSTICS-IRVING
        4770 REGENT BLVD.
        IRVING, TX  75063     SUZANNE H. KREISBERG, MD
=====================================================================
 KEY: L=Abnormal low, H=Abnormal high, *=Critical value,
TR=Therapeutic Range

[7737] QUEST DIAGNOSTICS-IRVING   4770 REGENT BLVD.   IRVING, TX
75063
```

Figure 11-32: Interim report for display of reference ranges, units, and abnormal flag

Do a PCC Visit Display or Browse the Health Summary for the Patient for the Date of Service to confirm the correct posting of reference ranges, abnormal flag, and units to PCC.

```
PCC VISIT DISPLAY            Jun 03, 2010 08:37:44         Page:   1
of  3

Patient Name:          TEST,CASE FOUR
```

```
Chart #:                105555
Date of Birth:          JAN 17, 1985
Sex:                    F
Visit IEN:              1937155

=============== VISIT FILE ===============
VISIT/ADMIT DATE&TIME: JUN 03, 2010@12:00
DATE VISIT CREATED:    JUN 03, 2010
TYPE:                  IHS
PATIENT NAME:          TEST,CASE FOUR
LOC. OF ENCOUNTER:     DEMO HOSPITAL
SERVICE CATEGORY:      AMBULATORY
CLINIC:                LABORATORY SERVICES
DEPENDENT ENTRY COUNT: 1
DATE LAST MODIFIED:    JUN 03, 2010
HOSPITAL LOCATION:     LAB
CREATED BY USER:       RUSSELL,DOROTHY
USER LAST UPDATE:      RUSSELL,DOROTHY
OLD/UNUSED UNIQUE VIS: 1132010001937155
DATE/TIME LAST MODIFI: JUN 03, 2010@08:35:43
NDW UNIQUE VISIT ID (: 162800001937155
VISIT ID:              15HV3-RLH

=============== LABs ===============
LAB TEST:              VITAMIN B-12  Q927
RESULTS:               125
ABNORMAL:              L
LR ACCESSION NO.:      SO 10 125
UNITS:                 pg/mL
ORDER:                 40800
SITE:                  BLOOD
REFERENCE LOW:         200
REFERENCE HIGH:        1100
SOURCE OF DATA INPUT:  LAB
CURRENT STATUS FLAG:   RESULTED
COLLECTION SAMPLE:     BLOOD
COLLECTION DATE AND T: JUN 03, 2010@08:34:06
ORDERING PROVIDER:     THOMPSON,MOHAMMAD
CLINIC:                LABORATORY SERVICES
ENCOUNTER PROVIDER:    RUSSELL,DOROTHY
ORDERING DATE:         JUN 03, 2010@08:34:06
RESULT DATE AND TIME:  JUN 03, 2010@08:35:42
CPT PTR:               VITAMIN B12
CPT - BILLABLE ITEMS:  82607||||90|
LAB POV:               TESTING
COMMENTS:

 Test Performed at:
 QUEST DIAGNOSTICS-IRVING
 4770 REGENT BLVD.
 IRVING, TX  75063     SUZANNE H. KREISBERG, MD
V FILE IEN:            3860862
```

Figure 11-33: PCC Visit Display for Reference Ranges, Units, and Abnormal Flag

Display the laboratory results under the Lab tab in EHR to ensure the correct display of reference ranges, abnormal flag, and units adjacent to the test results.

Check that the Lab result flags, units, and reference ranges appear as expected in the following EHR Lab tab displays:

- Most Recent
- Cumulative
- All Tests by Date

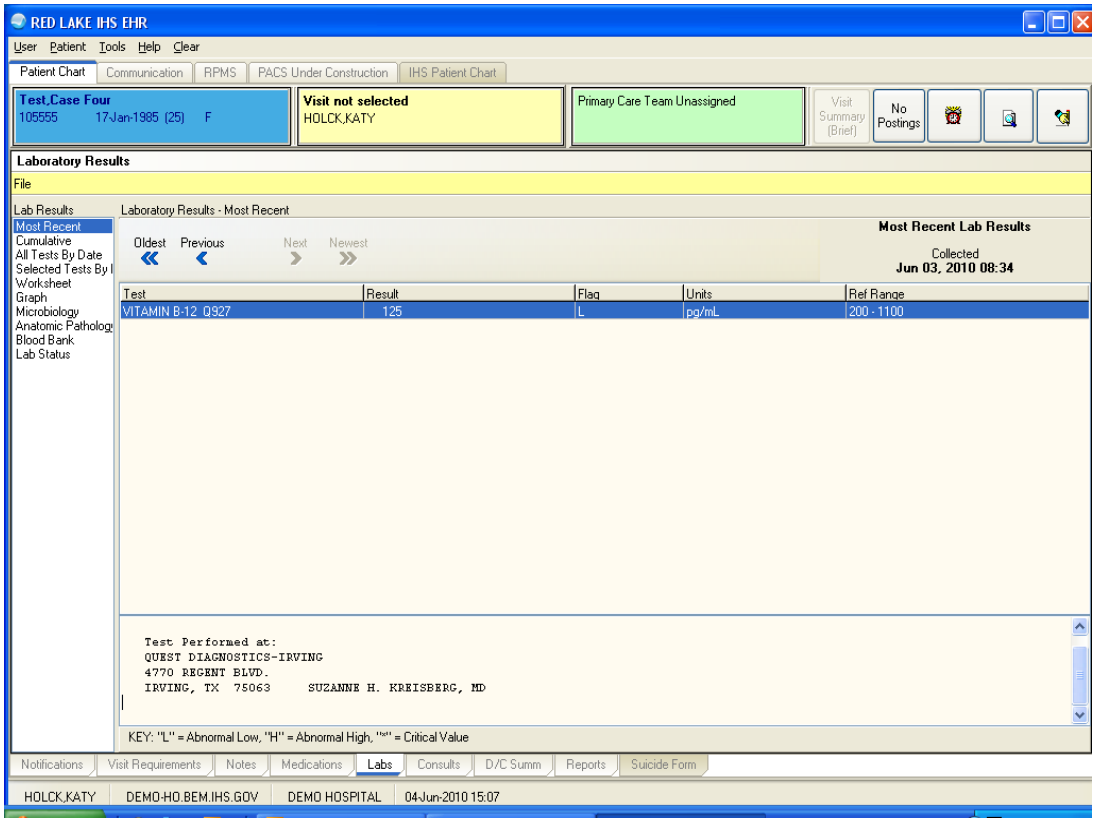


Figure 11-34: Demo Hospital EHR window displaying laboratory results

12.0 Creating an Insurer File for LabCorp

Prerequisite: in order to implement the LabCorp Third Party Billing options, the facility must have GIS V3.01 Patch 16 installed.

12.1 File Capture Using VA Fileman

Begin by creating a fixed-column-width report of your insurer file using VA Fileman. Create this file by turning on session logging for your terminal emulation program and capturing the following fields from your insurer file into a text file to be imported into an Excel spreadsheet:

- Insurer Name
- Insurer Address
- City
- State
- Zip Code
- Telephone Number

```
          Enter or Edit File Entries
          Print File Entries
          Search File Entries
          Modify File Attributes
          Inquire to File Entries
          Utility Functions ...
          Data Dictionary Utilities ...
          Transfer Entries
          Other Options ...

Select VA FileMan Option: PRINT FILE ENTRIES

OUTPUT FROM WHAT FILE: INSURER    (3458 entries)
SORT BY: NAME// STATUS
START WITH STATUS: FIRST// BILLABLE    USES INTERNAL CODE: 1
GO TO STATUS: LAST// BILLABLE    USES INTERNAL CODE: 1
 WITHIN STATUS, SORT BY: NAME
 START WITH NAME: FIRST// <ENTER>

FIRST PRINT FIELD: NAME;L15
THEN PRINT FIELD: STREET;L15
THEN PRINT FIELD: CITY;L12
THEN PRINT FIELD: STATE;L4
THEN PRINT FIELD: ZIP;L5
THEN PRINT FIELD: PHONE;L15
THEN PRINT FIELD:
Heading (S/C): INSURER LIST//
```

```
STORE PRINT LOGIC IN TEMPLATE:    RL INSURER
                              (May 25, 2009@15:24) User #1  File
#9999999.18

