PCE STANDARDIZATION 1.0 T3 ANNOUNCEMENT

To take full advantage of the PCE standardization work, changes to VistA applications that use PCE data are required. These applications include Clinical Reminders, Health Summary, and Problem List. To make it easier for sites, the builds for PCE (PX\*1.0\*211), Clinical Reminders (PXRM\*2.0\*42), Health Summary (GMTS\*2.7\*122), and Problem List (GMPL\*2.0\*53) are being distributed in a multi-package build named PCE STANDARDIZATION 1.0.

The third test version of the multi-package build is available from the Salt Lake City sftp server in either of the following directories:

VA5$:[CPRS.V32\_TEST\_SITES]

VA5$:[BETA.REMINDERS]

The name of the host file is PCE\_STANDARDIZATION\_1\_0\_T3.KID. If you do not know how to access these directories, let us know and we will send you instructions.

**PCE Changes (PX\*1.0\*211)**

DATA2PCE

DATA2PCE was ignoring the user passed as the parameter PXAUSER and just storing the currently defined DUZ in the Created by User field, piece 23 of the 0 node. This was corrected.

OSEHRA testing found several issues:

There was a typo in the routine EN^PXXDPT, the line S FDAIEN(1)=DFN,FDAIEN(2)=PXXLOC should be S FDAIEN(1)=DA,FDAIEN(2)=PXXLOC. It was corrected.

The variable PXAERR(9) was not getting set in several of the sections of PXAICPTV, it was added.

In DATA2PCE, the default for the Visit file Type field, which is a set of codes, is to set it to DUZ(“AG”). DUZ(“AG”) is set when the user logs into VistA and the possible values are a set of codes in the Kernel System Parameters file. The issue is the two sets of codes don’t completely match.

The possible values for TYPE are:

9000010,.03 TYPE 0;3 SET (Required)

'I' FOR IHS;

'C' FOR CONTRACT;

'T' FOR TRIBAL;

'O' FOR OTHER;

'6' FOR 638 PROGRAM;

'V' FOR VA;

And DUZ(“AG”) is set from the Kernel System Parameters file

8989.3,9 AGENCY CODE 0;8 SET

'V' FOR VA;

'AF' FOR AIR FORCE;

'I' FOR IHS;

'ARMY' FOR ARMY;

'N' FOR NAVY;

'O' FOR OTHER;

'E' FOR EHR;

'USCG' FOR COAST GUARD;

If the user has their Agency Code set to a value that is not defined in the Type field, it will cause an error.

The solution was to add the missing Agency Codes to the Type field. The codes AF, ARMY, N, E, USCG were added.

EN^PXXDPT adds a patient to the PATIENT/IHS file. A check to determine if the patient already exists was added.

The following error was reported:

SETPROB+3^PXAIERR, Null subscripts not allowed in local variables,150375938,-%GTM-E-LVNULLSUBS

This was because the variable PXAERR(9) was not being defined for V POV entries. This was corrected.

The error message:

"The Provider (DFN="\_DFN\_") does not have an active person class."

had a typo, DFN was changed to DUZ.

An undefined error at PRIM+10^PXAIPOVV was reported.

. S DIAG=@PXADATA@("DX/PL",IND,"DIAGNOSIS")

The cause turned out to be that in the call to DATA2PCE, the diagnosis was being passed as NULL. The code was changed to handle this case.

Testing by other VA developers found some issues:

In the V POV input validation routine, two of the error messages had typos, “diagnoses” was corrected to “diagnosis”.

One of their test cases was returning two warnings, one for no primary diagnosis and one for trying to edit the Visit file Package entry. Even though these are warnings, DATA2PCE returned -1 instead of -5 (-1 signifies an error, -5 signifies a warning). This was corrected and DATA2PCE now returns -5.

To make it clear the warning is associated with the Visit file and not one of the V-files, the warning text: “PACKAGE cannot be edited” was changed to “Visit file PACKAGE entry cannot be edited”.

