RESOURCE AND PATIENT MANAGEMENT SYSTEM

Laboratory Reference

(BLR, LA, LR)

User Manual

Version 5.2 Patch 1039
February 2017

Office of Information Technology
Division of Information Technology

Table of Contents

1.0 Introduction

This document lists various changes to the RPMS Lab module that were brought about by IHS Lab Patch LR*5.2*1039.

The majority of the additions/changes to the RPMS Lab Package were made to accommodate RPMS Laboratory Package Enhancement requests. This patch will assist in adherence to regulatory requirements for laboratory software (Meaningful Use), assist with improving patient safety and improve workflow and business process issues for users of the RPMS Lab package.

Laboratory end users can expect to observe the following modifications and corrections in this 2nd quarter release for Fiscal Year 2017.

A new Computed Creatinine Clearance can be populated when users create the new Delta Check for the Creatinine Clearance panel that includes the Serum Creatinine, Urine Creatinine, Total Volume and the Computed Creatinine Clearance test.

ASAP, STAT, and Emergency Room Order Notification are now available when users turn on the parameter to receive notifications of an EHR order with: (1) an Urgency of STAT or ASAP or (2) if an order was created with a division that has EMERGENCY in its name.

Marking multiple accessions as Not Performed will allow users to mark multiple accessions that have not been resulted as Not Performed.

The Collection Date used to create the PCC Visit is now available when users turn on the new parameter that allows the PCC visits created via the Lab Package to use the Accession File's Collection Date.

File 60 Search allows users the option to search all entries in File 60 for a specific string, the word/test that is being searched that appears anywhere in the Test definition, synonym, general processing inst. or general ward instructions, the test will be displayed.

Micro Interim Reports by Location, users will be able to list Micro Interim Reports by a specific entry in the Hospital Location (#44) file for a date range.

Lab Arrival Time Added from the Accession file has been added to the Interim Report and EHR Labs Tab.

The new Reference Lab Mapping Option allows users to use a new method to map Reference Lab tests.

The new menu option, RSNL, to Reprint/Reship a Non LEDI Order will be available for the GIS Reference Lab Interfaces to reprint or reship a lab order.

GIS reference lab interfaces, the IHS Manifest Header will print on all pages.

Sites with the Reference Lab interfaces have the option to designate how many Manifests to print.

Sites with the LabCorp Billing Reference Lab interfaces will now have the ability to print the patient's secondary insurance on the manifests.

LOINC codes is now mandatory for lab test configuration which is included in the Site/Specimen subfield in VA FileMan 60.

Transaction Fields for Laboratory Test were not updating or missing, as a result the PCC fields for the RESULT DATE AND TIME and ABNORMAL flags were absent for the Atomic (children) lab tests of the orderable Cosmic (panel) test. The fix is incorporated in the lab patch.

21 VA Patches were also included in LR*5.2*1039.

2.0 Computed Creatinine Clearance (CrCl) Delta Check

With the installation of LR*5.2*1039, it will be possible to create a new delta check for Creatinine Clearance utilizing 24-hour urine collection.

2.1 Calculation

The standard calculation will be utilized:

CrCl = $\frac{\text{uCr}}{\text{sCr}} * \frac{\text{uV}}{1440}$

CrCl = Creatinine Clearance

uCr = Urine Creatinine (mg/dl)

sCr = Serum Creatinine (mg/dl)

uV = Urine Volume (ml)

1440 = 24-hour collection of urine

2.1.1 Absolute Creatinine Clearance

In order to obtain the patient's Creatinine Clearance in absolute terms (i.e., mL/min), a separate calculation, outside of RPMS, must be made.

The patient's Body Surface Area (BSA) must be determined.

BSA = √((Ht*Wt)/3600)

Wt = weight in kgs and

Ht = height in cm.

Then the

Absolute CrCl = $CrCl * \frac{1.73}{BSA}$

2.2 CrCl Exceeds GFR by 10 to 20 percent

From the National Kidney Disease website:

The CrCl formula tends to exceed the true GFR by 10 to 20 percent or more depending upon the proportion of urinary creatinine that is derived from tubular secretion. Historically, this error was balanced by an error of almost equal magnitude in the measurement of the serum creatinine. The error in serum creatinine measurement was due to non-creatinine chromogens (such as acetone, ascorbic acid, and pyruvate) that are present in serum and contributed 10 to 20 percent of the creatinine concentration measured by older colorimetric techniques. However, national standardization of serum creatinine assays to creatinine reference materials has largely abolished this error. If a laboratory is using standardized methods, creatinine clearance measurements will consistently be 10 to 20 percent higher than GFR in patients with a normal GFR and progressively higher as the GFR falls.

2.3 Delta Check Reminder

Since the Creatinine Clearance will be implemented via a delta check, sites are reminded that the

1. CREATININE, SERUM,
2. CREATININE, URINE,
3. URINE VOLUME, 24 Hr, and the
4. COMPUTED CREATININE CLEARANCE

tests must all be defined and placed on a single Cosmic test; i.e., a panel, in that specific order.

If the tests are placed in any other order, the delta check will fail with an <UNDEFINED> error.

The delta check must be placed on the URINE VOLUME, 24 Hr test, in the TYPE OF DELTA CHECK field under the SITE/SPECIMEN multiple. For example:

```
INPUT TO WHAT FILE: LABORATORY TEST//
EDIT WHICH FIELD: ALL// SITE/SPECIMEN    (multiple)
   EDIT WHICH SITE/SPECIMEN SUB-FIELD: ALL// TYPE OF DELTA CHECK
   THEN EDIT SITE/SPECIMEN SUB-FIELD:
THEN EDIT FIELD:


Select LABORATORY TEST NAME: URINE VOLUME 24 Hr
Select SITE/SPECIMEN: URINE
  TYPE OF DELTA CHECK: IHS CREATININE CLEARANCE
Select SITE/SPECIMEN:
```

Figure 2-1: Adding a Delta Check to a Test

Delta checks are activated when they are placed on an atomic test of a panel – they should never be placed on the cosmic test itself.

2.4 New Computed CrCl Options

Two new options regarding the CrCl will be added to the BLRMENU during the post install phase of the patch.

The options will be locked by the LRSUPER security key; i.e., only those users with the LRSUPER key will be allowed to use the options.

2.4.1 Create New CrCL Delta Check option

The BLR CREAT CLEAR DELTA CHECK option will allow a user to create the new CREATININE CLEARANCE delta check interactively, with the user selecting the CREATININE tests to be used, the computed creatinine clearance test, as well as naming the new delta check.

The option will be added to the BLRMENU with the CCCD mnemonic.

2.4.2 Test CrCl equation option

The BLR CREATININE CLEARANCE TEST option will allow the user to test the Creatinine Clearance equation by asking the user a series of question before displaying the results.

The option will be added to the BLRMENU with the TCCR mnemonic.

Example BLRMENU with the new options.

```
IHS Lab Main Support Menu

   LS     Link Transaction Processor Status
   7421   Will restart the 7421 label routine if turned off.
   INQ    Inquire into the IHS LAB Transaction Log
   FLD    Search Transactions for PCC LINK DISABLE Error
   RSN    Requeue by Sequence Number
   RST    Requeue Transaction by Sort Template
   CPT    Enter/edit IHS Lab CPT File
   FAL    Find ALL PCC Link Errors from Lab
   STP    Stop/restart Lab to PCC Transaction Processor
   MSTR   Enter/edit BLR MASTER CONTROL FILE
   POV    Purpose of Visit Compliance Report
   6249   Display File 62.49 HL7 Segments
   BZY    IHS Taskman Busy Device Rpt
   CCCD   Create Creatinine Clearance Delta Check
   CGFR   Create CKD-EPI Equation Delta Check
   CLR    Clear BLR errors from error log
   CUM    IHS CUMULATIVE MENU ...
   DADD   Add Completed Date to Accession Tests
   EDCC   BLR CC DATA Parameter Edit
   ETP    LA7 Message Queue Error Messages to Purgeable
   IHSM   IHS Lab Microbiology Report
   ILUM   IHS LOINC/UCUM MENU ...
   LABT   Determine if Required RPMS Lab Options Tasked
```

```
              Press 'RETURN' to continue, '^' to stop:
   LOI    IHS Lab Package LOINC Percentage Report
   LRAS   Accession IHS Lab Microbiology Report
   LROS   Order/test status by Order Number
   LTRR   Laboratory Test (#60) File's Reference Ranges
   LVP    IHS Lab Version & Patch Report
   MMR    Lab Description Abbreviation Report
   NLO    Lab Tests Without LOINC Entries Report
   ORPH   Remove Orphans from # 68
   ORPR   BROWSER REPORT ON ORPHANS FROM # 68
   POCA   Edit BLR AGE DETAIL Parameter
   RBE    Clear ALL BLR Errors from Error Log
   REFL   Reference Lab Main Menu ...
   REPL   Replace Lab Order/Test Status Report ...
   SHDR   State Health Dept Report
   TCCR   Test Creatinine Clearance Logic
   TGFR   Test CKD-EPI Equation Logic
          Count Accessioned Tests Using Lab Data File ...
          IHS Lab Ask-At-Order ...

Select IHS Lab Main Support Menu Option:
```

Figure 2-2: BLR Menu Example

2.4.3 Selecting CCCD on the BLRMENU

The first step in creating the Creatinine Clearance delta check is to select the CCCD Create Creatinine Clearance Delta Check on the BLRMENU:

```
IHS Lab Main Support Menu


   LS     Link Transaction Processor Status
   7421   Will restart the 7421 label routine if turned off.
   INQ    Inquire into the IHS LAB Transaction Log
   FLD    Search Transactions for PCC LINK DISABLE Error
   RSN    Requeue by Sequence Number
   RST    Requeue Transaction by Sort Template
   CPT    Enter/edit IHS Lab CPT File
   FAL    Find ALL PCC Link Errors from Lab
   STP    Stop/restart Lab to PCC Transaction Processor
   MSTR   Enter/edit BLR MASTER CONTROL FILE
   POV    Purpose of Visit Compliance Report
   6249   Display File 62.49 HL7 Segments
   BZY    IHS Taskman Busy Device Rpt
   CCCD   Create Creatinine Clearance Delta Check
   CGFR   Create CKD-EPI Equation Delta Check
   CLR    Clear BLR errors from error log
   CUM    IHS CUMULATIVE MENU ...
   DADD   Add Completed Date to Accession Tests
   EDCC   BLR CC DATA Parameter Edit
   ETP    LA7 Message Queue Error Messages to Purgeable
   IHSM   IHS Lab Microbiology Report
   ILUM   IHS LOINC/UCUM MENU ...
   LABT   Determine if Required RPMS Lab Options Tasked

              Press 'RETURN' to continue, '^' to stop:
   LOI    IHS Lab Package LOINC Percentage Report
   LRAS   Accession IHS Lab Microbiology Report
```

```
   LROS   Order/test status by Order Number
   LTRR   Laboratory Test (#60) File's Reference Ranges
   LVP    IHS Lab Version & Patch Report
   MMR    Lab Description Abbreviation Report
   NLO    Lab Tests Without LOINC Entries Report
   ORPH   Remove Orphans from # 68
   ORPR   BROWSER REPORT ON ORPHANS FROM # 68
   POCA   Edit BLR AGE DETAIL Parameter
   RBE    Clear ALL BLR Errors from Error Log
   REFL   Reference Lab Main Menu ...
   REPL   Replace Lab Order/Test Status Report ...
   SHDR   State Health Dept Report
   TCCR   Test Creatinine Clearance Logic
   TGFR   Test CKD-EPI Equation Logic
          Count Accessioned Tests Using Lab Data File ...
          IHS Lab Ask-At-Order ...

Select IHS Lab Main Support Menu Option:CCCD
```

Figure 2-3: Selecting CCCD from the BLRMENU Example.

2.4.4 Creating the CrCl Delta Check

In order to create the new Delta Check, five prompts will need to be answered:

1. Create the name of the Creatinine Clearance Delta Check. This must be a unique name. For example, “IHS CREATININE CLEARANCE”
2. Name of the test to hold the computed Creatinine Clearance result.
3. Name of the Serum Creatinine test.
4. Name of the Urine Creatinine Test.
5. Name of the Urine Volume test.

Once the five questions are answered, a new delta check will be created in the Delta Checks (#62.1) file.

The following is an example of the process. First, the entering of information:

```
                              IHS Database LR1039 UCI
Date:04/11/16                         IHS LAB
Time:1:20 PM
NEWDELTA                        Creatinine Clearance
BLREXEC4
                                Delta Check Creation
-------------------------------------------------------------------------
-----

Name of the Creatinine Clearance Delta Check: “IHS CREATININE CLEARANCE”

Test to hold Creatinine Clearance Results: COMPUTED CREATININE CLEARANCE

Serum Creatinine Test to use for Creatinine Clearance calculation:
CREATININE
```

```
     1   CREATININE CLEARANCE
     2   CREATININE, SERUM
     3   CREATININE, URINE
CHOOSE 1-3: 1  CREATININE, SERUM

Urine Creatinine Test to use for Creatinine Clearance calculation:
CREATININE
 1   CREATININE CLEARANCE
     2   CREATININE, SERUME
     3   CREATININE, URINE
CHOOSE 1-3: 1  CREATININE, URINE

Urine Volume test to use for Creatinine Clearance calculation: URINE
VOLUME, 24 Hr
```

Figure 2-4: Delta Check Creation

Next is the creation of the Delta Check

```
                            IHS Database LR1039 UCI
Date:04/11/16                       IHS LAB
Time:1:21 PM
NEWDELTA                      Creatinine Clearance
BLREXEC4
                              Delta Check Creation
-------------------------------------------------------------------------
-----


Adding IHS CREATININE CLEARANCE to Delta Check Dictionary.

     IHS CREATININE CLEARANCE Delta Check added to Delta Check Dictionary.

     IHS CREATININE CLEARANCE Delta Check DESCRIPTION added to Delta Check
Dicti
onary.

     IHS CREATININE CLEARANCE Delta Check TEXT added to Delta Check
Dictionary.
```

Figure 2-5: Delta Check Creation

ADD the newly configured CrCl Delta Check to the URINE VOLUME, 24 Hr test, in the TYPE OF DELTA CHECK field under the SITE/SPECIMEN multiple.

```
INPUT TO WHAT FILE: LABORATORY TEST//
EDIT WHICH FIELD: ALL// SITE/SPECIMEN    (multiple)
   EDIT WHICH SITE/SPECIMEN SUB-FIELD: ALL// TYPE OF DELTA CHECK
   THEN EDIT SITE/SPECIMEN SUB-FIELD:
THEN EDIT FIELD:


Select LABORATORY TEST NAME: URINE VOLUME 24 Hr
Select SITE/SPECIMEN: URINE
  TYPE OF DELTA CHECK: IHS CREATININE CLEARANCE
Select SITE/SPECIMEN:
```

Figure 2-6: Adding a Delta Check to a Test

Delta checks are activated when they are placed on an atomic test of a panel – they should never be placed on the cosmic test itself.

2.4.4.1 Listing the new Delta Check from the Delta Check dictionary

In this example, the Delta Check created above will look similar to the following via FileMan Inquiry for File 62.1, DELTA CHECKS.

Note that description states that the delta check must be added to the URINE VOLUME, 24 Hr test.

```
Select VA FileMan Option: INQuire to File Entries

OUTPUT FROM WHAT FILE: 62.1// DELTA CHECKS    (43 entries)
Select DELTA CHECKS NAME: IHS
     1   IHS CLEAR 2
     2   IHS CLEAR 3
     3   IHS CLEAR4
     4   IHS CREATININE CLEARANCE
CHOOSE 1-4: 4  IHS CREATININE CLEARANCE
ANOTHER ONE:
STANDARD CAPTIONED OUTPUT? Yes//   (Yes)
Include COMPUTED fields:  (N/Y/R/B): NO// BOTH Computed Fields and Record
Number
 (IEN)

NUMBER: 61                              NAME: IHS CREATININE CLEARANCE
  XECUTABLE CODE: I LRSB(4),LRSB(2582330),LRDL S
LRSB(96)=$$CREATCLR^BLREXEC4(LR
SB(4),LRSB(2582330),LRDL)
 DESCRIPTION:   This delta check, when added to the test named
      URINE VOLUME
 will calculate a Creatinine Clearance.

 The Creatinine Clearance calculation will be stuffed into the test called
      COMPUTED CREATININE CLEARANCE

SITE NOTES DATE: APR 11, 2016
 TEXT:   Created by KRING,MICHAEL K     DUZ:6045
```

Figure 2-7: CrCl Delta Check Listing

2.5 Testing the CrCl Equation using the TCCR option

It is possible to test the logic of the Creatinine Clearance Equation by selecting the TCCR option on the BLRMENU. It is an iterative process that will require the user to enter four pieces of information and then it will display the result.

There are numerous Creatinine Clearance calculators on the web that can be used to "double-check" the equation.

For example:

https://www.healthcare.uiowa.edu/path_handbook/Appendix/Calculators/creat_clear.html

2.5.1 Selecting the TCCR option on the BLRMENU

```
Select Laboratory DHCP Menu Option: BLR  IHS Lab Main Support Menu

   LS     Link Transaction Processor Status
   7421   Will restart the 7421 label routine if turned off.
   INQ    Inquire into the IHS LAB Transaction Log
   FLD    Search Transactions for PCC LINK DISABLE Error
   RSN    Requeue by Sequence Number
   RST    Requeue Transaction by Sort Template
   CPT    Enter/edit IHS Lab CPT File
   FAL    Find ALL PCC Link Errors from Lab
   STP    Stop/restart Lab to PCC Transaction Processor
   MSTR   Enter/edit BLR MASTER CONTROL FILE
   POV    Purpose of Visit Compliance Report
   6249   Display File 62.49 HL7 Segments
   BZY    IHS Taskman Busy Device Rpt
   CCCD   Create Creatinine Clearance Delta Check
   CGFR   Create CKD-EPI Equation Delta Check
   CLR    Clear BLR errors from error log
   CUM    IHS CUMULATIVE MENU ...
   DADD   Add Completed Date to Accession Tests
   EDCC   BLR CC DATA Parameter Edit
   ETP    LA7 Message Queue Error Messages to Purgeable
   IHSM   IHS Lab Microbiology Report
   ILUM   IHS LOINC/UCUM MENU ...
   LABT   Determine if Required RPMS Lab Options Tasked

               Press 'RETURN' to continue, '^' to stop:
   LOI    IHS Lab Package LOINC Percentage Report
   LRAS   Accession IHS Lab Microbiology Report
   LROS   Order/test status by Order Number
   LTRR   Laboratory Test (#60) File's Reference Ranges
   LVP    IHS Lab Version & Patch Report
   MMR    Lab Description Abbreviation Report
   NLO    Lab Tests Without LOINC Entries Report
   ORPH   Remove Orphans from # 68
   ORPR   BROWSER REPORT ON ORPHANS FROM # 68
   POCA   Edit BLR AGE DETAIL Parameter
   RBE    Clear ALL BLR Errors from Error Log
   REFL   Reference Lab Main Menu ...
   REPL   Replace Lab Order/Test Status Report ...
   SHDR   State Health Dept Report
   TCCR   Test Creatinine Clearance Logic
   TGFR   Test CKD-EPI Equation Logic
          Count Accessioned Tests Using Lab Data File ...
          IHS Lab Ask-At-Order ...

Select IHS Lab Main Support Menu Option: TCCR  Test Creatinine Clearance Logic
```

Figure 2.7: Selecting the TCCR option on the BLRMENU

Input Data

Three pieces of information must be entered:

- CREATININE, SERUM
- CREATININE, URINE
- URINE VOLUME, 24 Hr

```
                            2013 DEMO HOSPITAL (CMBA)
```

```
Date:04/11/16                        IHS LAB                          Time:2:39 PM
                              Creatinine Clearance
                                Equation Testing
-------------------------------------------------------------------------------

     Enter Serum Creatinine Value (mg/dL Units):  2.0

     Enter Urine Creatinine Value (mg/dL Units):  64

     Enter 24 Hour Urine Volume (mL Units):  1500
Figure 2.8: Enter test results
Computed CrCl Result
Once all 3 pieces of information are entered, the routine will display results.

                            2013 DEMO HOSPITAL (CMBA)
Date:04/11/16                        IHS LAB                          Time:2:39 PM
                              Creatinine Clearance
                                Equation Testing
-------------------------------------------------------------------------------
     Serum Creatinine:2 mg/dL
     Urine Creatinine:64 mg/dL
     Urine Volume:1500 mL
     Time Assumed to be 24 Hours.


          Creatinine Clearance Equation = 33.33


               Again? NO//
```

Figure 2-8: Computed CrCl Test Results

> **Note**: If the "AGAIN?" prompt is answered **YES**, the process repeats.