DEVICE: ;;999  Virtual
```

Figure 12-1: Example file capture

```
INSURER LIST                                    MAY 25,2009  15:24
PAGE 1
NAME             STREET           CITY          STATE  ZIP    PHONE
-------------------------------------------------------------------
EMPLOYEE BENEF   1717 SO. BOULDE  TULSA         OKLAH  74119
MANAGED CARE A   4100 E. 51ST, S  TULSA         OKLAH  74135  664-
0220
METROPOLITAN L   P.O. BOX 14105   ORANGE        CALIF  92613
(800)438-9599
MUTUAL OF OMAH   P.O. BOX 3189    DALLAS        TEXAS  75221
(214)630-4100
MUTUAL OF OMAH   P.O. BOX 620022  DALLAS        TEXAS  75262
(214)630-4100
NORTHWESTERN N   P.O. BOX 1195    MINNEAPOLIS   MINNE  55440
PROVIDENT        P.O. BOX 105694  ATLANTA       GEORG  30348
PROVIDENT LIFE   P.O. BOX 219722  HOUSTON       TEXAS  77218
(800)423-3341
THE PRUDENT. IN  P.O. BOX 59054   MINNEAPOLIS   MINNE  55459
(800)446-8182
THE TRAVELERS    P.O. BOX 59049   MINNEAPOLIS   MINNE  55459
(800)551-3642
"PRUDENTIAL"     BOX 34890        LOUISVILLE    KENTU  40232
AARP             3200 E. CARSON   LAKEWOOD      CALIF  90712
(800)523-5800
AARP             P.O. BOX 7000    ALLENTOWN     PENNS  18175
(800)523-5800
AARP             P.O. BOX 13999   PHILADELPHIA  PENNS  19187
(800)523-5800
AARP             P.O. BOX 1011    MONTGOMERYVI  PENNS  18936
AARP HEALTH CAR  P.O. BOX 7000    ALLENTOWN     PENNS  18175
```

Figure 12-2: Creating a report in VA Fileman

Turn off session logging when the entire insurer file has been captured. You will next import this fixed-width file into Excel.

12.2 Import Insurer File into Excel

The insurer file that was captured is in text file format. Follow these steps to import the file into Excel:

1. Open Excel and click on the Open File menu. Navigate to the directory in which you placed the captured insurer file and click on the **All Files** option, as this file is not yet in Excel format.

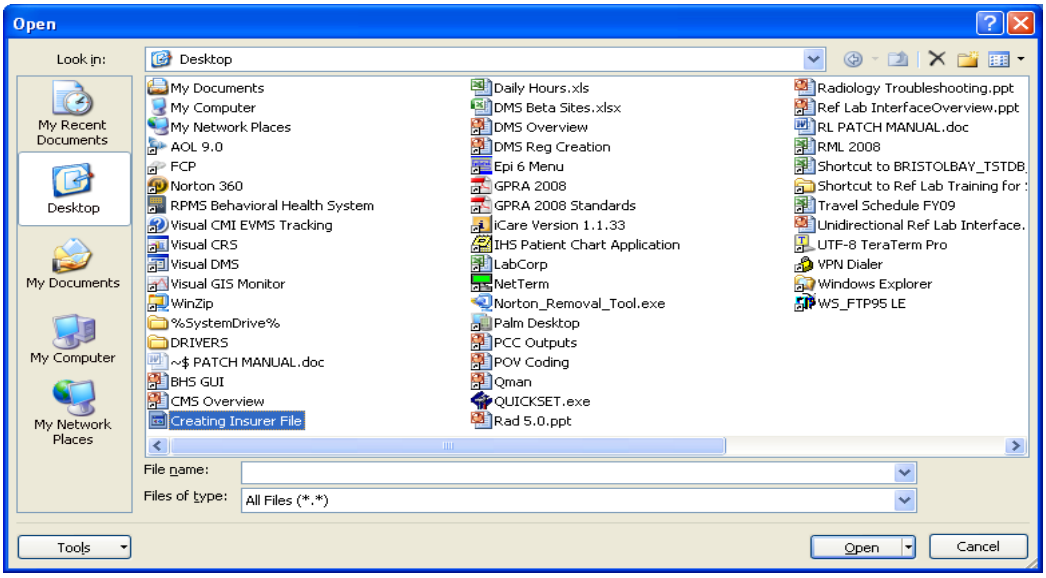


Figure 12-3: The Open window with Creating Insurer File highlighted

2. Click **Open**. This will trigger the Excel Import Wizard, but you may see the following warning message.

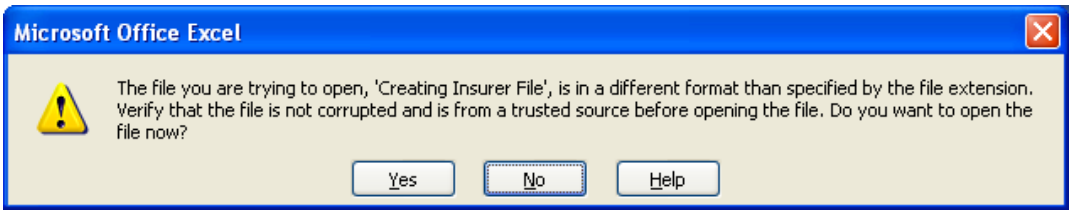


Figure 12-4: Warning message

Click **Yes** to proceed.

3. The text import wizard will open and the original data type will be selected as fixed column width. Note, however, that the header and formatting at the top of the file may interfere with the import wizard. Therefore, you will wish to alter the line at which you will begin the import to Line 6 or the first full line that contains only insurer information before clicking **Next**.

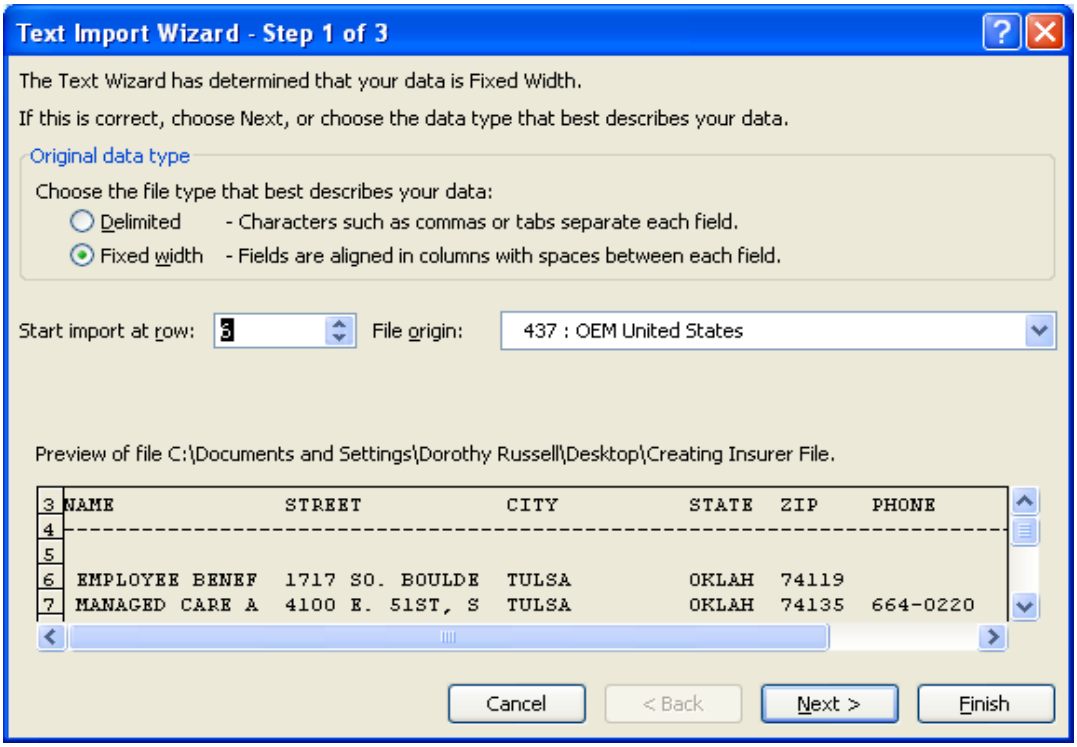


Figure 12-5: The Text Import Wizard, Step 1 of 3

4. When you click **Next**, the Excel Import Wizard will insert lines at expected column breaks. If the lines appear to be correctly located, click **Finish**. If a line is placed inappropriately, it may be removed by placing your cursor on the line and double-clicking to remove the line. If you wish to add a break line, you may put your cursor in the desired location, and click just once. Click **Finish** to complete the import.

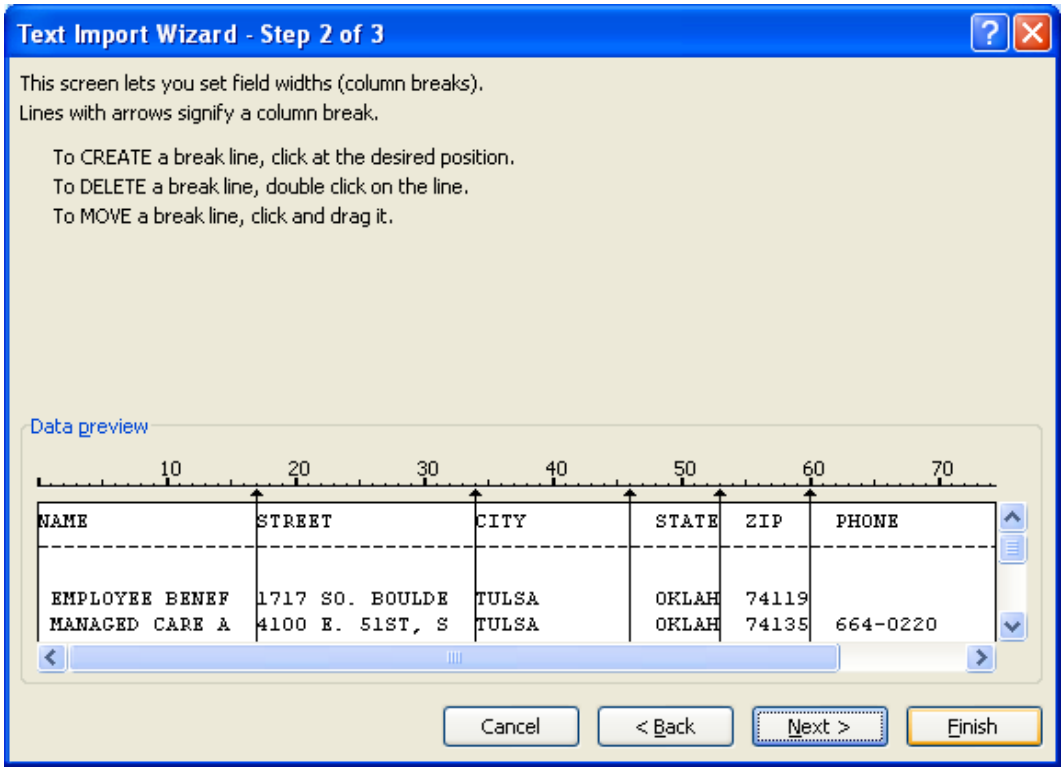
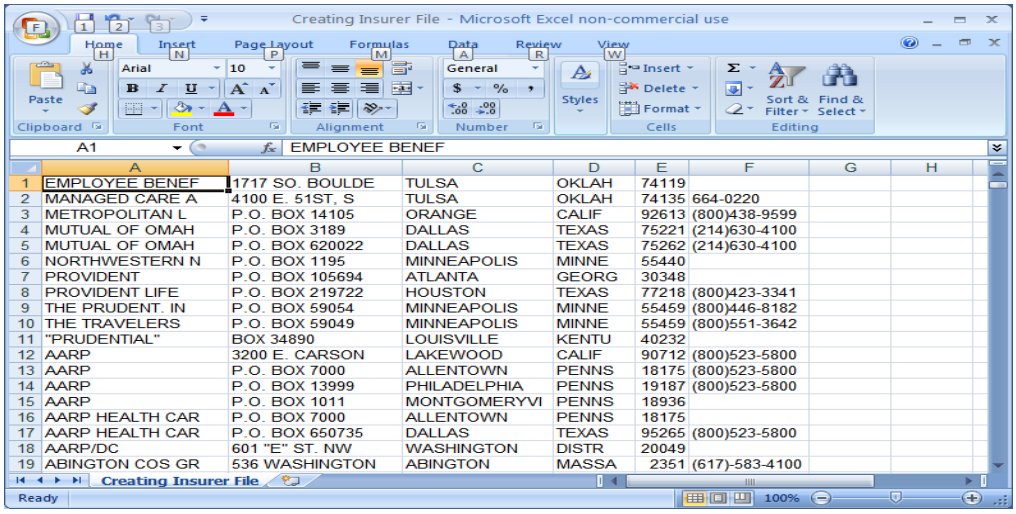


Figure 12-6: Text Import Wizard, Step 2 of 3

5. Expand the columns in the Excel Spreadsheet to ensure that the data has formatted correctly.



	A	B	C	D	E	F	G	H
1	EMPLOYEE BENEF	1717 SO. BOULDE	TULSA	OKLAH	74119			
2	MANAGED CARE A	4100 E. 51ST, S	TULSA	OKLAH	74135	664-0220		
3	METROPOLITAN L	P.O. BOX 14105	ORANGE	CALIF	92613	(800)438-9599		
4	MUTUAL OF OMAH	P.O. BOX 3189	DALLAS	TEXAS	75221	(214)630-4100		
5	MUTUAL OF OMAH	P.O. BOX 620022	DALLAS	TEXAS	75262	(214)630-4100		
6	NORTHWESTERN N	P.O. BOX 1195	MINNEAPOLIS	MINNE	55440			
7	PROVIDENT	P.O. BOX 105694	ATLANTA	GEORG	30348			
8	PROVIDENT LIFE	P.O. BOX 219722	HOUSTON	TEXAS	77218	(800)423-3341		
9	THE PRUDENT. IN	P.O. BOX 59054	MINNEAPOLIS	MINNE	55459	(800)446-8182		
10	THE TRAVELERS	P.O. BOX 59049	MINNEAPOLIS	MINNE	55459	(800)551-3642		
11	"PRUDENTIAL"	BOX 34890	LOUISVILLE	KENTU	40232			
12	AARP	3200 E. CARSON	LAKEWOOD	CALIF	90712	(800)523-5800		
13	AARP	P.O. BOX 7000	ALLENTOWN	PENNS	18175	(800)523-5800		
14	AARP	P.O. BOX 13999	PHILADELPHIA	PENNS	19187	(800)523-5800		
15	AARP	P.O. BOX 1011	MONTGOMERYVI	PENNS	18936			
16	AARP HEALTH CAR	P.O. BOX 7000	ALLENTOWN	PENNS	18175			
17	AARP HEALTH CAR	P.O. BOX 650735	DALLAS	TEXAS	95265	(800)523-5800		
18	AARP/DC	601 "E" ST. NW	WASHINGTON	DISTR	20049			
19	ABINGTON COS GR	536 WASHINGTON	ABINGTON	MASSA	2351	(617)-583-4100		

Figure 12-7: Creating Insurer File opens as an Excel spreadsheet

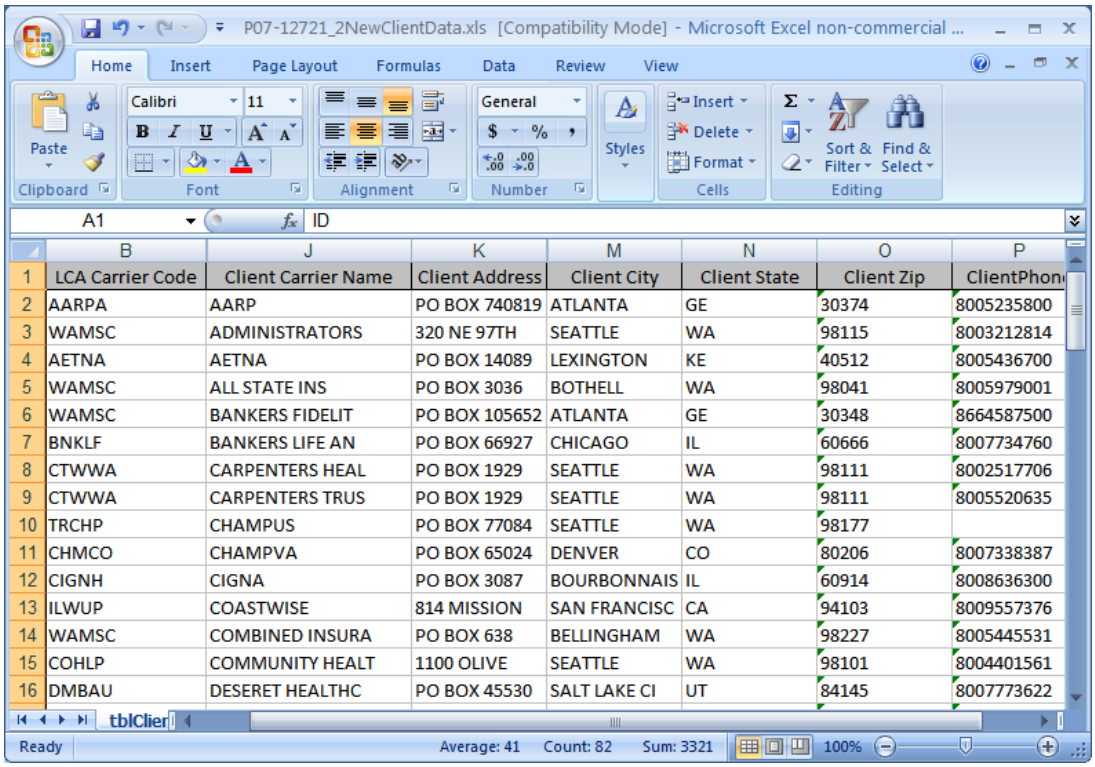
6. Save the newly created file *in Excel Format* so that it can be reviewed by your business office staff and unused insurers may be deleted from the Excel spreadsheet before submission to LabCorp.

7. Send a copy of the revised Insurer file to your LabCorp project manager so that LCA codes may be identified for your insurers.

8. Adding LCA Codes to the Insurer File

   After LabCorp staff has reviewed and assigned LCA codes to your insurers, your LabCorp spreadsheet will be returned. Use VA Fileman to edit the insurer file and add the LCA codes to the **EXTERNAL ID 3 (REF LAB)** field.

   a. Example of a Returned Insurer File with LCA Codes



	B	J	K	M	N	O	P
1	LCA Carrier Code	Client Carrier Name	Client Address	Client City	Client State	Client Zip	ClientPhon
2	AARPA	AARP	PO BOX 740819	ATLANTA	GE	30374	8005235800
3	WAMSC	ADMINISTRATORS	320 NE 97TH	SEATTLE	WA	98115	8003212814
4	AETNA	AETNA	PO BOX 14089	LEXINGTON	KE	40512	8005436700
5	WAMSC	ALL STATE INS	PO BOX 3036	BOTHELL	WA	98041	8005979001
6	WAMSC	BANKERS FIDELIT	PO BOX 105652	ATLANTA	GE	30348	8664587500
7	BNKLF	BANKERS LIFE AN	PO BOX 66927	CHICAGO	IL	60666	8007734760
8	CTWWA	CARPENTERS HEAL	PO BOX 1929	SEATTLE	WA	98111	8002517706
9	CTWWA	CARPENTERS TRUS	PO BOX 1929	SEATTLE	WA	98111	8005520635
10	TRCHP	CHAMPUS	PO BOX 77084	SEATTLE	WA	98177	
11	CHMCO	CHAMPVA	PO BOX 65024	DENVER	CO	80206	8007338387
12	CIGNH	CIGNA	PO BOX 3087	BOURBONNAIS	IL	60914	8008636300
13	ILWUP	COASTWISE	814 MISSION	SAN FRANCISC	CA	94103	8009557376
14	WAMSC	COMBINED INSURA	PO BOX 638	BELLINGHAM	WA	98227	8005445531
15	COHLP	COMMUNITY HEALT	1100 OLIVE	SEATTLE	WA	98101	8004401561
16	DMBAU	DESERET HEALTHC	PO BOX 45530	SALT LAKE CI	UT	84145	8007773622

Figure 12-8: Returned insurer file with LCA codes assigned

   b. Using VA Fileman to Add LCA Codes to Insurer File

   It is a relatively straightforward process to add LCA codes to the insurer file.

