



RESOURCE AND PATIENT MANAGEMENT SYSTEM

# Laboratory Reference

(LR)

## User Manual

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## 1.0 Introduction

This document lists various changes to the RPMS Lab module that were brought about by IHS Lab Patch LR\*5.2\*1033.

## 2.0 Change to “Sign or Symptom” Process

There has been a major change to the way the "Sign or Symptom" for lab orders will be entered, even during Multipurpose Accessioning.

It is now the Clinical Indication.

This change was necessitated by Meaningful Use Stage 2 requirements.

### 2.1 Mandatory Entry

The Clinical Indication field is mandatory and it is not possible to exit the Clinical Indication process by any means: it must be completed.

### 2.2 Previous Prompt

Previously, the user was presented with the following prompt to enter the "Sign or Symptom" for the order, even when using the Multipurpose Accessioning option.

```
Enter Sign or Symptom for LAB Order number XX  
(DO NOT USE 'RULE OUT', 'PROBABLE', 'QUESTIONABLE', etc.):
```

2-1: Previous “Sign or Symptom” prompt

### 2.3 New Clinical Indication Selection Process

The new process involves the patient's Problem (#9000011) file, the new IHS STANDARD TERMINOLOGY server and SNOMED coding.

#### 2.3.1 Problem (#9000011) file Logic

If the patient has entries in the Problem file that contain SNOMED coding, the user will be presented with a standard ListMan listing from which one Clinical Indication with the proper SNOMED code may be selected.

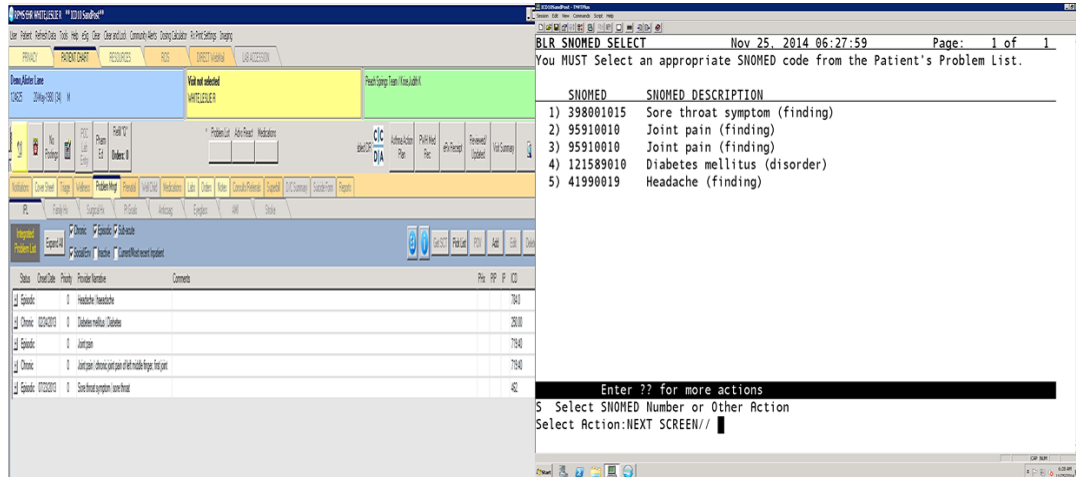


Figure 2-2: EHR Problem file (IPL) populated (left) and a View of populated Problem file as seen by RPMS user (right)

### 2.3.2 IHS Standard Terminology Server Logic

If the patient does not have entries in the Problem file that contain SNOMED coding, the user will be presented with a selection process that will allow the searching of the IHS Standard Terminology Server for the proper SNOMED code for the order from which one Clinical Indication with the proper SNOMED code may be selected.

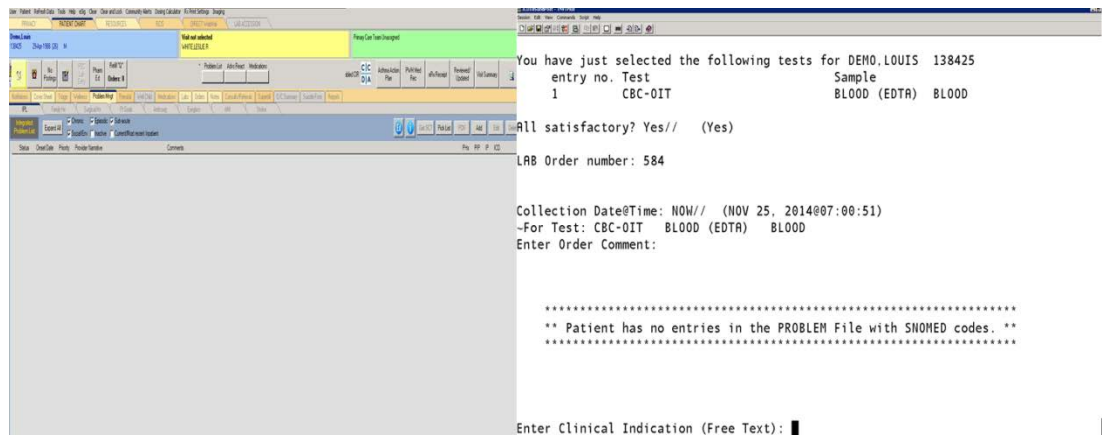


Figure 2-3: EHR Problem file (IPL) empty (left) and View of empty Problem file as seen by RPMS user (right)

## 2.4 Selecting an Entry from the ListMan Listing

In order to select the enumerated entry in the ListMan listing that will be presented, the letter **S** (for Select) must be entered first (Figure 2-4).

```

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

```

Figure 2-4: Once S has been entered, and then the entry number can be entered

## 2.5 Problem (#9000011) File Example

At the point when ordering a test where the “Sign Or Symptom” prompt would have appeared during previous versions of the Lab Module, and the patient has an entry or entries in the Problem (#9000011) file, the user will be presented with a ListMan screen that displays only those entries in the Problem file that have a value in the SNOMED CT DESIGNATION CODE field (#8002).

For example:

```

BLR SNOMED SELECT          Dec 11, 2013 14:03:42          Page: 1 of 1
You MUST Select an appropriate SNOMED code from the Patient's Problem List.

SNOMED      SNOMED DESCRIPTION
1) 784006012  Diabetes mellitus type 1 (disorder)

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

```

Figure 2-5: problem file ListMan listing

### 2.5.1 Enter S for Select Must Be Entered First

If an entry in the listing is the one needed, the user must first enter **S** for **SELECT**.

```

BLR SNOMED SELECT          Dec 11, 2013 14:03:42          Page: 1 of 1
You MUST Select an appropriate SNOMED code from the Patient's Problem List.

SNOMED      SNOMED DESCRIPTION
1) 784006012  Diabetes mellitus type 1 (disorder)

```



```

Enter ?? for more actions
S  Select SNOMED Number or Other Action
Select Action:NEXT SCREEN// S  Select SNOMED Number or Other Action
Enter a number (1-1):

```

Figure 2-6: Entering S for Select

## 2.5.2 Enumerated Entry

The user will then need to enter the number of the entry.

## 2.5.3 Non Appropriate Listing:

If the presented listing does not provide the proper Clinical Indication, then the user may enter the FileMan exit by typing a caret (^) and is sometimes referred to as an up-hat, to get to a prompt that will ask them if they wish to create a new SNOMED listing. For example, if the user types a caret (^), then they would be presented with the following:

```
Create new Listing of SNOMED codes?
```

Figure 2-7: Using FileMan Exit example

If the user enters **YES**, they will be presented with:

```
Enter Clinical Indication (Free Text):
```

Figure 2-8: Create new listing prompt

At this point, they may enter a free (alpha) text Clinical Indication they deem more appropriate and they will be presented with a new screen of selections from which to select. Do not use numbers at the “Enter Clinical Indication” prompt.

It will be as if the patient did not have any entries in the Problem file with SNOMED codes.

## 2.6 IHS Standard Terminology Server Example

If the patient has no entries in the PROBLEM file that contain SNOMED codes, the user will be presented with the following screen as shown in Figure 2-9.

```
*****
** Patient has no entries in the PROBLEM File with SNOMED codes. **
*****

Enter Clinical Indication (Free Text):
```

Figure 2-9: Initial Terminology Server prompt

The user may then enter free text of the proper Clinical Indication. Do not enter numbers (SNOMED).