3.0 ASAP, STAT, and Emergency Room Order Notification

With the installation of LR*5.2*1039, it will be possible for users to receive notifications of an EHR order with: (1) an Urgency of STAT or ASAP or (2) if an order was created with a division that has EMERGENCY in its name.

Note: This alert process will only be for EHR orders.

The notifications will only be sent to users who have been added to the new Mail Group LAB HIGH URGENCY NOTIFICATION and if and only if the BLR EMERGENCY ALERT Parameter has been set to YES.

3.1 New BLR EMERGENCY ALERT Parameter Definition

The new BLR EMERGENCY ALERT Parameter will be added to the PARAMETER DEFINITION file during the installation of LR*5.2*1039.

3.1.1 BLR EMERGENCY ALERT Parameter Modification Option

The BLR EMERGENCY ALERT parameter can either be modified via the XPAR MENU or by the new BLR EMER ALERT Parameter Edit Option that will be added to the BLRMENU with the EAPE menu option.

An example BLRMENU listing showing the new EAPE option follows:

```
   IHS Lab Main Support Menu

LS     Link Transaction Processor Status
7421   Will restart the 7421 label routine if turned off.
INQ    Inquire into the IHS LAB Transaction Log
FLD    Search Transactions for PCC LINK DISABLE Error
RSN    Requeue by Sequence Number
RST    Requeue Transaction by Sort Template
CPT    Enter/edit IHS Lab CPT File
FAL    Find ALL PCC Link Errors from Lab
STP    Stop/restart Lab to PCC Transaction Processor
MSTR   Enter/edit BLR MASTER CONTROL FILE
POV    Purpose of Visit Compliance Report
6249   Display File 62.49 HL7 Segments
BZY    IHS Taskman Busy Device Rpt
CCCD   Create Creatinine Clearance Delta Check
CGFR   Create CKD-EPI Equation Delta Check
CLR    Clear BLR errors from error log
CUM    IHS CUMULATIVE MENU ...
DADD   Add Completed Date to Accession Tests
EAPE   Edit BLR EMERGENCY ALERT Parameter
EDCC   BLR CC DATA Parameter Edit
EMGP   Edit LAB HIGH URGENCY NOTIFICATION Mail Group
ETP    LA7 Message Queue Error Messages to Purgeable
```

```
   IHSM   IHS Lab Microbiology Report
   ILUM   IHS LOINC/UCUM MENU ...
   LABT   Determine if Required RPMS Lab Options Tasked
   LOI    IHS Lab Package LOINC Percentage Report
   LRAS   Accession IHS Lab Microbiology Report
   LROS   Order/test status by Order Number
   LTRR   Laboratory Test (#60) File's Reference Ranges
   LVP    IHS Lab Version & Patch Report
   MMR    Lab Description Abbreviation Report
   NLO    Lab Tests Without LOINC Entries Report
   ORPH   Remove Orphans from # 68
   ORPR   BROWSER REPORT ON ORPHANS FROM # 68
   POCA   Edit BLR AGE DETAIL Parameter
   RBE    Clear ALL BLR Errors from Error Log
   REFL   Reference Lab Main Menu ...
   REPL   Replace Lab Order/Test Status Report ...
   SHDR   State Health Dept Report
   TCCR   Test Creatinine Clearance Logic
   TGFR   Test CKD-EPI Equation Logic
          Count Accessioned Tests Using Lab Data File ...
          IHS Lab Ask-At-Order ...

Select IHS Lab Main Support Menu Option:
```

Figure 3-1: BLRMENU with EAPE option

Selecting the EAPE option will allow a user with the LRSUPER Security key to modify the parameter. It will display a screen similar to the following:

```
                              2013 DEMO HOSPITAL (CMBA)
Date:05/04/16                       IHS Laboratory
Time:2:54 PM
                            BLR EMERGENCY ALERT Parameter
BLREMERA
                                     Modify Value
------------------------------------------------------------------------------
-----

BLR EMERGENCY ALERT (YES/NO)? NO//
```

Figure 3-2: EAPE Adding User menu

The only valid responses are either YES or NO. The default response is the current value of the parameter.

If a FileMan exit (the ^, or caret) is entered, the routine is exited via a screen similar to the following:

```
                              2013 DEMO HOSPITAL (CMBA)
Date:05/04/16                       IHS Laboratory
Time:2:54 PM
                            BLR EMERGENCY ALERT Parameter
BLREMERA
                                     Modify Value
------------------------------------------------------------------------------
-----
```

```
BLR EMERGENCY ALERT (YES/NO)? NO// ^

    Invalid/No Entry/Quit. Routine Ends.

         Press RETURN Key:
```

Figure 3-3: Exiting the EAPE option

3.2 New Mail Group LAB HIGH URGENCY NOTIFICATION

LR*5.2*1039 will add a new Mail Group, LAB HIGH URGENCY NOTIFICATION, to the Mail Group dictionary. It is the only Mail Group that will receive the ASAP, STAT or Emergency Room EHR order notifications.

3.2.1 New Mail Group Modifications option

A new option, BLR EDIT HIGH URG MGRP, will be added to the BLRMENU with the EMGP synonym.

It is a new option that will allow a user who has the LRSUPER security key the ability to:

1. Add new members to the new LAB HIGH URGENCY NOTIFICATION mail group; or
2. Delete members from the LAB HIGH URGENCY NOTIFICATION mail group; or
3. List all the members of the LAB HIGH URGENCY NOTIFICATION mail group.

3.2.2 New Mail Group Modifications option on BLRMENU

An example BLRMENU listing showing the new EMGP option follows:

```
    IHS Lab Main Support Menu


   LS     Link Transaction Processor Status
   7421   Will restart the 7421 label routine if turned off.
   INQ    Inquire into the IHS LAB Transaction Log
   FLD    Search Transactions for PCC LINK DISABLE Error
   RSN    Requeue by Sequence Number
   RST    Requeue Transaction by Sort Template
   CPT    Enter/edit IHS Lab CPT File
   FAL    Find ALL PCC Link Errors from Lab
   STP    Stop/restart Lab to PCC Transaction Processor
   MSTR   Enter/edit BLR MASTER CONTROL FILE
   POV    Purpose of Visit Compliance Report
   6249   Display File 62.49 HL7 Segments
   BZY    IHS Taskman Busy Device Rpt
   CCCD   Create Creatinine Clearance Delta Check
```

```
   CGFR   Create CKD-EPI Equation Delta Check
   CLR    Clear BLR errors from error log
   CUM    IHS CUMULATIVE MENU ...
   DADD   Add Completed Date to Accession Tests
   EAPE   Edit BLR EMERGENCY ALERT Parameter
   EDCC   BLR CC DATA Parameter Edit
   EMGP   Edit LAB HIGH URGENCY NOTIFICATION Mail Group
   ETP    LA7 Message Queue Error Messages to Purgeable
   IHSM   IHS Lab Microbiology Report
   ILUM   IHS LOINC/UCUM MENU ...
   LABT   Determine if Required RPMS Lab Options Tasked
   LOI    IHS Lab Package LOINC Percentage Report
   LRAS   Accession IHS Lab Microbiology Report
   LROS   Order/test status by Order Number
   LTRR   Laboratory Test (#60) File's Reference Ranges
   LVP    IHS Lab Version & Patch Report
   MMR    Lab Description Abbreviation Report
   NLO    Lab Tests Without LOINC Entries Report
   ORPH   Remove Orphans from # 68
   ORPR   BROWSER REPORT ON ORPHANS FROM # 68
   POCA   Edit BLR AGE DETAIL Parameter
   RBE    Clear ALL BLR Errors from Error Log
   REFL   Reference Lab Main Menu ...
   REPL   Replace Lab Order/Test Status Report ...
   SHDR   State Health Dept Report
   TCCR   Test Creatinine Clearance Logic
   TGFR   Test CKD-EPI Equation Logic
          Count Accessioned Tests Using Lab Data File ...
          IHS Lab Ask-At-Order ...

Select IHS Lab Main Support Menu Option:
```

Figure 3-4: BLRMENU with EMGP option

3.2.3 Selecting EMGP option

Once the EMGP option is selected, the following menu displays:

```
                            2013 DEMO HOSPITAL (CMBA)
Date:03/29/16                         RPMS Lab
Time:1:59 PM
                         LAB HIGH URGENCY NOTIFICATION
BLREMERA
                            Mail Group Modifications
                                   MAIN MENU
------------------------------------------------------------------------------
-----
    1) Add User to Mail Group             2) Delete User From Mail Group
    3) List Users on Mail Group

Select:  (1-3):
```

Figure 3-5: EMGP menu

3.2.3.1 Selecting Add User to Mail Group

If Add User to Mail Group is selected, the following menu will display:

```
                            2013 DEMO HOSPITAL (CMBA)
Date:05/02/16                     IHS Laboratory
Time:12:40 PM
                          LAB HIGH URGENCY NOTIFICATION
BLREMERA
                              Add User to Mail Group
------------------------------------------------------------------------------
-----

Select NEW PERSON:
```

Figure 3-6: EMGP Adding User menu

A person from the NEW PERSON (#200) file can be selected; for example:

```
                            2013 DEMO HOSPITAL (CMBA)
Date:05/02/16                     IHS Laboratory
Time:12:40 PM
                          LAB HIGH URGENCY NOTIFICATION
BLREMERA
                              Add User to Mail Group
------------------------------------------------------------------------------
-----

Select NEW PERSON: USER3
     1   USER3,USER
     2   USER3,USER JR
CHOOSE 1-2: 1  USER3,USER

    USER3,USER added to LAB HIGH URGENCY NOTIFICATION


         Press RETURN Key:
```

Figure 3-7: Example of adding a user

Pressing Enter will return to the "add user" menu

```
                            2013 DEMO HOSPITAL (CMBA)
Date:05/02/16                     IHS Laboratory
Time:12:40 PM
                          LAB HIGH URGENCY NOTIFICATION
BLREMERA
                              Add User to Mail Group
------------------------------------------------------------------------------
-----

Select NEW PERSON:
```

Figure 3-8: : EMGP Adding User menu

After all the users are entered, pressing RETURN at the NEW PERSON prompt will display something similar to the following:

```
                            2013 DEMO HOSPITAL (CMBA)
Date:05/02/16                     IHS Laboratory
Time:12:41 PM
```

```
                          LAB HIGH URGENCY NOTIFICATION
BLREMERA
                              Add User to Mail Group
------------------------------------------------------------------------------
-----

Select NEW PERSON:

    Exit/No Entry.

         Press RETURN Key:

    1 Users added to LAB HIGH URGENCY NOTIFICATION

    0 Errors when trying to add users to LAB HIGH URGENCY NOTIFICATION


         Press RETURN Key:
```

Figure 3-9: EMGP Adding User report

3.2.3.2 Selecting Delete User From Mail Group

```
                             2013 DEMO HOSPITAL (CMBA)
Date:03/29/16                          RPMS Lab
Time:2:00 PM
                          LAB HIGH URGENCY NOTIFICATION
BLREMERA
                             Mail Group Modifications
                                    MAIN MENU
------------------------------------------------------------------------------
-----
    1) Add User to Mail Group              2) Delete User From Mail Group
    3) List Users on Mail Group

Select:  (1-3): 2
```

Figure 3-10: EMGP menu

If Delete User From Mail Group is selected, the menu will alphabetically display all the current users on the Mail group, similar to the following:

```
                             2013 DEMO HOSPITAL (CMBA)
Date:05/02/16                        IHS Laboratory
Time:1:35 PM
                          LAB HIGH URGENCY NOTIFICATION
BLREMERA
                              Delete User from Mail Group
------------------------------------------------------------------------------
-----


Select one of the users below:

     1 USER1,USER1
     2 USER2,USER2
     3 USER3,USER3
```

```
Enter Number:
```

Figure 3-11: Delete User From Mail Group

Once the user has entered the number, the person listed will be removed from the Mail Group and a message displayed, similar to the following:

```
                            2013 DEMO HOSPITAL (CMBA)
Date:05/02/16                     IHS Laboratory
Time:1:35 PM
                          LAB HIGH URGENCY NOTIFICATION
BLREMERA
                           Delete User from Mail Group
------------------------------------------------------------------------------
-----


Select one of the users below:

     1 USER1,USER1
     2 USER2,USER2
     3 USER3,USER3


Enter Number: 2

    USER2,USER2 deleted from LAB HIGH URGENCY NOTIFICATION Mail Group


         Press RETURN Key:
```

Figure 3-12: Delete User From Mail Group

When the RETURN pressed, the display will reflect that the current members of the Mail group, similar to the following:

```
                            2013 DEMO HOSPITAL (CMBA)
Date:05/02/16                     IHS Laboratory
Time:1:35 PM
                          LAB HIGH URGENCY NOTIFICATION
BLREMERA
                           Delete User from Mail Group
------------------------------------------------------------------------------
-----


Select one of the users below:

     1 USER1,USER1
     2 USER3,USER3


Enter Number:
```

Figure 3-13: Delete User From Mail Group

If RETURN is pressed here, a brief listing will show how many users were removed from the Mail Group, similar to the following:

```
                              2013 DEMO HOSPITAL (CMBA)
Date:05/02/16                       IHS Laboratory
Time:1:35 PM
                            LAB HIGH URGENCY NOTIFICATION
BLREMERA
                             Delete User from Mail Group
------------------------------------------------------------------------------
-----


Select one of the users below:

     1 USER1,USER1
     2 USER3,USER3


Enter Number:

    Exit/No Entry.

         Press RETURN Key:

    1 User deleted from LAB HIGH URGENCY NOTIFICATION

    0 Errors when trying to delete users from LAB HIGH URGENCY NOTIFICATION


         Press RETURN Key:
```

Figure 3-14: Deleted User From Mail Group

3.2.3.3 Selecting List Users on Mail Group

If List Users on Mail Group is selected an option will then prompt the user if they want to list all of the members of the mail group without paging. The default will be NO. It will look similar to the following:

```
                              2013 DEMO HOSPITAL (CMBA)
Date:03/29/16                       IHS Laboratory
Time:2:00 PM
                            LAB HIGH URGENCY NOTIFICATION
BLREMERA
                                 Mail Group Members
------------------------------------------------------------------------------
-----

One Header Line ONLY? NO//
```

Figure 3-15: List Users on Mail group

Once the prompt has been answered, a report, similar to the following, will display to the screen.

```
                            2013 DEMO HOSPITAL (CMBA)
Date:03/29/16                     IHS Laboratory
Page 1
Time:2:00 PM              LAB HIGH URGENCY NOTIFICATION
BLREMERA
                                Mail Group Members

    DUZ       Name
------------------------------------------------------------------------------
-----
    2929      USER,TEST 1
    2916      USER,TEST 2
    2859      USER,TEST 3


         3 Members

              Press RETURN Key:
```

Figure 3-16: Mail Group Members listing

3.3 Alert and MailMan Message Example

If a user is part of the new Mail Group, once an order is entered that has a high urgency, the members of the LAB HIGH URGENCY NOTIFICATION Mail Group will receive an alert and a MailMan message.

The alert will appear similar to the following:

```
1. I   **URGENT** Lab Order:2582  Location: DEMO CLINIC  HRCN:893748
          Select from 1 to 1
          or enter ?, A, I, D, F, S, P, M, R, or ^ to exit:
```

Figure 3-17: Alert

The MailMan message will be similar to the following:

```
Subj: **URGENT** Lab Order: 2582   Location: DEMO CLINIC   HRCN: 893748
[#107278]
04/28/16@09:33 5 lines
From: RPMS LAB PACKAGE   In 'IN' basket.   Page 1   *New*
------------------------------------------------------------------------------
----
Lab Order #:2582   OERR #:1536938 detail:

     Patient Name: PATIENT, DEMO1   HRCN: 893748

          TEST: CBC W/ AUTO DIFF

Enter message action (in IN basket): Ignore//
```

Figure 3-18: Mail Group MailMan message

4.0 Marking Multiple Accessions as Not Performed

With the installation of LR*5.2*1039, it will be possible for users with the LRSUPER Security Key to mark multiple accessions that have not been resulted as Not Performed.

4.1 New MACC Option on BLRMENU

The new MACC option, Mark Multiple Accessions as Not Performed, will be added to the BLRMENU during the post install phase of the LR*5.2*1039 install.

An example BLRMENU listing showing the new MACC option follows:

```
IHS Lab Main Support Menu

   LS     Link Transaction Processor Status
   7421   Will restart the 7421 label routine if turned off.
   INQ    Inquire into the IHS LAB Transaction Log
   FLD    Search Transactions for PCC LINK DISABLE Error
   RSN    Requeue by Sequence Number
   RST    Requeue Transaction by Sort Template
   CPT    Enter/edit IHS Lab CPT File
   FAL    Find ALL PCC Link Errors from Lab
   STP    Stop/restart Lab to PCC Transaction Processor
   MSTR   Enter/edit BLR MASTER CONTROL FILE
   POV    Purpose of Visit Compliance Report
   6249   Display File 62.49 HL7 Segments
   BZY    IHS Taskman Busy Device Rpt
   CCCD   Create Creatinine Clearance Delta Check
   CDVC   Edit BLR COLL DT PCC VISIT CREATION Parameter
   CGFR   Create CKD-EPI Equation Delta Check
   CLR    Clear BLR errors from error log
   CUM    IHS CUMULATIVE MENU ...
   DADD   Add Completed Date to Accession Tests
   EAPE   Edit BLR EMERGENCY ALERT Parameter
   EDCC   BLR CC DATA Parameter Edit
   EMGP   Edit LAB HIGH URGENCY NOTIFICATION Mail Group

               Press 'RETURN' to continue, '^' to stop:
   ETP    LA7 Message Queue Error Messages to Purgeable
   IHSM   IHS Lab Microbiology Report
   ILUM   IHS LOINC/UCUM MENU ...
   LABT   Determine if Required RPMS Lab Options Tasked
   LOI    IHS Lab Package LOINC Percentage Report
   LRAS   Accession IHS Lab Microbiology Report
   LROS   Order/test status by Order Number
   LTRR   Laboratory Test (#60) File's Reference Ranges
   LVP    IHS Lab Version & Patch Report
   MACC   Mark Multiple Accessions as Not Performed
   MILO   Micro Interim Report by Location
   MMR    Lab Description Abbreviation Report
   NLO    Lab Tests Without LOINC Entries Report
   ORPH   Remove Orphans from # 68
   ORPR   BROWSER REPORT ON ORPHANS FROM # 68
   POCA   Edit BLR AGE DETAIL Parameter
   RBE    Clear ALL BLR Errors from Error Log
```

```
   REFL   Reference Lab Main Menu ...
   REPL   Replace Lab Order/Test Status Report ...
   SF60   IHS Search File 60
   SHDR   State Health Dept Report
   TCCR   Test Creatinine Clearance Logic

               Press 'RETURN' to continue, '^' to stop:
   TGFR   Test CKD-EPI Equation Logic
          Count Accessioned Tests Using Lab Data File ...
          IHS Lab Ask-At-Order ...

Select IHS Lab Main Support Menu Option:
```

Figure 4-1: BLRMENU example with new MACC option

4.1.1 Selecting MACC option

Once the MACC option is selected, the following menu displays:

```
                            2013 DEMO HOSPITAL (CMBA)
Date:05/04/16                  Multiple Accessions
Time:1:33 PM
                              Not Performed Utility
BLRMANPU
------------------------------------------------------------------------------
-----



Select Accession or UID:
```

Figure 4-2: Mark Multiple Accessions as Not Performed

If an accession is entered that has completed data, a message will display and the user will have to select another accession. The screen will look similar to the following:

```
                            2013 DEMO HOSPITAL (CMBA)
Date:05/04/16                  Multiple Accessions
Time:1:37 PM
                              Not Performed Utility
BLRMANPU
------------------------------------------------------------------------------
-----



Select Accession or UID: CX 0414 4  (APR 14, 2016)  4

    Accession CX 0414 4 has completed data.  Cannot be selected.

         Press RETURN Key:
```

Figure 4-3: Selected Accession has completed data.

