IMMUNIZATIONS DOCUMENTATION BY BAR CODE MEDICATION ADMINISTRATION (BCMA)

INSTALLATION GUIDE

PSB*3*47 and PSS*1*141

October 2009

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Introduction

This installation guide will describe the setup steps necessary to begin use of the Immunizations Documentation by Bar Code Medication Administration (BCMA) application introduced with patches PSB*3*47 and PSS*1*141. Patch PSB*3*47 adds *Immunizations Documentation by BCMA Nightly Task* [PSB PX BCMA2PCE TASK] option to the *Bar Code Medication Administration Manager* [PSB MGR] menu. You can use this option to run a task which will create a record within Patient Care Encounter (PCE) for medications marked as given in BCMA that have been identified as immunizations. The primary intended use of this option is to queue it as a nightly background task, which will process the previous day's BCMA administrations of immunizations. Patch PSS*1*141 adds the ASSOCIATED IMMUNIZATION field (#9) to the PHARMACY ORDERABLE ITEM file (#50.7). A mapping relationship is created between the PHARMACY ORDERABLE ITEM file (#50.7) and the pointed-to immunization so that a record can be created in the V IMMUNIZATION file (#9000010.11) corresponding to the BCMA administration of an immunization.

For sites running the BCMA2PCE Class III application, please see the Pre-Installation Considerations section for important steps that need to be completed prior to installing the Immunizations Documentation by BCMA Class I application.

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Pre-Installation Considerations

The purpose of this section is to provide considerations prior to installing the Immunizations Documentation by BCMA Class I application.

- All sites should install these patches, even if they are currently using the BCMA2PCE Class III application.
- It is recommended that sites install the software in test accounts prior to installing the application in a production account, but all sites are expected to install the patches to their production VistA system.
- Implementation of the new features, which includes mapping relationships between the PHARMACY ORDERABLE ITEM file (#50.7) and IMMUNIZATION file (#9999999.14) may be performed at the discretion of the local facility.
- For sites running the BCMA2PCE Class III application, you will need to identify existing mapped relationships prior to installing the Immunizations Documentation by BCMA Class I application. For sites not running the BCMA2PCE Class III application, it is not necessary to produce any reports from the system prior to installing the Immunizations Documentation by BCMA Class I application.
- Patch PSS*1*141 should be installed first, as it is required by patch PSB*3*47.
- Both patches can be installed with users on the system.
- Each patch takes less than one minute to install.
- In order to manually validate the *Immunizations Documentation by BCMA Nightly Task* [PSB PX BCMA2PCE TASK] option after installation, the user will need access to the PSB MANAGER security key.

External Relationships

BCMA V. 3.0 can only be run in an environment that already has several existing features, such as a standard MUMPS operating system. It also requires the following Department of Veterans Affairs (VA) software packages (versions listed or higher) — and all current patches. Otherwise, BCMA V. 3.0 will *not* be fully functional for your users.

- Inpatient Medications   5.0
- Kernel   8.0
- MailMan   8.0
- Nursing   4.0
- Order Entry/Results   3.0
  Reporting
- Patient Care Encounter   1.0
- Pharmacy Data   1.0
  Management
- RPC Broker (32-bit)   1.1
- Toolkit   7.3
- VA FileMan   22.0
- Vitals/Measurements   5.0

Pharmacy Data Management V.1.0 can only be run in an environment that already has several existing features. It also requires the following Department of Veterans Affairs (VA) software packages (versions listed or higher) — and all current patches. Otherwise, Pharmacy Data Management V. 1.0 will *not* be fully functional for your users.

- National Drug File   4.0
- Outpatient Pharmacy   7.0
- Inpatient Medications   5.0
- Kernel   8.0
- VA FileMan   22.0

BCMA2PCE Pre-Installation Considerations

The following information is presented as pre-installation considerations for sites currently running the BCMA2PCE Class III application.

Unschedule AJEY PSB PX BCMA2PCE TASK

For sites running the BCMA2PCE Class III application, your system will need the *BCMA Immunizations to PCE Nightly Task* [AJEY PSB PX BCMA2PCE TASK] option unscheduled before installing the Class I application Immunizations Documentation by BCMA. Below is the process for a programmer to unschedule that task.

```
Select Taskman Management Options: SCHedule/Unschedule Options

Select OPTION to schedule or reschedule: AJEY PSB PX BCMA2PCE TASK
BCMA Immunizations to PCE Nightly Task
        ...OK? Yes// <Enter>  (Yes)
                                                    ┌─────────────────────────┐
                        Edit Option Schedule        │ At this prompt, enter the '@' │
   Option Name: AJEY PSB PX BCMA2PCE TASK ──────────│ sign to delete the task. │
                                                    └─────────────────────────┘
   Menu Text: BCMA Immunizations to PCE Nightl        TASK ID: 1730560
_____

  QUEUED TO RUN AT WHAT TIME: NOV 29,2008@01:00

DEVICE FOR QUEUED JOB OUTPUT:

 QUEUED TO RUN ON VOLUME SET:

     RESCHEDULING FREQUENCY: 1D

             TASK PARAMETERS:

             SPECIAL QUEUEING:

_____


  WARNING: DELETIONS ARE DONE IMMEDIATELY!
          (EXITING WITHOUT SAVING WILL NOT RESTORE DELETED RECORDS.)
Are you sure you want to delete this entire record (Y/N)?    Y




Select OPTION to schedule or reschedule: <Enter>
```

