



RESOURCE AND PATIENT MANAGEMENT SYSTEM

Bar Code Medication Administration

End User Training

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1.0 Background

This document is the script for the End User training sessions for Bar Code Medication Administration (BCMA) at sites. This document includes exercises and examples of the various BCMA activities that users will experience in the inpatient ward setting.

2.0 Introductions

1. Office of Information Technology, Veterans Affairs (VA), and Area personnel present in person and on the web conference will introduce themselves.
2. Local Teams will introduce themselves and discuss their respective roles.

3.0 Roles and Responsibilities

3.1 BCMA Multidisciplinary Committee

The BCMA Multidisciplinary Committee provides ongoing multidisciplinary support and implements changes to improve the proper use of the software, affects oversight and maintenance of equipment, and provides guidance on business-related processes. This committee should meet monthly to resolve BCMA issues and is often a sub-committee of the Pharmacy and Therapeutics Committee. The BCMA Multidisciplinary Committee comprises end users and affiliates who can act as change agents at the local facility. Both the BCMA Coordinator and BCMA Multidisciplinary Committee work together to ensure patient safety is optimized, and this teamwork is central to BCMA success.

3.2 BCMA Coordinator

The BCMA Coordinator develops and implements processes to improve the safety and efficacy of medication management processes associated with BCMA. BCMA Coordinators must understand how the software functions and how pharmacy's finishing of orders affects what appears in BCMA.

3.3 Inpatient Pharmacy

- Conducts continuous Drug File Clean-up
- Scans all Medication Bar Codes into Drug File
- Maintains the Synonym File
- Maintains EHR Medication Quick Order and Medication Quick Order Menus
- Verifies that Medications display correctly in BCMA and on the Virtual Due List
- Ensures that all Medications have an appropriate Medication Bar Code prior to Administration
- Manages Scanning Failures
- Examines the use of the Med Order Button

3.4 BCMA Super User

A BCMA Super User is an individual who uses BCMA for medication administration in a patient care setting and also serves as a support resource to other BCMA users.

3.5 BCMA User

A BCMA User is an individual who uses BCMA for medication administration in a patient care setting.

3.6 Information Technology

- Configures RPMS and BCMA Clients in collaboration with BCMA Coordinator
- Loads BCMA Clients to identified workstations
- Configures Printers and Scanners
- Maintains Workstations and Equipment
- Manages Equipment Failure for Workstations, Printers, and Scanners
- Assigns appropriate BCMA Keys and Menus in collaboration with BCMA Coordinator to BCMA Users, Super Users, Coordinators, and Pharmacists.

3.7 Local Site Scanners and Workstation

- Facility Nurse BCMA Coordinator discusses local site's scanners and workstations.
- Discuss Training Medication Notebook/Drawer, Patient Wristbands, etc.
- Note any Print Patient Wristband local procedures.

4.0 BCMA Basics

4.1 What BCMA is:

- Software designed to promote Patient Medication Administration Safety and reduce the incidence of Medication Administration Errors.
- Software designed to improve Medication Administration Efficiency.

4.2 What BCMA is Not:

- A replacement for clinical judgment or observation skills, checking bar codes, and examining the packaging of medications to determine that medications have not been damaged
- Something that will administer medications for you

4.3 What is Required of the Nurse:

- Not assume that because the scanner generates a beep that the scan is successful.
- Read the screens and message dialogs.

4.4 Access the BCMA Application on the Desktop

1. Double click the BCMA Application shortcut to launch the application.
2. Instruct students to maximize the BCMA window.
3. Log on with the RPMS Access and Verify Code. BCMA uses same Access and Verify codes as RPMS and EHR.
4. Click **OK**:
 - The **Scan Patient Wristband** dialog displays.
 - The scanner status displays as “ready.”
 - The scanner box is green.
5. Scan the patient wristband; if the scan is accepted, the **Confirmation** dialog appears.
6. Differentiate between linear and 2D barcodes.
7. Verify patient identity and discuss the site’s policy for patient identification verification.