As accessions are entered, the selected accessions will be displayed while prompting for the next accession. The screen may look similar to the following:

```
                            2013 DEMO HOSPITAL (CMBA)
Date:05/04/16                  Multiple Accessions
Time:1:41 PM
                             Not Performed Utility
BLRMANPU
-------------------------------------------------------------------------------
-----
The following Accessions have been selected:
    CX 0418 2


Select Accession or UID:
```

Figure 4-4: Entered accession

Once the multiple accessions are entered, the user has to press Return and a prompt will ask the user if they wish to continue to the deletion process. The screen may be similar to the following:

```
                            2013 DEMO HOSPITAL (CMBA)
Date:05/04/16                  Multiple Accessions
Time:1:46 PM
                             Not Performed Utility
BLRMANPU
-------------------------------------------------------------------------------
-----
The following Accessions have been selected to be marked as NOT PERFORMED:
    CX 0418 1             CX 0418 2             CX 0502 1



Do you want to continue? NO//
```

Figure 4-5: Multiple Accessions entered

The default answer is NO, so if the user presses Return (or enters **N**), a message displays, similar to the following:

```
                            2013 DEMO HOSPITAL (CMBA)
Date:05/04/16                  Multiple Accessions
Time:1:46 PM
                             Not Performed Utility
BLRMANPU
-------------------------------------------------------------------------------
-----
The following Accessions have been selected to be marked as NOT PERFORMED:
    CX 0418 1             CX 0418 2             CX 0502 1



Do you want to continue? NO// NO

    Per response, routine ends.

         Press RETURN Key:
```

Figure 4-6: Do not mark as Not Performed

If the user selects **Yes**, they want to continue, they are prompted for a NOT PERFORMED reason, which will be placed on all the accessions. The screen will be similar to the following:

```
                              2013 DEMO HOSPITAL (CMBA)
Date:05/04/16                    Multiple Accessions
Time:1:49 PM
                                Not Performed Utility
BLRMANPU
-------------------------------------------------------------------------
-----

Not Performed Reason:
```

Figure 4-7: Mark Multiple Accessions as Not Performed

Once the user has entered a reason and pressed Return, the routine will display the accessions that have been marked as Not Performed, similar to the following:

```
                              2013 DEMO HOSPITAL (CMBA)
Date:05/04/16                    Multiple Accessions
Time:1:50 PM
                                Not Performed Utility
BLRMANPU
-------------------------------------------------------------------------
-----
    CX 0418 1                  *NP Marked
    CX 0418 2                  *NP Marked
    CX 0502 1                  *NP Marked


         Press RETURN Key:
```

Figure 4-8: Multiple Accessions marked as Not Performed

5.0 Collection Date Used to Create PCC Visit

With the installation of LR*5.2*1039, it will be possible for a site to choose to have PCC visits created via the Lab Package to use the Accession file's Collection Date.

5.1 New BLR COLL DT PCC VISIT CREATION Parameter Definition

A new parameter, BLR COLL DT PCC VISIT CREATION, will be added to the PARAMETER DEFINITION file by the patch. It is a YES/NO parameter and if it is YES, the PCC Visit will be created using the Collection Date of the Accession File, not the current date/time.

5.1.1 BLR COLL DT PCC VIS PARAM EDIT Parameter Modification Option

The BLR COLL DT PCC VISIT CREATION parameter can either be modified via the XPAR MENU or by the new BLR COLL DT PCC VIS PARAM EDIT Option that will be added to the BLRMENU with the CDVC menu option.

An example BLRMENU listing showing the new CDVC option follows:

```
IHS Lab Main Support Menu


   LS     Link Transaction Processor Status
   7421   Will restart the 7421 label routine if turned off.
   INQ    Inquire into the IHS LAB Transaction Log
   FLD    Search Transactions for PCC LINK DISABLE Error
   RSN    Requeue by Sequence Number
   RST    Requeue Transaction by Sort Template
   CPT    Enter/edit IHS Lab CPT File
   FAL    Find ALL PCC Link Errors from Lab
   STP    Stop/restart Lab to PCC Transaction Processor
   MSTR   Enter/edit BLR MASTER CONTROL FILE
   POV    Purpose of Visit Compliance Report
   6249   Display File 62.49 HL7 Segments
   BZY    IHS Taskman Busy Device Rpt
   CCCD   Create Creatinine Clearance Delta Check
   CDVC   Edit BLR COLL DT PCC VISIT CREATION Parameter
   CGFR   Create CKD-EPI Equation Delta Check
   CLR    Clear BLR errors from error log
   CUM    IHS CUMULATIVE MENU ...
   DADD   Add Completed Date to Accession Tests
   EAPE   Edit BLR EMERGENCY ALERT Parameter
   EDCC   BLR CC DATA Parameter Edit
   EMGP   Edit LAB HIGH URGENCY NOTIFICATION Mail Group

               Press 'RETURN' to continue, '^' to stop:
   ETP    LA7 Message Queue Error Messages to Purgeable
   IHSM   IHS Lab Microbiology Report
   ILUM   IHS LOINC/UCUM MENU ...
```

```
   LABT   Determine if Required RPMS Lab Options Tasked
   LOI    IHS Lab Package LOINC Percentage Report
   LRAS   Accession IHS Lab Microbiology Report
   LROS   Order/test status by Order Number
   LTRR   Laboratory Test (#60) File's Reference Ranges
   LVP    IHS Lab Version & Patch Report
   MACC   Mark Multiple Accessions as Not Performed
   MILO   Micro Interim Report by Location
   MMR    Lab Description Abbreviation Report
   NLO    Lab Tests Without LOINC Entries Report
   ORPH   Remove Orphans from # 68
   ORPR   BROWSER REPORT ON ORPHANS FROM # 68
   POCA   Edit BLR AGE DETAIL Parameter
   RBE    Clear ALL BLR Errors from Error Log
   REFL   Reference Lab Main Menu ...
   REPL   Replace Lab Order/Test Status Report ...
   SF60   IHS Search File 60
   SHDR   State Health Dept Report
   TCCR   Test Creatinine Clearance Logic

               Press 'RETURN' to continue, '^' to stop:
   TGFR   Test CKD-EPI Equation Logic
          Count Accessioned Tests Using Lab Data File ...
          IHS Lab Ask-At-Order ...

Select IHS Lab Main Support Menu Option:
```

Figure 5-1: BLRMENU example with new CDVC option

Selecting the CDVC option will allow a user with the LRSUPER Security key to modify the parameter. It will display a screen similar to the following:

```
                            2013 DEMO HOSPITAL (CMBA)
Date:05/04/16                     IHS Laboratory
Time:3:31 PM
                     BLR COLL DT PCC VISIT CREATION Parameter
BLREMERA
                                   Modify Value
------------------------------------------------------------------------------
-----

BLR COLL DT PCC VISIT CREATION (YES/NO)? NO//
```

Figure 5-2: CDVC menu

The only valid responses are either YES or NO. The default response is the current value of the parameter.

If a FileMan exit (the ^, or caret) is entered, the routine is exited via a screen similar to the following:

```
                            2013 DEMO HOSPITAL (CMBA)
Date:05/04/16                     IHS Laboratory
Time:3:31 PM
                     BLR COLL DT PCC VISIT CREATION Parameter
BLREMERA
                                   Modify Value
```

```
------------------------------------------------------------------------
-----

BLR COLL DT PCC VISIT CREATION (YES/NO)? NO// ^

    Invalid/No Entry/Quit. Routine Ends.

         Press RETURN Key:
```

Figure 5-3: Exiting the CDVC option

5.2 New COLL ECTION DATE USED TO CREATE PCC VISIT

The new parameter, BLR COLL DT PCC VISIT CREATION, will add the ability to have PCC visits created by the Lab Package to use the Accession file's Collection Date. The YES parameter for the BLR COLL DT PCC VISIT CREATION allows the PCC Visit to be created using the Collection Date of the Accession File, not the current date/time.

5.2.1 Example – Multipurpose Accessioning

Using the Collection Date and not the Order Date to create the PCC Visit.

```
Select Accessioning menu Option: Multipurpose accessioning


WANT TO ENTER COLLECTION TIMES? YES//
Select ACCESSION TEST GROUP:
Select one or more tests from which you will be generating your entries.
Select LABORATORY TEST NAME: GLUCOSE (PLASMA)
Is PLASMA (PST)   PST/GRN GEL the correct sample to collect//
Same specimen/source for the rest of the order? No//   (No)
Select LABORATORY TEST NAME:

Select Patient Name: DEMO, BENJAMIN SR

  DEMO, BENJAMIN SR                     M 08-06-2012 XXX-XX-9932   TST 893856

     Select one of the following:

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

Specimen collected how? : SP//   SEND PATIENT
PATIENT LOCATION: LAB OIT (HOSP)
PROVIDER: RADON,NICHOLAS M JR
LAB Order number: 100
Other tests? N//
Nature of Order/Change: POLICY//        I

You have just selected the following tests for DEMO, BENJAMIN SR   893856
     entry no. Test                          Sample
```

```
     1         GLUCOSE (PLASMA)            PLASMA (PST)   PLASMA

All satisfactory? Yes//   (Yes)
LAB Order number: 100


Collection Date@Time: 02/10/2017@1725//   (FEB 10, 2017@17:25:10) <<Using the
                                          Collection Date and not the Order Date
>>
BLR SNOMED SELECT             Feb 13, 2017 17:55:22          Page:    1 of    1
Select an appropriate SNOMED code from the Patient's 1 Problems.

     SNOMED      SNOMED DESCRIPTION                                    ICD
  1) 126734014   Abnormal first heart sound, S>1<                      R01.2


   +         Enter  ?? for more actions
   S  Select SNOMED Number or Other Action
Select Action:NEXT SCREEN// S   Select SNOMED Number or Other Action


ACCESSION:  CH 0213 20   <1070440020>
GLUCOSE (PLASMA)        PLASMA (PST)   PLASMA
```

Figure 5-4: Multipurpose accessioning example

5.2.1.1 Display Data for a Specific Patient Visit

Example below displays the VISIT/ADMIT DATE&TIME as the Collection date.

```
DSP    Display Data for a Specific Patient Visit

Display Data for a Specific Patient Visit

Enter PATIENT NAME:
  DEMO,BENJAMIN SR                      M 08-06-2012 XXX-XX-9932  TST 893856

Enter VISIT date: 02102017   << enter the Collection Date >>

PCC VISIT DISPLAY             Feb 13, 2017 18:18:11          Page:    1 of    4

Patient Name:          DEMO,BENJAMIN SR
Chart #:               893856
Date of Birth:         AUG 06, 2012
Sex:                   M
Visit IEN:             2090501

=============== VISIT FILE ===============
VISIT/ADMIT DATE&TIME: FEB 10, 2017@17:15 << Collection Date >>
DATE VISIT CREATED:    FEB 13, 2017
TYPE:                  IHS
PATIENT NAME:          DEMO,BENJAMIN SR
LOC. OF ENCOUNTER:     2013 DEMO HOSPITAL (CMBA)
SERVICE CATEGORY:      AMBULATORY
CLINIC:                LABORATORY SERVICES
DEPENDENT ENTRY COUNT: 1
DATE LAST MODIFIED:    FEB 13, 2017
HOSPITAL LOCATION:     LAB OIT (HOSP)
CREATED BY USER:       ROMANCITO,KAREN
```

```
USER LAST UPDATE:      ROMANCITO,KAREN

Select Action: +//
```

Figure 5-5: Display PCC Visit

5.2.2 Example – Accessioning tests ordered by provider order entry

Using the Collection Date and not the Order Date to create the PCC Visit.

```
Select Accessioning menu Option: ACC
    1    Accessioning tests ordered by provider order entry
    2    Accessioning, standard (Microbiology)
CHOOSE 1-2: 1  Accessioning tests ordered by provider order entry


DEMO,DEJON                    115569         Requesting location: LAB
Date/Time Ordered: 02/13/2017 20:52          By: ROMANCITO,KAREN
Lab Order #  102                     Provider: ROMANCITO,KAREN
  PLASMA (PST)
  GLUCOSE (PLAS,SER,BLD)
                   ROUTINE Requested (SEND PATIENT) for:  02/13/2017
  Clinical Indication: Diabetes mellitus type 2
Is this the correct order? Yes//   YES

Collection Date@Time: //0210@1700  (FEB 10, 2017@17:00:00) <<Using the Collection
                                                          Date and not the Order Date>>


Print labels on: LABLABEL//   INTERMEC 7421 PRINTER FOR LAB

ACCESSION:  CH 0214 16  <1070450016>
GLUCOSE (PLAS,SER,BLD)        PLASMA (PST)  PLASMA


Select Patient Name:
```

Figure 5-6: Accessioning example

5.2.2.1 Display Data for a Specific Patient Visit

Example below displays the VISIT/ADMIT DATE&TIME as the Collection date.

```
 DSP    Display Data for a Specific Patient Visit

Display Data for a Specific Patient Visit
Care Data Entry Menu Option:
DSP  Display Data for a Specific Patient Visit

Enter PATIENT NAME:
  DEMO,DEJON                          M 11-27-2002 XXX-XX-0095  TST 115569

Enter VISIT date: T  (FEB 14, 2017)

No VISIT selected!
------------------------------------------------------------
```

```
Display Data for a Specific Patient Visit

Enter PATIENT NAME:
  DEMO,DEJON                            M 11-27-2002 XXX-XX-0095  TST 115569

Enter VISIT date: 02102017   << enter the Collection Date >>

PCC VISIT DISPLAY             Feb 14, 2017 06:36:35          Page:    1 of    4


Patient Name:          DEMO,DEJON
Chart #:               115569
Date of Birth:         NOV 27, 2002
Sex:                   M
Visit IEN:             2090504

=============== VISIT FILE ===============
VISIT/ADMIT DATE&TIME: FEB 10, 2017@17:00   << Collection Date >>
DATE VISIT CREATED:    FEB 14, 2017
TYPE:                  IHS
PATIENT NAME:          DEMO,DEJON
LOC. OF ENCOUNTER:     2013 DEMO HOSPITAL (CMBA)
SERVICE CATEGORY:      AMBULATORY
CLINIC:                LABORATORY SERVICES
DEPENDENT ENTRY COUNT: 1
DATE LAST MODIFIED:    FEB 14, 2017
HOSPITAL LOCATION:     LAB OIT (HOSP)
CREATED BY USER:       ROMANCITO,KAREN
USER LAST UPDATE:      ROMANCITO,KAREN
+         Enter ?? for more actions
USER LAST UPDATE:      ROMANCITO,KAREN

Select Action: +//
```

Figure 5-7: Display PCC Visit

6.0 File 60 Search

With the installation of LR*5.2*1039, it will be possible for users with the LRSUPER Security Key to search all entries in File 60 for a specific string.

6.1 New SF60 Option on BLRMENU

The new SF60 option, IHS Search File 60, will be added to the BLRMENU during the post install phase of the LR*5.2*1039 install.

An example BLRMENU listing showing the new SF60 option follows:

```
IHS Lab Main Support Menu


   LS     Link Transaction Processor Status
   7421   Will restart the 7421 label routine if turned off.
   INQ    Inquire into the IHS LAB Transaction Log
   FLD    Search Transactions for PCC LINK DISABLE Error
   RSN    Requeue by Sequence Number
   RST    Requeue Transaction by Sort Template
   CPT    Enter/edit IHS Lab CPT File
   FAL    Find ALL PCC Link Errors from Lab
   STP    Stop/restart Lab to PCC Transaction Processor
   MSTR   Enter/edit BLR MASTER CONTROL FILE
   POV    Purpose of Visit Compliance Report
   6249   Display File 62.49 HL7 Segments
   BZY    IHS Taskman Busy Device Rpt
   CCCD   Create Creatinine Clearance Delta Check
   CDVC   Edit BLR COLL DT PCC VISIT CREATION Parameter
   CGFR   Create CKD-EPI Equation Delta Check
   CLR    Clear BLR errors from error log
   CUM    IHS CUMULATIVE MENU ...
   DADD   Add Completed Date to Accession Tests
   EAPE   Edit BLR EMERGENCY ALERT Parameter
   EDCC   BLR CC DATA Parameter Edit
   EMGP   Edit LAB HIGH URGENCY NOTIFICATION Mail Group

               Press 'RETURN' to continue, '^' to stop:
   ETP    LA7 Message Queue Error Messages to Purgeable
   IHSM   IHS Lab Microbiology Report
   ILUM   IHS LOINC/UCUM MENU ...
   LABT   Determine if Required RPMS Lab Options Tasked
   LOI    IHS Lab Package LOINC Percentage Report
   LRAS   Accession IHS Lab Microbiology Report
   LROS   Order/test status by Order Number
   LTRR   Laboratory Test (#60) File's Reference Ranges
   LVP    IHS Lab Version & Patch Report
   MACC   Mark Multiple Accessions as Not Performed
   MILO   Micro Interim Report by Location
   MMR    Lab Description Abbreviation Report
   NLO    Lab Tests Without LOINC Entries Report
   ORPH   Remove Orphans from # 68
   ORPR   BROWSER REPORT ON ORPHANS FROM # 68
   POCA   Edit BLR AGE DETAIL Parameter
   RBE    Clear ALL BLR Errors from Error Log
   REFL   Reference Lab Main Menu ...
```

```
   REPL   Replace Lab Order/Test Status Report ...
   SF60   IHS Search File 60
   SHDR   State Health Dept Report
   TCCR   Test Creatinine Clearance Logic

               Press 'RETURN' to continue, '^' to stop:
   TGFR   Test CKD-EPI Equation Logic
          Count Accessioned Tests Using Lab Data File ...
          IHS Lab Ask-At-Order ...

Select IHS Lab Main Support Menu Option:
```

Figure 6-1: BLRMENU example with new SF60 option

6.1.1 Selecting SF60 Option

Once the SF60 option is selected, the following menu displays:

```
                          2013 DEMO HOSPITAL (CMBA)
Date:05/09/16              File 60 line item Search              Time:7:28 AM
------------------------------------------------------------------------------

Search String:
```

Figure 6-2: File 60 Search

The user has to enter a phrase/word. For example, CREATININE would look similar to the following:

```
                          2013 DEMO HOSPITAL (CMBA)
Date:05/09/16              File 60 line item Search              Time:7:28 AM
------------------------------------------------------------------------------

Search String:CREATININE
```

Figure 6-3: CREATININE Search

After pressing RETURN, the user is presented with the standard I/O prompt:

```
                          2013 DEMO HOSPITAL (CMBA)
Date:05/09/16              File 60 line item Search              Time:7:31 AM
                           Search String:CREATININE                  BLRF60SR
------------------------------------------------------------------------------

DEVICE: HOME//
```