In V POV, Provider Narrative is a required field so, if it is not passed, there is code in PXAIPOV to create one from the code description. PXAIPOV calls DXNARR^PXUTL1 which is calling ICDDATA^ICDXCODE and ICDD^ICDXCODE. ICDXCODE has been deprecated and should be replaced by ICDEX. Because VAL^PXAIPOVV already makes a call to ICDDATA^ICDEX and has the information, it is more efficient to include generation of the Provider Narrative in VAL^PXAIPOVV.

PCE Reports

A “-“ was added between “ICD” and the 9 or 10 in the output of the most frequent diagnosis report. This makes it easier to read. An example of the report follows.

PCE Diagnosis Ranked by Frequency

Criteria for Frequency of Diagnoses Report

Encounter diagnoses: All Diagnoses (Primary and Secondary)

Encounter date range: Jan 01, 2000 through May 17, 2018

Selected encounters: ALL

Maximum number of diagnoses to be displayed: 20

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Facility: CHEYENNE VAMC 442

Total number of Encounters meeting the selection criteria: 1573951

Total number of Diagnoses for these Encounters: 6

Diagnoses/Encounter ratio: 0.00

20 Most Frequent ICD-10 Diagnoses:

Code Description Freq.

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Z13.0 Encntr screen for dis of the bld/bld-form org/immun mechnsm 1

S04.51XD Injury of facial nerve, right side, subsequent encounter 1

I11.9 Hypertensive heart disease without heart failure 1

E10.29 Type 1 diabetes mellitus w oth diabetic kidney complication 1

E08.00 Diab d/t undrl cond w hyprosm w/o nonket hyprgly-hypros coma 1

A52.17 General paresis 1

20 Most Frequent ICD-10 Diagnostic Categories:

Diagnostic Category Frequency

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1. HEALTH STATUS FACTORS 2

2. KIDNEY & URINARY TRACT 1

3. ENDOCRINE,NUTRIT,METABOLIC 1

4. CIRCULATORY SYSTEM 1

5. NERVOUS SYSTEM 1

PCE Table Maintenance

In the previous build, the options PXTT EDIT IMMUNIZATION LOT and PXV EDIT DEFAULT RESPONSES were left off the trimmed down PXTT TABLE MAINTENANCE menu. The menu was restructured as shown below. The option PX DELETE ENCOUNTERS W/O VISIT was originally on PXTT TABLE MAINTENANCE MENU, but that seemed out of place so it was moved to PX IRM MAIN MENU. Several of the options that were on the original PXTT TABLE MAINTENANCE MENU are obsolete so they can be deleted. This includes: PXTT ACTIVATE/INACTIVATE MENU, PXTT EDIT IMMUNIZATIONS, PXTT EDIT SKIN TESTS.

Select OPTION NAME: PXTT TABLE MAINTENANCE PCE Table Maintenance menu

ED Education Topic Management

EX Exam Management

HF Health Factor Management

TS Text/Keyword Search

IMC Inactive Mapped Codes Report

LOT Immunization Lot Add/Edit/Display

DEF Immunization Default Responses Enter/Edit

INFO PCE Information Only ...

Education Topic, Exam, and Health Factor Management

The help for health factor management incorrectly referred to exams instead of health factors, so it was corrected.

When using the Copy action on the HF management screen, the following error occurred:

The original health factors 1:1 COUNSELING has been copied into TEST COPY.

Do you want to edit it now? y YES

SMANEDIT(IEN,NEW) ;ScreenMan edit for entry IEN.

^

<PARAMETER>SMANEDIT^PXHFSM

This was because in COPY^PXCOPY, the call to the SMANEDIT was passing an extra parameter. The parameter was removed.

The Change Log action was still being referred to as EH in the Help. The Help was corrected to CL.

If an Education Topic, Exam, or Health Factor is mapped to a standard code and there is associated patient data, when exiting the management screen, the user is asked if they want to link the newly mapped codes. The default for the prompt:

Do you want to link them?

was changed from YES to NO.

