Test Evaluation Summary

CPRS PXRM\*2.0\*47



Department of Veterans Affairs

**July 2016**

Version 2.3

Revision History

| Date | Version | Description | Author |
| --- | --- | --- | --- |
| 8/21/2017 | 2.3 | Added T8 to TES log | PII |
| 5/25/2017 | 2.2 | Added T7 to TES log | PII |
| 5/24/2017 | 2.1 | Table added for Test Log | PII |
| 9/15/2016 | 2.0 | Evaluation Updates | PII |
| 7/11/2016 | 1.0 | PXRM\*2.0\*47 Patch Test Evaluation | PII |

Artifact Rationale

The test evaluation document is the primary output of the test and evaluation process, an integral part of the systems engineering process, which identifies levels of performance and assists the developer in correcting deficiencies.

The PMAS Directive cites the Service Delivery and Engineering (SDE) organization as having primary responsibilities for system testing and certification.

Table of Contents

[1. Test Evaluation Introduction 4](#_Toc491063435)

[1.1. Test Evaluation Scope 4](#_Toc491063436)

[1.2. Test Architecture 4](#_Toc491063437)

[1.3. Test Environment/ Configuration 4](#_Toc491063438)

[1.4. Installation Process 4](#_Toc491063439)

[2. Test Data 4](#_Toc491063440)

[3. Issues 4](#_Toc491063441)

[4. Test Execution Log 5](#_Toc491063442)

[5. Test Defect Log 5](#_Toc491063443)

[6. Test Results Summary 6](#_Toc491063444)

[7. Suggested Actions 6](#_Toc491063445)

[8. Priorty Level Definitions 7](#_Toc491063446)

[9. Document Approval Signatures 8](#_Toc491063447)

[Appendix A - Test Execution Log 9](#_Toc491063448)

[Appendix B – Defect Log 10](#_Toc491063449)

# Test Evaluation Introduction

The purpose of this Test Evaluation Summary is to document the testing efforts of internal SQA for the PXRM\*2.0\*47 patch. After passing all test scripts, the patch will then be sent out to test sites around the country for further evaluation.

## Test Evaluation Scope

The scope of testing was internal SQA,external site test account and externat test site production accounts, for the porpose of evaluating fixes to the Clinical Reminders functionality of CPRS v31.

## Test Architecture

The test architecture of each in-house test accounts are set-up with the CPRS v30 build. For CPRS v30 functuionality, please refer to the CPRS v30 Master Test Plan.

## Test Environment/ Configuration

The test accounts are test environments that duplicate the live systems operating in Indianopolis, Orlando and Phoneix with the exception of the use of mock patients for testing purposes.

## Installation Process

Installation of the PXRM\*2.0\*47 CPRS v31 patch took about 20 seconds to install. No issues were seen during the installation process.

# Test Data

See Test Execution Log below.

# Issues

All known issues are logged and located in Appendix B. All issues including Levels 1-4 have been corrected.

# Test Execution Log

The Test Execution Log records the execution of test scripts and documents the test results for each test script. The test analyst is responsible for completing the Test Execution Log. Each version of the Test Execution Log is listed in Appendix A, and has at least one corresponding Defect Log Listed in Appendix B.

**PXRM\*2.0\*47**



# Test Defect Log

The Test Defect Log table only contains defects listed by the PXRM\*2\*47 test scripts. Listed in Appendix B is the full testing log conducted by test sites, SQA and other developers.. The table specifies behavior or result that occurred, current status, resolution and the IEEE defined Severity Level. Use the IEEE definitions for Severity Levels.

No defects were seen during the testing of T7 of this patch.

