

ICD-10 Follow On Class 1 Software Remediation

Laboratory: Emerging Pathogens Initiative (EPI)

Application Version 5.2

Release Notes

LR*5.2*421



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**Department of Veterans Affairs
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Product Development**

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1. Introduction

1.1. Purpose

The purpose of these Release Notes is to identify enhancements to the Emerging Pathogens Initiative (EPI) package contained in patch LR 5*2*421.

1.2. Background

On January 16, 2009, the Centers for Medicare & Medicaid Services (CMS) released a final rule for replacing the 30-year-old International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) code set with International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM) and International Classification of Diseases, Tenth Revision, Procedure Coding System (ICD-10-PCS) with dates of service or dates of discharge for inpatients that occur on or after the ICD-10 Activation Date.

The classification system consists of more than 68,000 codes, compared to approximately 13,000 ICD-9-CM codes. There are nearly 87,000 ICD-10-PCS codes, while ICD-9-CM has nearly 3,800 procedure codes. Both systems also expand the number of characters allotted from five and four respectively to seven alpha-numeric characters. This value does not include the decimal point, which follows the third character for the ICD-10-CM code set. There is no decimal point in the ICD-10-PCS code set. These code sets have the potential to reveal more about quality of care, so that data can be used in a more meaningful way to better understand complications, better design clinically robust algorithms, and better track the outcomes of care. ICD-10-CM also incorporates greater specificity and clinical detail to provide information for clinical decision making and outcomes research.

ICD-9-CM and ICD-10-CM Comparison

ICD-9-CM	ICD-10-CM
13,000 codes (approximately)	68,000 codes (approximately)
3-5 characters	3-7 characters (not including the decimal)
Character 1 is numeric or alpha (E or V)	Character 1 is alpha; character 2 is numeric
Characters 2 - 5 are numeric	Characters 3–7 are alpha or numeric (alpha characters are not case sensitive)
Decimal after first 3 characters	Same

ICD-9-CM and ICD-10-PCS Comparison

ICD-9-CM Procedure Codes	ICD-10-PCS
3-4 characters	7 alphanumeric characters
All characters are numeric	Characters can be either alpha or numeric. Letters O and I are not used to avoid confusion with the numbers 0 and 1.
All characters are numeric	Each character can be any of 34 possible values. The ten digits 0-9 and the 24 letters A-H, J-N and P-Z may be used in each character.
Decimal after first 2 characters	Does not contain decimals

1.3. Scope of Changes

NOTE: Existing ICD-9 functionality has not changed.

Patch LR* 5.2*421 makes the following changes to the Emerging Pathogens Initiative (EPI) application:

- The following fields and screens have been updated to refer to “ICD” rather than “ICD9”:
 - Laboratory Search/Extract Parameters Input screens
 - Enter/Edit Local Pathogens screens
 - Detailed Verification Report
 - Help text
- Within the Enter/Edit Local Pathogens and Laboratory Search/Extract Parameters Input screens, users are prompted to specify a code set on which to search prior to entering an ICD code. Based on this input, the system will only allow ICD-9 entry or ICD-10 entry.
- The Pathogen Inquiry option has been modified to list both ICD-9 and ICD-10 codes.
- The Generate Local Report/Spreadsheet option has been modified to include both the Diagnosis Code Set Designation and the Diagnosis Code.
- HL7 Reports that are sent to AITC have been modified to include ICD-10 Codes and Descriptions, which are included in the DG1 HL7 Segments.

1.4. Documentation

The EPI manuals are posted on the VistA Documentation Library (VDL) page:

<http://www.va.gov/vdl/application.asp?appid=118>.

The following EPI user manuals are updated with changes for LR 5*2*421:

- Rollup Modifications Technical and User Manual
- Technical and User Guide
- Hepatitis C and EPI Technical and User Guide
- Search/Extract Technical and User Guide

The following manual does not exist for this package:

- Security Guide

NOTE: Security Information is contained within the *Search/Extract Technical and User Guide* and *Rollup Modifications Technical and User Manual*.