```
Select VA FileMan Option: ENter or Edit File Entries


INPUT TO WHAT FILE: INSURER
EDIT WHICH FIELD: ALL// EXTERNAL ID 3 (REF LAB)
THEN EDIT FIELD:


Select INSURER NAME: AARP
( AARP )
........
```

```
The following matches were found:

  1: AARP                              - 3200 E. CARSON ST.
                                         LAKEWOOD, CA 90712
  2: AARP                              - P.O. BOX 7000
                                         ALLENTOWN, PA 18175
  3: AARP                              - P.O. BOX 1011
                                         MONTGOMERYVILLE, PA 18936-
1011
  4: THE PRUDENTIAL/AARP               - P.O. BOX 13999
                                         PHILADELPHIA, PA 19187-0216
  5: AARP HEALTH CARE OPTIONS          - P.O. BOX 7000
                                         ALLENTOWN, PA 18175-0100

Select 1-8:
  6: AARP HEALTH CARE OPTIONS/TX       - P.O. BOX 650735
                                         DALLAS, TX 95265-0735
  7: AARP/DC                           - 601 "E" ST. NW
                                         WASHINGTON, DC 20049
  8: UNITED HEALTHCARE/AARP            - PO BOX 13999
                                         PHILADELPHIA, PA 19187-0216

Select 1-8: 1

EXTERNAL ID 3 (REF LAB): AARPA


Select INSURER NAME: ADMINISTR
(ADMINISTR/ADMINISTRATION/ADMINISTRATIVE/ADMINISTRATOR/ADMINISTRATOR
S)


The following matches were found:

  1: NORTHWEST ADMINISTRATORS          - 2323 EASTLAKE AVE. E.
                                         SEATTLE, WA 98102
  2: HEALTHCARE ADMINISTRATORS INC.    - P.O. BOX 1309
                                         MUSKOGEE, OK 74402
  3: AMERICAN ADMINISTRATIVE SERV.     - 5810 E SKELLY DR,1ST FL
                                         TULSA, OK 74135-6414
  4: SMITH ADMINISTRATORS              - P.O. BOX 6123
                                         SALT LAKE CITY, UT 84106
  5: MEMBER SERVICE ADMINISTRATORS     - P.O. BOX 3028
                                         TULSA, OK 74101-3028

Select 1-5: 1


EXTERNAL ID 3 (REF LAB): WAMSC


Select INSURER NAME: AETNA
( AETNA )


The following matches were found:

  1: AETNA LIFE/CASUALTY               - P.O. BOX 800
```

```
                                          ENCHFIELD, CT 06082
  2: AETNA LIFE INSRNCE CMPANY          - P.O. BOX 35890
                                          LOUISVILLE, KY 40232
  3: AETNA-LIFE INSRNCE COM             - PO BOX 1214
                                          TEWKSBURY, MA 01876
  4: AETNA LIFE INSRNCE COMPANY         - P.O. BOX 2520
                                          TYLER, TX 75710
  5: AETNA LIFE & CASUALTY              - P.O. BOX 91555
                                          ARLINGTON, TX 76015-0055

Select 1-150: 130

EXTERNAL ID 3 (REF LAB): AETNA


Select INSURER NAME: ALL STATE


The following matches were found:

  1: ALLSTATE                           - P.O. BOX 105181
                                          ATLANTA, GA 30348
  2: ALLSTATE INS. COMP.                - P.O. BOX 396
                                          NORTHBROOK, IL 60062
  3: BC/BS OF MO ALLIANCE               - P.O.B OX 14882
                                          ST LOUIS, MO 63178
  4: COMMONWEALTH HEALTH ALLIANCE       - P.O. BOX 1067
                                          CHARLOTTESVILLE, VA 22902
  5: ALLSTATE INSRNCE CO.               - P.O. BOX 5097
                                          ROLLING MEADOWS, IL 60008

Select 1-42:
  6: ALLIANCE INSURANCE COMP.           - P.O. BOX 809096
                                          DALLAS, TX 75380-9096
  7: CHICAGO HLTH ALLI OF LABOR&EMP     - SEVEN S DEARBORN   Domain: IL
                                          CHICAGO, IL 60603
  8: HMO ALLIANCE INC                   - 1709 BLVD OF THE ALLIES
Domain: PA
                                          PITTSBURGH, PA 15219
  9: ALLIED MUTUAL INS CO GRP           - 701 FIFTH AVE      Domain: IA
                                          DES MOINES, IA 50309
 10: ALLSTATE INS CO GRP                - ALLSTATE PLAZA     Domain: IL
                                          NORTHBROOK, IL 60062

Select 1-42: 10


Select INSURER NAME:    ALLSTATE INS CO GRP     ILLINOIS     60062
         ...OK? Yes//   (Yes)

EXTERNAL ID 3 (REF LAB): WAMSC
```

Figure 12-9: Adding LCA codes to the insurer file

13.0 Generating an Electronic Order

13.1 Ordering

Ordering is a function normally carried out by nursing, clerical, or provider staff outside the laboratory. It is a tool to electronically notify the laboratory of the tests to be done on a given patient and is designed to replace a paper requisition. Orders may be placed either via traditional RPMS or the EHR.

If orders are placed via traditional RPMS, paper copies of the electronically placed order *may* be printed on the LABORATORY printer and laboratory staff will use that to determine what tests need to be performed.

If clinic staff collects the specimen, the electronically generated order *may* also be sent to the LABORATORY printer.

If a laboratory collection is requested for immediate collection, the requisition will print in the laboratory unless this function is turned off. In either case, laboratory staff should be called to be sure that they know they need to come to a room to collect a specimen.

If orders are placed via EHR, a mechanism must be developed to notify the laboratory what the order numbers are.

A copy of the electronic order may be printed to the laboratory printer.

An order number generated when an order is placed by a provider in the EHR may be written on a slip of paper and sent with the patient to the laboratory. Tests that need to be done may be looked up using the **Review by Order Number** option.

The patient may present with proof of identity to the laboratory and the order may be looked up using the **Order/Test Status** option, or via EHR.

Regardless of how orders are placed, standard laboratory ordering locations and provider names should be used to prevent issues linking the laboratory visits created with the provider visit on the same date of service.

Some tests submitted to a reference laboratory will have Ask At Order questions associated with them. These typically include Maternal Serum AFP tests and Pap smears. Templates of the Ask At Order questions as they appear at the time of accessioning may be attached to the EHR quick orders. *The Ask At Order questions do not automatically transfer from EHR to the Laboratory Package, and the answers must be entered again at the time of accessioning*.

> **Note**: Maternal Serum Screening tests, as well as Pap smears (Liquid Based Paps, Surepath Paps, and traditional slide Paps), should always be placed on their own orders, as they are routed to different departments at most reference laboratories.

13.2 Accessioning Tests Ordered by Ward Order Entry

This option is to be used to accession tests ordered by provider, nursing, or clerical staff once the specimen(s) has reached the laboratory or laboratory staff is prepared to collect the specimen(s). The order number may be reviewed using either Review by Order Number or Order/Test Status.

```
Laboratory DHCP Menu
Accessioning Menu Option
     Accessioning tests ordered by ward order entry

Accessioning tests ordered by ward order entry


Select Order number: 3083
DEMO,PATIENT GRANDPA          999987         Requesting location:
LAB
Date/Time Ordered: 04/30/09 11:07            By: RUSSELL,DOROTHY
  -Lab Order # 3083                        Provider: BAXTER,PAMELA J

  BLOOD
  AMYLASE       ROUTINE Requested (SEND PATIENT) for:  04/30/2009
Sign or Symptom: TESTING
   : ~For Test: AMYLASE
   : ~PLEASE CALL RESULTS TO DR BAXTER
  LIPASE        ROUTINE Requested (SEND PATIENT) for:  04/30/2009
Sign or Symptom: TESTING
Is this the correct order? Yes// <ENTER>  YES
Collection Date@Time: //n  (APR 30, 2009@11:09:27)
Print labels on: LABLABEL// <ENTER>


ACCESSION:  SO 09 60  <6009000060>
AMYLASE                   BLOOD

     Select one of the following:

          C         Client
          T         Third Party
          P         Patient

Which Party is Responsible for Billing: : T//<ENTER> Third Party
```

Figure 13-1: Accessioning Tests Ordered by Ward Order Entry option

> **Note**: If the individual placing the order indicated that the same diagnosis or symptom will be used for all tests on the order, the individual accessioning the tests will only be prompted to enter the ICD-9 codes once. Those codes will then be applied to all tests on that order. If the individual ordering or accessioning indicated that a different diagnosis or symptom will be used for the tests on the order, the user will be prompted to enter separate ICD-9 codes for each test in the order.

```
What is the ICD Diagnosis code for billing: pancreatitis <- ICD-9
codes may be entered by code or ICD-9 lookup may be used.
( PANCREATITIS )

The following matches were found:

   1: 577.1 (CHRONIC PANCREATITIS)
       CHRONIC PANCREATITIS

   2: 072.3 (MUMPS PANCREATITIS)
       MUMPS PANCREATITIS

   3: 577.0 (ACUTE PANCREATITIS)
       ACUTE PANCREATITIS

Select 1-3: 1

What is the ICD Diagnosis code for billing: <-If only one ICD-9 Code
has been provided by the ordering provider, press ENTER to continue
with the accessioning process.  If more than one ICD-9 code will be
entered, continue to enter them one at a time.
What is the ICD Diagnosis code for billing: <ENTER>
Now Applying Sequenced Insurer to Accession <- Note that regardless
of how many insurers a patient has, the software automatically sends
insurer information based on sequencing.

Please select the appropriate account number for this accession
1) 46088552
2) 46088612
3) 46097672
4) 46852600
5) 90032080
Which account number for this accession :  (1-5): 5

ACCESSION:  SO 09 61  <6009000061>
LIPASE                    BLOOD
Printing Shipping Manifests for Reference Lab...

Now printing shipping manifest for this accession
DEVICE: HOME <- Note that you will not see the device prompt once
the interface goes into production.  The shipping manifests will be
directed to print automatically on the lab printer.
```

Figure 13-2: Accessioning an order for a patient with Third Party Coverage

13.3 Multipurpose Accessioning

This option is used for most routine accessioning of specimens into the laboratory if they have *not* previously been ordered by provider, nursing, or clerical staff outside the laboratory. It may also be used to accession tests when a provider requests additional tests on specimens that have already been submitted to your reference laboratory.

```
Laboratory DHCP Menu
Accessioning menu
        Multipurpose accessioning

Select IHS Accessioning Menu Option: Mu  Multipurpose accessioning

WANT TO ENTER COLLECTION TIMES? Y//<ENTER>
Select ACCESSION TEST GROUP: ?
    Answer with ACCESSION TEST GROUP, or NUMBER
   Choose from:
   1            LABCORP IRON STUDIES
   2            LABCORP SENDOUTS
   3            GENERAL IN HOUSE LABS
   4            LABCORP
   5            LABCORP STOOL STUDIES
   6            LABCORP HORMONE STUDIES
   7            LABCORP MICROBIOLOGY

Select ACCESSION TEST GROUP: 2  LABCORP SENDOUTS

Select Patient Name:
  DEMO,PATIENT TEEN B      F 08-01-1989 XXX-XX-9992  SOUC 999989

     Select one of the following:

          LC        LAB COLLECT(INPATIENTS-MORN. DRAW)
          SP        SEND PATIENT
          WC        WARD/CLINIC   COLLECT

Specimen collected how ? : SP//<ENTER>   SEND PATIENT
PATIENT LOCATION:    LAB     TECHNICIAN, LAB
PROVIDER: DOCTOR,TEST
LAB Order number: 2950
Choose one (or more, separated by commas)  ('*' AFTER NUMBER TO
CHANGE URGENCY)
1   BASIC METABOLIC                 24  HCV AB W/RFLX RIBA
2   COMP METABOLIC 14               25  HIV PANEL 083824
3   ELECTROLYTE                     26  IRON AND TIBC
4   HEPATIC FUNCTION                27  LIPASE
5   HEPATITIS PANEL                 28  MAGNESIUM
6   LIPID LDL/HDL R                 29  PROSTATE-SPECIFIC AG.
7   CBC W DIF/PLATE                 30  PROTHROMBIN TIME
8   HEMATOCRIT                      31  PT AND PTT
9   HGB                             32  RHEUMATOID ARTHRITIS
10  ABO GROUP & RH T                33  RPR RFX/QUANT
11  ALK PHOSPHATASE                 34  TESTOSTERONE
12  ALT SGPT                        35  T4 FREE DIRECT
13  AMYLASE                         36  TSH
```

```
14  ANTINUCLEAR AB DIRECT           37  VITAMIN D 25 HYDROXY
15  AST SGOT                        38  ANA/AER/GS CULT
16  B12 AND FOLATE                  39  CHLAM/GC APTIMA
17  CREATININE SERUM                40  CHLAM/GC W/RFLX
18  FSH AND LH                      41  GENITAL CULTURE
19  HCG BETA SUBUNIT QUAL SERUM     42  PAP 1 SLIDE
20  HCG BETA SUBUNIT QNT. SERUM     43  PAP LB RFX HPV
21  HEP B CORE AB IGM               44  PATHOLOGY REPORT
22  HEP B SURFACE AB                45  URINE CULTURE
23  HBSAG SCREEN                    46  HEPC VIRUS AB
TEST number(s): 2,6
Other tests? N//Y
Select LABORATORY TEST NAME: HEMOGLOBIN A1C