***Table 1: Test Defect Log***

| **Defect ID** | **Test Case ID** | **Description** | **Date**  **Reported** | **Severity** | **Current Status** | **Resolution** | **Date**  **Resolved** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 2-1 | 9e | Hard error occurring when doing a taxonomy code search if a term like “diabetes” was input instead of an actual code | 3/2/16 | 2 | Resolved | Corrected search | 6/15/16 |
| 2-2 | 4 | Time was not being displayed when the reminder frequency was in hours | 6/10/16 | 2 | Resolved | Missing line of code in ACHK^PXRMLOG. The line was put back and the routine was added to the build | 6/15/16 |
| 3-1 | 3a | New recursion checker was introduced in T2 and this error was occurring during the recursion check that is made as part of reminder evaluation | 7/22/16 | 2 | Resolved | The recursion check was modified | 8/15/16 |
| 5-1 | N/A | CPRS31 test site reported the following error:  <UNDEFINED>FERROR+7^PXRMOUTU \*TEXT | 1/9/17 | 3 | Resolved | Corrected Typo | 1/26/17 |
| 6-1 | N/A | SQA review noted that XU\*8.0\*657 was still listed in the build description | 5/3/17 | 2 | Resolved | No functional changes made, corrected listed patches and created new build to exclude XU\*8.0\*657 in the build description | 5/11/17 |
| 7-1 | N/A | After installing the T7 build in Production, Puget Sound started getting the following errors:  <><UNDEFINED>REMIND+29^VPSPTCR ^TMP("PXRHM" 06:46:33 ROU:PUGR1PA03 1  <><UNDEFINED>REMIND+21^ORQQPX ^TMP("PXRHM" 06:46:22 ROU:PUGR1PA01 259 | 7/27/2017 | 1 | Resolved | VPS and OR errors were due to improperly written code in those packages. solution was a one line change in Clinical Reminders | 7/28/2017 |

# Test Results Summary

Testing was conducted on each build of PXRM\*2\*47. Reported errors were logged and duplicated by CPRS development teams. These defects were researched and corrected. A final build CR\_ICD-10\_FOLLOWUP.KID was produced and installed at the three test sites, producing no further errors.

# Suggested Actions

N/A

# Priorty Level Definitions

Priority 1 - Resolve Immediately

Further development and/or testing cannot occur until the defect has been repaired. The system cannot be used until the repair has been affected.

Priority 2 - Give High Attention

The defect must be resolved as soon as possible because it is impairing development and/or testing activities. System use will be severely affected until the defect is fixed.

Priority 3 - Normal Queue

The defect should be resolved in the normal course of development activities. It can wait until a new build or version is created.

Priority 4 - Low Priority

The defect is an irritant that should be repaired, but can be repaired after more serious defects have been fixed.

# Document Approval Signatures

Signed: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

PII, IT Program Manager, CPRS, EPMO, EPMD Date

Signed: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

PII, IT Project Manager CPRS EP1, EPMO, EPMD Date

Signed: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

PII, VHA Clinical Reminders Developer Date

Appendix A - Test Execution Log

Appendix B – Defect Log

**T2 – T3 Changes:** These are the changes made to the T2 version to create the T3 version.

17 Feb 2016 – PKR Corrected a misspelled word in the comments of WASINP^PXRMPDEM.

Routine: PXRMPDEM - IEEE defined Severity Level 3

17 Feb 2016 – PKR Ticket I5761038FY15 reported a problem with reminder reports not giving the same number of patients as a FileMan query. It was determined the probable cause of this is the check for a valid appointment status when the service category is historical. The current behavior is to ignore the visit if the associated appointment status is null which is the case for most historical visits. The code was changed to not make the appointment status check if the service category is “E”.

Routines: PXRMLOCF, PXRMLOCL - IEEE defined Severity Level 2

25 Feb 2016 – PKR In Reminder Exchange, when installing a taxonomy it was always showing as different even if it had just been packed. The was because the checksum calculation is supposed to ignore the EDIT HISTORY/CHANGE LOG. In taxonomies when EDIT HISTORY was renamed to CHANGE LOG the code was not modified to look for CHANGE LOG so taxonomy checksum calculations were including the CHANGE LOG. This was corrected.