2. Modified Screens

The following screens have been modified:

- Laboratory Search/Extract Parameters Input
- Enter/Edit Local Pathogens Menu Option

2.1. Laboratory Search/Extract Parameters Input Screen

The following modifications have been made to the Laboratory Search/Extract Parameters Input Screen:

- A new prompt “ICD Coding System [ICD-9 or ICD-10]? (9/10):” has been added so that users must specify an ICD-9 or ICD-10 code set on which to search.
- A “CD Set” column header, which indicates the ICD code set (ICD-9 or ICD-10), has been added.
- Two column headers have been modified so that they refer generically to “ICD” rather than indicate an ICD code set (ICD-9 or ICD-10):

ICD Code

ICD Description

Example of Updated Lab Search/Extract Parameters Input Screen

LABORATORY SEARCH/EXTRACT PARAMETERS INPUT SCREEN			Page 1 of 5
NAME: PNEUMONIA442		INACTIVE: NO	
Laboratory Test(s)	Indicator	Value	
ICD Coding System [ICD-9 or ICD-10]? (9/10): 10			
ICD Code Cd Set ICD Description			
*A48.2	ICD-10 Nonpneumonic Legionnaires' Disease (Pontiac Fever)		

2.2. Enter/Edit Local Pathogens Menu Option

The Enter/Edit Local Pathogens screen has been modified from “ICD9” to “ICD DIAGNOSIS” and a “CODING SYSTEM:” field has been added to indicate whether the ICD Diagnosis is based on the ICD-9 and/or ICD-10 coding system.

Example of Updated Enter/Edit Local Pathogens Menu Screen

Select Local Pathogen Menu Option: Ent Enter/Edit Local Pathogens	
LOCAL PATHOGEN NAME: pneuMONIA442	
This pathogen is already entered as a local pathogen.	
NAME: PNEUMONIA442	INACTIVE: NO
PROTOCOL: LREPI	REFERENCE NUMBER: 100
ICD DIAGNOSIS: 010.94	CODING SYSTEM: ICD-9-CM
ICD DIAGNOSIS: A15.6	CODING SYSTEM: ICD-10-CM
Is this the correct one?	

2.3. Pathogen Inquiry Screen

The Pathogen Inquiry screen has been modified from “ICD9” to “ICD DIAGNOSIS” and a “CODING SYSTEM:” field has been added to indicate whether the ICD Diagnosis is based on the ICD-9 or ICD-10 coding system.

Example of Updated Pathogen Inquiry Screen

```
CHOOSE 1-5: 5 LREPI SEARCH EXTRACT MENU      Lab EPI Primary Menu

                               Lab EPI Primary Menu

ENH   Lab EPI Manual Run (Enhanced)
VR    Print Detailed Verification Report
LO    Local Pathogen Menu ...
PI    Pathogen Inquiry
UP    Lab EPI Parameter Setup
      Lab EPI Protocol Edit
LK    Antimicrobial Link Update

You have PENDING ALERTS
      Enter "VA to jump to VIEW ALERTS option

Select Lab EPI Primary Menu Option: pi Pathogen Inquiry
Select Pathogen: legionELLA
NAME: LEGIONELLA                      INACTIVE: YES
      LAG DAYS: 15                      RUN DATE: JUL 15, 2000
      CYCLE: MONTHLY                   PROTOCOL: LREPI
      FOLLOW PTF: YES                  REFERENCE NUMBER: 7
LAB TEST: LEGIONELLA AB                INDICATOR: Equal To
      INDICATED VALUE: POS
ETIOLOGY: LEGIONELLA BOZEMANII
ETIOLOGY: LEGIONELLA DUMOFFII
ETIOLOGY: LEGIONELLA GORMANII
ETIOLOGY: LEGIONELLA JORDANIS
ETIOLOGY: LEGIONELLA LONGBEACHAE
ETIOLOGY: LEGIONELLA MICDADEI
ETIOLOGY: LEGIONELLA OAKRIDGENSIS
ETIOLOGY: LEGIONELLA PNEUMOPHILA
ETIOLOGY: LEGIONELLA SP
ETIOLOGY: LEGIONELLA WADSWORTHII
ICD DIAGNOSIS: 482.80                  CODING SYSTEM: ICD-9-CM
ICD DIAGNOSIS: A48.1                   CODING SYSTEM: ICD-10-CM
ICD DIAGNOSIS: A48.2                   CODING SYSTEM: ICD-10-CM
ICD DIAGNOSIS: 482.84                  CODING SYSTEM: ICD-9-CM
ICD DIAGNOSIS: A48.8                   CODING SYSTEM: ICD-10-CM

Enter RETURN to continue or '^' to exit:
Description:  Legionella (Reference #7)
```