Identify Existing Relationships in BCMA2PCE Application

For sites running the BCMA2PCE Class III application, it is strongly recommended that you identify existing relationships between the PHARMACY ORDERABLE ITEM file (#50.7) and the IMMUNIZATION file (#9999999.14). The purpose of identifying existing relationships is so you can recreate those same relationships after you install the Class I application Immunizations Documentation by BCMA.

Below is a sample VA FileMan print report that shows one method to identify existing mapped relationships. In the BCMA2PCE Class III application, mapped relationships were stored in the IMMUNIZATION file (#9999999.14). In the Immunizations Documentation by BCMA Class I application, mapped relationships are stored in the PHARMACY ORDERABLE ITEM file (#50.7). You may find that you will map the same immunization to several pharmacy orderable items.

```
Select OPTION: PRINT FILE ENTRIES

OUTPUT FROM WHAT FILE: IMMUNIZATION// <Enter>
SORT BY: NAME// RELATED RX ORDERABLE ITEM
RELATED RX ORDERABLE ITEM SUB-FIELD: .01  RELATED RX ORDERABLE ITEM
START WITH RELATED RX ORDERABLE ITEM: FIRST// <Enter>
  WITHIN RELATED RX ORDERABLE ITEM, SORT BY: <Enter>
FIRST PRINT FIELD: .01  NAME
THEN PRINT FIELD: RELATED RX ORDERABLE ITEM    (multiple)
  THEN PRINT RELATED RX ORDERABLE ITEM SUB-FIELD: .01  RELATED RX ORDERABLE ITEM
  THEN PRINT RELATED RX ORDERABLE ITEM SUB-FIELD: <Enter>
THEN PRINT FIELD: <Enter>
Heading (S/C): IMMUNIZATION LIST// <Enter>
STORE PRINT LOGIC IN TEMPLATE: <Enter>
DEVICE: ;;999  VIRTUAL TERMINAL FOR TELNET


...SORRY, LET ME THINK ABOUT THAT A MOMENT...


IMMUNIZATION LIST                          DEC 15,2008  16:26    PAGE 1
NAME
    RELATED RX ORDERABLE ITEM
--------------------------------------------------------------------------------


TETANUS DIPTHERIA (TD-ADULT)
    DIPHTHERIA TOXOID/TETANUS TOXOID
    TETANUS TOXOID
    TETANUS TOXOID ABSORBED
HEPATITIS B
    HEPATITIS B
    HEPATITIS B
INFLUENZA
    INFLUENZA
    INFLUENZA
PNEUMOCOCCAL
    PNEUMOCOCCAL VACCINE
HEPATITIS A
    HEPATITIS A
HEPA/HEPB ADULT
    HEPATITIS A/HEPATITIS B
ZOSTER
    ZOSTER VACCINE LIVE (OKA/MERCK)
HUMAN PAPILLOMAVIRUS (HPV)
    PAPILLOMAVIRUS HUMAN
TETANUS DIPHTHERIA PERTUSSIS (Tdap)
    DIPHTH,PERTUSS(ACELL),TET
```

Installation Procedure

Below is the step-by-step procedure for installing patches PSS*1*141 and PSB*3*47. Patch PSS*1*141 should be installed first, as it is required by patch PSB*3*47.

Install Patch PSS*1*141

This patch can be installed with users on the system. Installation will take less than 1 minute.

Suggested time to install: non-peak requirement hours.

1. Use the INSTALL/CHECK MESSAGE option on the PackMan menu.

2. From the Kernel Installation & Distribution System menu, select the Installation menu.

3. From this menu, you may select to use the following options (when prompted for INSTALL NAME, enter PSS*1.0*141):

- Backup a Transport Global - this option will create a backup message of any routines exported with the patch. It will NOT backup any other changes such as DDs or templates.
- Compare Transport Global to Current System - this option will allow you to view all changes that will be made when the patch is installed. It compares all components of the patch (routines, DDs, templates, etc.).
- Verify Checksums in Transport Global - this option will ensure the integrity of the routines that are in the transport global.