Routine: PXRMEXCS - IEEE defined Severity Level 2

02 Mar 2016 – PKR Puget Sound (Doreen Rains) reported a hard error occurring when doing a taxonomy code search if a term like “diabetes” was input instead of an actual code. This was corrected.

Routine: PXRMLEX - IEEE defined Severity Level 2

14 Mar 2016 – PKR According to Alan this ticket should be added to the list of tickets resolved by 47: R7688243FY16 - IEEE defined Severity Level 2

05 May 2016 – PKR Updated the value sets with the April 01, 2016 release. The changes are summarized in the following table:

|  |  |  |  |
| --- | --- | --- | --- |
| File | May 01, 2015 | April 01, 2016 | After Purge |
| NLM Value Set Coding Systems | 17 | 17 |  |
| NLM Value Sets | 977 | 1527 | 1006 |
| NLM Quality Measure Groups | 242 | 335 | 260 |

- IEEE defined Severity Level 2

09 May 2016 – PKR Added in check in ERRHDLR^PXRMERRH for a FRAMESTACK error, if this is the case it quits and does not try to send the MailMan message.

Routine: PXRMERRH - IEEE defined Severity Level 2

11 May 2016 – PKR The computed finding VA-REMINDER DEFINITION was leaving some parts of ^TMP, this was fixed by newing PXRMDEBG in the routine RDEF^PXRMCDEF.

Routine: PXRMCDEF - IEEE defined Severity Level 2

13 May 2016 – PKR The recursion test for VA-REMINDER DEFINITION was too simple and in some cases incorrectly flagged recursion which prevented the reminder from being evaluated. A new algorithm was designed in implemented in PXRMRCUR, it corrects the problem. The variable PXRMDEFS is not needed with the new algorithm so it was removed from all routines that had it. The reminder integrity check already included a check for recursion but testing revealed it could miss recursion when it occurred through a term. The improved recursion check was added to the integrity check.

Routines: PXRM, PXRMICHK, PXRMRCUR

Routines where only change was deletion of PXRMPDEFS: PXRMDEV, PXRMETXR, PXRMTERM, PXRMXEVL, PXRMXSE1 - IEEE defined Severity Level 2

18 May 2016 – PKR Alan did a test install and found that file #811.3 was not deleted. The call to DELETAX^PXRMP47I had not been put in the post-init, it was added to the post-init.

Routine: POST^PXRMP47I. - IEEE defined Severity Level 2

10 Jun 2016 – PKR While going through the test scripts Jeff Fahner found that time was not being displayed when the reminder frequency was in hours. This was traced to a missing line of code in ACHK^PXRMLOG:

S ^TMP("PXRHM",$J,PXRMITEM,PXRMRNAM,"FREQ")=FREQ

The line was put back and the routine was added to the build.

Routine: PXRMLOG - IEEE defined Severity Level 2

**T3 – T4 Changes:** These are the changes made to the T3 version to create the T4 version.

22 Jul 2016 – PKR Puget Sound reported the following error during reminder evaluation:

I '$D(^PXD(811.9,DEFIEN,20,"E","PXRMD(811.4,",RDCFIEN)) Q 0

^

<SUBSCRIPT>DEFCHK+2^PXRMRCUR ^PXD(811.9,"")

A new recursion checker was introduced in T2 and this error was occurring during the recursion check that is made as part of reminder evaluation. The error was occurring because the Computed Finding Parameter for VA-REMINDER DEFINITION was a set to a non-existent reminder. The recursion check was modified to handle this case and the case when the Computed Finding Parameter is null.

Routine: DEFCHK^PXRMRCUR - IEEE defined Severity Level 2

22 Jul 2016 – PKR Testing of the above change revealed that the definition integrity check was not catching the case when the Computed Finding Parameter for VA-REMINDER DEFINITION is set to a non-existent reminder, this was corrected and a check to make sure the Usage is not List was added.