Is BLOOD   LAVENDER the correct sample to collect?Y//<ENTER>
Same specimen/source for the rest of the order? No// <ENTER>  (No)
Select Urgency Status: ROUTINE//
Select LABORATORY TEST NAME: MIC
     1   MIC CRYSTAL TYPE
     2   MIC MUCUS THREAD
     3   MICRO DESCRIPTION
     4   MICRO EXAM
     5   MICROALB/CREAT
Press <RETURN> to see more, '^' to exit this list, OR
CHOOSE 1-5:
     6   MICROALB/CREAT U
     7   MICROALBUMIN
     8   MICROSCOPIC EXAM
CHOOSE 1-8: 5  MICROALB/CREAT
Is URINE, RANDOM   URINE CUP the correct sample to collect?Y//
<ENTER>
Same specimen/source for the rest of the order? No// <ENTER>  (No)
Select Urgency Status: ROUTINE// <ENTER>
Select LABORATORY TEST NAME: <ENTER>
Nature of Order/Change: WRITTEN       W

You have just selected the following tests for DEMO,PATIENT TEEN B
999989
     entry no. Test                          Sample
     1         HEMOGLOBIN A1C            BLOOD
     2         COMP METABOLIC 14         BLOOD
     3         LIPID LDL/HDL R           BLOOD
     4         MICROALB/CREAT            URINE, RANDOM  URINE

All satisfactory? Yes// <ENTER)  (Yes)

LAB Order number: 2950


Collection Date@Time: NOW//  (APR 13, 2009@16:49:53)
Print labels on: LABLABEL//
~For Test: HEMOGLOBIN A1C   BLOOD
Enter Order Comment: <-you can convey any type of additional
information to the reference laboratory about faxing results to
another provider or calling results by typing information in this
field
~For Test: COMP METABOLIC 14   BLOOD
Enter Order Comment:
~For Test: LIPID LDL/HDL R   BLOOD
```

```
Enter Order Comment:


Do you want to enter a different Sign or Symptom for each test??
N//<ENTER> NO
```

Figure 13-3: **Multipurpose Accessioning** option for patient with Third Party coverage

> **Note**: If an individual answers NO to this question, he/she will be prompted to only enter ICD-9 code(s) once. The same ICD-9 code(s) will be applied to all tests on the order. If the individual ordering or accessioning indicates YES, a different diagnosis or symptom will be used for the tests on the order, then the user will be prompted to enter separate ICD-9 codes for each test in the order.

```
Enter Sign or Symptom for LAB Order number 2950
(DO NOT USE 'RULE OUT', 'PROBABLE', 'QUESTIONABLE', etc.): TESTING
Is this correct? YES// <ENTER>


ACCESSION:  SO 09 56  <6009000056>
HEMOGLOBIN A1C            BLOOD
Is the Patient Fasting? (Y/N): N
Are the responses to the Ask At Accession questions correct ?
Y//<ENTER> YES

     Select one of the following:

          C         Client
          T         Third Party
          P         Patient

Which Party is Responsible for Billing: : T//<ENTER> hird Party
What is the ICD Diagnosis code for billing: 250.00       DIABETES
II/UNSPEC NOT UNCONTR
         ...OK? Yes//   (Yes)

What is the ICD Diagnosis code for billing: 401.9       HYPERTENSION
NOS
         ...OK? Yes//   (Yes)

What is the ICD Diagnosis code for billing: RENAL <- Note that you
can look up ICD-9 codes if you know the disease category but cannot
remember the code.
( KIDNEY/KIDNEYS|RENAL )


The following matches were found:

   1: 189.1 (MALIG NEO RENAL PELVIS)
       MALIGNANT NEOPLASM OF RENAL PELVIS

   2: 223.1 (BENIGN NEO RENAL PELVIS)
```

```
       BENIGN NEOPLASM OF RENAL PELVIS

- - - - - - - numbers 3-100 not shown

 101: 189.0 (MALIG NEOPL KIDNEY)
       MALIGNANT NEOPLASM OF KIDNEY, EXCEPT PELVIS

 102: 198.0 (SECOND MALIG NEO KIDNEY)
       SECONDARY MALIGNANT NEOPLASM OF KIDNEY

 103: 223.0 (BENIGN NEOPLASM KIDNEY)
       BENIGN NEOPLASM OF KIDNEY, EXCEPT PELVIS

 104: 250.40 (DIAB W/RENAL TYII/UNSPEC CONT)
       DIABETES WITH RENAL MANIFESTATIONS, TYPE II OR UNSPECIFIED
TYPE, NOT STATED AS UNCONTROLLED

 105: 583.0 (PROLIFERAT NEPHRITIS NOS)
       NEPHRITIS AND NEPHROPATHY, NOT SPECIFIED AS ACUTE OR CHRONIC,
WITH
       LESION OF PROLIFERATIVE GLOMERULONEPHRITIS

Select 1-196: 104

What is the ICD Diagnosis code for billing: <- You will continue to
be prompted for ICD-9 codes until you press enter.  So you may enter
one ICD-9 code or 5 ICD-9 codes, one at a time.

Now Applying Sequenced Insurer to Accession
Please select the appropriate account number for this accession
1) 46088552
2) 46088612
3) 46097672
4) 46852600
5) 90032080
Which account number for this accession :  (1-5): 5

ACCESSION:  SO 09 57  <6009000057>
COMP METABOLIC 14         BLOOD
Is the Patient Fasting? (Y/N): N
Are the responses to the Ask At Accession questions correct ? Y// ES

ACCESSION:  SO 09 58  <6009000058>
LIPID LDL/HDL R           BLOOD
Is the Patient Fasting? (Y/N): N
Are the responses to the Ask At Accession questions correct ? Y// ES


ACCESSION:  SO 09 59  <6009000059>
MICROALB/CREAT            URINE, RANDOM  URINE
Printing Shipping Manifests for Reference Lab...

Now printing shipping manifest for this accession <- Do not "hat
out"!  Wait until cursor comes back to a menu prompt.  If you get in
a hurry, the shipping manifest may not print nor will it be stored
to reprint.
```

Figure 13-4: Entering multiple ICD-9 codes during accessioning

If you do not get a shipping manifest or a test does not print on the shipping manifest, order via the normal, preinterface process and notify Cimarron of the problem test(s).

14.0 RPMS Electronic Shipping Manifest

An RPMS-generated shipping manifest will be printed each time test(s) are accessioned for a reference laboratory. A manifest may have only one test or it may have multiple tests on it. The exceptions are orders for Pathology or Cytology (Pap Smears). Most reference laboratories prefer that orders each come in on their own shipping manifest so that they can be routed to the appropriate laboratory section.

The format of the electronic manifest generated from RPMS varies depending upon the type of billing selected when editing the reference laboratory site parameters. As long as Client Bill is selected, all shipping manifests will be the same regardless of reference laboratory. The only differences will be in reference laboratory name. The client type shipping manifest is the standard across reference laboratories. Fields are described below.

- **REF LAB NAME**. The name specified for the reference laboratory when the **Edit Reference Lab Site Parameter** option was exercised.
- **CLIENT #.** The client number used as the default if only one is specified, or the number specified when accessioning, if more than one client account number is available.
- **MID. IHS-3733915 (2903963)**. This is the number of the outgoing HL7 message in the Universal Interface file.
- **PHONE**. If you have specified that the patient's telephone number should print on the shipping manifest when editing the Ref Lab Site Parameters, and a telephone number is recorded in the patient's file, it will print on the shipping manifest.
- **SSN**. In keeping with the Health Insurance Portability and Accountability Act (HIPAA) regulations, if an SSN is on file, only the last four digits will print. The first five digits will be displayed as Xs, e.g. XXX-XX-5678.
- **BILL TYPE**. If the default has been set as C for Client, Client will always be printed. If T has been set as the default when editing site parameters, Client Bill, Third Party, Medicare, Medicaid, or Patient may be displayed depending on the choices made during accessioning.
- **UPIN or NPI**. Depending on the selection made during editing site parameters, either the NPI or UPIN for providers will print on the electronic requisition preceded by the appropriate designation.
- **LAB PROCESSING INSTRUCTIONS**. If specimen processing instructions have been entered in the field, Lab Processing Instructions, under the Collection Sample for a test, the processing instructions will be printed on the shipping manifest for each test.

14.1 Client Bill

```
INDIAN HEALTH SERVICE EREQ           PAGE: 1 of 1

1.REF LAB NAME: LABCORP                   2.CLIENT #: 90032080

FACILITY: YOUR FACILITY NAME        Oct 20, 2008@05:44:53
ADDRESS: YOUR FACILITY ADDRESS AND ZIPCODE  PHONE: YOUR FACILITY
PHONE #
=====================================================================

ORDER (Control): 1272426      ORDER DATE: Oct 20, 2008      3.MID:
IHS-3733915 (2903963)
PATIENT: DEMO,NINE            CHART (Patient ID): T16049    4.PHONE:
SEX: M    DOB: JAN 1,2006     5.SSN: NOT ON FILE
LOCATION: LAB (LOCATION)      6.BILL TYPE: Client
PRACTITIONER: DOCTOR, REF LAB                              7.NPI:
1619073483
LAB ARRIVAL (COLLECTION DATE/TIME): Oct 20, 2008@05:44:23


TEST NAME: TSH (004259)                      SAMPLE: BLOOD
SOURCE: SERUM                                ACCESSION (Lab Ref#):
3108000147
                                             URGENCY: ROUTINE
8.LAB PROCESSING INSTR:  SUBMIT SERUM AT ROOM TEMPERATURE


TEST NAME: Vitamin B-12 (001503)             SAMPLE: BLOOD
SOURCE: SERUM                                ACCESSION (Lab Ref#):
3108000146
                                             URGENCY: ROUTINE
8.LAB PROCESSING INSTR:  1 mL REFRIGERATED serum Overnight.  Test
performed on Mondays and Thursdays.
```

Figure 14-1: Sample manifest for client billing

14.2 Patient Bill

```
INDIAN HEALTH SERVICE EREQ           PAGE: 1 of 1

REF LAB NAME: LABCORP                    CLIENT #: 90032080

FACILITY: YOUR TEST FACILITY        Oct 20, 2008@05:50:35
ADDRESS: P.O. BOX 999, PHOENIX,  85016  PHONE: (602)263-1511
=====================================================================

ORDER (Control): 1274507      ORDER DATE: Oct 20, 2008      MID:
IHS-3733917 (2903967)
PATIENT: DEMO,PATIENT AUNT       Chart # (Alt Patn ID): 272271
PHONE: 840-631-9736
SEX: F    DOB: JUNE 7,1962     SSN: XXX-XX-1098
LOCATION: LAB (LOCATION)      BILL TYPE: Patient
PRACTITIONER: DOCTOR,FIVE                                NPI:
1619073483
```

```
LAB ARRIVAL (COLLECTION DATE/TIME): Oct 20, 2008@05:50:04


TEST NAME: TSH (004259)                    SAMPLE: BLOOD
SOURCE: SERUM                              Accession/Alt cnt#(CD):
3108000149
                                          URGENCY: ROUTINE
LAB PROCESSING INSTR:  SUBMIT SERUM AT ROOM TEMPERATURE


INSURANCE
Ins Carrier Code:                          Insured Name:
                                           Rel:
Insurer Name:                              Insured Add:
Insurer Add:
                                          Guarantor: DEMO,PATIENT AUNT
                                          Guar Add: PO BOX 284
Insurer Group:                                     ANYWHERE, USA 85353
Insured ID:                                Guarantor Phone: 840-634-
9736
-------------------------------------------------------------------

TEST NAME: Vitamin B-12 (001503)           SAMPLE: BLOOD
SOURCE: SERUM                              Accession/Alt cnt#(CD):
3108000148
                                           URGENCY: ROUTINE
LAB PROCESSING INSTR:  1 mL REFRIGERATED serum Overnight.  Test
performed on Mondays and Thursdays.

