



RESOURCE AND PATIENT MANAGEMENT SYSTEM

Laboratory Reference (LR)

Addendum to User Manual

Version 5.2 Patch 24
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1.0 Introduction

IHS Lab Patch 24 incorporates changes and/or enhancements to the Lab Package that have either corrected issues or implemented requests.

This guide provides IHS Lab Managers with descriptions of the changes and/or enhancements and other necessary information in a more readable format.

2.0 Lab to PCC Linker Routines Modified

Several Lab-to-PCC Linker routines were modified in order to correct an issue with the creation of an inordinate number of PCC errors. These errors were caused by invalid information being sent to the PCC visit creation API, as well the creation of Lab orphan visits created when too much information was being sent to the PCC visit creation API.

2.1 BLRLINK Routine Modification

The bulletin creation process for PCC errors has been modified to be more explicit in the errors reported.

2.2 BLRLINK2 Routine Modification

A lookup into the LAB VA-IHS LINK dictionary has been corrected.

2.3 BLRLINK3 Routine Modification

Several mandatory variables were being inadvertently cleared just before the call to update a PCC visit, thus causing PCC errors. The variables are now being checked and reset, if need be, prior to the PCC visit update routine call.

2.4 BLRNLINK Routine Modification

The bulletin creation process for PCC errors has been modified to be more explicit in the errors reported.

2.5 BLRPCCVC Routine Modification

The ANCILLARY flag is now being set.

3.0 Lab Routines Modifications

Several Lab routines have been modified to either fix errors in response to Service Center Calls or to enhance user support.

3.1 ENTRYAUD^BLRUTIL Routine Modification

The ability to capture multiple arrays during data analysis has been added to the BLRUTIL routine via the modification of the ENTRYAUD label from:

```
ENTRYAUD ( LABEL , ARRY )
```

To:

```
ENTRYAUD^BLRUTIL ( LABEL , ARRAY1 , ARRAY2 )
```

This modification is strictly for programmers and not end users.

3.2 LRAC3 Routine Fix

The naked reference in the LRAC3 routine that follows has caused <UNDEFINED> errors at some sites:

```
S X=^(LRMH,0)
```

It has been fixed to:

```
S X=$G(^LAC(LRXLR,LRDFN,1,LRMH,0))
```

3.3 LRAC4 Routine Fix

The naked reference in the LRAC4 routine that follows has caused <UNDEFINED> errors at some sites:

```
S Z=^(LRFDT,0)
```

It has been fixed to:

```
S Z=$G(^LAC(LRXLR,LRDFN,1,LRMH,1,LRSH,1,LRFDT,0))
```

3.4 **LRMISEZ1 Routine Fix**

The LRLLOC variable was sometimes not set in the LRMISEZ1 routine, which caused issues with other routines that called LRLLOC. The code has been modified to:

```
I $G(LRLLOC)="" S LRLLOC="UNKNOWN"
```

3.5 **BLRMERG2 and LR70MERG Routines Fix**

Numerous naked references have been modified to use the \$G command in order to prevent multiple <SUBSCRIPT> errors.

4.0 EDT Option Removed from BLRMENU

The Edit Provider/Ordering Location (EDT) option on the IHS Lab Main Support Menu (BLRMENU) is removed with this patch.

4.1 Reason for Removal

This option is being removed because the changes to the provider and/or location were not being communicated to OE/RR and EHR.

4.2 Menu Prior to Removal

Prior to removal, the BLRMENU will look similar to the following:

```

Select OPTION NAME: 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
CLR     Clear BLR errors from error log
CUM     IHS CUMULATIVE MENU ...
EDT   Edit Provider/Ordering Location ...
CVR     IHS Lab Critical Value Report
ETP     LA7 Message Queue Error Messages to Purgeable
LOI     IHS Lab Package LOINC Percentage Report
NLO     Lab Tests Without LOINC Entries Report
RBE     Clear ALL BLR Errors from Error Log
REFL    Reference Lab Main Menu ...
SHDR    State Health Dept Report

Select IHS Lab Main Support Menu Option:

```

Figure 4-1: BLR menu screen with EDT option highlighted

4.3 Menu after Removal

After the patch is installed, the EDT option will be removed and the BLRMENU will then look similar to the following:

```

Select OPTION NAME: 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
CLR     Clear BLR errors from error log
CUM     IHS CUMULATIVE MENU ...
CVR     IHS Lab Critical Value Report
ETP     LA7 Message Queue Error Messages to Purgeable
LOI     IHS Lab Package LOINC Percentage Report
NLO     Lab Tests Without LOINC Entries Report
RBE     Clear ALL BLR Errors from Error Log
REFL    Reference Lab Main Menu ...
SHDR    State Health Dept Report

Select IHS Lab Main Support Menu Option:

```

Figure 4-2:BLR menu after patch installed (EDT option removed)

4.4 Changes after Removal

With the removal of the EDT option, the only method to modify/change Providers and/or Locations is to mark the original order as "NOT PERFORMED" and re-enter the correct data on a new Order and Accession.

