Lab-VA HDR and COTS Interface
User Guide
for Patch LA*5.2*68

July 2010

Department of Veterans Affairs
VistA Health Systems Design & Development
## Revision History

<table>
<thead>
<tr>
<th>Date</th>
<th>Description</th>
<th>Author</th>
</tr>
</thead>
</table>
| May 2009     | Draft for Patch LA*5.2*68  
Incorporated the Installation, User, Technical, and Implementation/Security Guides into one document | CBeynon |
| December 2009| Changed dates to December 2009                                              | CBeynon |
| January 2010 | Changed dates to Month 2010                                                 | CBeynon |
| March 2010   | Changed dates to May 2010                                                   | CBeynon |
| April 2010   | Added updates provided by HDR                                                | CBeynon |
| June 2010    | - Added updates recommended by Mike Belschwinder, Clinical 2 Team  
- Added updates provided by John McCormack  
- Changed dates from May 2010 to July 2010 for July release date  
- Added updates from HDR | CBeynon |
| July 2010    | Corrected the Blood Bank Statement                                          | C Beynon |
This page intentionally left blank
# Table of Contents

**Introduction**

- Health Data Repository ................................................................. 1
- Blood Bank Clearance ................................................................. 2
- About This Guide ........................................................................... 2

**Installation Procedure** ................................................................. 3

**Post-installation Considerations** ................................................... 7

- HL7 Event Protocol ......................................................................... 7
- Activate Message Generation and Transmission ......................... 7
- Inactivate Message Generation and Transmission ....................... 8

**Technical Information** .................................................................... 11

- Routines ......................................................................................... 11
- Exported Options .......................................................................... 12
- Purging Capabilities ...................................................................... 12
- Callable Entry Points .................................................................... 13
  - ICR #3556 .................................................................................. 13
- External Relationships ................................................................... 16
  - Integration Agreement .............................................................. 16

**Security Information** ...................................................................... 17

- Laboratory Keys ........................................................................... 17
- Archiving Capabilities .................................................................. 17

**Acronyms** ....................................................................................... 19
Introduction

Patch LA*5.2*68 supports the Veterans Affairs (VA) Health Data Repository (HDR) effort, by allowing changes to the VistA Laboratory LAB DATA file (#63) to be transmitted to the HDR and Commercial Off the Shelf (COTS) subscribers using a VistA Laboratory HL7 result (ORU) message. The HL7 ORU messages containing verified patient laboratory results are transmitted to the subscribers of the HL7 event protocol LA7 Lab Results Available (EVN), as verified results are made available within the Laboratory package. This event supports subscripts: CH, MI, SP, CY, and EM.

<table>
<thead>
<tr>
<th>VistA Laboratory Subscript</th>
<th>Traditional Functional Sections</th>
</tr>
</thead>
<tbody>
<tr>
<td>CH</td>
<td>Chemistry, Hematology, Coagulation, Serology, Urinalysis, etc.</td>
</tr>
<tr>
<td>MI</td>
<td>Microbiology, Virology, Mycology, Parasitology</td>
</tr>
<tr>
<td>SP</td>
<td>Surgical Pathology</td>
</tr>
<tr>
<td>CY</td>
<td>Cytopathology</td>
</tr>
<tr>
<td>EM</td>
<td>Electron Microscopy</td>
</tr>
</tbody>
</table>

Health Data Repository

Patch LA*5.2*68 allows the HL7 ORU message containing patient laboratory results to be transmitted to the subscriber, LA7 LAB RESULTS TO HDR (SUB). This subscriber protocol is used to transmit laboratory results to the VA HDR.

- After you activate sending messages to the HDR, extracting existing laboratory data (HDR historical) will follow, so that there will be an overlap with no gaps of laboratory data within the HDR.
- Once you activate sending messages to the HDR, do not inactivate, as this can cause gaps of laboratory data within the HDR.
- If you must inactivate sending messages to the HDR, contact the HDR program office, so that the laboratory data can be tracked and recovered.
**Blood Bank Clearance**

VISTA Laboratory Package patch LA*5.2*68 contains changes to software controlled by VHA DIRECTIVE 99-053, titled VISTA BLOOD BANK SOFTWARE. Changes include:

- New style indexes have been created for the following sub-files of the LAB DATA file (#63):
  - ELECTRON MICROSCOPY (#63.02)
  - SURGICAL PATHOLOGY (#63.08)
  - CYTOPATHOLOGY (#63.09)

All of the above changes have been reviewed by the VISTA Blood Bank Developer and found to have no impact on the VISTA BLOOD BANK SOFTWARE control functions.