3. Modified Reports

3.1. PRT LAB EPI Print Local Report/Spreadsheet

- The LAB EPI Local Report/Spreadsheet option has been modified so that they each include the Diagnosis Code Set Designation (ICD-9 or ICD-10) as a prefix to the Diagnosis Code.

○

Example of Updated PRT LAB EPI Print Local Report/Spreadsheet (On-Screen Report Display)

Set Id	Value	Type	Test Name	LOINC Code	LOINC Name	Test Result	Units	Flags	and Interp
Verified Date/Time									
1	ICD10	A90.	DENGUE FEVER	[CLASSICAL DENGUE]					
11-09-2012	@0917								

○

Example of Updated PRT LAB EPI Print Local Report/Spreadsheet (Spreadsheet Output)

```
DEVICE: HOME// HOME (CRT)

|0| |PID|SSN|MPI|Patient Name|Date of Birth|Sex|Race|Homeless|State|Zip|County|Ethnicity|POS|
|1| |PVI|Patient Class|Hospital Location|Discharge Disposition|Facility|Admit Date/Time|Discharge
Date/Time|
|2| |DGI|Diagnosis Code|Diagnosis|Admission Date|
1|2|1| |ICD10 A90.|DENGUE FEVER [CLASSICAL DENGUE]|11-09-2012@0917|
```

3.2. Detailed Verification Report

The Detailed Verification Report of EPI Extracted Data has been modified so that the code set (ICD-9 or ICD-10) is not indicated. Rather, the description refers generically to an “ICD coded diagnosis.”

Example of Updated Detailed Verification Report of EPI Extracted Data

```
DETAILED VERIFICATION REPORT OF EPI EXTRACTED DATA
FROM STATION 442 CHEYENNE VAMC
PROCESSING PERIOD: 09-01-2014 through 10-30-2014

NTE~7- Report of Legionella/Legionnaire's
These data note persons at your facility during the month who had EITHER an ICD coded diagnosis
for Legionella/Legionnaire's disease OR a positive
```

3.3. Report Transmission to Cincinnati Group

The VistA Laboratory Emerging Pathogens Initiative shall retain the ability to transmit diagnosis codes and ICD code set designation within the LREPI SERVER Data Server triggered report option for the Cincinnati mail group REDACTED.

Example of Cincinnati Report

```
Subj: 1ALBANY EPI (3131011.094951) [#41916] 10/11/13@09:49 343 lines
From: POSTMASTER In 'IN' basket. Page 1
-----
REPORT triggered at 1ALBANY by DEVRD on 3131011.094939
*****
Pathogen          Ref# Cy LD Protocol FPTF Active
VANC-RES ENTEROCOCCUS      1 M 15      LREPI      1      0
  Lab Test
  Etiology
ENTEROCOCCUS (STREPT. FAECALIS-GROUP D)
  ICD
```

Microbial Susceptibility	Indicator	Value

Pathogen	Ref# Cy LD Protocol FPTF Active	
HEPATITIS C ANTIBODY POS	2 M 15 LREPI 1 0	
Lab Test	Indicator	Value
Etiology		
ICD		
Microbial Susceptibility	Indicator	Value