5.0 New IHS Lab Package LOINC® Reports

Two new reports dealing with the Regenstrief Institute's Logical Observation Identifiers Names and Codes (LOINC®) field in the Laboratory Test file (# 60) have been created. Both reports will be accessed via new options on the IHS Lab Main Support Menu (BLRMENU).

5.1 LOINC® Percentages Report

The first report counts the number of tests in the Lab Test file (# 60) and determines which have LOINC's assigned to them and which do not. It then produces a very simple output that shows the percentages.

5.1.1 LOI Option

The report will be run from the new LOI option that will be added to the IHS Lab Main Support Menu.

The IHS Lab Main Support Menu should look similar to the following:

```

Select OPTION NAME: 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
CLR     Clear BLR errors from error log
CUM     IHS CUMULATIVE MENU ...
CVR     IHS Lab Critical Value Report
ETP     LA7 Message Queue Error Messages to Purgeable
LOI   IHS Lab Package LOINC Percentage Report
NLO     Lab Tests Without LOINC Entries Report
RBE     Clear ALL BLR Errors from Error Log
REFL    Reference Lab Main Menu ...
SHDR    State Health Dept Report

Select IHS Lab Main Support Menu Option:

```

Figure 5-1: BLR menu screen with LOI option highlighted

5.1.2 Running the Report

To run the report, select the LOI option, enter the output device, and then press Return.

The output will look similar to the following:

```

                                IHS/OIT LabDev Test Database
Date:03/03/08                Logical Observation Identifiers           Time:12:38 PM
                                Names and Codes (LOINC)
                                IHS Percentages Report
-----
Number of Lab Tests in Dictionary = 1085

  Number of ZZ'ed Lab Tests in Dictionary = 7

  Number of Lab Tests in Dictionary with LOINC codes = 627

  Number of Lab Tests in Dictionary without LOINC codes = 458

  Percentage of Lab Tests in File 60 with LOINC codes = 57.8%

  Percentage of Non ZZ'ed Lab Tests in File 60 with LOINC codes = 58.2%

  Press RETURN Key:

```

Figure 5-2: Example of IHS Lab Package LOINC Percentage Report

5.1.3 Security Key

The report can only be accessed by those who have the LRSUPER key.

5.2 Missing LOINC[®] Report

The second report counts the number of tests in the Lab Test file (# 60) and determines which do not have LOINC[®]s assigned to them. It then produces a count and allows the user to request a listing of all the tests.

5.2.1 NLO Option

The report will be run from the new NLO option that will be added to the IHS Lab Main Support Menu.

The IHS Lab Main Support Menu should look similar to the following:

```
Select OPTION NAME: 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
CLR     Clear BLR errors from error log
CUM     IHS CUMULATIVE MENU ...
CVR     IHS Lab Critical Value Report
ETP     LA7 Message Queue Error Messages to Purgeable
LOI     IHS Lab Package LOINC Percentage Report
NLO   Lab Tests Without LOINC Entries Report
RBE     Clear ALL BLR Errors from Error Log
REFL    Reference Lab Main Menu ...
SHDR    State Health Dept Report

Select IHS Lab Main Support Menu Option:
```

Figure 5-3: BLR menu screen with NLO option highlighted

5.2.3 Detailed Report Output

The detailed report will look similar to the following:

IHS/OIT LabDev Test Database		Page 1
Date:02/29/08	Logical Observation Identifiers	
Time:3:42 PM	Names and Codes (LOINC)	
	IHS Lab Test File (# 60)	
	Tests WITHOUT Codes	
File 60		
Number	File 60 Description	

478	1/2Hr.GTT (URINE)	
392	25 OH VITAMIN D	
1200	2HR LTT	
1201	3HR LTT	
202	5' NUCLEOTIDASE	
1116	ABNORMAL FORMS	
320	ABO TITER	
1101	ABO/RH TYPING	
672	ACTIVE METABOLITE	
9101	AFB CULTURE	
1119	AFB CULTURE & SMEAR	
546	AFB SMEAR	
9999009	AFP XRA	
9034	ALBUMIN/CREATININE RATIO	
563	ALK PHOSPHATASE, HEAT LABILE	
564	ALK PHOSPHATASE, HEAT STABLE	
301	ALL	
687	ALPHA-2 FRACTION	
570	AMOEBIC IHA ANTIBODY	

Figure 5-5: NLO report output

5.2.4 Security Key

The report can only be accessed by those who have the LRSUPER key.