**RISK ANALYSIS:** Changes made by patch LA*5.2*68 have no effect on Blood Bank software functionality, therefore RISK is none.

**EFFECT ON BLOOD BANK FUNCTIONAL REQUIREMENTS:** Patch LA*5.2*68 does not alter or modify any software design safeguards or safety critical elements functions.

**POTENTIAL IMPACT ON SITES:** This patch contains changes to 0 routines and 1 file identified in Veterans Health Administration (VHA) Directive 99-053, group B listing. The changes have no effect on Blood Bank functionality or medical device control functions. There is no adverse potential to sites.

**About This Guide**

This user guide provides instructions for installing the Veterans Health Information Systems and Technology Architecture (VistA) Patch LA*5.2*68 for the Laboratory package, as well as pertinent technical, implementation, and security information.
Installation Procedure

The patch is of category: Routine, Enhancement, and Data Dictionary.

- Patch installation can be queued
- Install time for this patch is less than five minutes
- Install this patch during non-peak requirement hours
- Coordinate patch installation with the Laboratory Information Manager (LIM/ADPAC)
- You can install this patch when Laboratory users are on the system
- Patch pre-install routine:
  a. Notifies mail group LMI that installation has started
  b. If previous versions of the patch are installed, it saves the current status of the HDR interface
- Patch post-install routine:
  a. Notifies mail group LMI that installation has finished
  b. If previous versions of the patch are installed, it restores the status of the HDR interface to pre-installation condition
  c. Clears facility name from the LA7LAB entry in the HL7 APPLICATION PARAMETER FILE (#771), if present

**Note:** Kernel patches must be current on the target system to avoid problems loading and/or installing this patch.

**Note:** Before installing Patch LA*5.2*68, you must install the following associated patches.

<table>
<thead>
<tr>
<th>(v)LA<em>5.2</em>27</th>
<th>(v)LA<em>5.2</em>64</th>
</tr>
</thead>
<tbody>
<tr>
<td>(v)LA<em>5.2</em>46</td>
<td>(v)LA<em>5.2</em>69</td>
</tr>
<tr>
<td>(v)LA<em>5.2</em>51</td>
<td>(v)LA<em>5.2</em>70</td>
</tr>
<tr>
<td>(v)LA<em>5.2</em>61</td>
<td>(v)LA<em>5.2</em>71</td>
</tr>
</tbody>
</table>

1. Load **TRANSPORT GLOBAL**.
2. Select the PackMan message containing Patch LA*5.2*68 and invoke the PackMan option: **INSTALL/CHECK MESSAGE**.
3. Access the Kernel Installation & Distribution System (KIDS) menu [XPD MAIN]:

Edits and Distribution ...
Utilities ...
Installation ...

4. Select Kernel Installation & Distribution System Option:

```
Installation
---
1    Load a Distribution
2    Verify Checksums in Transport Global
3    Print Transport Global
4    Compare Transport Global to Current System
5    Backup a Transport Global
6    Install Package(s)
    Restart Install of Package(s)
    Unload a Distribution
```
Select Installation Option:

5. The following options in the Installation menu are optional, but the recommendation is to run these options. When prompted for the INSTALL NAME, enter LA*5.2*68.
   a. Backup a Transport Global - This option creates a backup message of any routines exported with this patch. It does not backup any other changes, such as DDs or templates.
   b. Compare Transport Global to Current System - This option allows you to view all changes made when this patch is installed. It compares all components of this patch (routines, DDs, templates, and so on).
   c. Verify Checksums in Transport Global - This option ensures the integrity of the routines that are in the Transport Global.

6. Select Installation Option: **Install Package(s)**. (The installation of the KIDS patch begins at this step.) When prompted for the INSTALL NAME, enter LA*5.2*68.

   **Note:** Routine LA68 is automatically deleted by KIDS after a successful patch installation.

**Installation Example**

Select Installation Option: 6  Install Package(s)
Select INSTALL NAME: LA*5.2*68 Loaded from Distribution 2/4/05@10:21
=> LA*5.2*68

This Distribution was loaded on Feb 04, 2005@10:21 with header of LA*5.2*68
It consisted of the following Install(s): LA*5.2*68
Checking Install for Package LA*5.2*68
Will first run the Environment Check Routine, LA68

--- Environment Check is Ok ---

Install Questions for LA*5.2*68

Incoming Files:
62.48  LA7 MESSAGE PARAMETER (including data)  
   Note: You already have the 'LA7 MESSAGE PARAMETER' File. 
   I will OVERWRITE your data with mine.