4.5 Overview of BCMA GUI

Compare and contrast menu items across the top of application from left to right:

- Title Bar - Note display of Title Bar Version – Will also indicate Limited Access Status.
- Menu Items: (will discuss items here in more detail during training).
- File – Open Patient Record, Open – Limited Access, Open – Read Only, Close Patient Record, Edit Med Log, Exit.
- View – Med Tab, Allergies, Patient Demographics.
- Reports – Administration Times, Due List, Missed Medications, PRN Effectiveness, IV Bag Status, Medication Administration Hx, Medication Log, Medication Variance, Medication Therapy, Unable to Scan (Detailed), Unable to Scan (Summary), Unknown Actions, Vitals Cumulative.
- Due List – Add Comment, Display Order, Mark, Med History, Missing Dose, PRN Effectiveness, Unable to Scan, Sort By, Refresh (Most people use F5).
- Tools – Notepad (Helpful to ascertain carriage return) Debug Mode.
- Help – BCMA User Manual.
- Buttons: Useful for Touch Screens:
 - Missing Dose – The Medication must be highlighted, can also be accessed by right-clicking on the medication
 - Medication Log – Lists comments entered by the Nurse for medications
 - Medication Administration History
 - Allergies
 - **CPRS Med Order** button
 - Flags – Not used by IHS – used by VA
- Patient Demographics – Double click Patient Demographics to view.
- Virtual Due List (VDL) Parameters:
 - Start Time/Stop Time: Discuss VDL default “2 hour window” from time user signs on to BCMA.
 - Demonstrate changing VDL window – wide range and dangers, keep narrow to prevent errors.
- Schedule Types – Check box displays Schedule Type: Continuous, On-Call, PRN, One-Time:
 - Filled/Green Circle means Active meds available for that type of administration, Note tabs along bottom of screen also have green circles.

- Allergies – Physician receives Order Check when ordering medications, if ordering a medication that is listed as an allergy for the patient in the Adverse Reaction Tracking System the physician enters an override justification; the Pharmacist also receives an Order Check when finishing the medication, the Nurse also is the final check for allergies when verifying the Medication Order in EHR:
 - Recommended that site regularly review Order Check Override Report.
 - Report is located on the old Computerized Patient Record System (CPRS) Clinical Application Coordinator menu.
- Examine “Virtual Due List” (VDL) display:
 - Resize and sort columns – Look at the ... If Column header is too narrow, display will be truncated, e.g. “Stat...” instead of “Status” If signing on for the first time BCMA will retain the column sizes that the user sets.
 - Sort Column by clicking the header. Columns:
 - Status – G=Given, H=Held, R=Refused, RM=Removed, M=Missing Dose
 - Ver – Never Verify a “Pending” Medication – Only Active Medications
 - HSM – Hospital Supplied Self Medications, generally not used in IHS
 - Active Medication Orders – Click on Header to alphabetize
 - Dosage
 - Route
 - Admin Time – PRN, On-Call, One-Time Medications do not have Administration Times
 - Last Action – Can use F5 key to Refresh or can click Menu Due List to Refresh
- Compare and Contrast Tabs along the bottom:
 - Coversheet
 - Unit Dose
 - IVPB (Intravenous Piggyback)
 - IV
- BCMA Clinical Reminders Marquee – Displays unassessed PRN Effectiveness, best to document in Limited Access to document on all PRN Effectiveness Meds at once:
 - What is your facility’s policy for documenting PRN Effectiveness?
- Cover Sheet:
 - Select the Cover Sheet tab (to the left of the Unit Dose tab).
 - The Cover Sheet provides an overview of the Patient’s Medication Profile.

- Notice the Scanner Status changes to red or **Not Ready** because you cannot document medications from the Cover Sheet.
- There are four views from which to choose:
 - Medication Overview
 - PRN Overview
 - IV Overview
 - Expired/Expiring Orders Overview
- At the bottom of the Medications Overview screen is a list of future orders if the patient has any.
- Each medication order can be expanded by clicking on the plus sign next to the order. This will reveal more details for that medication:
 - The last four times an action was taken on the medication
 - Comments associated with the administration
 - PRN Reasons
 - PRN Effectiveness Comments

5.0 Order Verification Exercise

1. Minimize BCMA.
2. Open EHR.
3. Click the blue box.
4. Select the patient using the **Wards** button.
5. Select the appropriate **Unit**.
6. Select the **Orders** tab.
7. Select an order – Only Verify Orders in **Active** status (e.g., Finished by Pharmacy) Double click the order.
8. Review the Medication Order noting the Dose and Route.
9. Review Administration Times for Continuous Orders.
10. Review “Dispense Drugs X Units Dispensed” – Special considerations because there may be a difference in what is ordered and what is dispensed by the Pharmacy.
11. Verify by right click:
 - The three initials of the nurse must display.
 - Take a poll of any nurses without three initials showing.
12. Select the **Reports** tab.
13. Locate the **Medication Administration History** and the **Medication Log**.
14. Close EHR and Return to BCMA.

6.0 BCMA Exercises

The following exercises cover the most common medication administration scenarios.