Fresno reported the following error:

Enter a new Health Factor Name: TEST CATEGORY 11 [C]  
Enter the Entry Type: CATEGORY  
Enter the Class: LOCAL  
Enter Display on Health Summary: YES  
FileMan could not create the new entry, the FileMan error message is:  
MSG("DIERR")=1^1  
MSG("DIERR",1)=701  
MSG("DIERR",1,"PARAM",0)=3  
MSG("DIERR",1,"PARAM",3)=1  
MSG("DIERR",1,"PARAM","FIELD")=.01  
MSG("DIERR",1,"PARAM","FILE")=9999999.64  
MSG("DIERR",1,"TEXT",1)=The value '1' for field FACTOR in file HEALTH FACTORS is  
 not valid.  
MSG("DIERR","E",701,1)=

This was because the category name check was returning 1 to say the name is valid instead of returning the name. This was corrected.

Fresno pointed this out: “If you go to edit an existing HF and give it a name with [C] at the end of the name, it **will accept** it even if it is a **Factor**, not a category.  Creating a new one worked fine. When adding a new Factor, it will not allow the ‘[C]’, this is what it does:

Enter a new Health Factor Name: TEST CATEGORY 11 [C]

Enter the Entry Type: f FACTOR

Factor names cannot end with '[C]', try again.

But for an existing factor, it will let you append the ‘[C]’. Data validation was added to the health factor ScreenMan form so it will not allow factor names to have the appended ‘[C]’.

Internal testing reported that when adding a new entry, if the name already exists, the message for the different data types was not consistent:

Education Topics - That entry already exists, use EDIT instead.

Exams - That entry already exists, use EDIT instead.

Health Factors - TEST HF already exists, choose a different name.

The message was made consistent, it now has the format: XXXX already exists, choose a different name or use the EDIT action to edit that entry.

Provider Narrative

When the Provider Narrative file was originally created, the maximum length for the “B” index of the .01 field was 30 characters. The length of the field is 245 characters; therefore, a complex lookup was required: all entries that matched up to 30 characters then had to be sorted through to find the actual match. To make the lookup more efficient and accurate, the 30-character index was replaced with a full-length index allowing a much faster direct lookup. The PCE Provider Narrative lookup was rewritten to work with the full-length index. Problem List’s Provider Narrative lookup was also written for the 30-character index, and consequently it quit working when the full-length index was put in place. The solution was to replace it with the new PCE API for Provider Narrative lookup. An ICR was put in place to allow this. That is the reason that GMPL\*2.0\*53 has been added to the multi-package build.

If the user does not enter a Provider Narrative, then one will be automatically created from the long description for the ICD diagnosis code. The routine that does this was using the Lexicon API routine ICDXCODE which has been deprecated. It was replaced with the supported routine ICDEX.

V Standard Codes

When Fresno installed the T2 build it, seemed to hang with the message: 10P is not a valid coding system for use with PCE. This was because previously mapping to ICD procedures was allowed and five health factors had been mapped to ICD-10 procedures at Fresno. That created 15,069 V Standard Codes entries with 10P codes. In the post-init for T2, the Clinical Reminders Index for V Standard Codes is rebuilt for test site’s test accounts. Each entry is checked to make sure that it has a valid coding system; the same routine is used in the input transform of the Coding System field of V Standard Codes, so if a problem is found, a message is displayed with a 3 second delay so that the user has time to read it. This is a problem for the Index rebuild because the 3 second delay for 15,069 entries amounts to 12.56 hours. The routine was modified so that for Index rebuilding, it does not display the message or delay for 3 seconds.

For test accounts that are running on the old VMS servers, the Index rebuild can take a while because these are relatively slow computers. Because it can take a long time, the Index rebuild was moved to a TaskMan job.

Miscellaneous

During development testing it was found that ICDDX^ICDEX and STATCHK^ICDEX will return the status of an ICD-10 code as active for any date prior to 10/01/2015. This issue has been reported to the Lexicon team. In the meantime, a workaround that correctly returns the status of both ICD and CPT codes was developed and has been put in place.

Event Date and Time, Encounter Provider, Ordering Provider, Package, and Data Source were added to the data that is returned by the V-File data APIs. In addition, the API for V CPT was updated to return Diagnosis 2 through Diagnosis 8 that were added during the ICD-10 project, but the API was never changed to include them.

The SQA check of the build found the following typos and grammar errors and they have been corrected.