INSURANCE
Ins Carrier Code:                          Insured Name:
                                           Rel:
Insurer Name:                              Insured Add:
Insurer Add:
                                          Guarantor: DEMO,PATIENT AUNT
                                          Guar Add: PO BOX 284
Insurer Group:                                     ANYWHERE, USA 85353
Insured ID:                                Guarantor Phone: 840-634-
9736
```

Figure 15-2: Sample manifest for patient billing

14.3 Medicaid

```
                              INDIAN HEALTH SERVICE EREQ
PAGE: 1 of 1

REF LAB NAME: LABCORP                      CLIENT #: 46097672

FACILITY: YOUR TEST FACILITY       Apr 01, 2009@16:46:29
ADDRESS: P.O. BOX 999, ANYWHERE, USA,  98590  PHONE: 360-267-0119
===================================================================

ORDER (Control): 2864         ORDER DATE: Apr 01, 2009      MID:
IHS-104326 (5142)
```

```
PATIENT: DEMO,PATIENT TEEN A  Chart # (Alt Patn ID): 999990 PHONE:
360-267-8138
SEX: M    DOB: JUL 1,1993     SSN: XXX-XX-9993
LOCATION: LAB                 BILL TYPE: Medicaid
PRACTITIONER: WILLIAMS, MARK                           NPI:
5678934567
LAB ARRIVAL (COLLECTION DATE/TIME): Apr 01, 2009@16:45:58


TEST NAME: CREATININE SERUM (001370)     SAMPLE: BLOOD
SOURCE: BLOOD                            Accession/Alt cnt#(CD):
6009000034
                                         URGENCY: ROUTINE
LAB PROCESSING INSTR:
DIAGNOSIS
Diagnosis:               DX Description:
250.41                   DIAB W/RENAL TYI/JUV CONT

INSURANCE
Ins Carrier Code: WA                    Insured Name: DEMO,PATIENT
TEEN A
                                        Relationship: SELF
Insurer Name: MEDICAID                  Insured Add: PO BOX 228
Insurer Add:                                         TOKELAND WA
98590
1431 Anywhere St                            Guarantor: DEMO PATIENT
TEEN A
Seattle, WA 98507                           Guar Add: PO BOX 228
Insurer Group:                                    TOKELAND WA 98590
Insured ID: ABCDE010105A                    Guarantor Phone:
-------------------------------------------------------------------
```

Figure 14-3: Sample manifest for Medicaid billing

14.4 Medicare

```
                              INDIAN HEALTH SERVICE EREQ
PAGE: 1 of 1

REF LAB NAME: LABCORP                   CLIENT #: 46097672

FACILITY: YOUR TEST FACILITY   Apr 01, 2009@16:54:15
ADDRESS: P.O. BOX 999, ANYWHERE, USA,  98590  PHONE: 360-267-0119
===================================================================

ORDER (Control): 2867         ORDER DATE: Apr 01, 2009      MID:
IHS-104329 (5145)
PATIENT: DEMO,PATIENT GRANDPA Chart # (Alt Patn ID): 999987 PHONE:
360-267-8138
SEX: M    DOB: SEP 1,1941     SSN: XXX-XX-9991
LOCATION: LAB                 BILL TYPE: Medicare
PRACTITIONER: WILLIAMS, MARK                           NPI:
5678934567
LAB ARRIVAL (COLLECTION DATE/TIME): Apr 01, 2009@16:53:16
```

```
TEST NAME: AMYLASE (001396)              SAMPLE: BLOOD
SOURCE: BLOOD                            Accession/Alt cnt#(CD):
6009000037
                                         URGENCY: ROUTINE
LAB PROCESSING INSTR:
DIAGNOSIS
Diagnosis:               DX Description:
571.49                   CHRONIC HEPATITIS NEC

INSURANCE
Ins Carrier Code: 05                     Insured Name: DEMO,PATIENT
GRANDPA
                                         Relationship: OTHER
Insurer Name: MEDICARE                   Insured Add: PO BOX 228
Insurer Add:                                            TOKELAND WA
98590
PO BOX 6700                              Guarantor: DEMO PATIENT
GRANDPA
FARGO ND 58108                           Guar Add: PO BOX 228
Insurer Group:                                     TOKELAND WA 98590
Insured ID: 300000000A                   Guarantor Phone:
```

Figure 14-4: Sample manifest for Medicare billing

14.5 Private Insurance

```
                            INDIAN HEALTH SERVICE EREQ
PAGE: 1 of 1

REF LAB NAME: LABCORP                    CLIENT #: 46088612

FACILITY: YOUR TEST CLINIC        Apr 01, 2009@16:49:51
ADDRESS: P.O. BOX 999, ANYWHERE, USA,  98590  PHONE: 360-267-0119
=====================================================================

ORDER (Control): 2865         ORDER DATE: Apr 01, 2009      MID:
IHS-104327 (5143)
PATIENT: DEMO,PATIENT BABY B  Chart # (Alt Patn ID): 999993 PHONE:
360-267-8138
SEX: F    DOB: APR 1,2005     SSN: XXX-XX-9996
LOCATION: LAB                 BILL TYPE: Private Insurance
PRACTITIONER: WILLIAMS, MARK                            NPI:
5678934567
LAB ARRIVAL (COLLECTION DATE/TIME): Apr 01, 2009@16:48:54


TEST NAME: LIPASE (001404)                  SAMPLE: BLOOD
SOURCE: BLOOD                               Accession/Alt cnt#(CD):
6009000035
                                            URGENCY: ROUTINE
LAB PROCESSING INSTR:
DIAGNOSIS
Diagnosis:               DX Description:
```

```
577.1                    CHRONIC PANCREATITIS
401.9                    HYPERTENSION NOS
272.2                    MIXED HYPERLIPIDEMIA

INSURANCE
Ins Carrier Code: BCWAA                 Insured Name: DEMO,PATIENT
BABY B
                                        Relationship: OTHER
Insurer Name: PREMERA                   Insured Add: PO BOX 228
Insurer Add:                                         TOKELAND WA
98590
PO BOX 327                              Guarantor: DEMO PATIENT BABY
B
SEATTLE WA 98111                        Guar Add: PO BOX 228
Insurer Group:                                    TOKELAND WA 98590
Insured ID: ZKR222222222                Guarantor Phone: 360-267-
8138
----------------------------------------------------------------------
```

Figure 14-5: Sample manifest for private insurance billing

15.0 Tracking Reference Laboratory Results

The menu option, Incomplete Test Status Report, can be used to ensure that no reference laboratory tests are lost to follow up. However, many users of reference laboratory interfaces find the menu option, Print Accession List, to be a more compact tool for generating daily logs of tests sent out and to monitor tests returned.

Within the Print Accession List Menu, there are four different ways to print accession lists. Many labs use the option, Print Accession List by Date, to maintain a daily log of all specimens processed through each section of the laboratory. It is recommended that you print the Accession List for Sendouts at the end of each day to use as a log to check the reports back into RPMS. One is simply prompted for the Accession Area and the date range desired to print these reports.

```
LAB    Laboratory DHCP Menu ...
2      Accessioning menu ...
Print accession list(s) ...

Accession and test counts by shift
Accession list by date
Accession list by number
Lab accession and test counts
Test counts by treating specialty

An example of printing an accession list by date is shown below.
You may choose to print Sendout accession lists by patient to make
it easier to compare RPMS results to those received from your
reference laboratory.

Select IHS Short Accessioning Menu Option: PAL  Print accession list
by date


                     YOUR TEST FACILITY

Select ACCESSION AREA: SENDOUTS


                     SENDOUT ACCESSION LIST
Start with Date: TODAY// T-1  (APR 09, 2009)
Go back to   Date TODAY// T-1  (APR 10, 2009)

List by (A)ccession number  (P)atient  (C)ollection Sample :
Accession number
DEVICE: HOME// <ENTER for screen or printer number>

Apr 10, 2009 19:10    DEMO HEALTH CENTER                    Pg: 1
SENDOUTS (Apr 09, 2009-Apr 10, 2009)
# = Not IHS patient                                         %=Test
not verified
Acc #   Date  Patient    ID    Loc   Spec/sample     Test       Tech
---------------------------------------------------------------------
```

```
    1   04/09 rrrrrrr,mmmmmmmmm  21649  ER    BLOOD  BASIC METABOL
JK
    2   04/09 Mmmmmm,Mmmmmm mmmm 32553  ER    BLOOD  ETHANOL
AL
    3   04/09 jjjjj,jjjjjjj jjjj 26473  ER    BLOOD  %AMYLASE
                                                     HEPATIC FUNCT AL
    4   04/09 Mmmmmm,Mmmmmm aaaa 32553  ER    URINE  %URINE DRUG SC
JK
    5   04/09 Rrrrrr,Irrrrrrr    12072  ER    BLOOD  COMPREHENSIVE
AL
```

Figure 15-6: Printing the Accession List for Sendouts

> **Note**: A test with a % in front of the test and no Tech ID indicates that results are still pending, e.g. AMYLASE in the above example.

A test with no % in front of the test and a Tech ID after the test indicates that receipt of the results has been verified, e.g. ETHANOL in the above example.

A test that has both a % in front of the test name and a Tech ID after the test is one that has been deleted (test not performed), e.g. URINE DRUG SC in the above example.

> **Note**: If you have set up your reference laboratory accession area with a Monthly Transform instead of a Yearly Transform (accession numbers roll over each month instead of once a year), this option may not work correctly. An alternative would be to use the option to print the Accession List by Number, specifying the month and year for the sendouts instead of the date or date range of interest.

16.0 Verifying Electronic Reference Laboratory Results

The EA, Enter/Verify Data (Auto Instrument) option is used to verify incoming reference laboratory results. Some reference laboratories return RPMS accession numbers on their hard copy reports, and some do not. It is helpful to have a copy of the Printed Accession List from previous days to confirm accession numbers that are ready to be verified. The hard copy report from the reference laboratory is treated as an instrument printout and is used to confirm that all results have posted correctly. If any discrepancies are noted or results have failed to post, they should not be verified. Instead, use the **Display a Lab Universal Interface Message** option described in Section 17.0 to determine why results may not have posted correctly.

Several changes will be noted during the verification process:

- The user will be prompted to select the Performing Laboratory. The default will be the institution under which the user is signed. If the reference laboratory has been set up as described in Section 11.3.2 the reference laboratory to which the test was referred may be selected.
- The ordering provider's telephone number and pager will be displayed on the screen to facilitate contacting that provider for any critical or amended reports. Note that these will display only if they have been entered into the provider's profile in the New Person file.
- The patient's sex and age at the time of specimen collection will be displayed.
- The option to Edit has been removed. The only options available during the auto instrument verification process are C for Comment and W for Workload.
- If additional results have been reported with the original accession, they will be displayed below. The user has the option to purge these results or add the additional tests to the original accession and use EA to verify them. Note that in this case, there was a duplicate test created and no correction was made other than to inactivate the duplicate test.