63  LAB DATA (Partial Definition)
   Note: You already have the 'LAB DATA' File.

Want KIDS to Rebuild Menu Trees Upon Completion of Install? NO//

Want KIDS to INHIBIT LOGONs during the install? NO// NO
Want to DISABLE Scheduled Options, Menu Options, and Protocols? NO// NO

Enter the Device you want to print the Install messages. 
You can queue the install by enter a 'Q' at the device prompt. 
Enter a '^' to abort the install.

DEVICE: HOME//  TELNET VIRTUAL

Install Started for LA*5.2*68 :
Build Distribution Date: Feb 04, 2005
Installing Routines:.............
   Feb 04, 2005@10:21:55
Running Pre-Install Routine: PRE^LA68.
   Sending install started alert to mail group G.LMI
      *** Pre install started ***
      --- No action required---
      *** Pre install completed ***
Installing Data Dictionaries: ...
   Feb 04, 2005@10:21:55
Installing Data:
   Feb 04, 2005@10:21:55
Installing PACKAGE COMPONENTS:
Installing HL7 APPLICATION PARAMETER...
Installing PROTOCOL..
   Located in the LA7 (LAB MESSAGING) namespace..
   Located in the LA7 (LAB MESSAGING) namespace..
   Located in the LA7 (LAB MESSAGING) namespace..
   Feb 04, 2005@10:21:55
Running Post-Install Routine: POST^LA68.
      *** Post install started ***
      *** Clearing facility name for LA7LAB entry in file #771 ***
      *** Clearing facility name completed ***
      *** Post install completed ***
Sending install completion alert to mail group G.LMI
Updating Routine file......
Updating KIDS files.......  
LA*5.2*68 Installed.
   Feb 04, 2005@10:21:55
Install Message sent #xxxx
Post-installation Considerations

HL7 Event Protocol

The HL7 event protocol LA7 LAB RESULTS AVAILABLE (EVN) supports subscripts: CH, MI, SP, CY, and EM.

Activate Message Generation and Transmission

Use the following steps only when activating the transmission of laboratory data to the VA HDR and/or interfacing to a Commercial Off the Shelf System (COTS) or other VistA subscriber. No further action is required, if there is no requirement to activate this interface.

- To activate messaging to the VA HDR perform steps 1, 2, and 3.
- To activate messaging to COTS and other VistA subscribers perform steps 1 and 4.

1. Generate and transmit HL7 Lab ORU result messages
   a. Enable the configuration LA7HDR in LA7 MESSAGE PARAMETER file (#62.48), and use VA File Manager to set the field Status (#2) to Active.
   b. When this field is set to Inactive, the generation of the Lab HL7 ORU message is turned off.

   Select VA FileMan Option: Enter or Edit File Entries
   
   INPUT TO WHAT FILE: LA7 MESSAGE PARAMETER// 62.48  LA7 MESSAGE PARAMETER
   EDIT WHICH FIELD: ALL// STATUS
   THEN EDIT FIELD:

   Select LA7 MESSAGE PARAMETER CONFIGURATION: LA7HDR
   STATUS: INACTIVE// ACTIVE  ACTIVE

2. Set up the VDEFVIE4 link for Laboratory data transmission
   a. Use the HL7 Main Menu: Select Filer and Link Management Options option to edit logical link VDEFVIE4.
   b. Enable Auto Startup and add the IP address and port number.
      IP address: 10.224.67.234
      Port number: 5021
   c. Use the HL7 Main Menu, Start/Stop Links option to start the VDEFVIE4 link.
   d. Use the HL7 Main Menu, Site Parameters Edit option to select VDEF view and add VDEFVIE4 to the view.