Figure 6-4: Device prompt

After a valid device (or HOME) is entered, the report displays. It would look similar to the following:

```
                          2013 DEMO HOSPITAL (CMBA)
Date:05/09/16              File 60 Line Item Search                Page 1
Time:7:33 AM               Search String:CREATININE              BLRF60SR
```

```
              Panel Type      Description                              LOINC
-------------------------------------------------------------------------------
    173             BOTH     ZZCREATININE (LW1)                       38483-4
    267       YES   OUTPUT   ..PAH BASIC MET. PANEL-before Dec2006
    268       YES   OUTPUT   ..PAH COMP. MET. PANEL-before Dec2006
    300             OUTPUT   _SQL Creatinine Clearance,Computed       13451-0
    432             BOTH     Cystine, Random Urine (SQL)              13725-7
    495       YES   OUTPUT   ..CATECHOLAMINES,24HR URINE-before 10/
    1242      YES   BOTH     SQL CREATININE CLEARANCE 201100
    9003            OUTPUT   ..MICROALB, RNDM URINE-BEFORE 7/2007     14957-5
    9005            OUTPUT   _SQL Creatinine,Urine 24 HR              2162-6
    9034            OUTPUT   ..ALBUMIN/CREATININE RATIO               58447-4
    2000256   YES   BOTH     SQL CREATININE,URINE RANDOM 2498
    2000257   YES   BOTH     SQL CREATININE,URINE TIMED 1101
    2000258   YES   NEITHER  ZZSQL PROTEIN URINE, RANDOM NRMLZD 248
    2000262   YES   NEITHER  ZZSQL CREA.CLEAR & PROTEIN,URINE 2729


Enter RETURN to continue or '^' to exit:
                           2013 DEMO HOSPITAL (CMBA)
Date:05/09/16               File 60 Line Item Search                   Page 2
Time:7:33 AM                Search String:CREATININE                 BLRF60SR

              Panel Type      Description                              LOINC
-------------------------------------------------------------------------------
    2000263         OUTPUT   _SQL Creatinine,Urine Timed
    2000473   YES   NEITHER  ZZ iSTAT CREATININE/GFR
    2000527         OUTPUT   _LPRH Creatinine                         14682-9
    2000543   YES   NEITHER  ZZLPRH CMP
    2000632   YES   BOTH     SQL STONERISK DIAGNOSTIC PANEL 901873
    2000836         OUTPUT   .._PAH Creatinine (NON-IDMS)             2160-0
    2000837   YES   OUTPUT   ..PAH CREATININE+eGFR (NON-IDMS)
    2000838   YES   BOTH     BMP-OIT
    2000839   YES   NEITHER  ZZPAH CMP
    2000870   YES   BOTH     SQL PROT. ELECTRO. URINE RANDOM 209198
    2000881   YES   NEITHER  ZZSQL IMMUNOFIXATION,URINE RANDOM 2092
    2000883   YES   NEITHER  ZZSQL UPEP & IFE,URINE RANDOM 780961
    2000887   YES   NEITHER  ZZSQL CHLORIDE,URINE RANDOM 2492
    2000893   YES   NEITHER  ZZSQL POTASSIUM,URINE RNDM NRMLZD 2497


Enter RETURN to continue or '^' to exit:
                           2013 DEMO HOSPITAL (CMBA)
Date:05/09/16               File 60 Line Item Search                   Page 3
Time:7:33 AM                Search String:CREATININE                 BLRF60SR

              Panel Type      Description                              LOINC
-------------------------------------------------------------------------------
    2000901   YES   NEITHER  ZZSQL SODIUM,URINE,RNDM,NRMLZD 2495
    2000905   YES   NEITHER  ZZSQL URIC ACID,URINE RANDOM 2494
    2000909   YES   NEITHER  ZZCREATININE 24 H URINE PANEL
    2000918   YES   NEITHER  ZZSQL HEAVY METALS,URINE RANDOM 14411
    2000964         OUTPUT   _SQL Creatinine Conc., Urine             2162-6
    2001044   YES   BOTH     SQL 5-HIAA, 24HR URINE 79100
    2001102   YES   BOTH     SQL PHOSPHORUS,URINE,RANDOM,NORMLZD 24
    2001105   YES   BOTH     SQL CALCIUM,URINE,RANDOM,NORMLZD 70834
    2001107         BOTH     _PAH Creatinine (NKDF)                   2160-0
    2001109   YES   BOTH     PAH CREATININE+eGFR
    2001112   YES   BOTH     SQL COLLAGEN CROSS-LINKED,URINE 10922
    2001117   YES   BOTH     SQL CATECHOLAMINES,24HR URINE 9165
```

```
    2001131         OUTPUT   _SQL SR Creatinine.Urine                20624-3
    2001211   YES   BOTH     SQL VMA,24HR URINE 709365


Enter RETURN to continue or '^' to exit:
                          2013 DEMO HOSPITAL (CMBA)
Date:05/09/16              File 60 Line Item Search                     Page 4
Time:7:33 AM               Search String:CREATININE                   BLRF60SR

              Panel Type      Description                              LOINC
-------------------------------------------------------------------------------
    2001212   YES   BOTH     SQL CATECHOLIMINES/VMA 24H URINE 30182
    2001250   YES   BOTH     PAH RFP (2012)
    2001461         BOTH     LAB CREATININE                           2160-0
    2001463   YES   BOTH     CREATININE PANEL FOR CMBA NEW CKD-EPI
    2001465         OUTPUT   ZZCREATININE LW1                          2160-0
    2001466   YES   BOTH     CREATININE w/CKD-EPI eGFR*NEW LW1
    2001469         OUTPUT   ZZCREATININE LW2                          2160-0
    2001470   YES   BOTH     CREATININE w/CKD-EPI eGFR*NEW LESLIE2
    2001471         BOTH     ZZCREATININE (CKD-EPI) KR
    2001473   YES   BOTH     CREATININE/CKD-EPI eGFR (KR)
    2001474   YES   BOTH     CREATININE w/CKD-EPI eGFR*NEWoldLW3
    2001476         OUTPUT   _CREATININE LW5                          2160-0
    2001478   YES   BOTH     CREATININE PANEL w/CKD-EPI eGFR #5 LW
    2001491   YES   BOTH     CREATININE CLEARANCE PANEL (LAB)


Enter RETURN to continue or '^' to exit:
                          2013 DEMO HOSPITAL (CMBA)
Date:05/09/16              File 60 Line Item Search                     Page 5
Time:7:33 AM               Search String:CREATININE                   BLRF60SR

              Panel Type      Description                              LOINC
-------------------------------------------------------------------------------
    2001493         BOTH     LAB SERUM CREATININE                     2160-0
    2001494         BOTH     LAB URINE CREATININE                     11279-7
    2001496         BOTH     LAB COMPUTED CREATININE CLEARANCE        2163-4
    2001497   YES   BOTH     LAB CREATININE CLEARANCE PANEL
    2001498         OUTPUT   _URINE CREATININE measured value (lw1)   2162-6
    2001500         OUTPUT   _COMPUTED CREATININE CLEARANCE (lw1)     2164-2
    2001501   YES   BOTH     CREATININE CLEARANCE 24hr Urine (lw1)
    2001510         OUTPUT   _CREATININE,SERUM KR                     2160-0
    2001511         OUTPUT   _CREATININE,URINE KR                     20624-3
    2001513         OUTPUT   _CREATININE CLEARANCE
    2001514   YES   BOTH     CREATININE CLEARANCE, 24 Hr Urine (KR)
    2906000         OUTPUT   _CREATININE (R)                          2160-0
    9999106         OUTPUT   zzMICROALBUMIN/CREATININE RATIO (SO)     14959-1
    9999278         OUTPUT   *SODIUM, URINE-before 5/2011            2955-3


Enter RETURN to continue or '^' to exit:
                          2013 DEMO HOSPITAL (CMBA)
Date:05/09/16              File 60 Line Item Search                     Page 6
Time:7:33 AM               Search String:CREATININE                   BLRF60SR

              Panel Type      Description                              LOINC
-------------------------------------------------------------------------------
    9999279         OUTPUT   *POTASSIUM, URINE-before 5/2011          2828-2
    9999492   YES   OUTPUT   ..PAH CREA/EST GFR-before Jan2011
    9999510         OUTPUT   _PS iSTAT Creatinine/Crea                2160-0
    9999521   YES   OUTPUT   ..PS iSTAT CHEM 8+ PANEL
```

```
    9999526         OUTPUT   ..CREATININE (SQL 1014)                2160-0
    9999554   YES   OUTPUT   ..SQL BASIC MET. PANEL-before Dec2006
    9999555   YES   BOTH     SQL RENAL FUNCTION PANEL 900325
    9999557   YES   OUTPUT   ..SQL CMP-before 6/15/2007
    9999594   YES   OUTPUT   ..VITROS CHEMISTRY LIST
    9999650         OUTPUT   ..CALCIUM, RANDOM URINE-before 9/2011   2004-0
    9999714         OUTPUT   _CREATININE, Rand ur                    2161-8
    9999715   YES   NEITHER  ZZCYSTINE, RANDOM URINE (SQL 2301)
    9999756   YES   OUTPUT   PAH XPAND TEST LIST
    9999760         OUTPUT   .._PAH Creatinine-before Jan2011        2160-0


Enter RETURN to continue or '^' to exit:
                           2013 DEMO HOSPITAL (CMBA)
Date:05/09/16               File 60 Line Item Search                    Page 7
Time:7:33 AM                Search String:CREATININE                  BLRF60SR

              Panel Type      Description                              LOINC
------------------------------------------------------------------------------
    9999785   YES   OUTPUT   ..PAH CMP-before Jan2011
    9999786   YES   OUTPUT   ..PAH BMP-before Jan2011
    9999810   YES   BOTH     SQL CORTISOL,FREE,24-HR URINE 8004
    9999831         OUTPUT   _ESTIMATED GFR (R)
    9999833   YES   BOTH     CMP (R)
    9999838   YES   BOTH     UACR PANEL (R)
    9999858   YES   BOTH     BMP (R)


    3419 File 60 entries analyzed.

         91 File 60 entries matched.

Press RETURN Key:
```

Figure 6-5: Print to HOME

In this example, if the word CREATININE appears anywhere in the test definition, including in the fields GENERAL PROCESSING INST. or GENERAL WARD INSTRUCTIONS, the test will be displayed.

7.0 Micro Interim Reports by Location

With the installation of LR*5.2*1039, it will be possible for users to list Micro Interim Reports by a specific entry in the Hospital Location (#44) file for a date range.

7.1 New MILO Option on BLRMENU

The new MILO option, Micro Interim Report by Location, will be added to the BLRMENU during the post install phase of the LR*5.2*1039 install.

An example BLRMENU listing showing the new MILO option follows:

```
IHS Lab Main Support Menu


   LS     Link Transaction Processor Status
   7421   Will restart the 7421 label routine if turned off.
   INQ    Inquire into the IHS LAB Transaction Log
   FLD    Search Transactions for PCC LINK DISABLE Error
   RSN    Requeue by Sequence Number
   RST    Requeue Transaction by Sort Template
   CPT    Enter/edit IHS Lab CPT File
   FAL    Find ALL PCC Link Errors from Lab
   STP    Stop/restart Lab to PCC Transaction Processor
   MSTR   Enter/edit BLR MASTER CONTROL FILE
   POV    Purpose of Visit Compliance Report
   6249   Display File 62.49 HL7 Segments
   BZY    IHS Taskman Busy Device Rpt
   CCCD   Create Creatinine Clearance Delta Check
   CDVC   Edit BLR COLL DT PCC VISIT CREATION Parameter
   CGFR   Create CKD-EPI Equation Delta Check
   CLR    Clear BLR errors from error log
   CUM    IHS CUMULATIVE MENU ...
   DADD   Add Completed Date to Accession Tests
   EAPE   Edit BLR EMERGENCY ALERT Parameter
   EDCC   BLR CC DATA Parameter Edit
   EMGP   Edit LAB HIGH URGENCY NOTIFICATION Mail Group

               Press 'RETURN' to continue, '^' to stop:
   ETP    LA7 Message Queue Error Messages to Purgeable
   IHSM   IHS Lab Microbiology Report
   ILUM   IHS LOINC/UCUM MENU ...
   LABT   Determine if Required RPMS Lab Options Tasked
   LOI    IHS Lab Package LOINC Percentage Report
   LRAS   Accession IHS Lab Microbiology Report
   LROS   Order/test status by Order Number
   LTRR   Laboratory Test (#60) File's Reference Ranges
   LVP    IHS Lab Version & Patch Report
   MACC   Mark Multiple Accessions as Not Performed
   MILO   Micro Interim Report by Location
   MMR    Lab Description Abbreviation Report
   NLO    Lab Tests Without LOINC Entries Report
   ORPH   Remove Orphans from # 68
   ORPR   BROWSER REPORT ON ORPHANS FROM # 68
   POCA   Edit BLR AGE DETAIL Parameter
```

```
   RBE    Clear ALL BLR Errors from Error Log
   REFL   Reference Lab Main Menu ...
   REPL   Replace Lab Order/Test Status Report ...
   SF60   IHS Search File 60
   SHDR   State Health Dept Report
   TCCR   Test Creatinine Clearance Logic

               Press 'RETURN' to continue, '^' to stop:
   TGFR   Test CKD-EPI Equation Logic
          Count Accessioned Tests Using Lab Data File ...
          IHS Lab Ask-At-Order ...

Select IHS Lab Main Support Menu Option:
```

Figure 7-1: BLRMENU example with new MILO option

7.1.1 Selecting MILO Option

Once the MILO option is selected, the following menu displays:

```
                          2013 DEMO HOSPITAL (CMBA)
Date:05/09/16          Micro Interim Report by Location           Time:8:48 AM
------------------------------------------------------------------------------

Select HOSPITAL LOCATION:
```

Figure 7-2: Location input Prompt

The user has to enter a valid entry from the Hospital Location (#44) file.

For example, if LAB ONLY was a valid entry, it would be entered

```
                          2013 DEMO HOSPITAL (CMBA)
Date:05/09/16          Micro Interim Report by Location           Time:8:48 AM
------------------------------------------------------------------------------

Select HOSPITAL LOCATION:LAB ONLY
```

Figure 7-3: Location Input

After pressing RETURN, the user is presented with a date range prompt:

```
                          2013 DEMO HOSPITAL (CMBA)
Date:05/09/16          Micro Interim Report by Location           Time:8:50 AM
                              Location:LAB ONLY
------------------------------------------------------------------------------

Start with Date: TODAY//
```

Figure 7-4: Beginning Date Range prompt

After entering a date range, the user is presented with a listing of how many accessions were analyzed and how many MI accessions were found and a prompt asking the user if they want to print the report. It would be similar to the following:

```
                          2013 DEMO HOSPITAL (CMBA)
Date:05/09/16          Micro Interim Report by Location           Time:8:50 AM
                              Location:LAB ONLY
------------------------------------------------------------------------------

Start with Date: TODAY// 1/1/2016  (JAN 01, 2016)
Go back to   Date TODAY// May 09, 2016

    Compiling Data.

    Compilation Complete.

         139 MI Accessions analyzed.

              3 MI Accessions with LAB ONLY Ward.


Produce Report (Y/N)?
```

Figure 7-5: Compilation screen

If the user enters **N** or **NO**, nothing prints.

```
                          2013 DEMO HOSPITAL (CMBA)
Date:05/09/16          Micro Interim Report by Location           Time:8:50 AM
                              Location:LAB ONLY
------------------------------------------------------------------------------

Start with Date: TODAY// 1/1/2016  (JAN 01, 2016)
Go back to   Date TODAY// May 09, 2016

    Compiling Data.

    Compilation Complete.

         139 MI Accessions analyzed.

              3 MI Accessions with LAB ONLY Ward.


Produce Report (Y/N)? NO

    No/Invalid Entry.  Routine Ends.

         Press RETURN Key:
```

Figure 7-6: No Report

If the user selects **YES**, then the standard RPMS I/O prompt is presented:

```
                          2013 DEMO HOSPITAL (CMBA)
Date:05/09/16          Micro Interim Report by Location           Time:8:57 AM
                              Location:LAB ONLY
------------------------------------------------------------------------------

Start with Date: TODAY// 1/1/2016  (JAN 01, 2016)
Go back to   Date TODAY// May 09, 2016
```

```
    Compiling Data.

    Compilation Complete.

         139 MI Accessions analyzed.

              3 MI Accessions with LAB ONLY Ward.


Produce Report (Y/N)? YES
DEVICE: HOME//   VIRTUAL TERMINAL    Right Margin: 80//
```