6.0 IHS Clear ALL BLR errors in Error Trap

The current Clear BLR errors in the error trap call, CLRERRS^BLRUTIL(ERRDT), only clears BLR errors one day (the ERRDT variable) at a time.

A new routine, BLRCLRAL, was created to clear all the BLR errors from the error trap no matter when they occurred. This was done to alleviate issues at sites that have had several days of errors.

6.1 RBE Option Added to the IHS Lab Main Support Menu (BLRMENU)

The routine can be run from the new RBE option that will be added to the IHS Lab Main Support Menu.

The IHS Lab Main Support Menu should look similar to the following:

```
Select OPTION NAME: 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
CLR     Clear BLR errors from error log
CUM     IHS CUMULATIVE MENU ...
CVR     IHS Lab Critical Value Report
ETP     LA7 Message Queue Error Messages to Purgeable
LOI     IHS Lab Package LOINC Percentage Report
NLO     Lab Tests Without LOINC Entries Report
RBE   Clear ALL BLR Errors from Error Log
REFL    Reference Lab Main Menu ...
SHDR    State Health Dept Report

Select IHS Lab Main Support Menu Option:
```

Figure 6-1: BLR menu screen with RBE option highlighted

6.2 Running the Routine

To run the routine, select the RBE option and then press Return.

If there are no BLR errors in the error trap, the output may look similar to the following:

```
Total Non-Link Errors = 175  
No link errors were found for Date Range: 03/28/02 thru 12/14/07  
  
Press RETURN Key:
```

Figure 6-2: Screen after RBE option selected, but no BLR errors

If there are BLR errors in the error trap, the output may look similar to the following:

```
Total Non-Link Errors = 17  
6 Link Errors were found and cleared from the error log!  
  
Date: 12/09/05 had 1 link error.  
Date: 06/14/06 had 2 link errors.  
Date: 07/06/06 had 1 link error.  
Date: 07/28/06 had 1 link error.  
Date: 08/31/06 had 1 link error.  
  
Press RETURN Key:
```

Figure 6-3: Screen after RBE option selected, and BLR errors were detected

Note: The routine goes to the beginning date of the error trap through the current date to search for BLR errors.

6.3 Security Key

The report can only be accessed by those who have the BLRZMGR key.

7.0 Lab Order Entry File Modification

In preparation for a Point-of-Care EHR interface, the Lab Order Entry File has been modified. It now includes an INDICATION CODE field. It will be used at a later date.

8.0 IHS CPT Code File Modification

In preparation of Code Set Versioning, the IHS Lab CPT Code file's CPT CODE field's input transform has been modified. This does not impact the end user until Code Set Versioning is implemented.

9.0 Glossary

Term	Definition
EHR	Electronic Health Record. An Electronic Medical Record that utilizes a technical infrastructure originally developed for the VHA that displays various clinical functions via a graphical user interface (GUI).
File	A set of related records or entries treated as a single unit.
FileMan	The database management system for RPMS.
Global	In MUMPS, global refers to a variable stored on disk (global variable) or the array to which the global variable may belong (global array).
IHS	Indian Health Service
LOINC [®]	Logical Observation Identifier Naming Codes. Copyright 1995-2007, Regenstrief Institute, Inc. and the LOINC Committee. All rights reserved.
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. When displayed, menu-type options are preceded by the word "Select" and followed by the word "option" as in Select Menu Management option: (the menu's select prompt).
MUMPS	Massachusetts General Hospital Utility Multiprogramming System. It is a procedural, interpreted general-purpose programming language oriented towards database applications.
OIT	Office of Information Technology
RPMS	Resource and Patient Management System. A suite of software applications used at IHS facilities to support administrative, clerical, and clinical functions.

10.0 Contact Information

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

Phone: (505) 248-4371 or (888) 830-7280 (toll free)

Fax: (505) 248-4297

Web: <http://www.ihs.gov/GeneralWeb/HelpCenter/Helpdesk/index.cfm>

Email: support@ihs.gov