"IX",9000010.18,9000010.18,"ACR",.1,15,0)  
 DATE is EVENT DATE AND TIME,if it exists. If it does not, then it is  
TIME,if  
DD: V CPT

"KRN",19,5296,1,3,0)  
topics that are distributed with the PCE package cn be inactivated using  
cn  
  
"KRN",19,5296,1,10,0)  
field to make an eduction topic "INACTIVE" for selection in the encounter  
eduction  
Option: PXTT EDIT EDUCATION TOPICS

"RTN","PXAIIMMV",103,0)  
 . S PXAERR(12)=PXAA("ADMIN ROUTE")\_" is not a valid pointer to the Imm Adminstration Route file #920.2."  
 Adminstration  
   
 "RTN","PXAIIMMV",110,0)  
 . S PXAERR(12)=PXAA("ANATOMIC LOC")\_" is not a valid pointer to the Imm Adminstration Site file #920.3."

Routine: PXAIIMMV

"RTN","PXAIPOVV",117,0)

. S PXAERR(12)=PXAA("LEXICON TERM")\_" is not a valid point to the Clincial Expression file #757.01."  
Clincial

Routine: PXAIPOVV  
  
"RTN","PXAIPRVV",51,0)  
 . S PXAERR(12)="Attemping to edit primary provider and PPEDIT is not 1."  
Attemping

Routine: PXAIPRVV

"RTN","PXAISKV",78,0)  
 . S PXAERR(12)=PXAA("ANATOMIC LOC")\_" is a not a valid pointer to the Imm Adminstration Site file."  
Adminstration

Routine: PXAISKV

"RTN","PXEDUMGR",135,0)  
 S VALMHDR(1)="Eduction Topic File Entries."  
Eduction

Routine: PXEDUMGR

"^DD",815,815,.01,21,1,0)  
There is only "1" parameter similiar to MAS Parameters File.  
similiar  
  
"^DD",815,815,.03,21,2,0)  
Health Summar components: PCE Immunization, PCE Skin Test, PCE Outpatient  
Summar  
  
"^DD",815,815,.03,21,3,0)  
Diagnosis, and PCOutpatient Encounter.  
PCOutpatient--is this supposed to be PCE Outpatient Encounter?  
  
"^DD",815,815,202,21,2,0)  
Encounter Data Entry starts up in. If it is "V" the the list is by  
the the  
  
"^DD",815,815,203,21,4,0)  
or 30 days before today. If the valuse is 5 then the starting day is T+5,  
valuse  
  
"^DD",815,815,204,21,4,0)  
30 days before today. If the valuse is 5 then the ending day is T+5,or 5  
valuse  
  
"^DD",815,815,205,21,4,0)  
T-30,or 30 days before today. If the valuse is 5 then the starting day is  
valuse  
  
"^DD",815,815,206,21,4,0)  
T-30,or 30 days before today. If the valuse is 5 then the ending day is  
valuse  
  
"^DD",815,815.0805,.01,3)  
Enter the name(s) of the Glycosolated Hemoglobin assays as they appear in the Laboratory Test (60) file.  
Glycosolated

DD: 815

"^DD",9000010.07,9000010.07,.04,21,3,0)  
specifically to the patient at the time of the visit (e.g, Hypertension,  
e.g-->e.g.  
  
"^DD",9000010.07,9000010.07,.13,21,1,0)  
This is the date the injury occurred for the problem being treated,it

DD: 9000010.07

"^DD",9000010.11,9000010.11,1312.5,21,2,0)  
fields. The resulting output will look something likes this: ".5 mL".  
likes

DD: 9000010.11

"^DD",9000010.18,9000010.18,.03,1,2,"%D",1,0)  
This cross reference is used for searches in sequence by paitent, CPT  
paitent  
  
"^DD",9000010.18,9000010.18,.07,21,1,0)  
This field identifies this procedure as the prinicipal procedure done to  
prinicipal  
  
"^DD",9000010.18,9000010.18,.09,12)  
Dx cannot be an inactive code, and it must be appropriat  
appropriat  
  
"^DD",9000010.18,9000010.18,.1,12)  
Dx cannot be an inactive code, and it must be appropria  
appropria  
  