Pathogen	Ref# Cy LD Protocol FPTF Active	
PEN-RES PNEUMOCOCCUS	3 M 15 LREPI 1 0	
Lab Test	Indicator	Value
Etiology		
ICD		
Microbial Susceptibility	Indicator	Value

Pathogen	Ref# Cy LD Protocol FPTF Active	
CLOSTRIDIUM DIFFICILE	4 M 15 LREPI 1 0	
Lab Test	Indicator	Value
Etiology		
ICD		
Microbial Susceptibility	Indicator	Value

Pathogen	Ref# Cy LD Protocol FPTF Active	
TUBERCULOSIS	5 M 15 LREPI 1 0	
Lab Test	Indicator	Value
Etiology		
ICD		
Microbial Susceptibility	Indicator	Value

Pathogen	Ref# Cy LD Protocol FPTF Active	
STREPTOCOCCUS GROUP A	6 M 15 LREPI 1 0	
Lab Test	Indicator	Value
Etiology		
ICD		
Microbial Susceptibility	Indicator	Value

Pathogen	Ref# Cy LD Protocol FPTF Active	
LEGIONELLA	7 M 15 LREPI 1 0	
Lab Test	Indicator	Value
Etiology		
LEGIONELLA BOZEMANII		
LEGIONELLA DUMOFFII		
LEGIONELLA MICDADEI		
LEGIONELLA PNEUMOPHILIA		
LEGIONELLA SP		
ICD		
482.80 (ICD-9)		
A48.1 (ICD-10)		
A48.2 (ICD-10)		
A48.8 (ICD-10)		
Microbial Susceptibility	Indicator	Value

Pathogen	Ref# Cy LD Protocol FPTF Active	
CANDIDA	8 M 15 LREPI 1 0	
Lab Test	Indicator	Value
Etiology		
CANDIDA ALBICANS		
CANDIDA GUILLIERMONDII		
CANDIDA KRUSEI		
CANDIDA PARAPSILOSIS		
CANDIDA PSEUDOTROPICALIS		
CANDIDA SKIN TEST ANTIGEN		
CANDIDA STELLATOIDEA		
CANDIDA TROPICALIS		
CANDIDA, NOS		
ICD		
Microbial Susceptibility	Indicator	Value

Pathogen	Ref# Cy LD Protocol FPTF Active	
CRYPTOSPORIDIUM	9 M 15 LREPI 1 0	
Lab Test	Indicator	Value

Etiology					
ICD					
007.8	(ICD-9)				
A07.2	(ICD-10)				
A07.9	(ICD-10)				
IEN # 9 damaged. (No ICD)					
Microbial Susceptibility			Indicator		Value

Pathogen		Ref#	Cy	LD	Protocol
E. COLI 0157:H7		10	M	15	LREPI
Lab Test				FPTF	Active
Etiology				1	0
ICD					
Microbial Susceptibility			Indicator		Value

Pathogen		Ref#	Cy	LD	Protocol
MALARIA		11	M	15	LREPI
Lab Test				FPTF	Active
Etiology				1	0
ICD					
084.0	(ICD-9)				
084.1	(ICD-9)				
084.2	(ICD-9)				
084.3	(ICD-9)				
084.4	(ICD-9)				
084.5	(ICD-9)				
084.6	(ICD-9)				
084.7	(ICD-9)				
084.8	(ICD-9)				
084.9	(ICD-9)				
B50.0	(ICD-10)				
B50.8	(ICD-10)				
B50.9	(ICD-10)				
B51.0	(ICD-10)				
B51.8	(ICD-10)				
B51.9	(ICD-10)				
B52.0	(ICD-10)				
B52.8	(ICD-10)				
B52.9	(ICD-10)				
B53.0	(ICD-10)				
B53.1	(ICD-10)				
B53.8	(ICD-10)				
B54.	(ICD-10)				
Microbial Susceptibility			Indicator		Value