### 2.6.1 Non Recognized Entry

If the user enters text that the Terminology Server does not recognize, there will be an error message and they will be prompted again. For example, if the user entered GARBAGE:

```
Enter Clinical Indication (Free Text): GARBAGE

          No entries found in the IHS STANDARD TERMINOLOGY database. Try
Again.

Enter Clinical Indication (Free Text):
```

Figure 2-10: Unknown Text Example (not recognized by Terminology Server)

### 2.6.2 Recognized Entry

If the user enters a valid Clinical Indication, they will be presented with a standard ListMan screen of the first 100 (if that many exist) matches from the Terminology Server from which they may select one entry. (Figure 2-11)

For example, if the user entered DIABETES:

```
Enter Clinical Indication (Free Text): DIABETES
```

Figure 2-11: Recognized (valid) free text Clinical Indication Entry

```
BLR SNOMED SELECT          Oct 24, 2013 07:34:05          Page: 1 of
5
You MUST Select an appropriate SNOMED code.

      SNOMED          SNOMED DESCRIPTION
1) 15519014          Secondary diabetes mellitus, NOS
2) 15518018          Secondary diabetes mellitus
3) 127436017         Diabetes mellitus in mother complicating pregnancy,
childbirth
4) 127435018         Diabetes mellitus in mother complicating pregnancy,
childbirth
```

```

5) 2621161019 Disorder associated with diabetes mellitus
6) 502372015 DM - Diabetes mellitus
7) 121590018 Diabetes mellitus, NOS
8) 121589010 Diabetes mellitus
9) 1233308013 Diabetes insipidus,diabetes mellitus, optic atrophy and
deafnes
10) 1233306012 Diabetes insipidus,diabetes mellitus, optic atrophy and
deafnes
11) 1233305011 DIDMOAD - Diabetes insipidus,diabetes mellitus, optic
atrophy a
12) 117423016 Diabetes mellitus and insipidus with optic atrophy and
deafness
13) 117422014 Diabetes mellitus AND insipidus with optic atrophy AND
deafness
14) 498512013 Genetic syndromes of diabetes mellitus
15) 10928019 Diabetes mellitus associated with genetic syndrome
16) 84990019 Diabetes mellitus associated with pancreatic disease
+ Enter ?? for more actions
S Select SNOMED Number or Other Action
Select Action:NEXT SCREEN//

```

Figure 2-12: Diabetes Example with returned ListMan

### 2.6.3 Enter S for Select Must Be Entered First

If one of the entries presented is the one needed, the user must first enter **S** for **SELECT**.

```

BLR SNOMED SELECT          Oct 24, 2013 07:34:05          Page: 1 of
5
You MUST Select an appropriate SNOMED code.

      SNOMED          SNOMED DESCRIPTION
1) 15519014          Secondary diabetes mellitus, NOS
2) 15518018          Secondary diabetes mellitus
3) 127436017          Diabetes mellitus in mother complicating pregnancy,
childbirth
4) 127435018          Diabetes mellitus in mother complicating pregnancy,
childbirth
5) 2621161019          Disorder associated with diabetes mellitus
6) 502372015          DM - Diabetes mellitus
7) 121590018          Diabetes mellitus, NOS
8) 121589010          Diabetes mellitus
9) 1233308013          Diabetes insipidus,diabetes mellitus, optic atrophy and
deafnes
10) 1233306012          Diabetes insipidus,diabetes mellitus, optic atrophy and
deafnes
11) 1233305011          DIDMOAD - Diabetes insipidus,diabetes mellitus, optic
atrophy a
12) 117423016          Diabetes mellitus and insipidus with optic atrophy and
deafness
13) 117422014          Diabetes mellitus AND insipidus with optic atrophy AND
deafness
14) 498512013          Genetic syndromes of diabetes mellitus
15) 10928019          Diabetes mellitus associated with genetic syndrome
16) 84990019          Diabetes mellitus associated with pancreatic disease
+ Enter ?? for more actions
.
S Select SNOMED Number or Other Action

```

```
Select Action:NEXT SCREEN// S   Select SNOMED Number or Other Action
Enter a number (1-16):
```

Figure 2-13: Entering S for Select

## 2.6.4 Enumerated Entry

The user will then need to enter the number of the entry.

## 2.6.5 Scrolling Through the Listing

The user may also scroll through all the entries if there is more than one page by either pressing the Page Up or Page Down keys or using the down arrow key to go down one entry or the up arrow key to go up one entry at a time.

If the user pressed the Page Down key, the screen could be similar to the following for DIABETES:

```
BLR SNOMED SELECT           Oct 24, 2013 07:34:05           Page:    2 of    5
You MUST Select an appropriate SNOMED code.

      SNOMED      SNOMED DESCRIPTION
17) 1230929011  Secondary pancreatic diabetes mellitus
18) 1230890017  Autonomic neuropathy due to diabetes
19) 77728011   Diabetes mellitus type I
20) 77727018   Insulin dependent diabetes mellitus
21) 494565013  Juvenile onset diabetes mellitus
22) 494564012  Type I diabetes mellitus
23) 494563018  Insulin-dependent diabetes mellitus
24) 494562011  IDDM - Insulin-dependent diabetes mellitus
25) 197985011  Diabetes mellitus type 1
26) 197984010  Type 1 diabetes mellitus
27) 73466011   Non-insulin dependent diabetes mellitus
28) 73465010   Diabetes mellitus type II
29) 493775015  Diabetes mellitus - adult onset
30) 493774016  Type II diabetes mellitus
31) 493773010  NIDDM - Non-insulin dependent diabetes mellitus
32) 493772017  Maturity onset diabetes mellitus
+      Enter ?? for more actions
S  Select SNOMED Number or Other Action
Select Action:NEXT SCREEN// use minus - or arrow keys for navigation, or ^ for exit
```

Figure 2-14: Diabetes Page 2 Example with Navigation options

## 2.6.6 Search Again

If the presented listing does not provide the proper Clinical Indication, then the user may enter the FileMan exit by typing a caret (^) and is sometimes referred to as an up-hat to get to a prompt that will ask them if they wish to create a new SNOMED listing. For example, if the user types a caret (^), then they would be presented with the following:

```
Create new Listing of SNOMED codes?
```

Figure 2-15: Using FileMan Exit example

If the user enters **YES** they will be presented with:

```
Enter Clinical Indication (Free Text):
```

Figure 2-16: Create new listing prompt

At this point, they may enter a Clinical Indication they deem more appropriate and they will be presented with a new screen of selections from which to select.

## 2.7 GLUCOMETER Script Indications for Interfaced POC devices

The following RPMS Lab Package prompts need to be provided to the POC Glucose vendor for Glucose Script modification (Figure 2-15). The following keystrokes for glucose scripts are for patients with recognized entries pulled from the EHR Problem File - returned in RPMS ListMan.

**Note:** Sites with glucometer scripts need to be aware that the ListMan/SNOMED return can take several minutes. Sites will need to work with vendor technical support for script modifications that require a timing loop due to the delayed return of the SNOMED entries in ListMan.

```
LAB    Laboratory DHCP Menu ...

3      Process data in lab menu ...

      Fast Bypass Data Entry/Verify

Do you want to review the data before and after you edit? YES// (Yes)take default
Select Referring Laboratory: LOCAL SITE// LOCAL SITEtake default

      WANT TO ENTER COLLECTION TIMES? YES// (Yes)take default
Select ACCESSION TEST GROUP:
Select one or more tests from which you will be generating your entries.
Select LABORATORY TEST NAME: POC GLUCOSE
The Sample Is CAPILLARY BLOOD
Same specimen/source for the rest of the order? No// (No)take default
Select LABORATORY TEST NAME:
Select Patient Name:
      DEMO,KARLA KAY                F 08-03-1989                TST 135272

      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// WARD/CLINIC COLLECT (or take default)
PATIENT LOCATION: PATIENT LOCATION
PROVIDER: PROVIDER NAME
LAB Order number: 592
Other tests? N// (No)take default
Nature of Order/Change: POLICY// POLICY defined in 69.9 - take default

You have just selected the following tests for DEMO,KARLA KAY 135272
  entry no. Test                               Sample
  1          POC GLUCOSE-OIT                   CAPILLARY BLOOD  CAPILLARY

All satisfactory? Yes// (Yes)take default

LAB Order number: 592

BLR SNOMED SELECT          Nov 29, 2014 08:32:55          Page 1 of 1
-----
You MUST Select an appropriate SNOMED code from the Patient's Problem List.

      SNOMED          SNOMED DESCRIPTION
-----
1)    477343011      Open fracture of neck of femur (disorder)
2)    304319014      Recurrent urinary tract infection (disorder)
3)    1209863015     Open fracture of skull (disorder)

Enter ?? for more actions
S      Select SNOMED Number or Other Action
Select Action: NEXT SCREEN// ^          Indicate ^ character at this prompt

Create new Listing of SNOMED codes (Y/N)? YES// (Yes)take default

Enter Clinical Indication (Free Text): GLUCOMETER

BLR SNOMED SELECT          Nov 29, 2014 08:34:05          Page: 1 of 1
-----
You MUST Select an appropriate SNOMED code from the Patient's Problem List.

      SNOMED          SNOMED DESCRIPTION
-----
1) 548466011      Glucometer blood sugar (procedure)
2) 820202016      Ward glucometer test (procedure)

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

Select SNOMED Number or Other Action
Enter a number (1-2): 1 (or Select 2 - site dependent)

ACCESSION: CH 14 68 <1014000068>
POC GLUCOSE-OIT          CAPILLARY BLOOD  CAPILLARY
DEMO,KARLA KAY          135272  LOC:ED
    
```

```

Sample: CAPILLARY BLOOD
Specimen: CAPILLARY

1  POC GLUCOSE-OIT

DEMO,KARLA KAY  HRCN: 135272      LOC: ED
Pat Info:                               Sex: FEMALE   Age: 25yr as of Nov 29, 2014
Provider: PROVIDER NAME

ACCESSION:                               CH 14 68
                                           11/29 0819d

POC GLUCOSE-OIT //150
Select COMMENT:

DEMO,KARLA KAY  HRCN: 135272      LOC: ED
Pat Info:                               Sex: FEMALE   Age: 25yr as of Nov 29, 2014
Provider: PROVIDER NAME

ACCESSION:                               CH 14 68
                                           11/29 0819d

POC GLUCOSE-OIT                               150 H  mg/dL
SELECT ('E' to Edit, 'C' for Comments, 'W' Workload):
Approve for release by entering your initials: XXX

Select Patient Name:

```

Figure 2-17: Glucometer Script

## 2.8 Adding a Test to an Already Existing Order or Accession

Adding a test to an existing order or Accession will invoke the same processes as if entering the order for the first time

### 2.8.1 Add Test to an Order: Please Note the SNOMED code and Description When Selecting the Order

When selecting the order to which a test will be added, the original SNOMED code and description will be displayed next to the Clinical Indication text. In the following example, the Clinical Indication currently stored in the Lab Order Entry (#69) file is Tubal pregnancy with a SNOMED code of 132037019.

```

                LISTING OF DATES
1      12/11/2013

ORDER #: 286          PAT: PATIENT,TEST 1      HRCN: 999999
-----
-----

WHO ENTERED: ENTER,WHO ONE          TYPE OF COLLECTION: SP
TO BE DRAWN: 12/11/2013             ORDERING LOCATION: LAB ONLY

SPECIMEN: BLOOD                      PROVIDER: PROVIDER,TEST ONE
TEST: IRON                            ROUTINE
Clinical Indication: Tubal pregnancy^132037019
Is this the one? Yes//

```

Figure 2-18: Adding a test to an existing order example

Once the test is added to the order, the user will be presented with the opportunity to either duplicate the Clinical Indication or enter a new one (Figure 2-18).