4. Use the Install Package(s) option and select the package PSS*1.0*141.

5. When prompted "Want KIDS to Rebuild Menu Trees Upon Completion of Install? NO//", respond NO.

6. When prompted "Want KIDS to INHIBIT LOGONs during the install? NO//", respond NO.

7. When prompted "Want to DISABLE Scheduled Options, Menu Options, and Protocols? NO//", respond NO.

Install Patch PSB*3*47

This patch can be loaded with users on the system. Installation will take less than 1 minute.

Suggested time to install: non-peak requirement hours.

1. Use the INSTALL/CHECK MESSAGE option on the PackMan menu.

2. From the Kernel Installation & Distribution System menu, select the Installation menu option.

3. From this menu, you may select to use the following options (when prompted for INSTALL NAME, enter PSB*3.0*47)
   - Backup a Transport Global - this option will create a backup message of any routines exported with the patch. It will NOT backup any other changes such as DDs or templates.
   - Compare Transport Global to Current System - this option will allow you to view all changes that will be made when the patch is installed. It compares all components of the patch (routines, DDs, templates, etc.).
   - Verify Checksums in Transport Global - this option will allow you to ensure the integrity of the routines that are in the transport global.
   - Print Transport Global - this option will allow you to view the components of the KIDS build.

4. Use the Install Package(s) option and select PSB*3.0*47.

5. When prompted "Want KIDS to Rebuild Menu Trees Upon Completion of Install? NO//", respond NO.

6. When prompted "Want KIDS to INHIBIT LOGONs during the install? NO//", respond NO.

7. When prompted "Want to DISABLE Scheduled Options, Menu Options, and Protocols? NO//", respond NO.

Mapping Relationships Between the PHARMACY ORDERABLE ITEMS File (#50.7) and the IMMUNIZATION File (#9999999.14)

Using the modified *Edit Orderable Items* [PSS EDIT ORDERABLE ITEMS] option that is installed with patch PSS*1*141, you can create relationships between a given orderable item (e.g., INFLUENZA INJ) and an immunization (e.g., INFLUENZA). These relationships will also be seen in the *Dispense Drug/Orderable Item Maintenance* [PSS MAINTAIN ORDERABLE ITEMS] option. Both options appear on the *Orderable Item Management* [PSS ORDERABLE ITEM MANAGEMENT] menu.

```
Select Orderable Item Management Option: EDIT Orderable Items

This option enables you to edit Orderable Item names, Formulary status,
drug text, Inactive Dates, and Synonyms.


Select PHARMACY ORDERABLE ITEM NAME: INFLUENZA   INFLUENZA   INJ

     Orderable Item -> INFLUENZA
     Dosage Form    -> INJ

List all Drugs/Additives/Solutions tied to this Orderable Item? YES// <Enter>


      Orderable Item ->  INFLUENZA
      Dosage Form    ->  INJ

Dispense Drugs:
---------------
INFLUENZA VACCINE

Are you sure you want to edit this Orderable Item? NO// YES


   Now editing Orderable Item:
   INFLUENZA    INJ
Orderable Item Name: INFLUENZA//<Enter>

This Orderable Item is Formulary.

This Orderable Item is marked as a Non-VA Med.

Select OI-DRUG TEXT ENTRY: <Enter>
INACTIVE DATE: <Enter>
DAY (nD) or DOSE (nL) LIMIT: <Enter>
MED ROUTE: <Enter>
SCHEDULE TYPE: <Enter>
SCHEDULE: <Enter>
PATIENT INSTRUCTIONS: <Enter>

ASSOCIATED IMMUNIZATION: INFLUENZA  FLU,3 YRS     INFLUENZA

Select SYNONYM: <Enter>
```

> Note: The ASSOCIATED IMMUNIZATION field (#9) is **only** presented when at least one of the dispense drugs tied to the selected orderable item is in a VA Drug Class in the IM100 to IM900 range.
>
> Immunizations are typically found in VA Drug Classes IM100, IM105, IM109, IM700 or IM900.

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Post Installation Considerations

The purpose of this section is to provide information for consideration after patches PSS*1*141 and PSB*3*47 have been installed.

Validate the Immunizations Documentation by BCMA Nightly Task [PSB PX BCMA2PCE TASK] Option

After the patch is installed and the mapped relationships between pharmacy orderable items and immunizations are established, run the *Immunizations Documentation by BCMA Nightly Task* [PSB PX BCMA2PCE TASK] option, once interactively. This may be done by selecting the option from the *Bar Code Medication Administration Manager* [PSB MGR] menu. Access to this menu requires that the user be a holder of the PSB MANAGER security key.