Pathogen		Ref#	Cy	LD	Protocol
DENGUE		12	M	15	LREPI
Lab Test				FPTF	Active
Etiology				1	0
ICD					
065.4	(ICD-9)				
061.	(ICD-9)				
A90.	(ICD-10)				
A91.	(ICD-10)				
A93.8	(ICD-10)				
Microbial Susceptibility			Indicator		Value

Pathogen		Ref#	Cy	LD	Protocol
CREUTZFELDT-JAKOB DISEASE		13	M	15	LREPI
Lab Test				FPTF	Active
Etiology				1	0
ICD					
046.1	(ICD-9)				
A81.00	(ICD-10)				
A81.01	(ICD-10)				
A81.09	(ICD-10)				
A81.1	(ICD-10)				
A81.2	(ICD-10)				
A81.81	(ICD-10)				
A81.82	(ICD-10)				
A81.83	(ICD-10)				
A81.89	(ICD-10)				

STREPTOCOCCUS FAECALIS						
STREPTOCOCCUS FAECIUM						
ICD						
Microbial Susceptibility			Indicator		Value	

Pathogen	Ref#	Cy	LD	Protocol	FPTF	Active
METH-RES STAPH AUREUS	19	M	15	LREPI	1	0
Lab Test					Indicator	Value
Etiology						
STAPHYLOCOCCUS AUREUS						
ICD						
Microbial Susceptibility			Indicator		Value	
OXACILLIN			Unknown			
NAFCILLIN			Unknown			

Pathogen	Ref#	Cy	LD	Protocol	FPTF	Active
ALL STAPH AUREUS	18	M	15	LREPI	1	0
Lab Test					Indicator	Value
Etiology						
STAPHYLOCOCCUS AUREUS						
ICD						
Microbial Susceptibility			Indicator		Value	

Pathogen	Ref#	Cy	LD	Protocol	FPTF	Active
VANC-RES STAPH AUREUS	20	M	15	LREPI	1	0
Lab Test					Indicator	Value
Etiology						
STAPHYLOCOCCUS AUREUS						
ICD						
Microbial Susceptibility			Indicator		Value	
VANCMCN			Unknown			

Pathogen	Ref#	Cy	LD	Protocol	FPTF	Active
ADD THIS ONE!10	100			LREPI		0
Lab Test					Indicator	Value
Etiology						
ICD						
500. (ICD-9)						
Microbial Susceptibility			Indicator		Value	

Pathogen	Ref#	Cy	LD	Protocol	FPTF	Active
NEWEXAMPLE10	101			LREPI		0
Lab Test					Indicator	Value
Etiology						
ICD						
Microbial Susceptibility			Indicator		Value	

Pathogen	Ref#	Cy	LD	Protocol	FPTF	Active
EXAMPLEPATHOGEN10	102			LREPI		0
Lab Test					Indicator	Value
Etiology						
ICD						
Microbial Susceptibility			Indicator		Value	

Pathogen	Ref#	Cy	LD	Protocol	FPTF	Active
EXAMPLEPATHOGEN01010	103			LREPI		0
Lab Test					Indicator	Value
Etiology						
ICD						
Microbial Susceptibility			Indicator		Value	

Pathogen	Ref#	Cy	LD	Protocol	FPTF	Active
ADD ANOTHER10	104			LREPI		0
Lab Test					Indicator	Value
Etiology						
ICD						
Microbial Susceptibility			Indicator		Value	

Pathogen	Ref#	Cy	LD	Protocol	FPTF	Active
LEG10	105			LREPI		0
Lab Test					Indicator	Value
Etiology						

4. ICD-10 Searches

The EPI package provides the ability to search on ICD-10-CM diagnosis codes.

NOTE: Existing ICD-9 functionality has not changed.