3. Activate the interface to the VA HDR
   a. On the HL package, Interface Developer Options [HL MENU INTERFACE TK], use the Protocol Edit [HL EDIT INTERFACE] menu option to edit the protocol LA7 LAB RESULTS TO HDR (SUB).
   b. On the second ScreenMan screen, remove the leading (;) character from the Routing Logic field.
   c. Enter the Save command to retain the changes to the protocol.
Example: Editing the Routing Logic field

<table>
<thead>
<tr>
<th>HL7 SUBSCRIBER</th>
<th>PAGE 2 OF 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>LA7 LAB RESULTS TO HDR (SUB)</td>
<td></td>
</tr>
</tbody>
</table>

-----------------------------

RECEIVING APPLICATION: LA7HDR

RESPONSE MESSAGE TYPE: ACK EVENT TYPE: R01

SENDING FACILITY REQUIRED?: YES RECEIVING FACILITY REQUIRED?: YES

SECURITY REQUIRED?:

LOGICAL LINK: VDEFVIE4

PROCESSING RTN:

ROUTING LOGIC: ;D RTR^LA7HDR("CH;")

<-- remove leading ";" character

COMMAND: Press <PF1>H for help Insert

After the change, the field looks like:

ROUTING LOGIC: D RTR^LA7HDR("CH;")

4. Transmit Lab HL7 ORU result messages to another system, such as a Commercial Off the Shelf System (COTS)
   a. Create an HL7 subscriber protocol, as documented in the HL7 Site Manager & Developer Manual version 1.6*56.
   b. Attach the HL7 subscriber protocol as a subscriber to HL7 event protocol, LA7 LAB RESULTS AVAILABLE (EVN).


Inactivate Message Generation and Transmission

Notify the HDR Project Office
in the event that this interface is deactivated and the interface to the HDR was previously activated

To control Lab HL7 ORU message generation and transmission after the interface is activated or to inactivate message generation and/or transmission, perform the following steps.

- Use step 1 to inactivate all message generation to all subscribers.
- Use step 2 to inactivate message generation/transmission to a specific subscriber.

1. Inactivate Lab HL7 ORU message generation and transmission to all subscribers of event protocol, LA7 LAB RESULTS AVAILABLE (EVN)
a. Disable the configuration **LA7HDR** in the LA7 MESSAGE PARAMETER file (#62.48), and set the field Status (#2) to *Inactive* using **VA File Manager Enter or Edit File Entries [DIEDIT]**.
b. When this field is set to *Inactive*, the generation of the Lab HL7 ORU message is turned off.

2. Inactivate message transmission to a specific subscriber

a. On the HL package, Interface Developer Options [HL MENU INTERFACE TK] menu option, use the **Protocol Edit [HL EDIT INTERFACE]** option to remove the related subscriber protocol from the event protocol **LA7 LAB RESULTS AVAILABLE (EVN)**.
b. For the VA HDR, remove subscriber protocol **LA7 LAB RESULTS TO HDR (SUB)**.
Technical Information

Routines

The checksums below are new checksums, and can be checked with CHECK1^XTSUMBLD.

Routine Name: LA68
   Before: n/a   After: B17816218 **68**
Routine Name: LA7HDR
   Before: n/a   After: B39353571 **68**
Routine Name: LA7HDR1
   Before: n/a   After: B37911850 **68**
Routine Name: LA7QRY
   Before: B5873978   After: B8496816 **46,69,68**
Routine Name: LA7QRY1
   Before: B12341981 After: B34477085 **46,61,68**
Routine Name: LA7QRY2
   Before: B24752999 After: B38475048 **46,69,68**
Routine Name: LA7VHLU
   Before: B42350744 After: B44857108 **46,62,64,68**
Routine Name: LA7VHLU2
   Before: B19775199 After: B28776777 **46,61,64,68**
Routine Name: LA7VHLU3
   Before: B15291257 After: B55573792 **46,64,68**
Routine Name: LA7VHLU4
   Before: B25336667 After: B25782007 **46,64,68**
Routine Name: LA7VHLU5
   Before: B40473983 After: B49053645 **46,64,68**
Routine Name: LA7VHLU9
   Before: n/a   After: B16600197 **68**
Routine Name: LA7VIN5
   Before: B52231590 After: B62438539 **46,64,68**
Routine Name: LA7VMSG1
   Before: B51506932 After: B52098570 **56,46,61,64,68**
Routine Name: LA7VOBR
   Before: B23749256 After: B25844567 **46,64,68**
Routine Name: LA7VOBRA
   Before: B37451712 After: B39455733 **46,64,68**
Routine Name: LA7VOBRB
   Before: n/a   After: B12807459 **68**
Routine Name: LA7VOBX
   Before: B25091305 After: B30185961 **46,64,68**
Routine Name: LA7VOBX1
   Before: B15262892 After: B28786998 **46,61,63,64,71,68**
Routine Name: LA7VOBX2
   Before: B15453740 After: B21393582 **46,64,68**
Routine Name: LA7VOBX3
   Before: B33632644 After: B83540167 **46,64,68**
Routine Name: LA7VOBXA
   Before: B31676928 After: B53603815 **46,70,64,68**
Routine Name: LA7VORC
   Before: B8007778 After: B18625097 **46,64,68**
Routine Name: LA7VORM1
   Before: B52156055 After: B57485485 **27,51,46,61,64,68**
**Exported Options**