```
LAB    Laboratory DHCP Menu ...
3      Process data in lab menu ...
EA  Enter/verify data (auto instrument)

Select Process data in lab menu Option: EA  Enter/verify data (auto
instrument)

Select LOAD/WORK LIST NAME:    SENDOUTS
Select Performing Laboratory: DEMO HOSPITAL// QUEST DIAGNOSTICS-
IRVING
                              TX            999
```

```
Would you like to see the list ? No// <ENTER>  NO

                      Do you wish to modify the test list
            i.e., would you like to add or subtract ATOMIC tests?

Enter Yes or No: No// <ENTER>  NO
You have selected 524 tests to work with.
Do you want to review the data before and after you edit? YES//
<ENTER>

    Select one of the following:

         1         Accession Number
         2         Unique Identifier (UID)

Verify by: 1//   Accession Number
Accession Date: TODAY// <ENTER> (APR 11, 2010)
Accession NUMBER: 47// 67
TEST,CASE THREE               117565
ORDER #: 37551
 Seq #: 10011 Accession: SO 10 67       Results received: Apr 09,
2010@15:25
                  UID: 6010000067          Last updated: Apr 09,
2010@15:25

Sample: BLOOD
Specimen: BLOOD

TEST,CASE THREE  HRCN: 117565      LOC: ERL
Pat Info:                          Sex: MALE     Age: 1mo as of Apr
08, 2010
Provider: ADAMS,PETE                     Voice pager:
  Phone:                              Digital pager:

ACCESSION:                                   SO 10 67
SENDOUTS                                     4/8 17:02d
TSH (R)                                          8.90 H  mIU/L
Inst Comments:
Inst Comments: Test Performed at:
Inst Comments: QUEST DIAGNOSTICS-IRVING
Inst Comments: 4770 REGENT BLVD.
Inst Comments: IRVING, TX  75063     SUZANNE H. KREISBERG, MD

COMMENTS:
COMMENTS: Test Performed at:
COMMENTS: QUEST DIAGNOSTICS-IRVING
COMMENTS: 4770 REGENT BLVD.
COMMENTS: IRVING, TX  75063     SUZANNE H. KREISBERG, MD

SELECT ('C' for Comments, 'W' Workload):
Approve for release by entering your initials: DR

Test(s) Not Reviewed:
_TSH = 8.90 H  mIU/L

Purge these test results? NO// Y
```

Figure 16-1: Using EA Enter/verify data (Auto Instrument) for reference laboratory results

You may notice in the previously provided example, a listing of Test(s) Not Reviewed.

```
SELECT ('C' for Comments, 'W' Workload):
Approve for release by entering your initials: DR

Test(s) Not Reviewed:
_TSH = 8.90 H  mIU/L

Purge these test results? NO// Y
```

Figure 16-2: List of Tests Not Reviewed

This indicates that either duplicates of the same test are in the auto instrument file with the same result code (example above) or reflex tests have been reported but the reflex tests have not been added on to the original order. If results have been received and verified, you may choose to purge the extra test results.

If, however, results have been received that have not been presented to verify, you may choose to add those test(s) onto the original accession so that you may release the reflex test results as well.

17.0 Display a Lab Universal Interface Message

If a result does not appear when the **EA** option is used to verify incoming results, and either a prompt for “What tray?” is displayed or the user is asked if they wish to enter results manually, a mapping problem, or even a typo when entering UI test codes in the Auto Instrument file, may exist. The raw data may be displayed either by using Fileman or the “Display a Message” prompt under the **Lab Universal Interface Menu**.

```
Laboratory DHCP Menu ...
Supervisor Menu ...
Lab Interface Menu
Lab Universal Interface Menu
Display Lab Universal Interface Message
```

Figure 17-1: Menu path to display a Lab Universal Interface Message

When prompted for the message number, enter the name of the auto instrument (Reference Laboratory)-I-Unique Accession Number.

In the following example, a UI result code was returned that did not match the UI test code for this test in the Auto Instrument file.

```
Display Lab Universal Interface Message

Select Message: LABCORP-I-0740800446
           LA7 UI Message Display Msg #312946 – LABCORP-I-0740800446
[*************** Message Statistics *************************]

CONFIGURATION: LABCORP                      DATE/TIME ENTERED: SEP
01, 2004@13:51:
DATE/TIME OF MESSAGE: SEP 01, 2004@14:37
ENCODING CHARACTERS:  ~\&                 INSTRUMENT NAME: LABCORP-
I-0740800446
MESSAGE CONTROL ID: 20040901154455000     MESSAGE NUMBER: 312946
MESSAGE TYPE: ORU R01                     MSH: MSH
PRIORITY: 3                               PROCESSING ID: PRODUCTION
RECEIVING FACILITY: 46621                 SECURITY: TOPNET2NEON
SENDING FACILITY: DAL                     STATUS: ERROR
TYPE: INCOMING                            VERSION ID: 2.3

[**************** Error Message ******************************]

, 2004@13:51:59
Text: Msg # 312946, Test code '85988430' was returned with a result
but is not entered as a UI Test Code on this instrument.

[******************** Text of Message ****************************]
```

```
SH|^~\&||DAL||46621|200409011437|TOPNET2NEON|ORU^R01|200409011544550
00|P|2.3|||
PID|1|IF299351E|46988|0740800446|JONES^VERNITA^MICHELLE^^^||19670123
|F||||||||||
Col>   1 |<PF1>H=Help <PF1>E=Exit| Line>    22 of 43     Screen>
1 of 2
```

Figure 17-2: Reviewing a Lab Universal Interface message for errors

The Up Arrow or Down Arrow keys may be used to scroll down through the message to see the raw data for that accession number.

Any new result codes that have not been mapped will be seen in the OBX segments.

```
OBX|1|TX|^^^85988430^VZV AB IGG,
EIA^||2.15|ISR||N|||F|||200408211600|EZ||CR|
```

Figure 17-3: OBX segments showing result code and associated test

This data may then be used to map the tests and change the UI test codes that failed in the auto instrument file.

Another problem that may be identified is that entries have been made in the LEDI field of the Topography file. If the error message indicates that the returned specimen type does not match the LEDI entry in the Topography file, results will not be available to verify. Remove the LEDI entries in the Topography file. Use VA Fileman as indicated below.

```
Select VA FileMan Option:  Enter or Edit File Entries

INPUT TO WHAT FILE: TOPOGRAPHY FIELD//
EDIT WHICH FIELD: ALL// <ENTER>

Select TOPOGRAPHY FIELD NAME:    URINE     7X100
NAME: URINE//
ICDO CODE:
HL7 CODE: UR//
LEDI HL7: Urine// @
  SURE YOU WANT TO DELETE? Y  (Yes)
TIME ASPECT:
SNOMED CODE: 7X100//
SEX SPECIFIC:
Select SYNONYM: UR//
WEIGH:
COLLECTION SAMPLE: URINE, RANDOM//
Select TITLE OF ARTICLE:
ABBREVIATION: U//
*NEGATIVE BACTERIOLOGY COMMENT: NO GROWTH//
```

Figure 17-4: Using VA Fileman to remove LEDI HL7 code

Once the LEDI code has been removed, the raw message may be refiled.

18.0 Monitoring GIS Processes

The Generic Interface System (GIS) is used to format and route HL7 messages created during laboratory accessioning and returned by the reference laboratory as results. There are four processes that must be running in order for the bidirectional interface to work correctly:

```
FORMAT CONTROLLER
OUTPUT CONTROLLER
HL IHS LAB TRANSMITTER
HL IHS LAB RECEIVER
```

Figure 18-1: Four processes required for the bidirectional interface to work correctly

If you do not see any laboratory results to verify, your RPMS has been down, or you have had a power outage, the GIS may be checked either in traditional RPMS or using the GUI monitor.

18.1 RPMS GIS Verify Status of Background Processes

```
GIS   Generic Interface System ...
BPM  Background Process Control Menu
VS   Verify Status of Background Processes
```

Figure 18-2: The VS option

On the first screen displayed, accept the default entries and at the “COMMAND” prompt type **S** and press Enter, then type **E** and press Enter (or you may use the shortcut F1-E)

```
**Verify Status of Background Processes**
**Input Parameters**

Detailed report: YES        Repaint frequency: 5

Maximum number of iterations (printer only): 100



COMMAND:    S <enter>                   Press <PF1>H for help
Insert
```

Figure 19-3: The “COMMAND” prompt to Save and Exit to display GIS process status

These steps will result in display of the status of the four processors required for a bidirectional interface.

```
Background Process/             Last Run/         (defaults in
seconds)
Message                        Last Msg   Elapsed    Min     Max
  ----------------------------  ----------  -------  ------  ------
     OUTPUT CONTROLLER     18:53:08        0       0       0       0
       Idle
     FORMAT CONTROLLER     18:53:08        0       0       0       0
       Idle
     HL IHS LAB RECEIVER   18:38:13  14m 55s   14.9m   14.9m   14.9m
       Idle
N    HL IHS LAB TRANSMITTER
```

Figure 18-4: The processes required for a bidirectional interface

In the example above, three processes are running, but the HL IHS LAB TRANSMITTER necessary for sending out orders is not running. (Note the ‘N’ in the RUN column.)

This menu may be left by typing a caret (^) to return to the primary menu and typing **EXIT** and pressing Enter to leave the menu.

18.2 S1 Startup a Background Process

If no processes (‘N’ in the RUN column, no text under the processor, and no numbers in the columns), the processors may be restarted using the **S1 Startup a Background Process** option.