4.1. ICD-10-CM Diagnosis Code Search

The EPI ICD-10 diagnosis code search functionality allows the end user to select a single, valid ICD-10 diagnosis code and also display its coding system and description. The EPI user interface prompts the user for input, invokes the Lexicon utility to get data, and then presents that data to the end user.

ICD-10-CM diagnosis code search highlights include:

- Text-based search using one or more words as search terms, finding matches based on full descriptions, synonyms, key words, and shortcuts associated with ICD-10-CM diagnosis codes, which are inherently built into the Lexicon coding system.
- The more refined the search criteria used (i.e., the more descriptive the search terms), the more streamlined the process of selecting the correct valid ICD-10 diagnosis code will be.
- Short descriptions for the valid ICD-10-CM codes display.
- Partial code searches are also possible, as is full ICD-10-CM code entry, for situations where all or part of the code is known.

5. Technical Information

5.1. Routines

Some EPI routines were modified to replace direct global reads and old APIs with new Standards and Terminology Services (STS) APIs and Lexicon APIs wherever possible. The following new routines are added:

Routine Name	Function
LR421P	ICD-10 Post Install Routine. (Populates new ICD-10 coding system fields for current records in the EPI Extract File (File # 69.5).
LREPICD	ICD-10 determines coding system (9 or 10) for extract parameter.
LREPIXDG	Called to pull in ICD Description and Code Set information for Enter/Edit Local Pathogens and LAB EPI <u>PARAMETER SETUP</u> a

5.2. HL7 Messages

The DG1segment of HL7 Messages has been updated to include an ICD-9 or ICD-10 code set indicator.

Example: HL7 MailMan Message

```
DG1|1||A90.~DENGUE FEVER [CLASSICAL DENGUE]~I10|20121023183419-0400||PR
DG1|2||A91.~DENGUE HEMORRHAGIC FEVER~I10|20121023183419-0400||
DG1|3||A93.8~OTHER SPECIFIED ARTHROPOD-BORNE VIRAL FEVERS~I10|20121023183419-0400||
```

5.3. Online Help for ICD-10 Codes

Help text (?) and extended help text (??) is included for prompts related to ICD-10 codes.

Example: Help Text with 1 and 2 Question Marks (? and ??)

```
LABORATORY SEARCH/EXTRACT PARAMETERS INPUT SCREEN    Page 1 of 5

NAME: LEGIONELLA                                     INACTIVE: NO

Laboratory Test(s)          Indicator          Value
-----
ICD Coding System [ICD-9 or ICD-10]? (9/10): 10

ICD Code Cd Set ICD Description
+A48.2      ICD-10 Nonpneumonic Legionnaires' Disease [Pontiac Fever]
 A48.8      ICD-10 Other Specified Bacterial Diseases
 ?

Answer with ICD DIAGNOSIS
Choose from:
482.80
A48.1

Enter RETURN to continue or '^' to exit: <Return>
```

A48.2
A48.8

Enter RETURN to continue or '^' to exit: <Return>

You may enter a new ICD DIAGNOSIS, if you wish

Select the ICD standardized code, used nationwide in federal and non-federal private health care facilities, to be included in the search.

LABORATORY SEARCH/EXTRACT PARAMETERS INPUT SCREEN Page 1 of 5

NAME: LEGIONELLA

INACTIVE: NO

Laboratory Test(s)	Indicator	Value
--------------------	-----------	-------

ICD Coding System [ICD-9 or ICD-10]? (9/10): 10

ICD Code Cd Set ICD Description

+A48.2 ICD-10 Nonpneumonic Legionnaires' Disease [Pontiac Fever]

A48.8 ICD-10 Other Specified Bacterial Diseases

??

Choose from:

482.80

A48.1

A48.2

Enter RETURN to continue or '^' to exit: <Return>

A48.8

You may enter a new ICD DIAGNOSIS, if you wish

Enter RETURN to continue or '^' to exit: <Return>

This defines an ICD for use in emerging pathogens data search/extract.