6.1 Unit Dose Tab

6.1.1 Administer Routine Medication

Furosemide 20 mg. tablet

1. Scan unit dose medication.
2. Demonstrate Refresh by pressing **F5**; Note **Last Action** column after scanning med.
3. Demonstrate Late/Early Administration (mostly likely will occur naturally during session).
4. Enter relevant or appropriate comment when needed.

6.1.2 Administer PRN Medication – Scanning Failure Wrong Dose – Submit Missing Dose Request

Haloperidol 0.5 mg tablet (order is for 0.5mg Pharmacy dispensed 5 mg.)

1. **Do not Give** dialog displays because dispensed dose (5mg) does not match order (0.5mg).
2. Submit “Missing Dose Request” The patient’s name, ward, ordered drug, order number, dosage, and administration time fields are automatically populated.
3. At the **Date and Time** field, type **N** for Now.
4. At the **Reason** field, select from the list of pre-defined reasons.
5. Click **Submit**, then **OK** to acknowledge the alert message has been sent to the pharmacy. Note that **M** is now displayed in the **Status** field.

6.1.3 Administer Med with Multiple Dose

Lisinopril 30 mg. (Pharmacy dispenses (10mg tab + 20mg tab)

1. Give Lisinopril 30mg.
2. **Do not** click **Done** (left over from Range Order Days).
3. Scan all the barcodes:
 - If multiple dose is the same item multiple times, always scan each individual item.

- *Do not* scan the same item multiple times.

6.1.4 Undo – Held/Refusal

Bisacodyl Suppository

1. Administer and document units/mg given.
2. Patient refuses.
3. Undo Given.
4. Mark as Held (or Refused) and add Comment “Diarrhea.”

6.1.5 Multi-dose Container Drugs – Special Site Protocol – Two Nurse Verification

Documentation Process to be taught by Site Nurse BCMA Coordinator detailing local procedures.

Insulin

1. Discuss different types of insulin orders, e. g. sliding scale, correctional, nutritional, and basal:
 - a. **2 Units Verified by N. Nurse.**
 - b. Select **Injection Site.**
 - c. Describe the process to draw up and label the insulin syringe with bar code (local process may vary).
2. Discuss possible use of barcoded BCMA comments.

6.1.6 Fractional Dose

Amlodipine (order is for 2.5 mg Pharmacy dispenses 5 mg. tablet)

1. Not used at all sites.
2. Recommended pharmacy practice add special instructions: **2.5mg = ½ Tab** which will display in bold, red text.

6.1.7 Multidose Container – PRN

Used for demonstrating PRN Effectiveness and Puff Units.

Albuterol Inhaler PRN Wheezing

1. Scan Albuterol. Note it is a PRN order.
2. Enter units as **2 Puffs.**

3. Discuss process for leaving at bedside, or method for ensuring access to barcode for scanning.

6.1.8 Scanning Failure/Wrong Dose, Using Five Rights

Clonidine 0.1 mg. tablet (order is for 0.2 mg.)

1. Scan Clonidine 0.1 mg. Receive error **Do Not Give** note order is for 0.2 mg. and that 0.2 mg table not available.
2. Right click and select **Failure to Scan**.
3. Use Five Rights to complete administration using 0.1 mg. tabs.

6.1.9 One-Time Medication – Undo Given (Using Edit Med Log)

Golytely

1. Administer Golytely
2. Enter amount given (4000ml)
3. Notice that drug no longer displays on VDL after administration
4. Look under **Expired Drugs** on coversheet
5. Use **Edit Med Log** to **Undo Give** so that next class will have On-Call med available

Note: Required Comment to describe the reason why the edit was necessary

6.1.10 Patch Medication

Demonstrate Remove Previous Patch – Uncheck all Schedule Boxes to see that the Patch Med remains in VDL – Must right click and Remove the Patch, then may Scan Patch Med.

Nicotine 14mg. Patch display, Remove Previous Patch

- Recommend that nurse indicate the patch location in **Comments**.
- BCMA will not prompt for removal of patches, must develop a reminder method for removing patches.

6.1.11 Multiple Administration Times Display

Now Dose too close to Scheduled Dose.

Acetaminophen 325mg PO q2h PRN and q3h Scheduled

- After scanning select the correct administration time.
- This type of display may occur with a New Order that includes a PRN dose and scheduled dose that occur close together.
- Best practice is to administer the PRN dose and mark the next scheduled dose as **Held**.

6.2 IVP/IVPB Tab**6.2.1 IVPB One-Time Use**

Scan patient specific IVPB label (one-time use) and demonstrate BCMA will not stop administering Allergy and Adverse Reaction medications

Ceftazidime 2 gm.