```
GIS   Generic Interface System
BPM  Background Process Control Menu
S1  Startup a Background Process


Select BACKGROUND PROCESS CONTROL NAME: OUTPUT CONTROLLER
. Started

Select BACKGROUND PROCESS CONTROL NAME: FORMAT CONTROLLER
. Started

Select BACKGROUND PROCESS CONTROL NAME: HL IHS LAB RECEIVER
. Started

Select BACKGROUND PROCESS CONTROL NAME: HL IHS LAB TRANSMITTER
. Started
```

Figure 18-5: Using the **SI Startup a Background Process** option

18.3 SH1 Shutdown a Process

Occasionally it may appear that the processors are running but no new results have been received. If the reference laboratory shuts down their side of the interface, it also shuts down yours. The processors will need to be stopped and restarted. The reference laboratory commonly refers to this as “bouncing the interface”.

To stop and restart the processors, choose the menu option **SH1** to shut down *only the lab processors*:

```
GIS   Generic Interface System
BPM  Background Process Control Menu
SH1  Shutdown a Process
```

Figure 18-6: Selecting the **SH1** option to shut down a process

When prompted for a process, select each of the processes. You may use VS to verify that both background processes have stopped.

```
HL IHS LAB RECEIVER
HL IHS LAB TRANSMITTER
```

Figure 18-7: Reference laboratory interface processes

Once both processes have been stopped, they may be restarted as indicated above by using the **S1** option.

18.4 GUI GIS Monitor

If the GUI GIS Monitor has been installed on your work station, you may monitor the interface using a “stoplight” placed on your toolbar.

When you first configure the GUI monitor, enter the RPMS Server Address, Server Port, and Server Namespace as shown below. Then click **OK**.

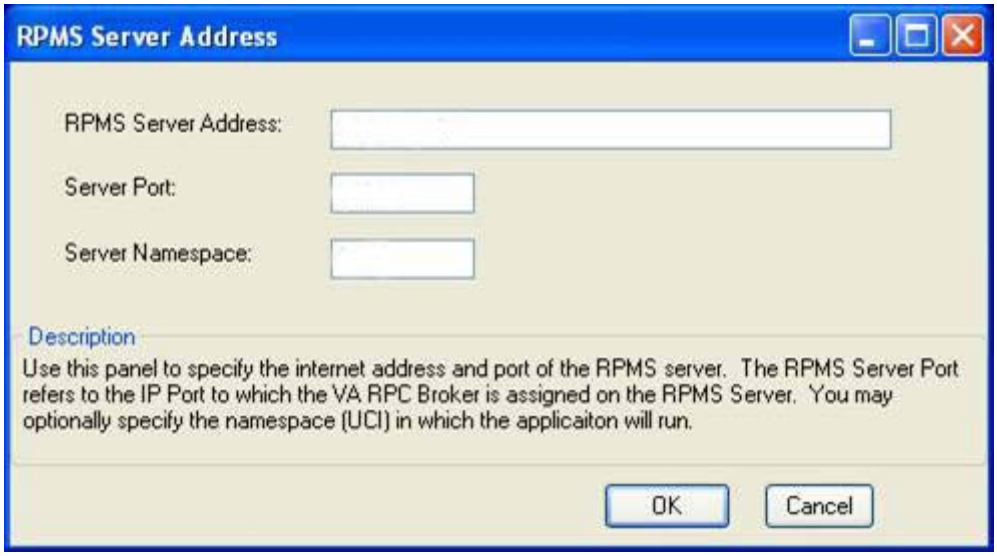


Figure 18-8: The **RPMS Server Address** window

Enter your usual RPMS Access and Verify Codes before again clicking **OK**.

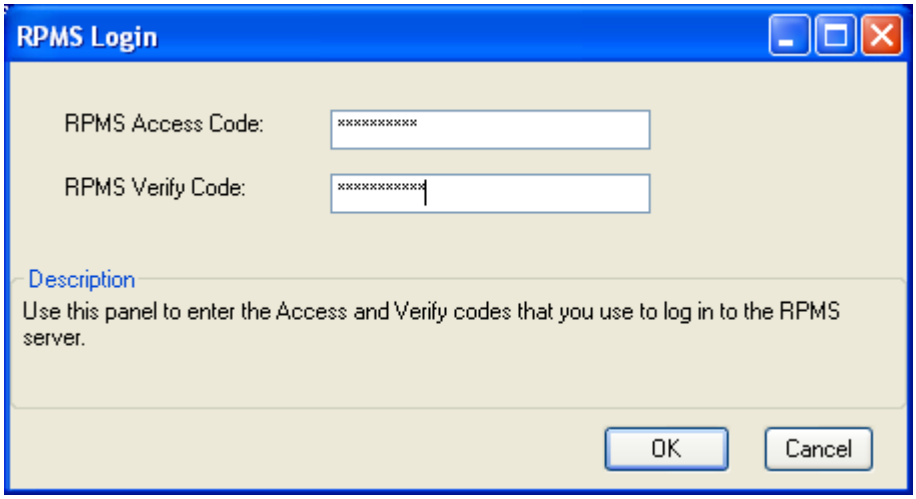


Figure 18-9: The **RPMS Login** window

This should result in an open window for monitoring, stopping, or restarting any one of the processes. The window may be minimized during the work day. If one or more processes have stopped, the stoplight will turn red and a bubble with text indicating which processor has stopped will appear next to the stoplight.

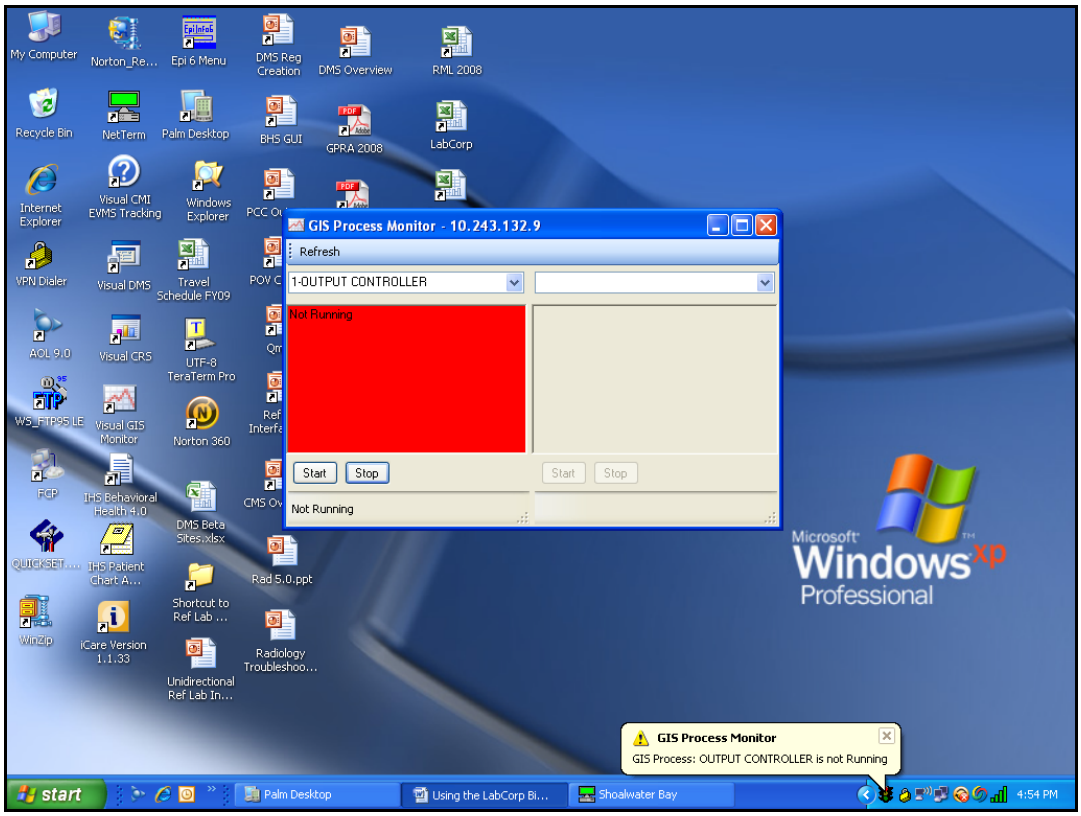


Figure 18-10: The **GI Process Monitor** window

The process may be restarted by clicking **Start**. The status of the other processes may be checked by selecting them as desired from the dropdown list.

If a process cannot be restarted, notify your Information Technology (IT) Department. There may be a problem with the local network or the Virtual Private Network (VPN). If all is well on a local basis, please contact your reference laboratory's Client Service department.

Note:	GIS processes should be checked twice a day: in the morning to ensure that all tests reported overnight have filed back into RPMS, and when the courier picks up specimens to ensure that electronic orders have reached the reference laboratory by the time the specimens arrive.

Appendix A: Step by Step Checklist for Implementing LEDI in LR 5.2 Patch 1027

Note: Steps 1–3 must be followed immediately after patch installation to ensure that your reference laboratory interface continues to function. Steps 4 through 9 should be completed as soon as convenient following patch installation. If the patch is installed at night, these steps may be completed the next morning. Steps 3–9 ensure that your site will benefit from the features available in LEDI functionality as described in the Laboratorian Guide.

#	Option (File)	Page	Responsibility	Task
1	BLR–REFL–SIT	Bidirectional–p. 41 Unidirectional–p. 44	Lab	Run this option for the main facility for any reference laboratory interface–client number(s), NPI, Lab name, patient phone number, accession area, etc. Do not change interface settings.
2	Multidivisional Sites VA Fileman–Enter/Edit File Entries–BLR Master Control file	p. 49	Site Manager/Lab	If this is a multidivisional interface site, use VA Fileman to edit additional sites in the BLR Master Control file that use reference laboratory interface with relevant information.
3	Lab Message Parameter (62.48)	p. 52	Site Manager/Lab	Use VA Fileman to edit in information as indicated for specific reference laboratory.

#	Option (File)	Page	Responsibility	Task
4	Institution (4)	p. 61	Site Manager/Lab	Add reference laboratory and address as indicated. *Be sure the Agency Code is Other and Status is Local*.
5	Lab Shipping Configuration	a. p. 61 b. p. 63	Lab	a. LEDI Set up b. Create a shipping configuration as collecting facility. (If site is multidivisional, add shipping configuration for each division)
6	Load/Worklist (#68.2)	p. 58	Lab	Add Reference Lab as default reference laboratory to Sendout Load/Worklist under each profile.
7	Mail Group	p. 64	Site Manager	Add laboratory staff as desired to mail group–Lab report.
8	Bulletin	p.65	Site Manager	Add mail group–Lab Messaging to Amended Report Bulletin and Abnormal Report Bulletin.
9	Auto Instrument (#62.4)	p. 75	Lab (Use Loop Function.)	Edit each test in Reference Lab auto instrument file to Store Units: YES. May wish to remove YES from Notify Abnormal Flag for each test.

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