Figure 7-7: RPMS I/O prompt

Once the device is entered, the report prints all the MI tests that were in selected Location, no matter who the patient is. The report may look similar to the following:

```
USER3,USER         28989          AGE: 26                   5/9/2016 8:58
                              ----MICROBIOLOGY----                    Page 1
 2013 DEMO HOSPITAL (CMBA)  5300 HOMESTEAD  ALBUQUERQUE, NM 87110

Accession: MI 16 3                      Received: Feb 26, 2016 13:59
Collection sample: SWAB/THROAT          Collection date: Feb 26, 2016 13:58
                                        Lab Arrival Time:Feb 26, 2016 13:59
Site/Specimen: PHARYNX
Provider: PROVIDER,TEST T

     Test(s) ordered:  CULTURE, THROAT      completed: Feb 26, 2016 13:59
* BACTERIOLOGY FINAL REPORT => Feb 26, 2016   TECH CODE: 4095

CULTURE RESULTS: FEW ESCHERICHIA COLI


================================================================================
 S=Sensitive     I=Intermediate     R=Resistant     NI=Not Immune     I=Immune
 IB=Inducible Beta Lactam    NR=Non Reactive    WR=Weakly Reactive    R=Reactive

USER3,USER               28989   ROUTING: LAB             PRESS '^' TO STOP

USER3,USER         28989          AGE: 26                   5/9/2016 8:59
                         >> CONTINUATION OF MI 16 3 <<               Page 2
 2013 DEMO HOSPITAL (CMBA)  5300 HOMESTEAD  ALBUQUERQUE, NM 87110

Collection sample: SWAB/THROAT          Collection date: Feb 26, 2016 13:58
                                        Lab Arrival Time:Feb 26, 2016 13:59

ANTIBIOTIC SUSCEPTIBILITY TEST RESULTS:  ('*' indicates display is suppressed)
               ESCHERICHIA COLI
               :
               SUSC  INTP
AMPICILLIN     R     RES
AMP/SULB       R     RES
CEFAZOLIN      R     RES
INVANZ         S     S
CEFTRIAXONE    R     RES
GATIFLOXACIN   R     RES
DOXYCYCLINE    R     RES
GENTAMICIN     R     RES
NITROFURANTOIN S     S
```

```
IMIPENEM       S     S
TICAR/CA       S     S

================================================================================
 S=Sensitive     I=Intermediate     R=Resistant     NI=Not Immune     I=Immune
 IB=Inducible Beta Lactam    NR=Non Reactive    WR=Weakly Reactive    R=Reactive

USER3,USER               28989   ROUTING: LAB             PRESS '^' TO STOP

USER3,USER         28989          AGE: 26                   5/9/2016 8:59
                        >> CONTINUATION OF MI 16 3 <<               Page 3
 2013 DEMO HOSPITAL (CMBA)  5300 HOMESTEAD  ALBUQUERQUE, NM 87110

Collection sample: SWAB/THROAT          Collection date: Feb 26, 2016 13:58
                                        Lab Arrival Time:Feb 26, 2016 13:59
               ESCHERICHIA COLI
               :
               SUSC  INTP
TRIMETH/SULFA  S     S
CEFTAZIDIME    S     S


================================================================================
 S=Sensitive     I=Intermediate     R=Resistant     NI=Not Immune     I=Immune
 IB=Inducible Beta Lactam    NR=Non Reactive    WR=Weakly Reactive    R=Reactive

USER3,USER               28989   ROUTING: LAB             PRESS '^' TO STOP


USER2,USER           3             AGE: 24                   5/9/2016 8:59
                              ----MICROBIOLOGY----                   Page 1
2013 DEMO HOSPITAL (CMBA)  5300 HOMESTEAD  ALBUQUERQUE, NM 87110

Accession: MI 16 2                      Received: Jan 19, 2016 09:01
Collection sample: BLOOD                Collection date: Jan 19, 2016 09:00
                                        Lab Arrival Time:Jan 19, 2016 09:01
Provider: PROVIDER,TEST T

     Test(s) ordered:  AEROBIC CULTURE - ZUNI completed: Jan 19, 2016 09:01
* BACTERIOLOGY FINAL REPORT => Jan 19, 2016   TECH CODE: 6045

CULTURE RESULTS: FEW ESCHERICHIA HERMANII (CONFIRM YELLOW PIGMENT)

================================================================================
 S=Sensitive     I=Intermediate     R=Resistant     NI=Not Immune     I=Immune
 IB=Inducible Beta Lactam    NR=Non Reactive    WR=Weakly Reactive    R=Reactive

USER2,USER                 3   ROUTING: LAB                 PRESS '^' TO STOP


USER2,USER           3             AGE: 24                   5/9/2016 8:59
                        >> CONTINUATION OF MI 16 2 <<               Page 2
2013 DEMO HOSPITAL (CMBA)  5300 HOMESTEAD  ALBUQUERQUE, NM 87110

Collection sample: BLOOD                Collection date: Jan 19, 2016 09:00
                                        Lab Arrival Time:Jan 19, 2016 09:01

ANTIBIOTIC SUSCEPTIBILITY TEST RESULTS:  ('*' indicates display is suppressed)
               ESCHERICHIA HERMANII (CONFIRM YELLOW PIGMENT)
               :
               SUSC  INTP
```

```
AMPICILLIN     R     RES
AMP/SULB       S     S
CEFAZOLIN      R     RES
INVANZ         S     S
CEFTRIAXONE    R     RES
GATIFLOXACIN   R     RES
DOXYCYCLINE    R     RES
GENTAMICIN     S     S
NITROFURANTOIN S     S
IMIPENEM       R     RES
TICAR/CA       R     RES

================================================================================
 S=Sensitive     I=Intermediate     R=Resistant     NI=Not Immune     I=Immune
 IB=Inducible Beta Lactam    NR=Non Reactive    WR=Weakly Reactive    R=Reactive

USER2,USER                 3   ROUTING: LAB                 PRESS '^' TO STOP

USER2,USER           3             AGE: 24                   5/9/2016 8:59
                        >> CONTINUATION OF MI 16 2 <<              Page 3
2013 DEMO HOSPITAL (CMBA)  5300 HOMESTEAD  ALBUQUERQUE, NM 87110

Collection sample: BLOOD               Collection date: Jan 19, 2016 09:00
                                       Lab Arrival Time:Jan 19, 2016 09:01
               ESCHERICHIA HERMANII (CONFIRM YELLOW PIGMENT)
               :
               SUSC  INTP
TRIMETH/SULFA  R     RES
CEFTAZIDIME    R     RES

================================================================================
 S=Sensitive     I=Intermediate     R=Resistant     NI=Not Immune     I=Immune
 IB=Inducible Beta Lactam    NR=Non Reactive    WR=Weakly Reactive    R=Reactive
USER2,USER                 3   ROUTING: LAB                 PRESS '^' TO STOP


USER3,USER         28989          AGE: 26                   5/9/2016 8:59
                              ----MICROBIOLOGY----                 Page 1
2013 DEMO HOSPITAL (CMBA)  5300 HOMESTEAD  ALBUQUERQUE, NM 87110

Accession: MI 16 1                     Received: Jan 19, 2016 08:45
Collection sample: BLOOD               Collection date: Jan 19, 2016 08:44
                                       Lab Arrival Time:Jan 19, 2016 08:45
Provider: PROVIDER,TEST T

     Test(s) ordered:  AEROBIC CULTURE - ZUNI completed: Jan 19, 2016 08:45
* BACTERIOLOGY FINAL REPORT => Jan 19, 2016   TECH CODE: 6045

CULTURE RESULTS: FEW ESCHERICHIA COLI

================================================================================
 S=Sensitive     I=Intermediate     R=Resistant     NI=Not Immune     I=Immune
 IB=Inducible Beta Lactam    NR=Non Reactive    WR=Weakly Reactive    R=Reactive

USER3,USER              28989   ROUTING: LAB             PRESS '^' TO STOP


USER3,USER         28989          AGE: 26                   5/9/2016 8:59
                        >> CONTINUATION OF MI 16 1 <<              Page 2
2013 DEMO HOSPITAL (CMBA)  5300 HOMESTEAD  ALBUQUERQUE, NM 87110
```

```
Collection sample: BLOOD                Collection date: Jan 19, 2016 08:44
                                        Lab Arrival Time:Jan 19, 2016 08:45

ANTIBIOTIC SUSCEPTIBILITY TEST RESULTS:  ('*' indicates display is suppressed)
               ESCHERICHIA COLI
               :
               SUSC  INTP
AMPICILLIN     R     RES
AMP/SULB       R     RES
CEFAZOLIN      R     RES
INVANZ         R     RES
CEFTRIAXONE    R     RES
GATIFLOXACIN   S     S
DOXYCYCLINE    S     S
GENTAMICIN     S     S
NITROFURANTOIN S     S
IMIPENEM       R     RES
TICAR/CA       S     S

================================================================================
 S=Sensitive     I=Intermediate     R=Resistant     NI=Not Immune     I=Immune
 IB=Inducible Beta Lactam    NR=Non Reactive    WR=Weakly Reactive    R=Reactive

USER3,USER               28989   ROUTING: LAB             PRESS '^' TO STOP


USER3,USER         28989          AGE: 26                   5/9/2016 8:59
                         >> CONTINUATION OF MI 16 1 <<               Page 3
2013 DEMO HOSPITAL (CMBA)  5300 HOMESTEAD  ALBUQUERQUE, NM 87110

Collection sample: BLOOD                Collection date: Jan 19, 2016 08:44
                                        Lab Arrival Time:Jan 19, 2016 08:45
               ESCHERICHIA COLI
               :
               SUSC  INTP
TRIMETH/SULFA  R     RES
CEFTAZIDIME    S     S

================================================================================
 S=Sensitive     I=Intermediate     R=Resistant     NI=Not Immune     I=Immune
 IB=Inducible Beta Lactam    NR=Non Reactive    WR=Weakly Reactive    R=Reactive

Press RETURN Key:
```

Figure 7-8: Micro Report by Location

8.0 New Reference Lab Mapping Option

With the installation of LR*5.2*1039, it will be possible for users to use a new method to map Reference Lab tests.

8.1 New NMAP Option on the Reference Lab Main Menu BLRREFLABMENU

The new NMAP option, New Version of Mapping Tests, will be added to the BLRREFLABMENU during the post install phase of the LR*5.2*1039 install.

An example BLRREFLABMENU listing showing the new NMAP option follows:

```
                          IHS Lab Reference Lab Menu


   E60    Edit Laboratory Test File (#60) CH ONLY
   EXP    Export Reference Lab Orders
   IMP    Import Reference Lab Results from HFS
   MAP    Map Reference Lab Codes to Laboratory Test File
   MON    Assign namespaces for Reference Lab Monitor
   NMAP   New Version of Mapping Tests
   PO     Purge Ref Lab Order/Accession file by date
   PSM    Purge Shipping Manifest File
   PUR    Purge Old Reference Lab Log Entries/File(s)
   QPO    Queueable purge Reference Lab Order/Accession File
   RAW    View/Refile Failed Raw Message(s)
   REP    Reprint Shipping Manifest
   RMSC   Reprint Shipping Manifest to the screen
   RRR    Restart the TCP/IP Receiver
   RRT    Restart the TCP/IP Transmitter
   RSNL   Reship a Non LEDI Order
   SIT    Reference Lab Site Parameter Add/Edit
   TBLL   Display Data in HL7 or Other Tables
   VER    Verify Reference Lab Results

Select Reference Lab Main Menu Option:
```

Figure 8-1: BLRREFLABMENU menu

8.2 Selecting NMAP Option

Once the NMAP option is selected, the following menu displays:

```
                          2013 DEMO HOSPITAL (CMBA)
Date:05/10/16                      RPMS Lab                      Time:6:41 AM
                         Reference Lab Mapping                       BLRMPRL2
                               MAIN MENU
--------------------------------------------------------------------------------
    1) Map Reference Lab Tests            2) Mapped Tests Report
    3) Non-Mapped Tests Report
```

```
Select:  (1-3):
```

Figure 8-2: Reference Lab Mapping Menu

8.2.1 Select Map Reference Lab Tests

Once the Map Reference Lab Tests option is selected, a menu similar to the following displays:

```
                          2013 DEMO HOSPITAL (CMBA)
Date:05/10/16          BLR Reference Lab File (#9009026)            Time:6:44 AM
------------------------------------------------------------------------------


     Reference Labs in BLR REFERENCE LAB (#9009026) File:

           1)  QUEST
           2)  LABCORP
           3)  ASSOCIATED PATHOLOGISTS LAB
           4)  PATHOLOGY CONSULTANTS
           5)  DYNACARE
           6)  UNILAB


     Select Reference Lab:
```

Figure 8-3: Reference Lab selection

Once the Reference Lab is selected, a menu similar to the following displays

```
                          2013 DEMO HOSPITAL (CMBA)
Date:05/10/16          BLR Reference Lab File (#9009026)            Time:6:53 AM
MAPTESTS          Mapping File 9009026 Tests to File 60 Tests           BLRMPRL2
                             Reference Lab: QUEST
------------------------------------------------------------------------------

Select Reference Lab (#9009026) File's Test to Map:
```

Figure 8-4: Reference Lab test selection prompt

Once a test name is entered, the appropriate test must be selected, in a process similar to the following:

```
                          2013 DEMO HOSPITAL (CMBA)
Date:05/10/16          BLR Reference Lab File (#9009026)            Time:7:00 AM
MAPTESTS          Mapping File 9009026 Tests to File 60 Tests           BLRMPRL2
                             Reference Lab: QUEST
------------------------------------------------------------------------------

Select Reference Lab (#9009026) File's Test to Map: GLUCOSE
     1   GLUCOSE       483
     2   GLUCOSE            25000000
     3   GLUCOSE            30071800
     4   GLUCOSE (CSF)       468
     5   GLUCOSE (CSF)           25027700
Press <RETURN> to see more, '^' to exit this list, OR
```

```
CHOOSE 1-5: 3  GLUCOSE          30071800
```

Figure 8-5: Test selection

Once selected, the user is prompted to enter the appropriate entry in the Laboratory Test (#60) file:

```
                          2013 DEMO HOSPITAL (CMBA)
Date:05/10/16          BLR Reference Lab File (#9009026)           Time:7:00 AM
MAPTESTS          Mapping File 9009026 Tests to File 60 Tests          BLRMPRL2
                             Reference Lab: QUEST
------------------------------------------------------------------------------

Select Reference Lab (#9009026) File's Test to Map: GLUCOSE
     1   GLUCOSE       483
     2   GLUCOSE            25000000
     3   GLUCOSE            30071800
     4   GLUCOSE (CSF)       468
     5   GLUCOSE (CSF)           25027700
Press <RETURN> to see more, '^' to exit this list, OR
CHOOSE 1-5: 3  GLUCOSE          30071800

FILE 60 POINTER:
```

Figure 8-6: File 60 prompt

If a test name is entered that matches several tests in File 60, the user is presented a listing and must choose from the list, similar to the following:

```
                          2013 DEMO HOSPITAL (CMBA)
Date:05/10/16          BLR Reference Lab File (#9009026)           Time:7:00 AM
MAPTESTS          Mapping File 9009026 Tests to File 60 Tests          BLRMPRL2
                             Reference Lab: QUEST
------------------------------------------------------------------------------

Select Reference Lab (#9009026) File's Test to Map: GLUCOSE
     1   GLUCOSE       483
     2   GLUCOSE            25000000
     3   GLUCOSE            30071800
     4   GLUCOSE (CSF)       468
     5   GLUCOSE (CSF)           25027700
Press <RETURN> to see more, '^' to exit this list, OR
CHOOSE 1-5: 3  GLUCOSE          30071800

FILE 60 POINTER: GLUCOSE
     1   GLUCOSE
     2   GLUCOSE  GLUCOSE,FLUID
     3   GLUCOSE  GLUCOSE, SERUM (R)
     4   GLUCOSE  URINE GLUCOSE
CHOOSE 1-4: 1
```

Figure 8-7: File 60 Selection

The user is then presented a series of prompts that will ask the user the ORDER CODE, RESULT CODE, ORDER ENTRY QUESTION and ORDER ENTRY RESULT CODE, in a manner similar to the following.

```
Date:05/10/16          BLR Reference Lab File (#9009026)           Time:7:00 AM
Date:05/10/16          BLR Reference Lab File (#9009026)           Time:7:00 AM
MAPTESTS          Mapping File 9009026 Tests to File 60 Tests          BLRMPRL2
                             Reference Lab: QUEST
------------------------------------------------------------------------------

Select Reference Lab (#9009026) File's Test to Map: GLUCOSE
     1   GLUCOSE       483
     2   GLUCOSE            25000000
     3   GLUCOSE            30071800
     4   GLUCOSE (CSF)       468
     5   GLUCOSE (CSF)           25027700
Press <RETURN> to see more, '^' to exit this list, OR
CHOOSE 1-5: 3  GLUCOSE          30071800

FILE 60 POINTER: GLUCOSE
     1   GLUCOSE
     2   GLUCOSE  GLUCOSE,FLUID
     3   GLUCOSE  GLUCOSE, SERUM (R)
     4   GLUCOSE  URINE GLUCOSE
CHOOSE 1-4: 1  GLUCOSE
ORDER CODE: 123456
RESULT CODE: 30071800//
ORDER ENTRY QUESTION: ??
        This field will contain the order entry question if applicable.

ORDER ENTRY QUESTION: IS THE PATIENT DIABETIC
Select ORDER ENTRY RESULT CODE: 5454324
  Are you adding '5454324' as a new ORDER ENTRY RESULT CODE (the 1ST for this TE
ST NAMES)? No// Y  (Yes)
Select ORDER ENTRY RESULT CODE:
```

Figure 8-8: Mapping prompts

Once the user presses RETURN at the Select ORDER ENTRY RESULT CODE, the process repeats.

8.2.2 Select Mapped Tests Report

Once the Mapped Tests Report option is selected, a menu similar to the following displays:

```
                          2013 DEMO HOSPITAL (CMBA)
Date:05/10/16          BLR Reference Lab File (#9009026)           Time:6:44 AM
------------------------------------------------------------------------------


     Reference Labs in BLR REFERENCE LAB (#9009026) File:

           1)  QUEST
           2)  LABCORP
           3)  ASSOCIATED PATHOLOGISTS LAB
           4)  PATHOLOGY CONSULTANTS
           5)  DYNACARE
           6)  UNILAB
```

```
     Select Reference Lab:
```

Figure 8-9: Reference Lab menu

Once the Reference Lab is selected, the user is prompted to determine if pagination is wanted.

```
                          2013 DEMO HOSPITAL (CMBA)
Date:05/10/16          BLR Reference Lab File (#9009026)            Time:6:47 AM
------------------------------------------------------------------------------

One Header Line ONLY? NO//
```

Figure 8-10: Pagination prompt

Once that prompt is answered, the standard DEVICE prompt is displayed. The user can either accept the HOME device, which prints to the screen, or can select a valid device.

```
                          2013 DEMO HOSPITAL (CMBA)
Date:05/10/16          BLR Reference Lab File (#9009026)            Time:6:47 AM
MAPRPT                       Reference Lab: LABCORP                     BLRMPRL2
                                  Mapped Tests
------------------------------------------------------------------------------

DEVICE: HOME//
```

Figure 8-11: Pagination prompt

After the output device is selected, the report begins. It will be similar to the following:

```
                          2013 DEMO HOSPITAL (CMBA)
Date:05/10/16          BLR Reference Lab File (#9009026)                Page 1
Time:6:48 AM                 Reference Lab: QUEST                     BLRMPRL2
MAPRPT                            Mapped Tests

==== File 9009026 ====  =========== File 60 ============   Order     Result
Test Name                IEN       Description              Code      Code
------------------------------------------------------------------------------
BILIRUBIN                186       BILIRUBIN,TOTAL          1234567   30005800
CHLAMYDIA/N.GONNORRHOE   123491    CHLAMYDIA/N.GONNORRHOE   Q132345   Q545454
GLUCOSE                  175       GLUCOSE                  483
GLUCOSE                  123494    GLUCOSE, SERUM (R)                 30071800
GLUCOSE (CSF)            175       GLUCOSE                  55355     900389610
IRON TOTAL               104       IRON                     25002600  25002600
URINE CREATININE (MG/D   1665269   CREATININE, FLUID        343434    25025500


    7 Tests

         Press RETURN Key:
```

Figure 8-12: Mapped Tests report

8.2.3 Select Non-Mapped Tests Report

Once the Non-Mapped Tests Report option is selected, a menu similar to the following displays:

```
                          2013 DEMO HOSPITAL (CMBA)
Date:05/10/16          BLR Reference Lab File (#9009026)            Time:6:44 AM
------------------------------------------------------------------------------


     Reference Labs in BLR REFERENCE LAB (#9009026) File:

           1)  QUEST
           2)  LABCORP
           3)  ASSOCIATED PATHOLOGISTS LAB
           4)  PATHOLOGY CONSULTANTS
           5)  DYNACARE
           6)  UNILAB


     Select Reference Lab:
```

Figure 8-13: Reference Lab menu

Once the Reference Lab is selected, the user is prompted to determine if pagination is wanted.

```
                          2013 DEMO HOSPITAL (CMBA)
Date:05/10/16          BLR Reference Lab File (#9009026)            Time:6:47 AM
------------------------------------------------------------------------------

One Header Line ONLY? NO//
```

Figure 8-14: Pagination prompt

Once that prompt is answered, the standard DEVICE prompt is displayed. The user can either accept the HOME device, which prints to the screen, or can select a valid device.

```
                          2013 DEMO HOSPITAL (CMBA)
Date:05/10/16          BLR Reference Lab File (#9009026)            Time:6:47 AM
UMAPRPT                     Reference Lab: LABCORP                     BLRMPRL2
                               Non-Mapped Tests
------------------------------------------------------------------------------

DEVICE: HOME//
```

Figure 8-15: Pagination prompt

After the device is selected, the report begins. It will be similar to the following:

```
                          2013 DEMO HOSPITAL (CMBA)
Date:05/10/16          BLR Reference Lab File (#9009026)              Page 1
Time:6:50 AM                Reference Lab: QUEST                    BLRMPRL2
UMAPRPT                        Non-Mapped Tests
```

```
                                                          Order     Result
File 9009026 Test Name                                    Code      Code
------------------------------------------------------------------------------
     NS5                                                            85986884
     c22p                                                           85986883
     c33c                                                           85986882
     hSOD                                                           85986885
  ADJ MULTIPLE OF MEDI                                              55126300
  ADJ MULTIPLE OF MEDI                                              55126500
  ADJ MULTIPLE OF MEDI                                              55126700
  MULTIPLE OF MEDIAN                                                55126200
 COLLECTION TIME                                                    25026800
 FAMILY HISTORY                                                     55147700
 FAMILY HISTORY                                                     55166400
 GESTATIONAL CALC METH                                              55147100


Enter RETURN to continue or '^' to exit:
```

Figure 8-16: Non-Mapped Tests report

9.0 Lab Arrival Time Added to Interim Report

With the installation of LR*5.2*1039, the Lab Arrival Time from the Accession file has been added to the report.