Note that whatever is entered will replace the Clinical Indication in file 69 since the Clinical Indication field does not allow multiple entries.

### 2.8.2 Add test to Accession:

When selecting the accession to which a test will be added, the original SNOMED code and description will be “forced” added to the Clinical Indication text of the original parent test. Additional entries are not needed (Figure 2-19).

```
Select Accessioning menu Option: ADD tests to a given accession

Select Accession or UID: HE 10
HEMATOLOGY (JUN 10, 2014) 10
DEMO, ALISTER LANE      124625
Nature of Order/Change: POLICY// Site defined
TESTS ALREADY ON THE ACCESSION:
    CBC W/AUTO DIFF- OIT

Select Original Ordered Test CBC      CBC W/AUTO DIFF- OIT
Add LABORATORY TEST:  DIFF      DIFFERENTIAL, MANUAL- OIT
...OK? Yes// (YES)
Select URGENCY:  ROUTINE//
...OK? Yes// (YES)
Is this a Reflex Test? (Y/N):
    DIFFERENTIAL, MANUAL- OIT ADDED
Add LABORATORY TEST:

Select Accession or UID:
```

Figure 2-19: Adding a test to an existing accession example

### 2.8.2 Problem File Listing

If the patient has entries in the Problem file with SNOMED codes, the process will be exactly the same as described in Section 5.0.

### 2.8.3 IHS Standard Terminology Server

If the patient has no entries in the Problem file with SNOMED codes, the process will be exactly the same as described in Section 2.6.



## 3.0 Laboratory Test (#60) File's Reference Ranges Report

A new routine (BLRLTRRR) and a new option (BLR LAB TESTS REF RANGES) have been created to allow users to display information regarding the tests in the Laboratory Test (#60) file with Mumps code in the Reference Range or Critical Range fields containing the SEX variable.

### 3.1 Patient Registration SEX Modification

Due to Meaningful Use Stage 2 requirements, the SEX variable within Patient Registration has been modified so that it will now allow "M" for Male; "F" for Female; and "U" for Unknown.

### 3.2 Lab Test Reference Ranges

The modifications to the SEX variable within Patient Registration have implications for any Reference Range in the Laboratory Test (#60) file that has Mumps code that contains the SEX variable.

#### 3.2.1 Lab Test Reference Range Example

The implications of the new SEX value of "U" can best be illustrated with an example.

If the test ESTROGEN has the following Reference Ranges:

- Reference Low: \$\$SEX="M":4,1:0)
  - Means that Males will have a Reference Low of 4, but for Females or patients with Unknown Sex, the Reference Low is 0.
- Reference High: \$\$SEX="M":25,1:10)
  - Means Males will have a Reference High of 25, but for Females or patients with Unknown Sex, the Reference High is 10.

In other words, Reference Range Mumps code that invokes the SEX variable must take into account that there are now three possible values, not just two.

### 3.3 BLR LAB TESTS REF RANGES Option

During the post install phase of the patch, the LTRR shortcut to the BLR LAB TESTS REF RANGES option will be added to the BLRMENU (Figure 3-1).

```

                                IHS Lab Main Support Menu

PCC      IHS Lab PCC Menu ...
CUM      IHS CUMULATIVE MENU ...
REFL     Reference Lab Main Menu ...
ILUM     IHS LOINC/UCUM MENU ...
CPT      Enter/edit IHS Lab CPT File
7421     Will restart the 7421 label routine if turned off.
ETP      LA7 Message Queue Error Messages to Purgeable
MMR      Lab Description Abbreviation Report
BZY      IHS Taskman Busy Device Rpt
SHDR     State Health Dept Report
LVP      IHS Lab Version & Patch Report
ILLT     IHS Lab Label Printer Testing
6249     Display File 62.49 HL7 Segments
DADD     Add Completed Date to Accession Tests
IHSM     IHS Lab Microbiology Report
LABT     Determine if Required RPMS Lab Options Tasked
LRAS     Accession IHS Lab Microbiology Report
LTRR     Laboratory Test (#60) File's Reference Ranges

Select IHS Lab Main Support Menu Option:

```

Figure 3-1: Example BLRMENU menu showing LTRR option

### 3.4 Print or Display Laboratory Test (#60) File's Reference Ranges Report

The following outlines the steps necessary to print or display the report.

The report will only display information regarding tests in File 60 that have Mumps code in the Reference/Critical range fields that contain the SEX variable.

#### 3.4.1 Select LTRR option on the BLRMENU

Once the user selects the LTRR option, the main menu of the Reference Ranges Report menu is displayed.

```

                                DEMO INDIAN HOSPITAL
Date:07/29/13                    RPMS Laboratory Test (#60) File
Time:9:47 AM
                                Reference Ranges Reports
BLRLTRRR
                                MAIN MENU
-----
-----
      1) 'SEX' Ref Range(s) Report
Select:  (1-1):

```

Figure 3-2: Reference Ranges Report menu

### 3.4.2 Select 1 at the Select prompt

Once the main menu to the Reference Ranges Report appears, the user must select **1** in order to run the report.

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

Figure 3-3: Running the report

### 3.4.3 Pagination Prompt

Selecting the report will first prompt the user with a pagination prompt: in other words, should all data be printed on “one page” or should page breaks be inserted?

```

                                DEMO INDIAN HOSPITAL
Date:07/29/13                    FILE 60 'SEX' REF RANGE CHECK
Time:9:51 AM

BLRLTRRR
-----
-----

One Header Line ONLY? NO//
```

Figure 3-4: Pagination prompt

### 3.4.4 Device Selection Prompt

The next prompt is standard select device prompt.

```

                                DEMO INDIAN HOSPITAL
Date:07/29/13                    FILE 60 'SEX' REF RANGE CHECK
Time:9:51 AM

BLRLTRRR
-----
-----

One Header Line ONLY? NO//
DEVICE: HOME//
```

Figure 3-5: Select Device prompt

### 3.4.5 Example Report

The following is an example report.

```

                                DEMO INDIAN HOSPITAL
Date:07/29/13                    FILE 60 'SEX' REF RANGE CHECK
Page 1
Time:9:53 AM                      'SEX' in Reference and/or Critical Ranges
BLRLTRRR
```