The LA7 HDR Recover is a new option added to the OPTION file (#19).

*NAME:* LA7 HDR RECOVER  
*MENU TEXT:* Recover/Transmit Lab HDR Result Messages

*TYPE:* run routine  
*CREATOR:* LDSICREATOR, ONE

*PACKAGE:* AUTOMATED LAB INSTRUMENTS

*DESCRIPTION:* Option to recover from failed Lab HDR ORU Result message generation and/or transmission failure. This option allows the user to select those VistA Laboratory accessions that need to be transmitted to the VA HDR and other subscribers of the VistA Laboratory Result Available HL7 message capability via the protocol Lab Results Available Event [LA7 LAB RESULTS AVAILABLE (EVN)].

If the original message generation/transmission failed due to system or communication problems then using this option will allow the generation of new HL7 messages with the results associated with the selected accessions. Accessions can be selected using the human-readable accession designation (area abbreviation modified date accession number - "CH 1225 100") or the accession's associated 10 character unique identifier (UID)

*ROUTINE:* RECOVER^LA7HDR

**UPPERCASE MENU TEXT:** RECOVER/TRANSMIT LAB HDR RESUL

This option is assigned to the Lab liaison menu option [LRLIAISON] and can be assigned as needed to support/monitor message transmission to the VA HDR and other subscribers.

**Purging Capabilities**

Purging of LA7 MESSAGE QUEUE file (#62.49) is handled along with other Lab HL7 interfaces via the scheduled task.

*NAME:* LA7TASK NIGHTY  
*MENU TEXT:* Lab Messaging Nightly Cleanup

*TYPE:* run routine  
*CREATOR:* LDSICREATOR, ONE

*PACKAGE:* AUTOMATED LAB INSTRUMENTS

*DESCRIPTION:* This is a tasked option to check 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 (#62.85), LAB SHIPPING EVENT (#62.85) and LAB PENDING ORDERS ENTRY (#69.6)

This option should be tasked daily, preferably during period when activity in the Lab Messaging (i.e. Universal Interface, LEDI) package is at a minimum.

Prior to the purge of LA7 MESSAGE QUEUE file (#62.49), an integrity check is performed. The integrity check can be run with a couple of switches.
LA7FIX = 0 - do not fix errors
1 - do fix errors

LA7LOG = 0 - do not log errors in XTMP global.
1 - do log errors in XTMP global

LA7ION = name of device to print error report if set to
log errors (LA7LOG=1).

These parameters can be setup by TaskMan if the site defines them when scheduling the
task.

An example is given below:

```
Edit Option Schedule
Option Name: LA7TASK NIGHTY

<table>
<thead>
<tr>
<th>VARIABLE NAME:</th>
<th>VALUE:</th>
</tr>
</thead>
<tbody>
<tr>
<td>LA7FIX</td>
<td>0</td>
</tr>
<tr>
<td>LA7ION</td>
<td>&quot;IRM DEVELOP LASER1&quot;</td>
</tr>
<tr>
<td>LA7LOG</td>
<td>1</td>
</tr>
</tbody>
</table>
```

If errors are found, an alert is sent to members of the mail group "LAB MESSAGING" notifying them that errors were detected. If
logging of errors occurred then alert recipients will be able to print/view error log from the alert system. Alternatively the
error report can be printed using option Print Lab Messaging Integrity Check [LA7 PRINT INTEGRITY CHECK].

The integrity report can be run alone using option Lab Messaging File Integrity Checker [LA7 CHECK FILES].