The LRRP1 routine was modified to accommodate the new report field.

9.1 Lab Arrival Time Example

An example of the Interim Report with the new field follows:

```
                          2013 DEMO HOSPITAL (CMBA)

Printed at:                                                    page 1     IHS
Database LR1039 UCI (2582)  5300 HOMESTEAD  ALBUQUERQUE, NM 87110

USER3,USER                                  Date/Time Printed: 05/10/16@07:54
     HRCN:12345     SEX:F  DOB:Jan 01, 1990  CURRENT AGE:26     LOC:LAB ONLY
Accession [UID]: CX 0509 1 [0161300001]
     Provider: PHYSICIAN,TEST              Lab Arrival Date/Time:05/09/16@08:15
     Specimen:BLOOD                       Spec Collect Date/Time:05/02/16@14:00
                          Res
Test name         Result Flg units         Ref.   range     Site  Result Dt/Time
GLUCOSE               83     mg/dL         65 - 110        [2582] 05/09/16@08:28
================================================================================
        KEY: A=Abnormal          L=Abnormal Low          H=Abnormal High
                  *=Critical value          TR=Therapeutic Range




[2582]  2013 DEMO HOSPITAL (CMBA)   5300 HOMESTEAD   ALBUQUERQUE, NM 87110
```

Figure 9-1: Interim Report example with new Lab Arrival Time field.

An example of an EHR Lab tab:

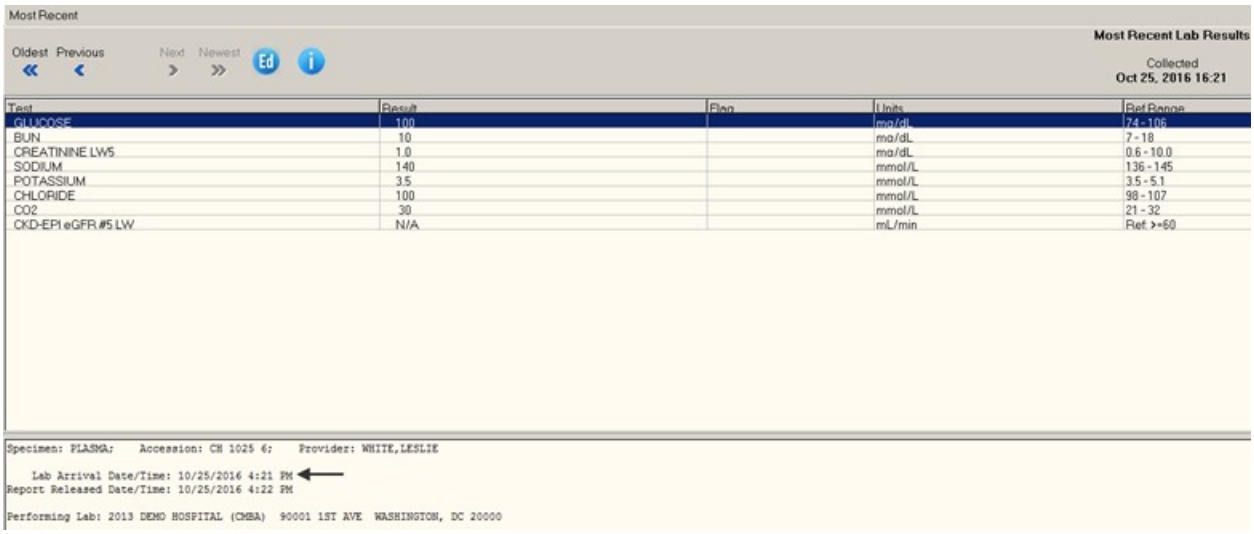

Figure 9-2: EHR Lab tab display

10.0 BLR Reference Lab Modifications

10.1 Purge Pending in Shipping Manifest

The option PSM, Purge Shipping Manifest File, on the Reference Lab Main Menu, has been modified to purge the Shipping Manifest file based on the type of interface whether LEDI or non LEDI (GIS).

```
          IHS Lab Reference Lab Menu

   E60    Edit Laboratory Test File (#60) CH ONLY
   EHL    Export Lab Results
   EXP    Export Reference Lab Orders
   GIS    GIS Interface Menu ...
   IMP    Import Reference Lab Results from HFS
   MAP    Map Reference Lab Codes to Laboratory Test File
   MON    Assign namespaces for Reference Lab Monitor
   NMAP   New Version of Mapping Tests
   PO     Purge Ref Lab Order/Accession file by date
   PSM    Purge Shipping Manifest File
   PUR    Purge Old Reference Lab Log Entries/File(s)
   QPO    Queueable purge Reference Lab Order/Accession File
   RAW    View/Refile Failed Raw Message(s)
   REP    Reprint Shipping Manifest
   RLDI   Refile LEDI Message
   RPTS   IHS Reference Lab Reports
   RRR    Restart the TCP/IP Receiver
   RRT    Restart the TCP/IP Transmitter
   RSNL   Reship a Non LEDI Order
   SIT    Reference Lab Site Parameter Add/Edit
   TBLL   Display Data in HL7 or Other Tables
   VER    Verify Reference Lab Results

               Press 'RETURN' to continue, '^' to stop:

Select Reference Lab Main Menu Option: PSM  Purge Shipping Manifest File
Purge Shipping Manifests older than how many days :  (1-365): 90//
```

Figure 10-1: BLRREFL example with PSM option

10.2 Reprint/Reship a Non LEDI Order

In the event a shipping manifest fails to print or a copy must be made, the menu option, RSNL Reprint/Reship a Non LEDI Order, may be used to generate a duplicate. The RSNL option is available for the GIS (non LEDI) Reference Lab Interfaces only.

```
IHS Lab Reference Lab Menu

   E60    Edit Laboratory Test File (#60) CH ONLY
   EHL    Export Lab Results
   EXP    Export Reference Lab Orders
   GIS    GIS Interface Menu ...
   IMP    Import Reference Lab Results from HFS
```

```
   MAP    Map Reference Lab Codes to Laboratory Test File
   MON    Assign namespaces for Reference Lab Monitor
   NMAP   New Version of Mapping Tests
   PO     Purge Ref Lab Order/Accession file by date
   PSM    Purge Shipping Manifest File
   PUR    Purge Old Reference Lab Log Entries/File(s)
   QPO    Queueable purge Reference Lab Order/Accession File
   RAW    View/Refile Failed Raw Message(s)
   REP    Reprint Shipping Manifest
   RLDI   Refile LEDI Message
   RPTS   IHS Reference Lab Reports
   RRR    Restart the TCP/IP Receiver
   RRT    Restart the TCP/IP Transmitter
   RSNL   Reprint/Reship a Non LEDI Order
   SIT    Reference Lab Site Parameter Add/Edit
   TBLL   Display Data in HL7 or Other Tables
   VER    Verify Reference Lab Results
```

Figure 10-2: BLRREFL example with RSNL option

The added option to Reprint/Reship a Non Ledi Order will allow the user to reship the order and/or reprint the GIS (Non Ledi) manifest.

```
   RSNL   Reprint/Reship a Non LEDI Order
   SIT    Reference Lab Site Parameter Add/Edit
   TBLL   Display Data in HL7 or Other Tables
   VER    Verify Reference Lab Results

Select Reference Lab Main Menu Option:  Reprint/Reship a Non LEDI Order
Enter Order Number:  45

Would you like to reship this order as well?  ?
Enter either 'Y' or 'N'.

Would you like to reship this order as well? YES
Reshipping order: 45
How many of copies of the shipping manifest: :  (1-9): 2// 1
Printing Shipping Manifests for Reference Lab...
Printing manifest for order # 45

Now printing shipping manifest for this accession
DEVICE: HOME//
```

Figure 10-3: RSNL option to reship and/or reprint

10.3 Secondary Insurance on LabCorp eReq

If a patient has a secondary insurance, it will print on the Labcorp manifest as requested by Labcorp.

The new entry, REF LAB NUM OF INS ON MANIFEST, was added to the BLR MASTER CONTROL File that will allow the user to indicate how many insurers allowed. Entering “2” allows the patient’s secondary insurance to print on the Labcorp manifest.

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

INPUT TO WHAT FILE: BLR MASTER CONTROL//
EDIT WHICH FIELD: ALL//

Select BLR MASTER CONTROL SITE:    2013 DEMO HOSPITAL (CMBA)
SITE: 2013 DEMO HOSPITAL (CMBA)//
LAB LOG TRANSACTION: YES//
LAB LOG TO PCC: YES//
LOG PAT DATA ONLY: YES//
*DEFAULT DIRECTORY PATH:
START PROCESSING DATE: AUG 18, 2016//
START EVENT DATE: AUG 18, 2016//
DAYS TO KEEP TRANSACTIONS: 180//
STOP PROCESSOR: NO//
TAKE SNAPSHOTS: NO//
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:
ORDER CALLBACK PHONE #1:
ORDER CALLBACK PHONE #2:
PRINCIPAL RESULT INTERPRETER:
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:
COLLECTION DATE ACCESSIONING:
SCREEN SCRAPER INTERFACE:
ACCESSION TEST GROUP TEMPLATE:
Select EVENT DATE:
Select PROCESSING DATE: FEB 24,2016//
  PROCESSING DATE: FEB 24,2016//   (No Editing)
  LAST TRANSACTION SEQ ASSIGNED: 6//   (No Editing)
  LAST TRANSACTION SEQ PROCESSED: 6//
  TRANSACTION LOG # ASSIGNED:
Select LAB APPLICATION PLUG-IN: LR*5.2*1021//
  LAB APPLICATION PLUG-IN: LR*5.2*1021//
  PLUG-IN ON/OFF?: ON//
Select LAB APPLICATION PLUG-IN:
REFERENCE LAB: LABCORP//
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: Third Party//
REF LAB PRT SHP MAN BY STORAGE:
REF LAB PRT PT PHONE MANIFEST:
REF LAB BI/UNIDIRECTIONAL: BIDIRECTIONAL//
REF LAB NPI OR UPIN ON ORDER: NPI//
REF LAB NAME FOR SHIP MANIFEST: LABCORP//
REF LAB USE INSURANCE SEQ: YES//
REF LAB USING LEDI?: NO//
REF LAB NUM OF INS ON MANIFEST: 2// << Enter "2", this will allow the patient's
secondary insurance to print on the Labcorp manifest. >>
REF LAB BI DIR AUTO VERIFY:
REF LAB BI AUTO VER L/W LIST:
REF LAB BI AUTO VER L/W PROF:
PERFORMING LAB DIRECTOR:
REF LAB USING SECONDARY:
REF LAB SECONDARY:
REF LAB SECONDARY SHIP CONFIG:
REF LAB SECONDARY NON LAB TAX:
REF LAB MANIFEST COPIES: 2//
REF LAB SECONDARY LAB TAXONOMY:
REF LAB SECONDARY TYPE:
REF LAB SECONDARY URGENCY:
REF LAB TESTING:
REF LAB TESTING LOCATION:
Select REF LAB CLIENT ACCOUNT NUMBER: 66600009//
Select REF LAB ACCESSION AREA: SENDOUTS//


Select BLR MASTER CONTROL SITE:
```

Figure 10-4: BLR Master Control file – Ref Lab number of insurance on manifest

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

REF LAB NAME: LABCORP                   CLIENT #: 66600009

FACILITY: 2013 DEMO HOSPITAL (CMBA)     Aug 22, 2016@10:58:35
ADDRESS: UPTOWN USA, ALBUQUERQUE,  89701  PHONE: 202-555-1212
================================================================================


ORDER (Control): 2815         ORDER DATE: Aug 22, 2016@10:57MID:IHS-178788(184359)
PATIENT: SEE,SUMMER FRANCIS   Chart # (Alt Patn ID): 111622 PHONE: 555-555-9831
SEX: F    DOB: Feb 28, 1945   SSN: XXX-XX-3221
LOCATION: LAB (OIT TEST)      BILL TYPE: Private Insurance
PRACTITIONER: ROMANCITO,KAREN,                          NPI:
LAB ARRIVAL (COLLECTION DATE/TIME): Aug 22, 2016@10:58:10


TEST NAME: GLUCOSE, SERUM (R) (001032)       SAMPLE: SERUM (SST)
SOURCE: SERUM                                Accession/Alt cnt#(CD): 6316000306
                                             URGENCY: ROUTINE
LAB PROCESSING INSTR:  PRIMARY TRANSPORT TUBE, Refrigerated
DIAGNOSIS
Diagnosis:              DX Description:
```

```
E11.9                    Type 2 diabetes mellitus without complications

PRIMARY INSURANCE
Ins Carrier Code: 05                     Insured Name: SEE,SUMMER FRANCIS
                                         Relationship: SELF
Insurer Name: MEDICARE                   Insured Add: 1ST & BOOTH
Insurer Add:                                          ALB NM 87119
PO BOX 660155                            Guarantor: SEE SUMMER FRANCIS
DALLAS TX 75266-0155                     Guar Add: 1ST & BOOTH
Insurer Group:                                     ALB NM 87119
Insured ID: 250539903A                   Guarantor Phone:


SECONDARY INSURANCE
Ins Carrier Code: BCBS                   Insured Name: SEE,SUMMER FRANCIS
                                         Relationship:
Insurer Name: PRIVATE INSURANCE     Insured Add: 1ST & BOOTH
Insurer Add:                                          ALB NM 87119
PO BOX 2924                              Guarantor: THOMAS TESSA
PHOENIX AZ 85062-2924                    Guar Add:
Insurer Group: 130
Insured ID:                              Guarantor Phone: 555-999-9174
-------------------------------------------------------------------------------
```

Figure 10-5: Manifest with secondary insurer example

10.4 Option to Designate Shipping Manifest Number Of Copies

The REF LAB NUMBER OF COPIES field has been added to the BLR MASTER CONTROL file to allow the user to set a default number of shipping manifest copies to print. If this field is populated, then the prompt How many of copies of the shipping manifest: comes up at the time the shipping manifest prints and defaults to the number in this field.

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

INPUT TO WHAT FILE: BLR MASTER CONTROL//
EDIT WHICH FIELD: ALL//

Select BLR MASTER CONTROL SITE:    2013 DEMO HOSPITAL (CMBA)
SITE: 2013 DEMO HOSPITAL (CMBA)//
LAB LOG TRANSACTION: YES//
LAB LOG TO PCC: YES//
LOG PAT DATA ONLY: YES//
*DEFAULT DIRECTORY PATH:
START PROCESSING DATE: AUG 18, 2016//
START EVENT DATE: AUG 18, 2016//
DAYS TO KEEP TRANSACTIONS: 180//
STOP PROCESSOR: NO//
TAKE SNAPSHOTS: NO//
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:
ORDER CALLBACK PHONE #1:
ORDER CALLBACK PHONE #2:
PRINCIPAL RESULT INTERPRETER:
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:
COLLECTION DATE ACCESSIONING:
SCREEN SCRAPER INTERFACE:
ACCESSION TEST GROUP TEMPLATE:
Select EVENT DATE:
Select PROCESSING DATE: FEB 24,2016//
  PROCESSING DATE: FEB 24,2016//   (No Editing)
  LAST TRANSACTION SEQ ASSIGNED: 6//   (No Editing)
  LAST TRANSACTION SEQ PROCESSED: 6//
  TRANSACTION LOG # ASSIGNED:
Select LAB APPLICATION PLUG-IN: LR*5.2*1021//
  LAB APPLICATION PLUG-IN: LR*5.2*1021//
  PLUG-IN ON/OFF?: ON//
Select LAB APPLICATION PLUG-IN:
REFERENCE LAB: QUEST//
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: Client//
REF LAB PRT SHP MAN BY STORAGE:
REF LAB PRT PT PHONE MANIFEST:
REF LAB BI/UNIDIRECTIONAL: BIDIRECTIONAL//
REF LAB NPI OR UPIN ON ORDER: NPI//
REF LAB NAME FOR SHIP MANIFEST: QUEST//
REF LAB USE INSURANCE SEQ: NO//
REF LAB USING LEDI?: NO//
REF LAB NUM OF INS ON MANIFEST:
REF LAB BI DIR AUTO VERIFY:
REF LAB BI AUTO VER L/W LIST:
REF LAB BI AUTO VER L/W PROF:
PERFORMING LAB DIRECTOR:
REF LAB USING SECONDARY:
REF LAB SECONDARY:
REF LAB SECONDARY SHIP CONFIG:
REF LAB SECONDARY NON LAB TAX:
REF LAB MANIFEST COPIES: 2// ?
```

```
     Type a number between 2 and 9, 0 decimal digits.
REF LAB MANIFEST COPIES: 2// << Enter the number of manifests to print. Entering “2”
will allow the user to select “1” at the printing manifest prompt during
accessioning.>>
REF LAB SECONDARY LAB TAXONOMY:
REF LAB SECONDARY TYPE:
REF LAB SECONDARY URGENCY:
REF LAB TESTING:
REF LAB TESTING LOCATION:
Select REF LAB CLIENT ACCOUNT NUMBER: 66600009//
Select REF LAB ACCESSION AREA: SENDOUTS//

Select BLR MASTER CONTROL SITE:
```

Figure 10-6: BLR Master Control file – Ref Lab Manifest copies

```
CHOOSE 1-2: 1  Accessioning tests ordered by provider order entry

DEMO,ASHLEY                    114649         Requesting location: LOT
Date/Time Ordered: 08/22/2016 12:01           By: ROMANCITO,KAREN
Lab Order #  2817                     Provider: ROMANCITO,KAREN
  SERUM (SST)
  HCG, QUANT (R)    ROUTINE Requested (SEND PATIENT) for:  08/22/2016@12:01
  Clinical Indication: Diabetes mellitus type 2 without retinopathy^3013049012
Is this the correct order? Yes//   YES
Collection Date@Time: //T@1118AM  (AUG 22, 2016@11:18:00)


ACCESSION:  SO 16 308  <6316000308>
HCG, QUANT (R)                SERUM (SST)  SERUM
NUMBER: 515
 GENERAL PROCESSING INST.:   1 ML REFRIGERATED SERUM
LAB PROCESSING INSTRUCTIONS:   Primary tube is acceptable; transport at Room
 Temp.
How many of copies of the shipping manifest: :  (1-9): 2// 1
Printing Shipping Manifests for Reference Lab...
Printing manifest for order # 2817

Now printing shipping manifest for this accession
DEVICE: HOME//   Virtual

                           INDIAN HEALTH SERVICE EREQ          PAGE: 1 of 1

REF LAB NAME: QUEST                     CLIENT #: 66600009

FACILITY: 2013 DEMO HOSPITAL (CMBA)     Aug 22, 2016@12:02:14
ADDRESS: UPTOWN USA, ALBUQUERQUE,  89701  PHONE: 202-555-1212
==============================================================================

ORDER (Control): 2817         ORDER DATE: Aug 22, 2016@12:01MID:IHS-178790(184363)
PATIENT: DEMO,ASHLEY          CHART (Patient ID): 114649    PHONE:
SEX: F    DOB: Feb 25, 1980   SSN: XXX-XX-5631
LOCATION: LAB (OIT TEST)      BILL TYPE: Client
PRACTITIONER: ROMANCITO,KAREN,                          NPI:
LAB ARRIVAL (COLLECTION DATE/TIME): Aug 22, 2016@11:18


TEST NAME: HCG, QUANT (R) (8396)            SAMPLE: SERUM (SST)
SOURCE: SERUM                               ACCESSION (Lab Ref#): 6316000308
                                            URGENCY: ROUTINE
```

```
LAB PROCESSING INSTR:  Primary tube is acceptable; transport at Room Temp.
DIAGNOSIS
Diagnosis:               DX Description:
E11.9                    Type 2 diabetes mellitus without complications
```

Figure 10-7: GIS Ref Lab example