===== File 60 =====			
IEN	Description	SITE/ SPEC	Ranges
-----			
2	RBC	70	Ref Low: \$\$ (SEX="M":4.27,1:3.69) Ref High: \$\$ (SEX="M":5.49,1:4.88)
3	HGB	70	Ref Low: \$\$ (SEX="M":12.9,1:11.4) Ref High: \$\$ (SEX="M":16.1,1:14.4)
4	HCT	70	Ref Low: \$\$ (SEX="M":37.7,1:33.3) Ref High: \$\$ (SEX="M":46.5,1:41.4)
52	pH	8728	Ref Low: \$\$ (SEX="M":7.34,1:7.35) Ref High: \$\$ (SEX="M":7.44,1:7.45)
52	pH	8819	Ref Low: \$\$ (SEX="M":7.31,1:7.32) Ref High: \$\$ (SEX="M":7.41,1:7.42)
53	pCO2	8728	Ref Low: \$\$ (SEX="M":35,1:32) Ref High: \$\$ (SEX="M":45,1:43)
53	pCO2	8819	Ref Low: \$\$ (SEX="M":42,1:39) Ref High: \$\$ (SEX="M":55,1:52)
54	BASE EXCESS	8728	Ref Low: \$\$ (SEX="M":-2.4,1:-3.3) Ref High: \$\$ (SEX="M":2.3,1:1.2)
55	BICARBONATE	8728	Ref Low: \$\$ (SEX="M":22,1:20) Ref High: \$\$ (SEX="M":26,1:24)
55	BICARBONATE	8819	Ref Low: \$\$ (SEX="M":24,1:22) Ref High: \$\$ (SEX="M":28,1:26)
56	TCO2	8728	Ref Low: \$\$ (SEX="M":23,1:21) Ref High: \$\$ (SEX="M":27,1:25)
56	TCO2	8819	Ref Low: \$\$ (SEX="M":25,1:23) Ref High: \$\$ (SEX="M":29,1:27)
61	ZZWINTROBE*	70	Ref Low: \$\$ (SEX="M":0,1:0) Ref High: \$\$ (SEX="M":10,1:20)
104	IRON	70	Ref Low: \$\$ (SEX="M":40,1:35)
113	FERRITIN	70	Ref Low: \$\$ (SEX="M":22,1:10) Ref High: \$\$ (SEX="M":322,1:291)
113	FERRITIN	72	Ref Low: \$\$ (SEX="F":10,1:22) Ref High: \$\$ (SEX="F":291,1:322)
192	GAMMA-GT	70	Ref Low: \$\$ (SEX="M":8,1:5) Ref High: \$\$ (SEX="M":37,1:24)
192	GAMMA-GT	72	Ref Low: \$\$ (SEX="M":8,1:5) Ref High: \$\$ (SEX="M":37,1:24)
192	GAMMA-GT	73	Ref Low: \$\$ (SEX="M":8,1:5) Ref High: \$\$ (SEX="M":37,1:24)
197	CPK	72	Crit High: \$\$ (SEX="M":348,1:280)
197	CPK	73	Crit High: \$\$ (SEX="M":348,1:280)
218	ESTROGEN, TOTAL	71	Ref Low: \$\$ (SEX="M":4,1:0) Ref High: \$\$ (SEX="M":25,1:10)
218	ESTROGEN, TOTAL	8755	Ref Low: \$\$ (SEX="M":4,1:5)
248	PROLACTIN	72	Ref Low: \$\$ (SEX="M":2.1,1:2.8) Ref High: \$\$ (SEX="M":17.7,1:29.2)
249	TESTOSTERONE, TOTA	72	Ref Low: \$\$ (SEX="M":241,1:14) Ref High: \$\$ (SEX="M":827,1:76)
300	COMPUTED CREATININ	71	Ref Low: \$\$ (SEX="M":85,1:75) Ref High: \$\$ (SEX="M":125,1:115)
300	COMPUTED CREATININ	8755	Ref Low: \$\$ (SEX="M":85,1:75) Ref High: \$\$ (SEX="M":125,1:115)
312	THYROGLOBULIN AB	72	Ref High: \$\$ (SEX="M":59,1:99)
450	C1 EST INHIB, SERU	70	Ref Low: \$\$ (SEX="M":30,1:28) Ref High: \$\$ (SEX="M":41,1:40)
450	C1 EST INHIB, SERU	72	Ref Low: \$\$ (SEX="M":30,1:28) Ref High: \$\$ (SEX="M":41,1:40)
589	ESTRONE	8755	Ref Low: \$\$ (SEX="M":3,1:4) Ref High: \$\$ (SEX="M":8,1:7)

615	17-HYDROXYCORTICOS	8755	Ref Low: \$\$ (SEX="M":3,1:2)
			Ref High: \$\$ (SEX="M":15,1:12)
621	17-KETOGENIC STERO	8755	Ref Low: \$\$ (SEX="M":5,1:3)
			Ref High: \$\$ (SEX="M":23,1:15)
622	17-KETOSTEROIDS,TO	8755	Ref Low: \$\$ (SEX="M":9,1:5)
			Ref High: \$\$ (SEX="M":22,1:15)
1125	Hb	73	Ref Low: \$\$ (SEX="M":13.5,1:12.0)
			Ref High: \$\$ (SEX="M":18.0,1:16.0)
1275	LIVER-KIDNEY MICRO	72	Ref High: \$\$ (SEX="M":59,1:99)
123472	POC HEMOGLOBIN	70	Ref Low: \$\$ (SEX="M":14,1:12)
			Ref High: \$\$ (SEX="M":18,1:16)
1665052	MICROSOMAL AB	70	Ref High: \$\$ (SEX="M":59,1:99)
1665052	MICROSOMAL AB	72	Ref High: \$\$ (SEX="M":59,1:99)
1665105	VLDL	70	Ref High: \$\$ (SEX="M":60,1:35)
1665276	T3 UPTAKE	70	Ref Low: \$\$ (SEX="M":30.6,1:25.3)
1665276	T3 UPTAKE	72	Ref Low: \$\$ (SEX="M":30.6,1:25.3)
1665296	COMPUTED URINE CRE	71	Ref Low: \$\$ (SEX="M":1000,1:800)
			Ref High: \$\$ (SEX="M":2000,1:1800)
1665296	COMPUTED URINE CRE	8755	Ref Low: \$\$ (SEX="M":1000,1:800)
			Ref High: \$\$ (SEX="M":2000,1:1800)
1665362	ZZFSH (92)	72	Ref Low: \$\$ (SEX="M":1.0,1:"")
			Ref High: \$\$ (SEX="M":10.5,1:"")
1665379	ZZLH	72	Ref Low: \$\$ (SEX="M":1.0,1:15)
			Ref High: \$\$ (SEX="M":8.4,1:64)
9999225	URIC ACID (REF)	70	Ref Low: \$\$ (SEX="M":2.4,1:2.2)
			Ref High: \$\$ (SEX="M":8.2,1:7.7)
9999225	URIC ACID (REF)	72	Ref Low: \$\$ (SEX="M":3.5,1:2.2)
			Ref High: \$\$ (SEX="M":9.0,1:7.7)
9999234	THYROID PEROXIDASE	72	Ref High: \$\$ (SEX="M":59,1:99)
9999296	HDL	70	Ref Low: \$\$ (SEX="M":29,1:35)
			Ref High: \$\$ (SEX="M":71,1:85)
Press RETURN Key:			

Figure 3-6: Example report

## 4.0 Add Completed Date to an Accession

A new routine (BLRADD CD) and a new option (BLR ADD COMPLETED DATE) have been created to allow users with the LRSUPER security key to forcefully add completed dates to all tests in an accession. Such actions may be necessary if the accession is malformed and cannot be cancelled.

### 4.1 Symptoms of a Malformed Accession

The most common symptoms of a malformed accession are:

- Test will not come off of incomplete list.
- Test cannot be resultd.
- The following message displays when trying to delete test from an accession:

```

Delete test from an accession.
Select Accession or UID: CH 1023 4
ch CHEMISTRY
CHEMISTRY (OCT 23, 2013) 4
Doe, John
      Can't find Lab Data for this accession
  
```

Figure 4-1: Example message displayed when trying to delete a malformed accession's test

### 4.2 DADD Option

During the post install phase of the patch, the DADD shortcut to the BLR ADD COMPLETED DATE option will be added to the BLRMENU. It will be secured with the LRSUPER security key.

```

                                IHS Lab Main Support Menu

PCC      IHS Lab PCC Menu ...
CUM      IHS CUMULATIVE MENU ...
REFL     Reference Lab Main Menu ...
ILUM     IHS LOINC/UCUM MENU ...
CPT      Enter/edit IHS Lab CPT File
7421     Will restart the 7421 label routine if turned off.
ETP      LA7 Message Queue Error Messages to Purgeable
MMR      Lab Description Abbreviation Report
BZY      IHS Taskman Busy Device Rpt
SHDR     State Health Dept Report
LVP      IHS Lab Version & Patch Report
ILLT     IHS Lab Label Printer Testing
6249     Display File 62.49 HL7 Segments
DADD     Add Completed Date to Accession Tests
IHSM     IHS Lab Microbiology Report
LABT     Determine if Required RPMS Lab Options Tasked
LRAS     Accession IHS Lab Microbiology Report
LTRR     Laboratory Test (#60) File's Reference Ranges
  
```

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

Figure 4-2: Example BLRMENU showing DADD option

### 4.3 Example of How to Use Add Completed Date to Accession Tests Option

The following outlines the steps necessary to use the Add Completed Date To Accession Tests option.

#### 4.3.1 Select Add Completed Date to Accession Tests Option

Once a user selects the DADD shortcut, the routine will display the main menu.

```

                                DEMO INDIAN HOSPITAL
                                Invalid Accession Fix
Date:10/24/13
Time:1:06 PM
                                Add Completed Date to Tests
BLRADDCD
-----
-----
Select Accession or UID:
```

Figure 4-3: Accession or UID prompt

#### 4.3.2 Select Accession or UID prompt

The user must then enter a valid Accession or UID at the Select prompt.

```
Select Accession or UID:
```

Figure 4-4: Select Accession or UID prompt

#### 4.3.3 Successful Dates Added Display

When a valid Accession (or UID) is entered, the routine will display what test(s) it added a completed date onto in the Accession file:

```

                                DEMO INDIAN HOSPITAL
                                Invalid Accession Fix
Date:10/24/13
Time:12:06 PM
                                Add Completed Date to Tests
BLRADDCD
-----
-----
Select Accession or UID: 3010550020 (UR 0224 20)

    For Accession UR 0224 20
      Completed Date added to test URINE MICRO (#1665186).
```

```
Press RETURN Key:
```

Figure 4-5: Added Completed Date message

## 4.4 Exceptions

The entered accession must meet strict criteria before it will be modified. The routine will display various error messages if the entered accession does not satisfy the requirements.