"^DD",9000010.18,9000010.18,.11,12)  
Dx cannot be an inactive code, and it must be appropriat  
appropriate

DD: 9000010.18

"^DD",9999999.09,9999999.09,.01,1,3,"%D",1,0)  
Kwick crossreference on all of the words in this file  
Kwick   
cross-reference

DD: 9999999.09

"^DD",9999999.64,9999999.641101,.01,21,3,0)  
Enter the name of a health factor that is laready in this file.  
laready

DD: 9999999.64

"^DIC",815,815,"%D",2,0)  
Encounter (PCE). The "LM" node is used by the User Inteface (PXCE).  
Inteface

DD: 815

"^DIC",9000010.18,9000010.18,"%D",7,0)  
patient at an encounter or occassion of service. The procedures may  
occasion

DD: 9000010.18  
  
"RTN","PXRMXD",32,0)  
 S ^XTMP(PXRMXCCS,0)=$$FMADD^XLFDT(DT,7)\_U\_DT\_U\_"PXRM Reminder Due Report Seperate Clinic Stop"  
Seperate

Routine: PXRMXD

The contents of the build host file were checked for spelling and grammatical errors. Numerous corrections were made in areas such as data dictionary descriptions, help text, comment lines in routines, etc.

**Clinical Reminders Changes (PXRM\*2.0\*42)**

At some of the Linux sites, the Reminder Exchange action Load Web Host File fails sometimes because there is a bug in the Kernel API $$GETURL^XTHC10. A fix was developed by OSEHRA and it was given to the Kernel Team. However, getting Kernel patches released has proved to be extremely difficult because test sites cannot be obtained. Therefore, a workaround was developed and added to the Clinical Reminders Exchange routine used for the Load Web Host File functionality.

Fresno reported the following error when evaluating a reminder with an Exam finding.

Enter date for reminder evaluation: Jul 30, 2018//   (JUL 30, 2018)

<UNDEFINED>COPYTXT+2^PXRMOUTU \*TEXT(2)

^TMP(NODE,$J,1,0)=The following error occurred:

^TMP(NODE,$J,2,0)=<UNDEFINED>COPYTXT+2^PXRMOUTU \*TEXT(2)

^TMP(NODE,$J,3,0)=While evaluating reminder TEST5

^TMP(NODE,$J,4,0)=For patient DFN=7173415

^TMP(NODE,$J,5,0)=The time of the error was 07/30/2018@11:04:02

^TMP(NODE,$J,6,0)=See the error trap for complete details.

This was because there was an extra increment of the Clinical Maintenance output line counter. it was removed.

Puget Sound reported the error:

<FRAMESTACK>CHECKLEN+20^PXRMTEXT.

when trying to display a Reminder Dialog in List Manager. When setting up the display, there is a calculation of the last column width that depends on how deeply the dialog is nested. In this case, there was a large dialog with a lot of nested dialog definitions and the calculated width of the column was less than 1. To address this issue, the code was changed so the width of the last column can never be less than 10.

**Health Summary Changes (GMTS\*2.7\*122)**

The PCE Health Summary extract routines had code for displaying DATA SOURCE, but it did not work and was corrected in the T2 build. However, there was an unanticipated side effect that was pointed out by Sean McFarland; DATA SOURCE was now being displayed in TIU Health Summary Objects. Sean felt that displaying DATA SOURCE in a note was not appropriate and other testers agreed. Consequently, changes were made so that DATA SOURCE will not be displayed in TIU Health Summary Objects but will still be displayed in regular Health Summary output.

**Problem List Changes (GMPL\*2.0\*53)**

See the Provider Narrative discussion above.

While making the Provider Narrative change to the GMPLX routine, we noticed that four other entry points were using the ICDXCODE routine which has been deprecated. Calls to it were replaced with the equivalent calls to ICDEX, which is supported. This had the beneficial effect of improving the performance of these entry points. The results are summarized in the following table.

|  |  |
| --- | --- |
| Entry Point | Percent of Previous Time |
| CODESTS | 2.71% |
| DUPL | 63.6% |
| NOS | 8.59% |
| PROBTEXT | 15.2% |