```
Select Laboratory DHCP Menu Option: LSM  Lab Shipping Menu

   SMB    Build Shipping Manifest
   SSM    Start a Shipping Manifest
   SMS    Close/Ship a Shipping Manifest
   ART    Add/Remove a Shipping Manifest Test
   SMR    Edit Required Test Information
   SMI    Edit Relevant Clinical Information
   SMC    Cancel a Shipping Manifest
   PSM    Print Shipping Manifest
   STA    Order Status Report
   RSM    Retransmit Shipping Manifest
   RLR    Retransmit LEDI Lab Results
   SMP    Print LEDI Pending Orders

Select Lab Shipping Menu Option: SMB  Build Shipping Manifest
Select Shipping Configuration: QUEST
There's no open shipping manifest for QUEST
Do you want to start one? NO// YES
Use default accession dates? YES//
Exclude previously removed tests from building? YES//
     Using shipping manifest# 8992-20160822-2
     Searching accession area: SENDOUTS
     There were 18 specimens added
Print Shipping Manifest? NO// YES
How many of copies of the shipping manifest: :  (1-9): 2// 1

   SMB    Build Shipping Manifest
   SSM    Start a Shipping Manifest
   SMS    Close/Ship a Shipping Manifest
   ART    Add/Remove a Shipping Manifest Test
   SMR    Edit Required Test Information
   SMI    Edit Relevant Clinical Information
   SMC    Cancel a Shipping Manifest
   PSM    Print Shipping Manifest
   STA    Order Status Report
   RSM    Retransmit Shipping Manifest
   RLR    Retransmit LEDI Lab Results
   SMP    Print LEDI Pending Orders

Select Lab Shipping Menu Option: SMS  Close/Ship a Shipping Manifest
Select Shipping Configuration:    QUEST
Select Shipping Manifest:    8992-20160822-2 QUEST Status: OPEN as of Aug 22, 20
16@13:52

     Select one of the following:

          1         Close manifest
          2         Ship manifest

Select action to perform: 1// 2  Ship manifest
Enter Manifest Shipping Date:  NOW//   (AUG 22, 2016@13:55)
Print Shipping Manifest? NO// YES
```

```
How many of copies of the shipping manifest: :  (1-9): 2// 1
```

Figure 10-8: Figure 10.8: LEDI Ref Lab example

11.0 Miscellaneous Resolutions or Modifications

IHS Lab Patch LR*5.2*1039 corrects certain issues or modifies things.

11.1 EHR Lab GUI Diagnosis Codes

The EHR Lab GUI module allowed the user to enter additional Diagnosis codes during accessioning; however, it was discovered that those codes were not being stored.

A modification to the BLRAG05 routine was made to store the codes appropriately.

11.2 PCC Visits Not Being Updated

In certain circumstances, the entries in the IHS LAB TRANSACTION LOG (#9009022) file would not be processed correctly and no updates would be sent to PCC for storage into the V LAB (#9000010.09) or V MICROBIOLOGY (#9000010.25) files.

The BLRLINK3 routine was modified to ensure the fields were sent to PCC correctly.

In PCC, the fields for the Abnormal flags and Result Date/Time are now populated.

11.3 Clear BLR Errors (CLR and RBE on the BLRMENU)

Due to a change brought about by a Kernel patch, the CLR and RBE options no longer worked.

The routines called by those options (BLRUTIL and BLRCLRAL, respectively) were modified to take into account the Kernel change.

The CLR option will now clear all BLR errors in the error trap, but only for the current day.

The RBE option will now clear all BLR errors in the error trap, no matter when they occurred.

11.4 Collection List Order Numbers Being Truncated

During the printing of the Collection List, it was possible for long order numbers to be truncated due the printing starting a column to close to the edge. The LRLABELF and LRPHLIS1 routines have been modified to print in columns where the order numbers should not be truncated.

11.5 File 60 SITE/SPECIMEN LOINC CODE Field Mandatory

The Site/Specimen' LOINC CODE field in the LABORATORY TEST (#60) file has been modified and is now mandatory.

```
INPUT TO WHAT FILE: LABORATORY TEST//
EDIT WHICH FIELD: ALL// SITE/SPECIMEN    (multiple)
   EDIT WHICH SITE/SPECIMEN SUB-FIELD: ALL// LOINC CODE
   THEN EDIT SITE/SPECIMEN SUB-FIELD:
THEN EDIT FIELD:

Select LABORATORY TEST NAME: GLUCOSE, PLASMA
Select SITE/SPECIMEN: PLASMA
  LOINC CODE: ??
  LOINC CODE: ??
  LOINC CODE: 2345      -7 VUID
   GLUCOSE:MCNC:PT:SER/PLAS:QN:
Select SITE/SPECIMEN:
```

Figure 11-1: Adding LOINC CODE for Site/Specimen

11.6 Interim Report Prints Patient's Name on Last Page

The Interim report routine LRRP1 was modified to ensure that the patient's name appears on the last page of the report.

11.7 ICD-10 Code Not Printing on Shipping Manifest

A fix was made to routine BLRUTIL6 to store the diagnosis code if the test was ordered for a LEDI site.

12.0 LR*5.2*1039 Components

The following is a listing of the various patches, routines, etc. that are included in the IHS LR*5.2*1039 Lab Patch.

12.1 Files

The following are the files included in LR*5.2*1039

Table 12-1: Files included in LR*5.2*1039

File #	File Description
60	LABORATORY TEST
63	Lab Data
64.03	WKLD LOG FILE
64.2	WKLD SUFFIX CODES
69.86	HOWDY SITE FILE
9009022	IHS LAB TRANSACTION LOG
9009029	BLR MASTER CONTROL

12.2 Mail Group

The following is the Mail Group included in LR*5.2*1039: LAB HIGH URGENCY NOTIFICATION.

12.3 Options

The following are the Options included in LR*5.2*1039:

1. BLR COLL DT PCC VIS PARAM EDIT
2. BLR CREAT CLEAR DELTA CHECK
3. BLR CREATININE CLEARANCE TEST
4. BLR EDIT HIGH URG MGRP
5. BLR EMER ALERT Parameter Edit
6. BLR MI INTERIM BY LOC
7. BLR MULTI ACCESSION CANCEL
8. BLR REFLAB TESTS

12.4 Parameter Definitions

The following are the Parameter Definitions included in LR*5.2*1039:

1. BLR COLL DT PCC VISIT CREATION
2. BLR EMERGENCY ALERT

12.5 Routines

The following are the Routines included in LR*5.2*1039.

Table 12-2: Routine List

Routine Name	Routine Description
BLR7OGMP	Lab Interim Report for EHR
BLRAG05	LABORATORY ACCESSION GUI RPCS
BLRAG05A	SUPPORT FOR LABORATORY ACCESSION GUI RPCS
BLRCLRAL	Clear ALL Lab Module Errors in the Error Trap
BLREMERA	BLR EMERgency Alert parameter edit
BLREXEC4	IHS Implementation of the Creatinine Clearance equation
BLRF60SR	File 60 line item SeaRch
BLRKIDS2	IHS Lab KIDS utilities~ part 2
BLRLINK3	CONT. OF BLR - IHS LABORATORY VISIT CREATION
BLRMANP2	Multiple Accession Not Performed utility~ part 2
BLRMANPU	Multiple Accession Not Performed Utility
BLRMIIBL	MIcro Interim report by Location
BLRMPRL2	BLR Map Reference Lab Codes to Lab Test File - version 2
BLRPCCVC	IHS LAB LINK TO PCC
BLRPRE39	IHS Lab Patch LR*5.2*1039 Pre/Post Routine
BLRPST	Show processor status
BLRRLEVN	BLR Reference Lab Non LEDI Manifest Build
BLRSHPM	BLR Reference Lab Shipping Manifest Others

Routine Name	Routine Description
BLRSHPM1	BLR Reference Lab Shipping Manifest (con't)
BLRSHPML	BLR Reference Lab Shipping Manifest: Others
BLRUTIL	BLR Link Utilities And Testing Subroutines
BLRUTIL3	Misc IHS Lab Utilities (Cont)
BLRUTIL6	Misc IHS Lab Utilities (Cont)
BLRUTIL8	Misc IHS Lab Utilities (Cont)
LAMIVTL4	4th Vitek literal verify rtn
LR315	LR*5.2*315 Patch Environment Check Routine
LR430PST	Init Routine for LR*5.2*430
LR7OB63C	Get SP~EM~CY data
LR7OB63D	Get Autopsy data
LR7OF1	Setup new order from OE/RR
LR7OGM	Interim report RPC memo
LR7OGMC	Interim report RPC memo chem
LR7OGMG	Interim report RPC memo grid
LR7OGMM	Interim report RPC memo micro
LR7OGMP	Interim report RPC memo print
LR7OGMU	MOD Interim report RPC memo utility
LR7OSAP1	MOD Silent AP RPT cont.
LR7OSAP3	Silent AP RPT from TIU
LRAPALRT	Send An AP Alert After The Report Has Been Released
LRAPCUM1	AP Patient Cumulative
LRAPQAT1	QA Code Search
LRAPRES	AP ESIG Release Report
LRAPRES2	AP ESIG Release Report
LRAPT3	AUTOPSY RPT PRINT COND(1)'T
LRAPTIUP	API Print AP Reports from TIU
LRAUSICD	AUTOPSY ICDCM SEARCH
LRBEBA	SCI~ EI~ AND LRBEDGX QUESTIONS
LRBEBA2	ORDERING AND RESULTING OUTPATIENT
LRBEECPT	Edit CPT associated with CIDC
LRBLJPP1	PT ADM~RX SPECIALTY~ICDCM CODES

Routine Name	Routine Description
LRBLPC1	PT ADM~RX SPECIALTY~ICDCM CODES
LRBLPCSS	PRE-OP COMPONENT SELECTION
LRBLS	BLOOD BANK SUPERVISOR OPTS
LRCAPDAR	LAB DSS RESULTS EXTRACT (LAR)
LRCAPDSS	LAB WORKLOAD DSS EXTRACT (LMIP)
LRCAPPH	PROCESS PHLEBOTOMY WORKLOAD DATA
LRDPA	FILE OF FILES LOOKUP ON ENTITIES
LREPI1A	EMERGING PATHOGENS HL7 BUILDER
LREPI3	EMERGING PATHOGENS HL7 SEGMENTS
LREPI5	EMERGING PATHOGENS SEARCH
LRHY0	HOWDY MAIN DRIVER
LRHY01	HOWDY MAIN DRIVER
LRHY4X	PHLEBOTOMY TAT
LRHYAFT	HOWDY MAIN DRIVER WITH PPOC ADDON
LRHYB	HOWDY B DRIVER
LRHYBC1	LAB PHLEB AND COLLECTION TIME UPDATER
LRHYLS1	DISPLAY ORDERS
LALABELF	PRINT COLLECTION LIST (CONT.)
LRLNC1	LOOKUP LOINC CODE
LRLNCNLT	PRINT LAB TEST W/O RESULT NLT CODE
LRMIPSU	MICRO PATIENT REPORT
LRMIPSZ2	MICRO PATIENT REPORT - BACTERIA
LROE	LAB ORDER ENTRY AND ACCESSION
LRPHLIS1	PRINT COLLECTION LIST (CONT.)
LRPHLIST	PRINT COLLECTION LIST
LRPHSET1	COLLECTION LIST TO ACCESSIONS
LRPXAPIU	Lab Extract API Utilities
LRRP1	PRINT THE DATA FOR INTERIM REPORTS
LRRP2	INTERIM REPORT
LRSPRPT1	SURG PATH RPT PRINT CONT.
LRSPSICD	CY/EM/SP ICD SEARCH
LRWU	UTILITY FUNTIONS

12.6 VA Patches

The following are the VA Patches included in LR*5.2*1039.

12.6.1 LA*5.2*81 - File# 68 Erroneous VITEK Node

This patch will address the following issue: the HL7 record being returned to VistA from the VITEK automated instrument is setting the automated value for field LOAD LIST ENTRY (#2) incorrectly.

A modification to routine LAMIAUT8 has been made to set the LOAD LIST ENTRY into the correct node/field of the ACCESSION file.

12.6.2 LA*5.2*83 - Subscript Error LRMIEDZ

The patch modifies code in the VITEK LITERAL routine LAMIVTL4 that uses improper subscripting in a $ORDER function causing a Subscript Error.

12.6.3 LR*5.2*315 - AP Report Causes Unsigned CPRS Alert and New CPT APIs

This patch corrects the following problem which can occur when an Anatomic Pathology (AP) report is released: when an AP report is electronically signed containing 3 sequential characters defined in the BLANK CHARACTER STRING field (#1.06), of the TIU PARAMETERS file (#8925.99), the Text Integration Utility (TIU) electronic signature fails without giving notification to the user. The AP report is successfully created and stored in TIU, but is marked in TIU as an unsigned document, which, in turn, may generate an alert in Computerized Patient Record System (CPRS).

This patch adds a new parameter to the code that calls the TIU API, NEW^TIUPNAPI. This TIU API is called at the time the AP report is electronically signed; it creates and stores the AP report in the TIU DOCUMENT file (#8925).

12.6.4 LR*5.2*335 - Vista to VBECS Data Conversion

Because RPMS does not incorporate VBECS, this is an empty patch: i.e., no routines, no files, etc.

It is being included because other VA Lab Patches may, in the future, depend upon its existence.

12.6.5 LR*5.2*367 - VBECS Lab Order Completion

Because RPMS does not incorporate VBECS, this is an empty patch: i.e., no routines, no files, etc.

It is being included because other VA Lab Patches may, in the future, depend upon its existence.

12.6.6 LR*5.2*382 - LAB ADT

LR*5.2*382 is exported as part of the VistA Blood Establishment Computer System (VBECS) Version 1.6.0 release and supports the Bar Code Expansion (BCE) Positive Patient Identification project.

Because RPMS does not incorporate VBECS, this is an empty patch: i.e., no routines, no files, etc.

It is being included because other VA Lab Patches may, in the future, depend upon its existence.

12.6.7 LR*5.2*387 - API For CPRS Cumulative Display

This patch will allow the Computerized Patient Record System (CPRS) to retrieve data for the Cumulative report from the pre-existing VBECS API's.

Because RPMS does not incorporate VBECS, this is an empty patch: i.e., no routines, no files, etc.

It is being included because other VA Lab Patches may, in the future, depend upon its existence.

12.6.8 LR*5.2*388 – Antibiotic Level Concentration Not Working

This patch will address the following three issues:

1. When the EDIT CODE field (#98) of the LABORATORY TEST file (#60) is set to 'ANTIBIOTIC LEVEL', and a user is entering results for a Laboratory Test, the system will not allow responses to the CONCENTRATION prompt that are acceptable according to help text. The solution is to modify the Data Dictionary input transform ^DD(63.42,2) for field CONC(ug/ml) to accept a range, specific values and also accept "<" or ">" accompanied by a specific value.

2. The incorrect LAB TEST (field #1) and ACC NO. (field #8) are stored in sub-file #64.1111 of the WKLD DATA file (#64.1) when the date of the order and the date of specimen collection are different. The solution is to modify routine LRCAPPH to handle the 2 dates properly and extract the appropriate data items for inclusion in the building of the WKLD DATA file.

3. There are 3 indicators for DRAW TIMES related to antibiotics: PEAK, TROUGH, and RANDOM. The designator "RANDOM" will not appear on patient reports as does "PEAK" and "TROUGH". The solution is to modify routine LRMIPSZ2 to print any DRAW TIME (including RANDOM) alongside the appropriate concentration.

12.6.9 LR*5.2*395 - Add Test Status to CPRS Lab Report API'S

This patch will address the following issues:

1. When reviewing Lab Results on the Labs Tab in CPRS, only verified lab results are shown. Lab Specimens that have been collected, but not verified are not shown along with the results. The solution is that three reports on the Labs Tab in CPRS have been modified.

2. A site reported that during a JCAHO Lab Survey the lab received a RIF because the lab test results do not have the date and time the labs were completed or reported on the Labs Tab in CPRS. Reported instead are the date/time of collection. The solution is that the "Report Released Date/Time" was added to the three reports on the Labs Tab.

12.6.10 LR*5.2*398 - LRPHLIST For Mixed Operating System

Sites using mixed operating systems have encountered an error in option LRPHLIST [Itemized routine lab collection] due to the forced queuing of the print job. The solution is to modify routine LRPHLIST to allow collection label printing through TaskMan. Sites not yet on the mixed operating system will not be affected.

12.6.11 LR*5.2*412 - Companion Patch To VBEC*1*27

Because RPMS does not incorporate VBECS, this is an empty patch: i.e., no routines, no files, etc.

It is being included because other VA Lab Patches may, in the future, depend upon its existence.

12.6.12 LR*5.2*417 - Fix for Several HOWDY Issues

The VA HOWDY interface that allows patients to sign themselves into the scheduling system is not implemented in RPMS.

This patch is included because other VA Lab Patches may, in the future, depend upon its existence.

12.6.13 LR*5.2*418 - VM Patch to Address Some LOINC-Related Problems

This patch addresses three LOINC-related issues:

1. The LR LOINC LOOKUP [Find LOINC for Vista Lab Test] option won't accept default. The solution is to modify routine LRLNC1 to get the LOINC code from LABORATORY TEST file (#6O) and then use that LOINC code for the lookup into the LAB LOINC file (#95.3).

2. The LR LOINC PRINT RESULT NLT [Lab Tests With/Without Result NLT Codes Print] option prints MI (Microbiology) and BB (Blood Bank) tests when it should only print CH (Chemistry) tests. The solution is to modify routine LRLNCNLT to not print any MI or BB subscripted tests on the report.

3. The LR LOINC PRINT RESULT NLT [Lab Tests With/Without Result NLT Codes Print] option prints profiles (cosmic tests) when it should only print individual tests (atomic tests). The solution is to modify routine LRLNCNLT to omit cosmic tests (panels).

12.6.14 LR*5.2*420 - Update Data Extract Logic For DSS

The VA Decision Support System (DSS) is not implemented in RPMS.

This patch is included because other VA Lab Patches may, in the future, depend upon its existence.

12.6.15 LR*5.2*423 - Errors with Building Collection List

This patch is addresses two issues in the Lab package.

1. In building the collection list, if an order fails to accession, it can cause subsequent orders to fail to accession also, even though the subsequent orders are ok. The solution is to modify routine LRPHSET1 to use the institution from the user, DUZ(2), when an ordering location is encountered that is not linked to an institution.

2. Laboratory-related locking issues when doing accessioning. The solution is to modify the incremental lock in routine LROE to use the variable DILOCKTM as the timeout value rather than 1 second.

12.6.16 LR*5.2*426 - Input Transform Error Causing Data Verification Error

This patch addresses an issue involving the VA FileMan Verify Field utility, which gives mixed results on outputs. The solution is to remove the '$D(DIU(0)) logic test from the input transform.

12.6.17 LR*5.2*430 - Address Some HOWDY Issues

The VA HOWDY interface that allows patients to sign themselves into the scheduling system is not implemented in RPMS.

This patch is included because other VA Lab Patches may, in the future, depend upon its existence.

12.6.18 LR*5.2*432 - Hospital Location File/Lab Collect issues

This patch will fix the following two issues in the laboratory package:

1. Screening problem in the Hospital Location file (#44). The solution is to modify the FileMan call to the Hospital Location file (#44) in routine LRWU to screen out Hospital Locations of type "F" (File Area) and "I" (Imaging).

2. There is a problem when a Lab Collect is placed on a collection list. The solution is to modify routine LROE to not allow accessioning to occur again if the Accession file (#68) and the Lab Order Entry file (#69) indicate that accessioning has already occurred.

12.6.19 LR*5.2*435 - VHIC 4.0 Card

The VA VHIC 4.0 Card system is not implemented in RPMS.

This patch is included because other VA Lab Patches may, in the future, depend upon its existence.

12.6.20 LR*5.2*436 - Same SSN On Entries in File 68

This patch addresses the following issue:

When printing a CAPTIONED template report in VA FileMan with the printing of computed fields turned on for the ACCESSION file (#68), all of the values printed for the HOSPITAL ID computed field (#.09) are the same. It will print a different value for each different AREA (#.01) and use that value for all patients with accessions in that AREA (#.01). The solution is to remove from the MUMPS code of the HOSPITAL ID field (#.09) using the variable DA to help pull the patient's ID from the PATIENT file (#2).

12.6.21 LR*5.2*441 - Update Data Extract Fields For DSS

The VA Data Extraction subsystem is not implemented in RPMS.

This patch is included because other VA Lab Patches may, in the future, depend upon its existence.

Appendix A: Test Scripts

Software changes should be tested ***in the manner that you use the feature/function in your environment***. If, for example, lab results are viewed and printed in the EHR, the EHR should be included in your testing. The test scripts below are meant to provide a place for you to begin creating your own test script.

A.1 Computed Creatinine Clearance (CrCl) Delta Check

Creating the new delta check for Creatinine Clearance utilizing 24-hour urine collection should be completed by users that perform the Creatinine Clearance test in their laboratories.

Since the Creatinine Clearance will be implemented via a delta check, sites are reminded that the following tests must be defined and placed on a single Cosmic test to include:

1. CREATININE, SERUM
2. (2) CREATININE, URINE
3. URINE VOLUME, 24 Hr
4. COMPUTED CREATININE CLEARANCE

    a. Review the Creatinine Clearance Cosmic test. Make sure you have separate Atomic tests for Serum Creatinine and Urine Creatinine.

    b. The Atomic tests need to be added to the Cosmic test in a specific order, see above.

    c. Create the CrCL Delta Check using the CCCD option: LR DHCP->BLR->CCCD.

    d. Add the newly configured Delta Check to the URINE VOLUME test: (File 60, Site/Specimen, subfield TYPE OF DELTA CHECK).

    e. Test with panel for calculation of new the COMPUTED CREATININE CLEARANCE by ordering/accessioning/resulting.

    f. Use the TCCR option to QA: LR DHCP-> BLR-> TCCR.

    g. Confirm successful BLR IHS LAB TRANSACTION files with V LAB and RESULTED status.

☐PASS ☐FAIL ☐ N/A

A.2 ASAP, STAT, and Emergency Room Order Notification

To receive notifications of an EHR order with an Urgency of STAT or ASAP or if an order was created with a division that has EMERGENCY in its name, complete the following:

1. User will require the LRSUPER Security key to perform the following:
   a. Turn on (YES) the BLR Emergency Alert Parameter: LR DHCP-> BLR-> EAPE
   b. Add new members to the mail group: LR DHCP-> BLR-> EMGP
2. Place an EHR lab order with the Emergency Location, sign the lab order.
3. Place another EHR lab order with lab tests to include the urgency of ASAP or STAT, sign the lab order.
4. Sign into SecureCRT/RPMS or Telnet/RPMS and view the VA Alerts and Mailman Messages.

☐PASS ☐FAIL ☐ N/A

A.3 Marking Multiple Accessions as Not Performed

Selecting the MACC option to mark multiple accessions that have not been results as Not Performed; this routine will allow the user to cancel multiple accessions numbers and marked them as Not Performed.

1. User will require the LRSUPER Security key to utilize the MACC option.
2. From the BLR menu, select the MACC option to mark multiple accessions as Not Performed.
3. Review the Order Test Status for Canceled test(s) and the EHR Lab Tab for discontinued status.

☐PASS ☐FAIL ☐ N/A

A.4 Collection Date Used to Create PCC Visit

The new parameter, CDVC, will be added to the Parameter Definition file by the patch. It is a YES/NO parameter and if it is YES, the PCC Visit will be created using the Collection Date of the Accession File and not the current date/time.

1. User will require the LRSUPER Security key to utilize the CDVC option.
2. From the BLR menu, select the CDVC option and enter '**YES'**.

3. EHR activity: order labs on EHR; accession the lab order number that has a collection date in the past (not today's date).

4. In SecureCRT/RPMS or Telnet/RPMS, access the PCC Menu for DSP, enter patient MR#, enter date of Collection, and review the VISIT/ADMIT DATE&TIME.

☐PASS ☐FAIL ☐ N/A

A.5 File 60 Search

With the installation of LR 1039, it will be possible for users to search all entries in File 60 for a specific string.

1. User will require the LRSUPER Security key to utilize the SF60 option.

2. From the BLR menu, select the SF60 option. Search for the name text of 'GLUCOSE'.

3. Device: print to screen or printer. Search again for another test.

4. The word/test that is being searched that appears anywhere in the Test definition, Synonym, General processing inst. or General ward instructions, the test will be displayed and/or printed.

☐PASS ☐FAIL ☐ N/A

A.6 Micro Interim Reports By Location

Laboratories that perform microbiology in-house have the option to print Micro Interim Reports by a specific entry in the Hospital Location (#44) file for a date range:

1. User will require the LRSUPER Security key to utilize the MILO option.

2. From the LR DHCP> BLR menu, select the MILO option.

3. Once the MILO option is selected, enter a valid entry from the Hospital Location.

4. Enter dates for Start DATE & the Go back to DATE and enter **Y**(es) to Produce Report.

5. Device: print to screen or printer.

☐PASS ☐FAIL ☐ N/A

A.7 New Reference Lab Mapping Option

New method to map Reference Lab tests for the GIS Reference Lab Interfaces.

1. The new NMAP option will be added to the BLR -> REFL menu.
2. Once the NMAP option is selected, the user will have 3 options. (Map Ref Lab Tests, Mapped Tests Report, Non-Mapped Test Report).
3. 'Map Reference Lab Tests', once selected, a list of ref labs will display. Select your reference lab.
4. You are prompted with select 'Reference Lab (#9009026) File's Test to Map:' to map a lab test, follow the prompts.
5. Once a lab test was mapped, you are able to enter another test to map.
6. 'Mapped Tests Report' provides a report of mapped lab tests.
7. 'Non-Mapped Test Report' provides a report of unmapped lab tests.

☐PASS ☐FAIL ☐ N/A

A.8 Lab Arrival added to Interim Report and EHR Labs Tab

The Lab Arrival Date and Time from the Accession file has been added to the RPMS Interim Report and EHR Labs display, as well as the patient's name has been added back to the bottom of the Interim Report pages.

Review the Interim Report and EHR Labs tab for a selected patient, notice that Lab Arrival Date and Time has been added. Review the RPMS Interim Report and you will notice that the patient's name will appear at the bottom of each page.

☐PASS ☐FAIL ☐ N/A

A.9 GIS Reference Lab Interface

IHS Manifest Header will print on all pages with page number with option to designate how many manifests to print.

The REF LAB MANIFEST COPIES entry in the BLR MASTER CONTROL file in the RPMS VA FM will allow the user to indicate how many manifests to print.

1. Access VA FILEMAN, ENTER/EDIT for BLR MASTER CONTROL file. Select your facility name.
2. Enter down to the field for REF LAB MANIFEST COPIES, enter "**2**". The system only allows a number between 2 and 9.

3. Process lab orders for the ref lab interface.
4. Accession the lab order number(s).
5. The user will be prompted to indicate how many of copies of the shipping manifest. Test 2, 3 as needed.
6. The printed manifest will display the header with page number on all printed manifests.
7. Review the printed manifests, patient demographics, ref lab name, account number and bill type.

☐PASS ☐FAIL ☐ N/A

Appendix B: Rules of Behavior

The Resource and Patient Management (RPMS) system is a United States Department of Health and Human Services (HHS), Indian Health Service (IHS) information system that is ***FOR OFFICIAL USE ONLY***. The RPMS system is subject to monitoring; therefore, no expectation of privacy shall be assumed. Individuals found performing unauthorized activities are subject to disciplinary action including criminal prosecution.

All users (Contractors and IHS Employees) of RPMS will be provided a copy of the Rules of Behavior (RoB) and must acknowledge that they have received and read them prior to being granted access to a RPMS system, in accordance IHS policy.

- For a listing of general ROB for all users, see the most recent edition of *IHS General User Security Handbook* (SOP 06-11a).
- For a listing of system administrators/manager's rules, see the most recent edition of the *IHS Technical and Managerial Handbook* (SOP 06-11b).

Both documents are available at this IHS Web site: http://security.ihs.gov/.

The ROB listed in the following sections are specific to RPMS.

B.1 All RPMS Users

In addition to these rules, each application may include additional RoBs that may be defined within the documentation of that application (e.g., Dental, Pharmacy).

B.1.1 Access

RPMS users shall

- Only use data for which you have been granted authorization.
- Only give information to personnel who have access authority and have a need to know.
- Always verify a caller's identification and job purpose with your supervisor or the entity provided as employer before providing any type of information system access, sensitive information, or nonpublic agency information.
- Be aware that personal use of information resources is authorized on a limited basis within the provisions *Indian Health Manual* Part 8, "Information Resources Management," Chapter 6, "Limited Personal Use of Information Technology Resources."

RPMS users shall not

- Retrieve information for someone who does not have authority to access the information.
- Access, research, or change any user account, file, directory, table, or record not required to perform their *official* duties.
- Store sensitive files on a PC hard drive, or portable devices or media, if access to the PC or files cannot be physically or technically limited.
- Exceed their authorized access limits in RPMS by changing information or searching databases beyond the responsibilities of their jobs or by divulging information to anyone not authorized to know that information.

B.1.2 Information Accessibility

RPMS shall restrict access to information based on the type and identity of the user. However, regardless of the type of user, access shall be restricted to the minimum level necessary to perform the job.

RPMS users shall

- Access only those documents they created and those other documents to which they have a valid need-to-know and to which they have specifically granted access through an RPMS application based on their menus (job roles), keys, and FileMan access codes. Some users may be afforded additional privileges based on the functions they perform, such as system administrator or application administrator.
- Acquire a written preauthorization in accordance with IHS polices and procedures prior to interconnection to or transferring data from RPMS.

B.1.3 Accountability

RPMS users shall

- Behave in an ethical, technically proficient, informed, and trustworthy manner.
- Log out of the system whenever they leave the vicinity of their personal computers (PCs).
- Be alert to threats and vulnerabilities in the security of the system.
- Report all security incidents to their local Information System Security Officer (ISSO)
- Differentiate tasks and functions to ensure that no one person has sole access to or control over important resources.
- Protect all sensitive data entrusted to them as part of their government employment.

- Abide by all Department and Agency policies and procedures and guidelines related to ethics, conduct, behavior, and information technology (IT) information processes.

B.1.4 Confidentiality

RPMS users shall

- Be aware of the sensitivity of electronic and hard copy information, and protect it accordingly.
- Store hard copy reports/storage media containing confidential information in a locked room or cabinet.
- Erase sensitive data on storage media prior to reusing or disposing of the media.
- Protect all RPMS terminals from public viewing at all times.
- Abide by all Health Insurance Portability and Accountability Act (HIPAA) regulations to ensure patient confidentiality.

RPMS users shall not

- Allow confidential information to remain on the PC screen when someone who is not authorized to that data is in the vicinity.
- Store sensitive files on a portable device or media without encrypting.

B.1.5 Integrity

RPMS users shall

- Protect their systems against viruses and similar malicious programs.
- Observe all software license agreements.
- Follow industry standard procedures for maintaining and managing RPMS hardware, operating system software, application software, and/or database software and database tables.
- Comply with all copyright regulations and license agreements associated with RPMS software.

RPMS users shall not

- Violate federal copyright laws.
- Install or use unauthorized software within the system libraries or folders.
- Use freeware, shareware, or public domain software on/with the system without their manager’s written permission and without scanning it for viruses first.

B.1.6 System Logon

RPMS users shall

- Have a unique User Identification/Account name and password.
- Be granted access based on authenticating the account name and password entered.
- Be locked out of an account after five successive failed login attempts within a specified time period (e.g., one hour).

B.1.7 Passwords

RPMS users shall

- Change passwords a minimum of every 90 days.
- Create passwords with a minimum of eight characters.
- If the system allows, use a combination of alpha-numeric characters for passwords, with at least one uppercase letter, one lower case letter, and one number. It is recommended, if possible, that a special character also be used in the password.
- Change vendor-supplied passwords immediately.
- Protect passwords by committing them to memory or store them in a safe place (do not store passwords in login scripts or batch files).
- Change passwords immediately if password has been seen, guessed, or otherwise compromised, and report the compromise or suspected compromise to their ISSO.
- Keep user identifications (IDs) and passwords confidential.

RPMS users shall not

- Use common words found in any dictionary as a password.
- Use obvious readable passwords or passwords that incorporate personal data elements (e.g., user's name, date of birth, address, telephone number, or social security number; names of children or spouses; favorite band, sports team, or automobile; or other personal attributes).
- Share passwords/IDs with anyone or accept the use of another's password/ID, even if offered.
- Reuse passwords. A new password must contain no more than five characters per eight characters from the previous password.
- Post passwords.
- Keep a password list in an obvious place, such as under keyboards, in desk drawers, or in any other location where it might be disclosed.

- Give a password out over the phone.

B.1.8 Backups

RPMS users shall

- Plan for contingencies such as physical disasters, loss of processing, and disclosure of information by preparing alternate work strategies and system recovery mechanisms.
- Make backups of systems and files on a regular, defined basis.
- If possible, store backups away from the system in a secure environment.

B.1.9 Reporting

RPMS users shall

- Contact and inform their ISSO that they have identified an IT security incident and begin the reporting process by providing an IT Incident Reporting Form regarding this incident.
- Report security incidents as detailed in the *IHS Incident Handling Guide* (SOP 05-03).

RPMS users shall not

- Assume that someone else has already reported an incident. The risk of an incident going unreported far outweighs the possibility that an incident gets reported more than once.

B.1.10 Session Timeouts

RPMS system implements system-based timeouts that back users out of a prompt after no more than 5 minutes of inactivity.

RPMS users shall

- Utilize a screen saver with password protection set to suspend operations at no greater than 10 minutes of inactivity. This will prevent inappropriate access and viewing of any material displayed on the screen after some period of inactivity.

B.1.11 Hardware

RPMS users shall

- Avoid placing system equipment near obvious environmental hazards (e.g., water pipes).
- Keep an inventory of all system equipment.

- Keep records of maintenance/repairs performed on system equipment.

RPMS users shall not

- Eat or drink near system equipment.

B.1.12 Awareness

RPMS users shall

- Participate in organization-wide security training as required.
- Read and adhere to security information pertaining to system hardware and software.
- Take the annual information security awareness.
- Read all applicable RPMS manuals for the applications used in their jobs.

B.1.13 Remote Access

Each subscriber organization establishes its own policies for determining which employees may work at home or in other remote workplace locations. Any remote work arrangement should include policies that

- Are in writing.
- Provide authentication of the remote user through the use of ID and password or other acceptable technical means.
- Outline the work requirements and the security safeguards and procedures the employee is expected to follow.
- Ensure adequate storage of files, removal, and nonrecovery of temporary files created in processing sensitive data, virus protection, and intrusion detection, and provide physical security for government equipment and sensitive data.
- Establish mechanisms to back up data created and/or stored at alternate work locations.

Remote RPMS users shall

- Remotely access RPMS through a virtual private network (VPN) whenever possible. Use of direct dial in access must be justified and approved in writing and its use secured in accordance with industry best practices or government procedures.

Remote RPMS users shall not

- Disable any encryption established for network, internet, and Web browser communications.

B.2 RPMS Developers

RPMS developers shall

- Always be mindful of protecting the confidentiality, availability, and integrity of RPMS when writing or revising code.
- Always follow the IHS RPMS Programming Standards and Conventions (SAC) when developing for RPMS.
- Only access information or code within the namespaces for which they have been assigned as part of their duties.
- Remember that all RPMS code is the property of the U.S. Government, not the developer.
- Not access live production systems without obtaining appropriate written access, and shall only retain that access for the shortest period possible to accomplish the task that requires the access.
- Observe separation of duties policies and procedures to the fullest extent possible.
- Document or comment all changes to any RPMS software at the time the change or update is made. Documentation shall include the programmer's initials, date of change, and reason for the change.
- Use checksums or other integrity mechanism when releasing their certified applications to assure the integrity of the routines within their RPMS applications.
- Follow industry best standards for systems they are assigned to develop or maintain, and abide by all Department and Agency policies and procedures.
- Document and implement security processes whenever available.

RPMS developers shall not

- Write any code that adversely impacts RPMS, such as backdoor access, "Easter eggs," time bombs, or any other malicious code or make inappropriate comments within the code, manuals, or help frames.
- Grant any user or system administrator access to RPMS unless proper documentation is provided.
- Release any sensitive agency or patient information.

B.3 Privileged Users

Personnel who have significant access to processes and data in RPMS, such as, system security administrators, systems administrators, and database administrators, have added responsibilities to ensure the secure operation of RPMS.

Privileged RPMS users shall

- Verify that any user requesting access to any RPMS system has completed the appropriate access request forms.
- Ensure that government personnel and contractor personnel understand and comply with license requirements. End users, supervisors, and functional managers are ultimately responsible for this compliance.
- Advise the system owner on matters concerning information technology security.
- Assist the system owner in developing security plans, risk assessments, and supporting documentation for the certification and accreditation process.
- Ensure that any changes to RPMS that affect contingency and disaster recovery plans are conveyed to the person responsible for maintaining continuity of operations plans.
- Ensure that adequate physical and administrative safeguards are operational within their areas of responsibility and that access to information and data is restricted to authorized personnel on a need-to-know basis.
- Verify that users have received appropriate security training before allowing access to RPMS.
- Implement applicable security access procedures and mechanisms, incorporate appropriate levels of system auditing, and review audit logs.
- Document and investigate known or suspected security incidents or violations and report them to the ISSO, Chief Information Security Officer (CISO), and systems owner.
- Protect the supervisor, superuser, or system administrator passwords.
- Avoid instances where the same individual has responsibility for several functions (i.e., transaction entry and transaction approval).
- Watch for unscheduled, unusual, and unauthorized programs.
- Help train system users on the appropriate use and security of the system.
- Establish protective controls to ensure the accountability, integrity, confidentiality, and availability of the system.
- Replace passwords when a compromise is suspected. Delete user accounts as quickly as possible from the time that the user is no longer authorized system. Passwords forgotten by their owner should be replaced, not reissued.

- Terminate user accounts when a user transfers or has been terminated. If the user has authority to grant authorizations to others, review these other authorizations. Retrieve any devices used to gain access to the system or equipment. Cancel logon IDs and passwords, and delete or reassign related active and backup files.
- Use a suspend program to prevent an unauthorized user from logging on with the current user's ID if the system is left on and unattended.
- Verify the identity of the user when resetting passwords. This can be done either in person or having the user answer a question that can be compared to one in the administrator's database.
- Shall follow industry best standards for systems they are assigned to, and abide by all Department and Agency policies and procedures.

Privileged RPMS users shall not

- Access any files, records, systems, etc., that are not explicitly needed to perform their duties
- Grant any user or system administrator access to RPMS unless proper documentation is provided.
- Release any sensitive agency or patient information.

Glossary

FileMan

The database management system for the VA's VistA system and IHS' RPMS system.

IHS

Indian Health Service. An Operating Division (OPDIV) within the U.S. Department of Health and Human Services (HHS).

LOINC

Logical Observation Identifiers Names and Codes (LOINC) is a database and universal standard for identifying medical laboratory observations.

RPMS

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

Acronym List

Acronym	Term Meaning
IHS	Indian Health Service
RPMS	Resource and Patient Management System

Contact Information

If you have any questions or comments regarding this distribution, please contact the OIT Help Desk (IHS).

Phone: (888) 830-7280 (toll free)

Web: https://www.ihs.gov/helpdesk/

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