### 4.4.1 Completed Date Already Exists

If a completed date already exists, the routine will display a message similar to the following shown in Figure 4-6.

```

                                DEMO INDIAN HOSPITAL
Date:10/24/13                    Invalid Accession Fix
Time:12:03 PM
                                Add Completed Date to Tests
BLRADDCCD
-----
-----

Select Accession or UID: 3010550020 (UR 0224 20)

    For Accession UR 0224 20
      Completed Date already exists on test URINE MICRO (#1665186).

Press RETURN Key:
```

Figure 4-6: Completed Date Already Exists message

### 4.4.2 Lab Data Exists

If the accession has data in the Lab Data file, the routine will display a message similar to the following shown in Figure 4-7.

```

                                DEMO INDIAN HOSPITAL
Date:10/24/13                    Invalid Accession Fix
Time:12:37 PM
                                Add Completed Date to Tests
BLRADDCCD
-----
-----

Select Accession or UID: 2012430030 (HE 0831 30)

    Lab Data Exists for Accession HE 0831 30.

    Cannot Use that Accession. Try Again.
```



```
Press RETURN Key:
```

Figure 4-7: Lab Data Exists message

#### 4.4.3 No Tests on Accession

If there are no tests on the accession, the routine will display a message similar to the following shown in Figure 4-8.

```

                                DEMO INDIAN HOSPITAL
Date:10/24/13                    Invalid Accession Fix
Time:12:47 PM
                                Add Completed Date to Tests
BLRADDCCD
-----
-----

Select Accession or UID: 8099000945  (SE 99 945)

                                No Tests on Accession.

                                Press RETURN Key:
```

Figure 4-8: No Test on Accession message

#### 4.4.4 Invalid Entry

If the entered accession number is invalid, the routine will display a message similar to the following shown in Figure 4-9.

```

                                DEMO INDIAN HOSPITAL
Date:10/24/13                    Invalid Accession Fix
Time:12:11 PM
                                Add Completed Date to Tests
BLRADDCCD
-----
-----

Select Accession or UID: UR 0224 20
URINALYSIS (FEB 24, 2013) 20

                                Invalid/No Entry. Try Again? NO//
```

Figure 4-9: Invalid Entry message

## 5.0 Determine If Required RPMS Lab Options Tasked Report

The main Lab tasks that are scheduled to run daily are crucial to the functionality of the RPMS Lab package. If they have not been tasked, or have been tasked incorrectly, issues will result.

### 5.1 The Main Lab Daily Tasks

The main Lab daily tasks are:

- LRTASK ROLLOVER
- LA7TASK NIGHTY
- LRTASK NIGHTY
- BLRTASK LAB LOG CLEANUP

The following subsections detail the main Lab daily tasks.

#### 5.1.1 LRTASK ROLLOVER Task

The LRTASK ROLLOVER task is the ROLLOVER ACCESSION option.

The LRTASK ROLLOVER option is used by TaskMan to roll forward unverified accessions.

If it has been scheduled to run prior to midnight, or not scheduled, or scheduled improperly, users will see the following message as shown in Figure 5-1 when logging onto the system after midnight:

```
ROLLOVER HAS NOT RUN. ACCESSIONING SHOULDN'T BE DONE NOW.  
  
ROLLOVER HAS BEEN TASKED -- TRY ACCESSIONING LATER
```

Figure 5-1: Incorrectly tasked LRTASK ROLLOVER message

#### 5.1.2 LA7TASK NIGHTY Task

The LA7TASK NIGHTY task is the Lab Messaging Nightly Cleanup option.

This task will check the integrity of LA7 MESSAGE QUEUE file (#62.49) and purge messages that are eligible for purging. It also purges the following files related to LEDI: SHIPPING MANIFEST (#62.8), LAB SHIPPING EVENT (#62.85) and LAB PENDING ORDERS ENTRY (#69.6).

If it has not been scheduled, or scheduled improperly the files will not be purged and unnecessary disk space will be used.

### 5.1.3 LRTASK NIGHTY Task

The LRTASK NIGHTY task is the NIGHTLY CLEANUP option.

This task does some lab clean up. It cleans up an x-ref used by the LRTASK INTERIM option and updates workload counts for WKLD code reporting.

If it has not been scheduled, or scheduled improperly the files will not be purged and unnecessary disk space will be used.

### 5.1.4 BLRTASK LAB LOG CLEANUP Task

The BLRTASK LAB LOG CLEANUP task is the TASK THE IHS LAB TRANS LOG CLEANUP EVERY NIGHT option.

This task will cleanup entries in the IHS LAB TRANSACTION LOG along with the queue file, BLR MASTER CONTROL, used for processing the transactions based on the value of the GRACE PERIOD FOR ORDERS parameter in the LABORATORY SITE file. The default is 180 days if the GRACE PERIOD FOR ORDERS is not defined.

If it has not been scheduled, or scheduled improperly the files will not be purged and unnecessary disk space will be used.

## 5.2 Improperly Scheduled Tasks

An improperly scheduled task is one that is scheduled to run in the past (which may occur after a system crash), or scheduled to run at an unexpected interval, for example, scheduled to run monthly (1M) instead of daily (1D). The report will show the user the scheduled run date and the scheduling interval.

It is important that the report be examined to ensure that no past dates are scheduled, nor any task has scheduling period other than 1D (daily).

## 5.3 New LABT Option

During the post install phase of the patch, the LABT shortcut to the BLRSCRNTASKS option will be added to the BLRMENU (Figure 5-2).

```

                                IHS Lab Main Support Menu

PCC      IHS Lab PCC Menu ...
CUM      IHS CUMULATIVE MENU ...
REFL     Reference Lab Main Menu ...
ILUM     IHS LOINC/UCUM MENU ...
CPT      Enter/edit IHS Lab CPT File
7421     Will restart the 7421 label routine if turned off.
ETP      LA7 Message Queue Error Messages to Purgeable

```

```

MMR      Lab Description Abbreviation Report
BZY      IHS Taskman Busy Device Rpt
SHDR     State Health Dept Report
LVP      IHS Lab Version & Patch Report
ILLT     IHS Lab Label Printer Testing
6249     Display File 62.49 HL7 Segments
DADD     Add Completed Date to Accession Tests
IHSM     IHS Lab Microbiology Report
LABT     Determine if Required RPMS Lab Options Tasked
LRAS     Accession IHS Lab Microbiology Report
LTRR     Laboratory Test (#60) File's Reference Ranges

Select IHS Lab Main Support Menu Option:

```

Figure 5-2: Example BLRMENU menu showing LABT option

## 5.4 Example Report

Once a user selects the LABT shortcut, the report immediately displays on the screen. The report is not designed to be printed. Figure 5-3 is an example report.

```

                                DEMO INDIAN HOSPITAL
Date:10/01/13                Latest IHS Lab Patch: LR*5.2*1033
Time:1:34 PM
SCRNREPT                    Latest IHS Lab Patch Install Date: 10/01/13 09:10
BLRTASKS
                                First Install Date for LR*5.2*1033: 07/30/13 11:43
                                TODAY:3131001 [10/01/2013]

OPTION                        TASK          SCHDDATE          $$FMTE SCHDDATE
Sched
-----
-----
BLRTASK LAB LOG CLEANUP 6950053  3131001.213  10/01/2013 9:30 PM
1D
LA7TASK NIGHTY          6950049  3131001.203  10/01/2013 8:30 PM
1D
LRTASK NIGHTY           6950051  3131001.2045 10/01/2013 8:45 PM
1D
LRTASK ROLLOVER         6950063  3131002.05   10/02/2013 5:00 AM
1D
Press RETURN Key:

```

Figure 5-3: Example report

### 5.4.1 What to Look For

The \$\$FMTE SCHDDATE column shows the date the task is scheduled to run. The dates in the \$\$FMTE SCHDDATE column must be either current or future dates. If any dates are in the past, that indicates the task has not run.

The Sched column should only have the 1D displayed, which means the task is scheduled to run daily. If any entry has anything other than 1D (including a blank) displayed in the column, it indicates the task has not run.

## 5.5 Many Patches Require Taskman to Be Stopped

TaskMan is shut down during many patch installations, so it is especially important to look at the report after any patch has been installed.

## 5.6 What to Do If Discrepancies Detected

If any discrepancy is detected, the site manager needs to be contacted immediately so corrections can be made in TaskMan to ensure the tasks are running daily.

## 6.0 New Microbiology Interim Reports

Two new, completely redesigned, Microbiology Interim Reports were created due to Meaningful Use Stage 2 requirements. Options to enable easy access to the reports were also created.

One report, invoked by the BLR LRAS MICRO REPORT option, allows the user to enter just an Accession Number or UID to display the report for just that accession.

The other report, invoked by the BLR MU2 MICRO REPORT option, will display all Micro tests in the redesigned format for a patient.

Microbiology reports will display and print as indicated in this guide for the subsequent two BLR Micro Reporting Options and for the EHR LABS tab reporting: Most Recent and MICROBIOLOGY Cumulative selections. LRAS display with Gram Stain and Preliminary Reporting and EHR GUI display (Figure 6-1 and Figure 6-2).