Routine: PXRMICHK - IEEE defined Severity Level 2

26 Jul 2016 – PKR For recursion occurring through a term, the recursion checker was modified to return

1^811.9;IEN;FINDING^811.5;IEN,TERM FINDING. The integrity checker uses this information to display the definition finding, term name, and term finding. When recursion is occurring in the definition the recursion checker returns 1^811.9;IEN;FINDING. The integrity checker uses this to display the finding causing the recursion.

Routines: PXRMICHK, PXRMRCUR - IEEE defined Severity Level 2

26 Jul 2016 – PKR Reminder definition editing was changed so that the integrity check is always run unless the user opts to exit out. Previously the integrity check was run only if a change was made to the definition.

Routine: PXRMREDT - IEEE defined Severity Level 2

26 Jul 2016 – PKR Checks were added to the national computed finding VA-REMINDER DEFINITION to make sure the reminder to evaluate is defined, that it exists, and it is active. If it does not meet these criteria a fatal error is thrown.

Routine: PXRMCDEF - IEEE defined Severity Level 2

26 Jul 2016 – PKR Checking for missing or inactive reminder definition being passed to VA-REMINDER DEFINITION was added. Missing means that it is null or the specified reminder definition does not exist. If either of these is true it will cause a fatal evaluation error.

Routine: PXRMCDEF - IEEE defined Severity Level 2

28 Jul 2016 – PKR In PXRMOUTU checks are made for fatal errors and error text is produced for the Clinical Maintenance output. The checks for taxonomy expansion errors were removed. Display of text for errors associated with CF.VA-REMINDER definition was added.

Routine: FERROR^PXRMOUTU - IEEE defined Severity Level 2

01 Aug 2016 – PKR The recursion check in EVAL^PXRM was modified to set the error text that is displayed in the Clinical Maintenance Output. It has to be done there because if there is recursion no further evaluation can be done or it will generate stack errors.

Routine: EVAL^PXRM - IEEE defined Severity Level 2

01 Aug 2016 – PKR TERMCHK^PXRMRCUR was not checking for a non-existent definition before calling DEFCHK^PXRMRCUR. The check was added.

Routine: TERMCHK^PXRMRCUR - IEEE defined Severity Level 2

09 Aug 2016 – PKR In response to the ROF received from PII did the following:

File #802.2

The OIDVD index was corrupted with bad dates, it was rebuilt and this corrected the problem.

The input transform for the Code field in the Codes multiple was changed to have a minimum length of 1 instead of 3. This is because there are codes like F for female or M for male.

The algorithm for generating Short ID was failing for birth date and principal because the names are entirely lowercase. The algorithm was changed to first change names to title case which guarantees there will be at least on uppercase letter to use for the Short ID. The Short ID for these two entries was repaired by hand.

File #802.3

The field Version Number which stores the eMeasure Version Number is failing the input transform for many of the entries. The field is defined to be an integer between 1 and 9999 which matches this definition:

eMeasure Version Number: A positive integer value used to indicate the version of the eMeasure.

Found in the document GUIDE FOR READING ELIGIBLE PROFESSIONAL (EP) AND ELIGIBLE HOSPITAL (EH)

EMEASURES VERSION 5 (March 2014)

However in the SVS XML files many of the eMeasure Version Numbers are not integers but have a format like 6.2.000. It appears that this change was made starting with the May 01, 2015 release.

The Developer field was created with a maximum length of 128, two entries IEN=38 and 99 have lengths that exceed 128; 145 and 141 respectively. The maximum length was changed to 245 and that took care of the problem. - IEEE defined Severity Level 2

10 Aug 2016 – PKR Continue with the ROF fixes. Some of the Value Set Version Date in Value Sets multiple were -1700000, this was a problem we saw with the 3150501 release so those dates were set to 3150501.

