



MEDICATION ORDER CHECK HEALTHCARE APPLICATION (MOCHA) V1.0

RELEASE NOTES

PSO*7*251, PSJ*5*181, PSJ*5*226
PSS*1*136, PSS*1*117, PSS*1*151

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Table of Contents

1. Introduction.....	1
2. Enhancements	3
3. Menu Changes.....	5
3.1. New Options.....	5
3.2. Changed Options	6
3.3. Deleted Options	7
3.4. New Files.....	8
3.5. New Fields.....	8
4. Other Functionality	11
5. Impacts to Other Packages	13

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1. Introduction

The goal of the Pharmacy Reengineering (PRE) project is to replace the current M-based suite of pharmacy applications with a system that will better meet the current and expected business needs for the Department of Veterans Affairs (VA) and address the ever-changing patient safety issues. The first phase, Medication Order Check Healthcare Application (MOCHA) v1.0, implements enhanced order checking functionality utilizing HealthVet (HeV) compatible architecture and First DataBank (FDB), Drug Information Framework (DIF), Application Program Interfaces (APIs), and database. A Graphical User Interface (GUI) application has been developed for maintenance of FDB custom tables. A process to automatically update the standard and custom FDB data at each instance of the Cache' database will also be provided.

This release notes document provides a brief description of the new features and functions of the MOCHA v1.0 patches listed in the table below. More detailed information on the functionality can be found in the Application user and technical manuals found on the Virtual Documentation Library (VDL).

Application	Patch
Outpatient Pharmacy	PSO*7*251
Inpatient Medications	PSJ*5*181, PSJ*5*226
Pharmacy Data Management (PDM)	PSS*1*136, PSS*1*117, PSS*1*151

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2. Enhancements

MOCHA v1.0 will provide the following enhancements:

Enhanced Order Checking Features:

- Enhanced drug-drug interaction order check to provide the clinician with more information by displaying a short description of the clinical effects of the drug interaction and providing an optional view of a detailed professional drug interaction monograph.
- Enhanced duplicate therapy order check to utilize FDB's Enhanced Therapeutic Classification System which allows for multiple classes per drug.
- Provide error messages at the system and drug levels when order checks cannot be performed.
- Order check display sequence changes for efficiency and consistency between Outpatient Pharmacy and Inpatient Medication applications (PSI-07-080).
- Order check information display changes for consistency between Remote Data Interoperability (RDI) and local medication order information and for improved readability and processing.
- Send a priority notification message to a mail group when FDB link is down and when the link comes back up.
- Ability to perform order checks on premix solutions (PSI -06-012).
- Provide a quick and timely notification of recently discontinued/expired outpatient and inpatient medication orders.
- Provide quick identification of the action on the medication profile by which outpatient and inpatient orders were discontinued or held.
- Provide display changes to Duplicate Drug Order Check for outpatient pharmacy to be consistent with the enhanced Drug Interaction and Duplicate Therapy Order Checks.
- Remove Duplicate Drug Order Check from Inpatient Medications application.
- Providing Intervention Menu hidden action on additional ListMan order screens for both Outpatient Pharmacy and Inpatient Medications applications.
- Addition of three new Computerized Patient Record System (CPRS) Order Checks (Aminoglycoside Ordered, Glucophage Lab Results, and Dangerous Meds for Patient >64) to Pharmacy backdoor order checks.
- Provide an option to allow a user to check to see if the link to the FDB database is up or down.
- Provide consistency between Allergy/Adverse Drug Reaction (ADR) order check displays in Outpatient Pharmacy and Inpatient Medications applications.

- Allow the user to take action after an Allergy/ADR order check is displayed for Inpatient Medications application.
- Create/Modify Application Programmers Interfaces (APIs) (i.e. CPRS, etc) in M environment to support order check enhancements.
- Provide an option to allow a user to disable/enable the connection to the vendor database.
- Provide an option to ensure that the connection to the vendor database is operational and that the enhanced order checks can be executed successfully.
- Provide option to keep track of when and for how long the vendor database connection is unavailable.
- Create new API to send additive frequency information to CPRS (DBIA 5504).
- Provide messaging modifications between CPRS and Inpatient Medications applications to exchange the additive frequency/IV bottle information.
- Modify IV finishing process to accept new additive frequency information from CPRS.

HeV Construction includes:

Component(s) to utilize services provided by a commercial drug database to support Legacy VistA order check changes.

3. Menu Changes

Patches PSS*1*136 and PSS*1*117 introduce some menu changes to the *Pharmacy Data Management* menu. Details on the new and modified options can also be found in the *Pharmacy Data Management (PDM) V.1.0 User Manual* and *Pharmacy Data Management (PDM) V.1.0 Technical Manual*.