Site/Specimen: BLOOD SPECIMEN	
Provider: WHITE, LESLIE R	
Comment on Specimen: ~ADULT BOTTLE/SET	
Tests(s) Ordered:	
PAH GRAM STAIN	Completed: Nov 28, 2014 12:53
BLOOD CULTURE	
BACTERIOLOGY PRELIMINARY REPORT => 11/28/2014	TECH CODE: 2933
Bacteriology Remark(s):	
Positive Blood Cx reported to Dr. Smith	
by Lab Tech 4/28/14 12:50	

Figure 6-1: LRAS display with Gram Stain and Preliminary Reporting

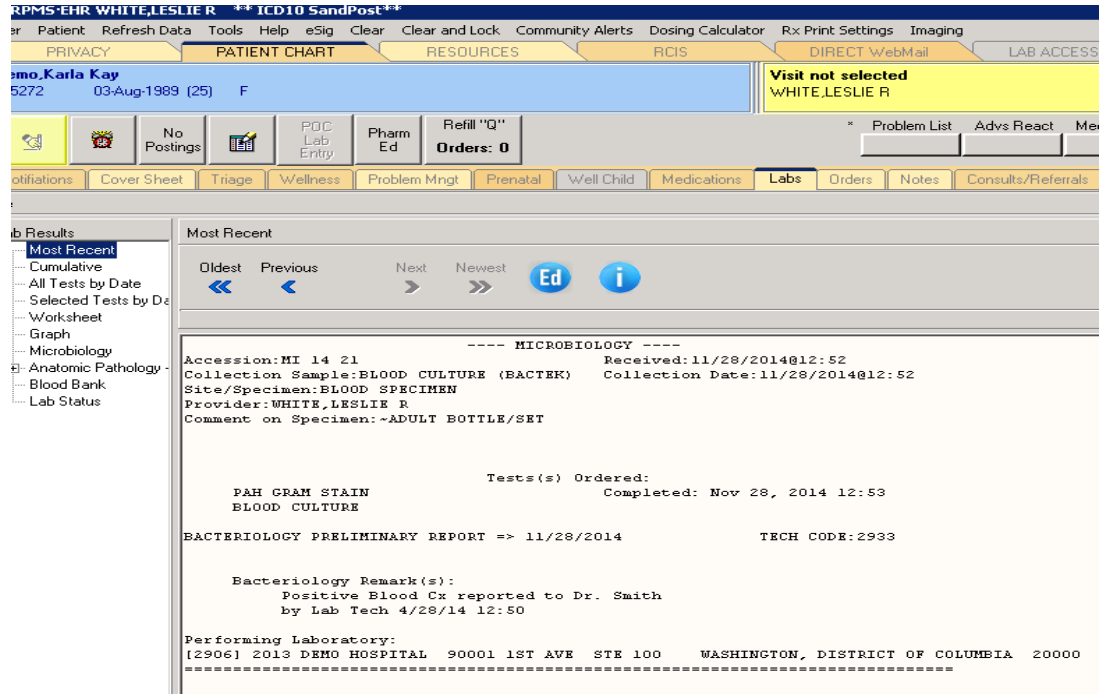


Figure 6-2: Example EHR GUI screen

## 6.1 BLR LRAS MICRO REPORT Option

During the post install phase of the patch, the LRAS shortcut to the BLR LRAS MICRO REPORT option will be added to the BLRMENU.

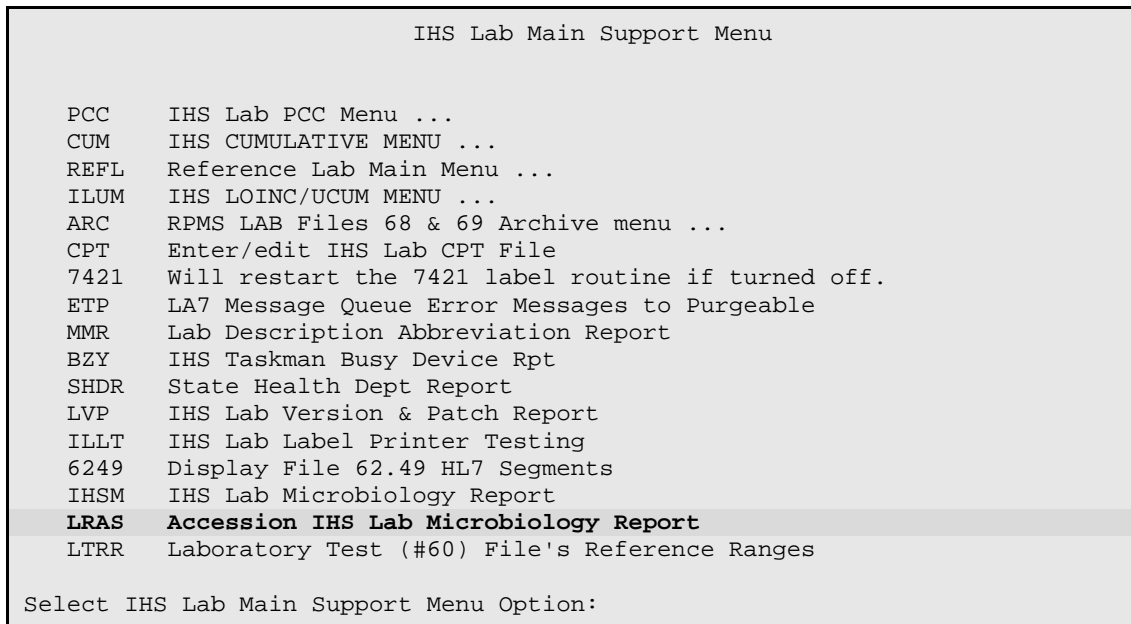


Figure 6-3: Example BLRMENU menu showing LRAS option

It is recommended that it also be added to the Microbiology Menu. Instructions on how to add the option are included in the notes file (lr\_\_0520.33n)

### 6.1.1 Selecting the LRAS Option

Once the user selects the LRAS option, they are presented with the standard Accession prompt:

```

Accession IHS Lab Microbiology Report
Select Accession or UID:

```

Figure 6-4: LRAS prompt

### 6.1.2 Pagination

After entering the accession/UID, the user will then be prompted with a pagination prompt: in other words, should all data be printed on “one page” or should page breaks be inserted?

```

Accession IHS Lab Microbiology Report
Select Accession or UID: MI 13 76
MICROBIOLOGY (2013) 76

One Header Line ONLY? NO//

```

Figure 6-5: Pagination prompt

### 6.1.3 Device Selection Prompt

Figure 6-6 is standard select device prompt.

```

Accession IHS Lab Microbiology Report
Select Accession or UID: MI 13 76
MICROBIOLOGY (2013) 76

One Header Line ONLY? NO//

DEVICE: HOME//  VIRTUAL TERMINAL  Right Margin: 80//

```

Figure 6-6: Select Device prompt

### 6.1.4 Example IHS Microbiology Report

Once the device has been selected, the redesigned Microbiology report will print.

```

Microbiology Report Keys:
CONC RANGE      MIC Concentration for Antibiotic
UNITS           Antibiotic measurement in units

```



FLG	Result Flag (Abnormal, Normal)	
SUSC	Concentration Range for Antibiotic =	
Sensitive, Resistant or Intermediate		
INTP	Antimicrobial Interpretation	
STS	Final, Preliminary Status	
2011 DEMO HOSPITAL		
Date:09/20/13	---- MICROBIOLOGY ----	Time:2:01 PM
DEMO,PATIENT	DOB:01/01/1963	HRCN:111111
Printed At: 2011 DEMO HOSPITAL 1 HOSPITAL RD CHEROKEE, NORTH CAROLINA 28719		
-----		
Accession:MI 13 76	Received:07/23/2013@15:09	
Collection Sample:STOOL	Collection Date:07/23/2013@15:09	
Site/Specimen:FECES		
Provider:DEMO,PROVIDER		
Tests(s) Ordered:		
STOOL CULTURE	Completed: Jul 23, 2013 15:27	
BACTERIOLOGY FINAL REPORT => 07/23/2013	TECH CODE:3037	
CULTURE RESULTS:		
Description	Quantity	FLG Observation Date
1. E. COLI 0157:H7		A 05/30/2011@12:35
	CONC	
ANTIBIOTIC	RANGE UNITS	FLG SUSC INTP STS OBSERVATION DATE SITE
CIPROFLOXACIN	0.05 ug/mL	S S S F 05/30/2011@12:35 [8078]
GENTAMICIN	0.05 ug/mL	S S S F 05/30/2011@12:35 [8078]
AMPICILLIN	<0.06 ug/mL	S S F 05/30/2011@12:35 [8078]
Description	Quantity	FLG Observation Date
2. SALMONELLA I, GROUP O:4		A 05/30/2011@12:35
	CONC	
ANTIBIOTIC	RANGE UNITS	FLG SUSC INTP STS OBSERVATION DATE SITE
CIPROFLOXACIN	0.05 ug/mL	S S S F 05/30/2011@12:35 [8078]
GENTAMICIN	0.05 ug/mL	S S S F 05/30/2011@12:35 [8078]
AMPICILLIN	<0.06 ug/mL	S S F 05/30/2011@12:35 [8078]
Description	Quantity	FLG Observation Date
3. SHIGELLA FLEXNERI		A 05/30/2011@12:35
	CONC	
ANTIBIOTIC	RANGE UNITS	FLG SUSC INTP STS OBSERVATION DATE SITE
CIPROFLOXACIN	0.05 ug/mL	S S S F 05/30/2011@12:35 [8078]
GENTAMICIN	0.05 ug/mL	S S S F 05/30/2011@12:35 [8078]
AMPICILLIN	<0.06 ug/mL	S S F 05/30/2011@12:35 [8078]
-----		
Performing Laboratory:		
[8078]	Century Hospital	2070 Test Park Los Angeles, CALIFORNIA 90067

```
County:6097 Country:USA
```

Figure 6-7: Example report

## 6.2 BLR MU2 MICRO REPORT Option

During the post install phase of the patch, the IHSM shortcut to the BLR MU2 MICRO REPORT option will be added to the BLRMENU.

```

                                IHS Lab Main Support Menu

PCC   IHS Lab PCC Menu ...
CUM   IHS CUMULATIVE MENU ...
REFL  Reference Lab Main Menu ...
ILUM  IHS LOINC/UCUM MENU ...
ARC   RPMS LAB Files 68 & 69 Archive menu ...
CPT   Enter/edit IHS Lab CPT File
7421  Will restart the 7421 label routine if turned off.
ETP   LA7 Message Queue Error Messages to Purgeable
MMR   Lab Description Abbreviation Report
BZY   IHS Taskman Busy Device Rpt
SHDR  State Health Dept Report
LVP   IHS Lab Version & Patch Report
ILLT  IHS Lab Label Printer Testing
6249  Display File 62.49 HL7 Segments
IHSM  IHS Lab Microbiology Report
LRAS  Accession IHS Lab Microbiology Report
LTRR  Laboratory Test (#60) File's Reference Ranges

Select IHS Lab Main Support Menu Option:

```

Figure 6-8: Example BLRMENU menu showing IHSM option

It is recommended that it also be added to the Microbiology Menu. Instructions on how to add the option are included in the notes file (lr\_\_0520.33n).