Validation

"Select START DATE" is the only prompt presented to the user and represents when the application will begin evaluating recorded medication administrations. Valid responses for the Start Date field will be any past date, up to and including yesterday. The option will default to yesterday's date (T-1). For the purposes of validating the Class I option, this default is acceptable, as long as at least one immunization was recorded via BCMA on the day prior to running the option. If there are no immunizations found by the report for that particular date, nothing will display, and selection of a previous start date (e.g., T-2 or T-3) is appropriate. The option can also be used to backlog entries in the V IMMUNIZATION file (#9000010.11). Sites that have an existing manual process using Clinical Reminder Dialogs or the Computerized Patient Record System (CPRS) Encounter button to record this data may find duplicative data filed by this application, as a new record will be created any time there is a unique combination of patient name, entry date, and immunization name. The potential for unintended duplicates can be reduced by appropriate selection of IMMUNIZATION file (#9999999.14) entries during mapping, especially when there are multiple choices for a given vaccine (e.g., Pneumococcal vs. Pneumo-Vax) and selecting the same immunization entry that is used by local Clinical Reminder dialogs. As shown in the screen capture below, each immunization found will display two lines of data to the screen.

Example: Data Displayed to Screen

```
Select OPTION NAME: PSB PX BCMA2PCE TASK
Immunizations Documentation by BCMA Nightly Task
Immunizations Documentation by BCMA

Select START DATE: Dec 18, 2008//12-1  (DEC 01, 2008)
BCMAPATIENT, ONE             FLU,3 YRS (12/1/08)  BCMANURSE, ONE
Result code: 1
BCMAPATIENT, ONE             PNEUMOVAX (12/1/08)  BCMANURSE, ONE
Result: Immunization already on file.
```

For each orderable item that is found in which there is an associated immunization, the application will display the patient name, entry date, immunization name, and the person who recorded the BCMA administration. Nothing will display on the screen when there are no BCMA immunizations found for a particular date.

Results

Once an immunization is found, the next line will display a result code.

- Result code 1 indicates a successful transmission of data to PCE.
- Result codes -1, -2 and -3 indicate a problem filing the data to PCE.
  - -1 is returned if there were errors in PCE but the data was filed as completely as possible. For example, error code -1 can occur if the nurse who recorded the administration in BCMA does not have a valid and current entry in the PERSON CLASS field (#8932.1).
  - -2 is returned if PCE could not find or create an entry in the VISIT file (#9000010).
  - -3 is returned if PCE was called incorrectly, which is indicative of a problem with this BCMA application.

If the task generates an error code, file a Remedy ticket. If you don't have access to Remedy please call the VA Service Desk at 1-888-596-4357 and they will file a ticket on your behalf.

A message will be displayed if there is already a record on file for the combination of patient name, entry date, and immunization name. Duplicate data will not be filed.

Example: Result Codes and Existing Records
```
Select OPTION NAME: PSB PX BCMA2PCE TASK
Immunizations Documentation by BCMA Nightly Task
Immunizations Documentation by BCMA

Select START DATE: Dec 18, 2008//12-1  (DEC 01, 2008)
BCMAPATIENT, ONE              FLU,3 YRS (12/1/08)  BCMANURSE, ONE
Result code: 1
BCMAPATIENT, ONE              PNEUMOVAX (12/1/08)  BCMANURSE, ONE
Result: Immunization already on file.
```

Queuing the Nightly Background Option

Once the option is confirmed as working correctly, the final step in installation is to queue the option via TaskMan so that it will run nightly. The start time should be after 12:00 midnight, and early enough to avoid interfering with daytime workload. The example shown below uses 1:00 a.m. as a suggestion.

After the task has been queued, there is no specific use of the manual (interactive) option as shown above other than to backlog data, or to correct missing data if the task rescheduling failed. Each time the task runs, it will process the previous day's administrations from BCMA. Therefore, if it runs successfully on a daily basis, there will be no need to manually run the option.

```
Select Taskman Management Option: SCHedule/Unschedule Options

Select OPTION to schedule or reschedule: PSB PX BCMA2PCE TASK        Immunizations
Documentation by BCMA Nightly Task
  Are you adding 'PSB PX BCMA2PCE TASK' as
    a new OPTION SCHEDULING (the 116TH)? No// Y  (Yes)

                        Edit Option Schedule
    Option Name: PSB PX BCMA2PCE TASK <Enter>
    Menu Text: Immunizations Documentation by B        TASK ID:
_____

  QUEUED TO RUN AT WHAT TIME: DEC 20,2008@01:00 ──────   Enter as T+1@0100
DEVICE FOR QUEUED JOB OUTPUT: <Enter>

 QUEUED TO RUN ON VOLUME SET: <Enter>

     RESCHEDULING FREQUENCY: 1D

           TASK PARAMETERS: <Enter>

           SPECIAL QUEUEING: <Enter>

_____
Exit     Save     Next Page     Refresh

Enter a command or '^' followed by a caption to jump to a specific field.


COMMAND: Save                             Press <PF1>H for help    Insert
```

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