See above for a description of the issue with Version, to solve this problem the Version field was changed from integer to free text. - IEEE defined Severity Level 2

11 Aug 2016 – PKR Continue with ROF fixes. Corrected misspelling” “changle” to “change”.

Routine: PXRMTAXL - IEEE defined Severity Level 3

**T4 – T5 Changes:** These are the changes made to the T4 version to create the T5 version.

19 Sep 2016 – PKR In the rare case when a definition was deleted an attempt was made to run the integrity check which caused an undefined error, for example:

S ZNODE=^PXD(811.9,IEN,100)

^

<UNDEFINED>DEF+7^PXRMICHK ^PXD(811.9,114,100)

This was found working with Teresa. It was corrected so that if a definition is deleted the integrity check is not run. - IEEE defined Severity Level 3

21 Sep 2016 – PKR Added the variable DIR to the newed list in GETLIST^PXRMLEXL.

Routine: PXRMLEXL - IEEE defined Severity Level 3

24 Oct 2016 – PKR Bob Ruff found that for CF.VA-REMINDER DEFINTION if the Computed Finding Parameter was not defined it was generating the error:

<UNDEFINED>DEFCHK+9^PXRMRCUR ^PXD(811.9,98,20,3,15)

The fix was simply putting $G around all the sets of CFPARAM.

Routine: PXRMRCUR - IEEE defined Severity Level 2

25 Oct 2016 – PKR Bob Ruff had an example where the step-by-step function finding evaluation did not agree with the regular FF evaluation. This was traced to the handling of the null character (ASCII 0). In the step-by-step display ASCII 0 was listed as NULL but this causing confusion with the actual character string “NULL”. The representation of ASCII 0 was changed to {NULL} and for each step in the logic calculation {NULL} is changed to ASCII 0. The documentation needs updated.

Routine: PXRMFF - IEEE defined Severity Level 2

25 Oct 2016 – PKR While testing the above we found several variables being left in the symbol table after reminder evaluation. These variables are: DUE, DUEDATE, FREQ, PCLOGIC, RESDATE, and RESLOGIC. The variables are all initialized in EVAL^PXRM, newing of the variables was added just before they are initialized.

Routine: PXRM - IEEE defined Severity Level 2

28 Oct 2016 – PKR Occasionally when trying to install a Reminder Exchange entry the following message appears: “Index missing, cannot continue!” This occurs when a corrupted component throws off the line count and the internal index for the Exchange entry is not at the correct line. It the past finding the corrupted component has been a matter of trial and error. To make it easier to find corrupted components a new check has been added that will attempt to locate and display the corrupted component. It will be run automatically when the internal index is not at the correct location. The documentation needs updated. Ticket #I11279169FY17.

Routines: PXRMEXCC, PXRMEXCO - IEEE defined Severity Level 3

04 Nov 2016 – PKR The Function Finding Value function could only handle CSUBs with three subscripts. This was causing a problem at sites needing to use CSUBs with more than three subscripts, CA ticket I11370104FY17. It has been generalized so it can now return values for CSUBs with any number of subscripts.

Routine: PXRMFF0 - IEEE defined Severity Level 2

**T5 – T6 Changes:** These are the changes made to the T5 version to create the T6 version.

09 Jan 2017 – PKR A CPRS31 test site reported the following error:

<UNDEFINED>FERROR+7^PXRMOUTU \*TEXT

Last Global Ref: ^TMP("PXRM49464266,23417",17143,494,"FERROR","ERROR TRAP")

. D ADDTXTA(2,PXRMRM,.NTXT,TEXT)

There is a typo, TEXT should have been passed by reference.