The BLR MU2 MICRO REPORT option will produce a report of all completed MI Accessions for a patient during a specified date range in the redesigned format.

### 6.2.1 Selecting the IHSM Option

When the user selects the IHSM option from the BLRMENU, they are prompted for the patient. They may enter either the name or the HRCN.

```

                                IHS LAB MICROBIOLOGY REPORT

PATIENT:

```

Figure 6-9: IHSM prompt

## 6.2.2 Entering/Accepting Date Range

After the user enters a patient's name or HRCN, they are prompted for a date range. Figure 6-10 is an example.

```

                                IHS LAB MICROBIOLOGY REPORT

PATIENT:
  DEMO,PATIENT                      F 01-01-1996 XXX-XX-1111   WW
111111

Start with Date: TODAY// 8/1  (AUG 01, 2013)
Go back to   Date TODAY// Oct 03, 2013

```

Figure 6-10: Example Date Range

## 6.2.3 Pagination

After entering the date range, the user will then be prompted with a pagination prompt: in other words, should all data be printed on “one page” or should page breaks be inserted?

```

                                IHS LAB MICROBIOLOGY REPORT

PATIENT:
  DEMO,PATIENT                      F 01-01-1996 XXX-XX-1111   WW
111111

Start with Date: TODAY// 8/1  (AUG 01, 2013)
Go back to   Date TODAY// Oct 03, 2013

One Header Line ONLY? NO//

```

Figure 6-11: Pagination prompt

## 6.2.4 Device Selection Prompt

Figure 6-12 is standard select device prompt.

```

                                IHS LAB MICROBIOLOGY REPORT

PATIENT:
  DEMO,PATIENT                      F 01-01-1996 XXX-XX-1111   WW
111111

Start with Date: TODAY// 5/1  (MAY 01, 2013)
Go back to   Date TODAY// Oct 03, 2013

One Header Line ONLY? NO//

```

```

DEVICE: HOME//    VIRTUAL TERMINAL    Right Margin: 80//

```

Figure 6-12: Select Device prompt

## 6.2.5 Example IHS Microbiology Report

Once all prompts are answered, the redesigned Microbiology report will print all completed microbiology accessions in that range for that patient:

```

                2013 DEMO HOSPITAL
Date:09/20/13      ---- MICROBIOLOGY ----      Time:2:24 PM
                DEMO,PATIENT  DOB:01/01/1996  HRCN:111111      BLRMIRPT

                Printed At: 2013 DEMO HOSPITAL  90001 1ST AVE  STE 100
                WASHINGTON, DISTRICT OF COLUMBIA  20000
-----
Accession:MI 13 30      Received:09/18/2013@15:54
Collection Sample:FECES (C&S)      Collection Date:09/18/2013@15:54
Site/Specimen:FECES
Provider:DEMO,PROVIDER

                Tests(s) Ordered:

                STOOL CULTURE      Completed: Sep 18, 2013 16:03

                BACTERIOLOGY FINAL REPORT => 09/18/2013      TECH CODE:2853

CULTURE RESULTS:

                Description      Quantity      FLG  Observation Date
1.  E. COLI 0157:H7
                CONC
                ANTIBIOTIC      RANGE UNITS FLG  SUSC  INTP  STS  OBSERVATION DATE  SITE
                AMPICILLIN      <0.06 ug/mL S  S      F  05/30/2011@10:35 [8293]
                CIPROFLOXACIN    0.05 ug/mL S  S      F  05/30/2011@10:35 [8293]
                GENTAMICIN      0.05 ug/mL S  S      F  05/30/2011@10:35 [8293]

                Description      Quantity      FLG  Observation Date
2.  SALMONELLA I, GROUP 0:4
                CONC
                ANTIBIOTIC      RANGE UNITS FLG  SUSC  INTP  STS  OBSERVATION DATE  SITE
                AMPICILLIN      <0.06 ug/mL S  S      F  05/30/2011@10:35 [8293]
                CIPROFLOXACIN    0.05 ug/mL S  S      F  05/30/2011@10:35 [8293]
                GENTAMICIN      0.05 ug/mL S  S      F  05/30/2011@10:35 [8293]

                Description      Quantity      FLG  Observation Date
3.  SHIGELLA FLEXNERI
                CONC
                ANTIBIOTIC      RANGE UNITS FLG  SUSC  INTP  STS  OBSERVATION DATE  SITE
                AMPICILLIN      <0.06 ug/mL S  S      F  05/30/2011@10:35 [8293]
                CIPROFLOXACIN    0.05 ug/mL S  S      F  05/30/2011@10:35 [8293]

```

```

GENTAMICIN                0.05 ug/mL  S  S                F  05/30/2011@10:35 [8293]

-----
                                Performing Laboratory:
[8293] CENTURY HOSPITAL  2070 TEST PARK  STE 100
LOS ANGELES, CALIFORNIA  90067
County:90067

Press RETURN Key:

                                2013 DEMO HOSPITAL
Date:09/20/13              ---- MICROBIOLOGY ----              Time:2:24 PM
                                DEMO,PATIENT  DOB:01/01/1996  HRCN:111111              BLRMIRPT

Printed At: 2013 DEMO HOSPITAL  90001 1ST AVE  STE 100
WASHINGTON, DISTRICT OF COLUMBIA  20000

-----
Accession:MI 13 29              Received:09/18/2013@15:49
Collection Sample:FECES (C&S)    Collection Date:09/18/2013@15:49
Site/Specimen:FECES
Provider:DEMO,PROVIDER

Tests(s) Ordered:

STOOL CULTURE

BACTERIOLOGY PRELIMINARY REPORT => 09/18/2013              TECH CODE:2853

CULTURE RESULTS:

Description                    Quantity                    FLG  Observation Date
1.  E. COLI 0157:H7              A              05/30/2011@10:35

Description                    Quantity                    FLG  Observation Date
2.  SALMONELLA I, GROUP 0:4      A              05/30/2011@10:35

Description                    Quantity                    FLG  Observation Date
3.  SHIGELLA FLEXNERI            A              05/30/2011@10:35

-----
                                Performing Laboratory:
[8293] CENTURY HOSPITAL  2070 TEST PARK  STE 100
LOS ANGELES, CALIFORNIA  90067
County:90067

Press RETURN Key:

                                2013 DEMO HOSPITAL
Date:09/20/13              ---- MICROBIOLOGY ----              Time:2:24 PM
                                DEMO,PATIENT  DOB:01/01/1996  HRCN:111111              BLRMIRPT
    
```

Printed At: 2013 DEMO HOSPITAL 90001 1ST AVE STE 100  
 WASHINGTON, DISTRICT OF COLUMBIA 20000

-----  
 Accession:MI 13 26 Received:08/09/2013@15:57  
 Collection Sample:FECES (C&S) Collection Date:08/09/2013@15:56  
 Site/Specimen:FECES  
 Provider:DEMO,PROVIDER

Tests(s) Ordered:

STOOL CULTURE Completed: Aug 13, 2013 15:50

BACTERIOLOGY FINAL REPORT => 08/13/2013 TECH CODE:2853

CULTURE RESULTS:

Description	Quantity	FLG	Observation Date
1. E. COLI 0157:H7		A	05/30/2011@10:35

ANTIBIOTIC	CONC	RANGE	UNITS	FLG	SUSC	INTP	STS	OBSERVATION DATE	SITE
AMPICILLIN	<0.06	ug/mL	S	S			F	05/30/2011@10:35	[8293]
CIPROFLOXACIN	0.05	ug/mL	S	S	S		F	05/30/2011@10:35	[8293]
GENTAMICIN	0.05	ug/mL	S	S	S		F	05/30/2011@10:35	[8293]

Description	Quantity	FLG	Observation Date
2. SALMONELLA I, GROUP 0:4		A	05/30/2011@10:35

ANTIBIOTIC	CONC	RANGE	UNITS	FLG	SUSC	INTP	STS	OBSERVATION DATE	SITE
AMPICILLIN	<0.06	ug/mL	S	S			F	05/30/2011@10:35	[8293]
CIPROFLOXACIN	0.05	ug/mL	S	S	S		F	05/30/2011@10:35	[8293]
GENTAMICIN	0.05	ug/mL	S	S	S		F	05/30/2011@10:35	[8293]