1. Administer Ceftazidime:
 - Discuss that the patient is identified as allergic to the medication but BCMA still allows the administration of the medication.
 - Identify the steps for allergy verification:
 - Physician Order Check
 - Pharmacy Check
 - Nurse Order Verification
 2. Highlight the IVP (IV Push)/IVPB medication order.
 3. Right click and a drop down menu appears listing the available actions for this order.
 4. Select the **Available Bags** option and an alert dialog displays listing the available bags by their assigned bar code label numbers for IVPB that have been printed by Pharmacy and are not yet administered.
- Note:** IVPB labels can only be used one time, (have students mark labels after use)
5. Select the injection site from the drop down list of injection sites:
 - Type the first character to bring the list to that section.
 6. Click **OK**; status is G=given.

6.2.2 IVPB – Scan IVPB with Individual Components

Gentamycin 80 mg. NS 0.9% 100 ml.

1. Scan Gentamycin 80 mg.
2. Scan NS 0.9% 100 ml.

6.2.3 IVP – For Nausea/Vomiting PRN

Note: Pharmacy Finish the IVP orders as Unit Dose, but set up IVP to Display on the IVP/IVPB Tab as follows:

```
NAME: IV PUSH//
ABBREVIATION: IVP//
PACKAGE USE: ALL PACKAGES//
OUTPATIENT EXPANSION: IV PUSH//
OTHER LANGUAGE EXPANSION:
IV FLAG: YES//
PROMPT FOR INJ. SITE IN BCMA: YES//
DSPLY ON IVP/IVPB TAB IN BCMA?: YES//
```

Assure PRN Medications is checked to view the IVP Medication (May Uncheck Continuous, On-Call, One Time Schedules)

Ondansetron 4mg/2ml Inj.

1. Administer IVP medication.
2. Select the **PRN Medication Schedule**; uncheck all other schedules.
3. If the medication is related to a PRN administration, select the reason for administration.
4. Verify the last time the medication was given.
5. Click **OK** to exit the **Med Log** window.

6.3 IV Solution Tab: Patient Specific vs. Ward Stock

Discuss Patient Specific vs. Ward Stock solutions, e.g., compound solutions prepared by the pharmacy - MultiVitamin in sodium chloride solutions which are Patient Specific or Ward Stock sodium chloride 0.9% solutions.

Sodium Chloride 9.9% 500ml. – Show Scanning as Ward Stock

1. Mark IV as stopped or completed – take action on bag.
2. Discuss difference between **Stopped** and **Completed**.
3. Scan NaCl bag again – Mark old bag as completed:
 - a. MVI (Dextrose 5%NaCl 0.45 1000 ml.).

- b. Show Scanning as Pharmacy Specific Bag – Available bags, etc.).
4. Scan Patient Specific MVI in NaCl – If an error dialog displays, scan next label and mark label.

Note: Intake and Output Flowsheets remain on paper; not a function of BCMA.

6.4 CPRS Med Order Button

Discuss the use of the **CPRS Med Order** button (used in urgent situations where it is more important to administer the medication to the patient immediately rather than following the typical process of physician ordering the medication in EHR, pharmacy finishing the order, and then nurse verification. Example of urgent situation: Albuterol for Zofran).

- Note that **CPRS Med Order** button use is monitored very closely by BCMA Coordinators and Pharmacy staff.

Morphine Sulfate 4mg./ml inj.

1. Scan CPRS Med order Medication.
2. Add TORB (Telephone Order Read Back) or VORB (Virtual Order Read Back) (according to facility policy) when administering.
3. Examine order on Cover Sheet.

6.5 Document PRN Effectiveness

1. Click **File**.
2. Select **Limited Access Document PRN Effectiveness for 2-3 Medications in succession**.

6.6 Reports

6.6.1 Generate a Missed Medications Report

1. Set **Start Date**, **Stop Date**, and **Time Range**.
2. Select patient.
3. Click **Preview**.
4. Discuss Best Practices for generating the report:
 - After beginning shift.
 - After each med pass.

- Prior to end of shift.

6.6.2 Generate Medication Administration History

This is also available on the EHR **Reports** tab.

1. Examine Medication Log.
2. Review Comments and Audits.

6.6.3 Special Situations

BCMA Coordinator or Pharmacy to teach site specific special situations.

Acronym List

BCMA	Bar Code Medication Administration
CPRS	Computerized Patient Record System
EHR	Electronic Health Record
IHS	Indian Health Service
IV	Intravenous
IVP	Intravenous Push
IVPB	Intravenous Piggyback
PRN	<i>Pro Re Nata</i> (Latin for “As Needed”)
RPMS	Resource and Patient Management System
VA	Department of Veterans Affairs
VDL	Virtual Due List