**Callable Entry Points**

**ICR #3556**

INTEGRATION REFERENCE INQUIRY #3556 MAR 31, 2009 12:04 PAGE 1

<table>
<thead>
<tr>
<th>3556</th>
<th>NAME: GET LAB RESULTS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>CUSTODIAL PACKAGE: AUTOMATED LAB INSTRUMENTS       Dallas</td>
</tr>
<tr>
<td></td>
<td>SUBSCRIBING PACKAGE: CLINICAL CASE REGISTRIES     Hines</td>
</tr>
</tbody>
</table>

Clinical Registries system requires access to the API GCPR^LA7QRY to analyze lab tests and results. This
API is required during the registry update process and the data extract process.

HEALTH DATA SYSTEMS

CLINICAL PROCEDURES

USAGE: Controlled Subscri ENTERED: APR 11,2002
STATUS: Active           EXPIRES:
DURATION: Till Otherwise Agr VERSION:
DESCRIPTION:              TYPE: Routine
Clinical Registries system requires access to the API GCPR^LA7QRY to analyze lab tests and results. This API is required during the registry
update process and the data extract process.

ROUTINE: LA7QRY
COMPONENT: GCPR
This component is passed a patient identifier, start and end
dates (for when specimens were taken) and NLT and/or LOINC
codes and specimen types. The component passes back an array
with details of any lab tests with results that occurred
within the start and end dates that were for the LOINC or NLT
codes and specimen types that were passed in.
The structure of the returned values is as described in the
VistA Laboratory VA HDR HL7 Interface Specification. This document
Is available from the VA VistA Documentation Library
http://www.va.gov/vdl/

VARIABLES: Input LA7PTID
Patient identifier, either SSN or MPI/ICN or medical record
number.
if MPI/ICN then should be full ICN (10 digit number
followed by "V" and six digit checksum)
Pass in the 2nd piece of this variable the type of
identifier:
SS = Social Security number
PI = VA MPI Integration Control Number
MR = medical record number of patient in file PATIENT/IHS
(#9000001)
Example: 1000720100V271387^PI
123456789^SS
123456789^MR

VARIABLES: Input LA7SDT
Start date of query (FileMan D/T, time optional).

VARIABLES: Input LA7EDT
End date of query (FileMan D/T, time optional)
(FileMan D/T"type of date ("CD" or "RAD") Both
start and end date values can pass a parameter in
the second piece to indicate that the date values
are for specimen collection date/time (CD) or
results available date (RAD).
Example: LA7SDT="2991001.1239^CD"
LA7EDT="2991002.0331^CD"
LA7SDT="3010201^RAD"
LA7EDT="3010201^RAD"

VARIABLES: Input LA7SC
Array of search codes, either NLT or LOINC
(code\"coding system ("NLT" or "LN");
Example: LA7SC(1)="89628.0000^NLT"
LA7SC(2)="84330.0000^NLT"
LA7SC(3)="84295.0000^NLT"
LA7SC(4)="14749-6^LN"
or
The "*" (wildcard) for any code;
Example: LA7SC="*"

or

A list of subscripts (separated by commas) from where the results will be extracted ("CH", "MI" or "SP").
Example: LA7SC="CH,MI" (CH and MI results only).

Pass in the 2nd piece of LA7SC the indicator (1) to return VUID when available.
Example: LA7SC="*^1" or LA7SC="CH,MI^1"

VARIABLES: Input

LA7SPEC
Array of specimen types using HL7 source table 0070 or "*" (wildcard) for any code. Currently specimen type only supported for CH and MI subscripted tests.

Example: LA7SPEC="*"

or

LA7SPEC(1)="UR"
LA7SPEC(2)="SER"
LA7SPEC(3)="PLAS"

VARIABLES: Both

LA7QERR
Array (by reference) containing any errors.
LA7QERR(error number) = text of error message

The following error codes and text are returned:
1 Invalid patient identifier passed
2 No patient found with requested identifier
3 No laboratory record for requested patient
4 Database error - missing laboratory record for requested patient
5 If ICN passed and MPI returns error then the error message for a given ICN
6 Unknown search code "_<code>_" passed, where <code> is a LOINC or NLT code passed in input parameter LA7SC.
7 Invalid list of subscripts: '_<subscript>, where <subscript> is the value passed in input parameter LA7SC.
99 No results found for requested parameters

VARIABLES: Both

LA7DEST
Closed root global reference to return search results (optional). If this parameter is omitted or equals an empty string, then node ^TMP("HL5",$J) is used.

Example: LA7DEST=$NA(^TMP("Z2TMP",$J)).

The information returned in this global reference uses the structure of an HL7 message to format the results of the query.