Description	Quantity	FLG	Observation Date
3. SHIGELLA FLEXNERI		A	05/30/2011@10:35

ANTIBIOTIC	CONC	RANGE	UNITS	FLG	SUSC	INTP	STS	OBSERVATION DATE	SITE
AMPICILLIN	<0.06	ug/mL	S	S			F	05/30/2011@10:35	[8293]
CIPROFLOXACIN	0.05	ug/mL	S	S	S		F	05/30/2011@10:35	[8293]
GENTAMICIN	0.05	ug/mL	S	S	S		F	05/30/2011@10:35	[8293]

-----  
 Performing Laboratory:

[8293] CENTURY HOSPITAL 2070 TEST PARK STE 100  
 LOS ANGELES, CALIFORNIA 90067  
 County:90067

Press RETURN Key:

Date:09/20/13 2013 DEMO HOSPITAL  
 ---- MICROBIOLOGY ---- Time:2:24 PM

DEMO,PATIENT	DOB:01/01/1996	HRCN:111111	BLRMIRPT
Printed At: 2013 DEMO HOSPITAL 90001 1ST AVE STE 100 WASHINGTON, DISTRICT OF COLUMBIA 20000			
-----			
Accession:MI 13 25	Received:08/09/2013@15:55		
Collection Sample:FECES (C&S)	Collection Date:08/09/2013@15:55		
Site/Specimen:FECES			
Provider:DEMO,PROVIDER			
Tests(s) Ordered:			
STOOL CULTURE			
BACTERIOLOGY PRELIMINARY REPORT => 08/13/2013		TECH CODE:2853	
CULTURE RESULTS:			
Description	Quantity	FLG	Observation Date
1. E. COLI 0157:H7		A	05/30/2011@10:35
Description	Quantity	FLG	Observation Date
2. SALMONELLA I, GROUP 0:4		A	05/30/2011@10:35
Description	Quantity	FLG	Observation Date
3. SHIGELLA FLEXNERI		A	05/30/2011@10:35
-----			
Performing Laboratory:			
[8293] CENTURY HOSPITAL	2070 TEST PARK STE 100		
LOS ANGELES, CALIFORNIA	90067		
County:90067			

Figure 6-13: Example report

## 7.0 Display File 62.49 HL7 Segments Report

Due to Meaningful Use Stage 2 requirements, a new routine (BLRRLMU2) and a new option (BLR 62.49 HL7 SEGMENTS) have been created to allow users to display HL7 message segments (incoming or outgoing) for any of the accessions in the LA7 MESSAGE QUEUE (#62.49) file.

The report has not been designed to be printed, but only to be displayed to the screen. This report is an advanced user function.

### 7.1 New 6249 Option

During the post install phase of the patch, the 6249 shortcut to the BLR 62.49 HL7 SEGMENTS option will be added to the BLRMENU.

```

                                IHS Lab Main Support Menu

PCC      IHS Lab PCC Menu ...
CUM      IHS CUMULATIVE MENU ...
REFL     Reference Lab Main Menu ...
ILUM     IHS LOINC/UCUM MENU ...
CPT      Enter/edit IHS Lab CPT File
7421     Will restart the 7421 label routine if turned off.
ETP      LA7 Message Queue Error Messages to Purgeable
MMR      Lab Description Abbreviation Report
BZY      IHS Taskman Busy Device Rpt
SHDR     State Health Dept Report
LVP      IHS Lab Version & Patch Report
ILLT     IHS Lab Label Printer Testing
6249     Display File 62.49 HL7 Segments
DADD     Add Completed Date to Accession Tests
IHSM     IHS Lab Microbiology Report
LABT     Determine if Required RPMS Lab Options Tasked
LRAS     Accession IHS Lab Microbiology Report
LTRR     Laboratory Test (#60) File's Reference Ranges

Select IHS Lab Main Support Menu Option:

```

Figure 7-1: Example BLRMENU menu showing new 6249 option

### 7.2 Selecting the 6249 Option

Once the user selects the new option, they are presented with a menu of valid accessions that are in file 62.49. An example is shown in Figure 7-2.

```

                                DEMO INDIAN HOSPITAL
Date:10/03/13                    LA7 MESSAGE QUEUE (#62.49) File                    Time:9:54 AM
                                UID Selection
-----
UID      Accession      UID      Accession      UID      Accession

```



```

-----
1) 0132740005 CX 1001 5      2) 0132740005 CX 1001 5      3) 0132740004 CX 1001 4
4) 0132740004 CX 1001 4      5) 0132740003 CX 1001 3      6) 0132740003 CX 1001 3
7) 0132740002 CX 1001 2      8) 0132740002 CX 1001 2      9) 0132740001 CX 1001 1
10) 0132740001 CX 1001 1     11) 0132740001 CX 1001 1

Select number:

```

Figure 7-2: 6249 option

## 7.3 Example Report

Once the user selects an accession, the report prints to the screen. An example report is shown in Figure 7-3.

```

                                DEMO INDIAN HOSPITAL
Date:10/03/13                    File 62.49 Data Display                    Time:9:56 AM
                                UID:132740005 [CX 1001 5]
-----
NUMBER: 23                      MESSAGE NUMBER: 23
TYPE: OUTGOING                   STATUS: PURGEABLE
PRIORITY: 3                      DATE/TIME ENTERED: OCT 01, 2013@15:15:08
INSTRUMENT NAME: CX9 2-O-0132740005  CONFIGURATION: UNIVERSAL INTERFACE
MSH: MSH                         ENCODING CHARACTERS: ~\&
SENDING APPLICATION: LA AUTO INST  SENDING FACILITY: 505901
RECEIVING APPLICATION: LAB INTERFACE 2
RECEIVING FACILITY: Instrument Manager
DATE/TIME OF MESSAGE: OCT 01, 2013@15:15:08
MESSAGE TYPE: ORM                MESSAGE CONTROL ID: 25822975370
PROCESSING ID: PRODUCTION         VERSION ID: 2.2

MSH
  1)      ^~\&
  2)      LA AUTO INST
  3)      505901
  4)      LAB INTERFACE 2
  5)      Instrument Manager
  6)      20131001151508-0600
  8)      ORM
  9)      25822975370
 10)      P
 11)      2.2

      Press RETURN Key:

PID
  3)      111111
  5)      DEMO^PATIENT
  7)      20000526
  8)      F
 19)      111-11-1111

      Press RETURN Key:

```

```
PV1
  3)      LAB

      Press RETURN Key:

ORC
  1)      NW
  3)      178
  12)     ^MABRY^TAD^R

      Press RETURN Key:

OBR
  1)      1
  2)      0132740005
  4)      06C^06C^99001^175X2^GLUCOSE^99002
  7)      20131001151452-0600
  15)     BLD
  18)     CX9 2^
  19)     ^^1^3131001^5^CX 1001 5^0132740005^
  27)     ^^^^^R

      Press RETURN Key:

All sequences have been displayed.
```

Figure 7-3: Example report

## 8.0 Add Refile LEDI Message Option to Reference Lab Main Menu at Sites That Have the LEDI/Ensemble Interface

It is recommended that the BLR REFLAB REFILE LEDI MESSAGE option be added to the Reference Lab Main Menu (BLRREFLABMENU option) at all sites with a LEDI/Ensemble reference laboratory interface.

**Note:** If the laboratory site does not utilize the LEDI/Ensemble for its reference lab testing interface, do not complete this step. It is also recommended that the SYNONYM field be set to RLDI. If added, the new menu option will appear similar to the following example in Figure 8-1.

```
Select OPTION NAME: BLRREFLABMENU           Reference Lab Main 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
PSM      Purge Shipping Manifest File
PUR      Purge Old Reference Lab Log Entries/File(s)
RAW      View/Refile Failed Raw Message(s)
REP      Reprint Shipping Manifest
RLDI     Refile LEDI Message
RMSC     Reprint Shipping Manifest to the screen
RRR      Restart the TCP/IP Receiver
RRT      Restart the TCP/IP Transmitter
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: Reference Lab Main Menu with BLR REFLAB REFILE LEDI MESSAGE added

Instructions on how to add the option are included in the notes file (lr\_\_0520.33n).

## Appendix A: 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/managers 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.

### A.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).

#### A.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.

### A.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 policies and procedures prior to interconnection to or transferring data from RPMS.

### A.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.

#### A.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.

#### A.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.

### A.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).

### A.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.

### A.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.

### A.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.

### A.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.

### A.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.

### A.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.

### A.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.

## A.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.

## A.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

**Accession Number**

A unique alpha-numeric (combination of letters and numbers) assigned to an individual patient specimen when it is received in the laboratory.

**File**

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

**FileMan**

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

**HL7**

Health Level Seven. An ANSI approved American National Standard for electronic data exchange in health care

**IEN**

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

**IHS**

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

**Menu**

A list of choices for computing activity. A menu is a type of option designed to identify a series of items (other options) for presentation to the user for selection.

**Parameter**

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

**RPMS**

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

**VA**

Veteran's Administration. United States Department of Veterans Affairs

**VistA**

The Veterans Health Information Systems and Technology Architecture. An enterprise-wide information system built around an Electronic Health Record (EHR), used throughout the VA medical 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:** <http://www.ihs.gov/helpdesk/>

**Email:** [support@ihs.gov](mailto:support@ihs.gov)