Routine: PXRMOUTU - IEEE defined Severity Level 3

13 Jan 2017 – PKR On 01/06/2017 the VSAC released updated electronic clinical quality measure value set for 2017 reporting. The Vista Value Set files were updated to this release. The number of entries before and after the update are listed in the following table:

|  |  |  |
| --- | --- | --- |
|  | Before | After |
| NLM VALUE SET CODING SYSTEMS | 17 | 17 |
| NLM VALUE SETS | 1006 | 1006 |
| NLM QUALITY MEASURE GROUPS | 260 | 260 |

- IEEE defined Severity Level 2

13 Jan 2017 – PKR A CPRSV31 test site reported the following error:

$ZE= <UNDEFINED>RDEF+17^PXRMCDEF \*PXRMPID

Last Global Ref: ^PXD(811.9,914,0)

. S ^TMP(PXRMPID,$J,PXRMITEM,"FERROR","CF.VA-REMINDER DEFINITION")="The reminder definition is inactive"

Analysis of the error determined the cause to be dialog branching logic using CF.VA-REMINDER definition through term evaluation and the reminder to be evaluated is inactive. Because it was inactive an attempt was made to record the error in ^TMP but the variable PXRMPID was not defined causing the hard error. PXRMPID is defined at the start of reminder evaluation but was not defined for term evaluation done outside of reminder evaluation. The solution is to modify the standalone term evaluator: IEVALTER^PXRMATERM, to make sure PXRMPID is defined:

I '$D(PXRMPID) D

. N PXRMITEM S PXRMITEM=TERMARR("IEN")

. S PXRMPID="PXRM"\_PXRMITEM\_$H

The routines that call IEVALTER^PXRMTERM were modified to included PXRMPID in the argument list of the call.

Routine: PXRMDLLB, PXRMDRUG, PXRMRUL1, PXRMTERM - IEEE defined Severity Level 1

24 Jan 2017 – PKR Anthony’s testing showed the above changes did not fix the problem. He gave me a good test case which I put in BLTEST^PXRMTEST and analysis using it lead to the conclusion that in dialogs TERM^PXRMDLLB is the top-level for term evaluation so it is the place where PXRMITEM and PXRMPID should be defined. That change was made and it eliminated the PXRMITEM undefined error. The question is should we back-out PXRMPID being passed as a parameter to IEVALTER^PXRMTERM; yes it was removed.

Routine: PXRMDLLB - IEEE defined Severity Level 1

24 Jan 2017 – AGP Reminder Dialogs and Reminder Order Checks will now display an error message to the end user when an error is found in the Reminder Evaluation. Also, a MailMan message will be sent to the Clinical Reminders mail group.

Routines: PXRMDLL, PXRMORCH - IEEE defined Severity Level 2

**T6 – T7 Changes:** These are the changes made to the T6 version to create the T7 version.

2 May 2017 - When SQA did review they noticed that XU\*8.0\*657 was still listed in the build description and taking it out requires a new build. Since there weren’t any functional changes we did not ask test sites to install it. We will have them install T7 for production testing. These are the host files:

CR\_ICD-10\_FOLLOWUP\_T6.KID;1

                       61853  25-JAN-2017 08:22:49.85

CR\_ICD-10\_FOLLOWUP\_T7.KID;1

                       61853  11-MAY-2017 08:23:39.09

**T7 – T8 Changes:** These are the changes made to the T6 version to create the T7 version.

The VPS and OR errors were due to improperly written code in those packages. The solution was a one line change in Clinical Reminders. Puget Sound has installed the change and verified that it eliminates the errors.

Template Revision History

| Date | Version | Description | Author |
| --- | --- | --- | --- |
| June 2015 | 1.6 | Migrated to latest Artifact Template, edited to conform with latest Section 508 guidelines, and remediated with Common Look Office tool | Process Management |
| May 2015 | 1.5 | Reviewed and modified during the PMAS Process Improvement Lockdown | Process Management |
| October 2014 | 1.4 | Edited to conform with current Section 508 guidelines and remediated with Common Look Office tool | Process Management |
| June 2014 | 1.3 | Removed signature requirements for ESE Representative | Process Management |
| March 2013 | 1.2 | Formatted to current ProPath documentation standards and edited to conform with latest Alternative Text (Section 508) guidelines | Process Management |
| March 2013 | 1.1 | Updates from ETS | ETS |
| January 2013 | 1.0 | Initial Version | PMAS Business Office |