VARIABLES: Input

LA7HL7
HL7 field separator and encoding characters (4) to use to encode results (optional). If undefined or incomplete (length<5) then field separator ",\"|

July 2010 Laboratory VA HDR HL7 Interface User Guide
and encoding characters "\~&" are used. See HL7 standard for further information of use and purpose of field separator and encoding characters.

Example call:
S LA7PTID="0000000000v000000^PI"
S LA7SDT="3000101"
S LA7EDT=$$NOW^XLFDT
S LA7SC="*"
S LA7SPEC="*"
S LA7DEST=$NA(^TMP("ZZTMP",$J))
S X=$$GCPR^LA7QRY(LA7PTID,LA7SDT,LA7EDT,.LA7SC,.LA7SPEC,.LA7ERR,LA7DEST,"|\~&")

KEYWORDS: Clinical Registries
Hepatitis C

***********************

External Relationships

Versions of VA FileMan, Kernel, and other software (VistA or other) required to run this software.
- VA FileMan v22
- VA MailMan v8.0
- Health Level Seven v1.6
- Kernel v 8.0

Integration Agreement

Integration Agreement (IA): ICR #3556   NAME: GET LAB RESULTS
Security Information

The Laboratory System interacts with many VistA packages. Because of this interaction, as well as the patient data maintained in the Laboratory files, security is a real and necessary.

Laboratory security is maintained using Laboratory security keys, Laboratory file security, and appropriate Laboratory menu assignments.

Laboratory Keys

Each user must be assigned appropriate keys in order to access the Laboratory system. SECURITY KEY file (#19.1) contains the key names, a short description, and a list of the holders. Under each of the appropriate key names, you need to enter the names of the users.

Archiving Capabilities

Currently there are no archiving capabilities required for this patch release.
This page intentionally left blank
## Acronyms

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADPAC</td>
<td>ADP Application Coordinator</td>
</tr>
<tr>
<td>API</td>
<td>Application Programming Interface</td>
</tr>
<tr>
<td>CH</td>
<td>Chemistry</td>
</tr>
<tr>
<td>COTS</td>
<td>Commercial Off The Shelf System</td>
</tr>
<tr>
<td>CY</td>
<td>Cytopathology</td>
</tr>
<tr>
<td>DD</td>
<td>Data Dictionary</td>
</tr>
<tr>
<td>EM</td>
<td>Electron Microscopy</td>
</tr>
<tr>
<td>EVN</td>
<td>Event</td>
</tr>
<tr>
<td>HDR</td>
<td>Health Data Repository</td>
</tr>
<tr>
<td>HIPPA</td>
<td>Health Insurance Portability and Accountability Act of 1996 (PL 104-191)</td>
</tr>
<tr>
<td>HL7</td>
<td>Health Level Seven Standard</td>
</tr>
<tr>
<td>IA</td>
<td>Integration Agreement</td>
</tr>
<tr>
<td>ICD</td>
<td>Interface Control Document</td>
</tr>
<tr>
<td>ICR</td>
<td>Integration Control Reference</td>
</tr>
<tr>
<td>IMS</td>
<td>Interim Messaging Solution</td>
</tr>
<tr>
<td>LA</td>
<td>Laboratory</td>
</tr>
<tr>
<td>LIM</td>
<td>Laboratory Information Manager</td>
</tr>
<tr>
<td>MI</td>
<td>Microbiology</td>
</tr>
<tr>
<td>MLLP</td>
<td>Minimum Lower Level Protocol</td>
</tr>
<tr>
<td>OI</td>
<td>Office of Information</td>
</tr>
<tr>
<td>ORM</td>
<td>HL7 Order Message</td>
</tr>
<tr>
<td>ORU</td>
<td>HL7 Observation Unsolicited Message</td>
</tr>
<tr>
<td>SP</td>
<td>Surgical Pathology</td>
</tr>
<tr>
<td>TCP/IP</td>
<td>Transmission Control Protocol/Internet Protocol</td>
</tr>
<tr>
<td>VA</td>
<td>Veterans Affairs</td>
</tr>
<tr>
<td>VDEF</td>
<td>VistA Data Extraction Framework</td>
</tr>
<tr>
<td>VIE</td>
<td>Vitria Interface Engine</td>
</tr>
<tr>
<td>VistA</td>
<td>Veterans Health Information System and Technology Architecture</td>
</tr>
</tbody>
</table>