Restructured Pharmacy Data Management menu (changes are bolded)

```
Select Pharmacy Data Management Option: ??

CPOP Mark/Unmark (Single drug) [PSSXX MARK]
  **> Locked with PSXCMOPMGR
Dosages ... [PSS DOSAGES MANAGEMENT]
Drug Enter/Edit [PSS DRUG ENTER/EDIT]
Order Check Management ... [PSS ORDER CHECK MANAGEMENT]
  Request Changes to Enhanced Order Check Database [PSS ORDER CHECK CHANGES]
  Report of Locally Entered Interactions [PSS REPORT LOCAL INTERACTIONS]
Electrolyte File (IV) [PSSJI ELECTROLYTE FILE]
Lookup into Dispense Drug File [PSS LOOK]
Medication Instruction Management ... [PSS MED INSTRUCTION MANAGEMENT]
Medication Routes Management ... [PSS MEDICATION ROUTES MGMT]
Orderable Item Management ... [PSS ORDERABLE ITEM MANAGEMENT]
Formulary Information Report [PSSNFI]
Drug Text Management ... [PSS DRUG TEXT MANAGEMENT]
Pharmacy System Parameters Edit [PSS SYS EDIT]
Standard Schedule Management ... [PSS SCHEDULE MANAGEMENT]
Synonym Enter/Edit [PSS SYNONYM EDIT]
Controlled Substances/PKI Reports ... [PSS CS/PKI REPORTS]
Send Entire Drug File to External Interface [PSS MASTER FILE ALL]
IV Additive/Solution ... [PSS ADDITIVE/SOLUTION]
  IV Additive Report [PSS IV ADDITIVE REPORT]
  IV Solution Report [PSS IV SOLUTION REPORT]
Mark PreMix Solutions [PSS MARK PREMIX SOLUTIONS]
Warning Builder [PSS WARNING BUILDER]
Warning Mapping [PSS WARNING MAPPING]
PEPS Services ... [PSS PEPS SERVICES]
  Check Vendor Database Link [PSS CHECK VENDOR DATABASE LINK]
  Check PEPS Services Setup [PSS CHECK PEPS SERVICES SETUP]
  Schedule/Reschedule Check PEPS Interface [PSS SCHEDULE PEPS INTERFACE CK]
```

3.1. New Options

The following items are the new options:

- *Request Changes to Enhanced Order Check Database* [PSS ORDER CHECK CHANGES] option allows a user to request custom changes to the Enhanced Order Check Database such as addition of a new drug interaction, change in a drug interaction severity, duplicate therapy and dosing order check changes. The request is sent to a mail group on Outlook for review. This option is found under the *Order Check Management* menu.
- *Check Vendor Database Link* [PSS CHECK VENDOR DATABASE LINK] option allows you to check whether VistA can or cannot communicate with the vendor database. If the communication link is up and running, the vendor database version, build version

and date it was issued will be displayed for both standard and custom databases. The date and time of the connection will also display. If the connection could not be made, this status is displayed with the date and time a successful connection was last made. This option is found under the *PEPS Services* menu.

- *Check PEPS Services Setup* [PSS CHECK PEPS SERVICES SETUP] option provides the ability to check and validate that the link to the vendor interface used for enhanced order checking (drug interaction, duplicate therapy and dosing) is enabled and operational. The option executes various predetermined order checks against the vendor database to ensure that the database is installed correctly and is reachable. This option is found under the *PEPS Services* menu.
- *Schedule/Reschedule Check PEPS Interface* [PSS SCHEDULE PEPS INTERFACE CK] option allows you to schedule/reschedule the Interface Scheduler [PSS INTERFACE SCHEDULER] option. This job runs every 15 minutes to check if the communication link (Pharmacy Enterprise Product System (PEPS) Interface) from VistA to the vendor database is up and reachable. If the PEPS Interface is down, a priority mail message will be sent to the G.PSS ORDER CHECKS mail group. Once the interface comes back up another priority mail message will be sent to the G.PSS ORDER CHECKS mail group. This option is found under the *PEPS Services* menu.
- *Enable/Disable Vendor Database Link* [PSS ENABLE/DISABLE DB LINK] is a stand-alone option that is to be used ONLY by the Information Resource Management (IRM) support personnel who oversee and maintain the vendor database and connectivity to the vendor database. It is NOT exported as part of the main Pharmacy Data Management [PSS MGR] menu option. This option provides the ability to disable/enable the link to the vendor database used for enhanced order checking. When disabled, NO drug-drug interactions, duplicate therapy or dosing order checks will be performed in Outpatient Pharmacy, Inpatient Medications applications or in CPRS.

3.2. Changed Options

The following options have been changed:

- The *Drug Interaction Management* [PSS DRG INTER MANAGEMENT] menu was renamed to *Order Check Management* [PSS ORDER CHECK MANAGEMENT].
- The *IV Additive/Solution Reports* [PSS ADDITIVE/SOLUTION REPORTS] menu was renamed to *IV Additive/Solution* [PSS ADDITIVE/SOLUTION].
- The *Mark PreMix Solutions* [PSS MARK PREMIX SOLUTIONS] was moved to the *IV Additive/Solution* [PSS ADDITIVE/SOLUTION] menu. It was previously found on the now deleted *Enhanced Order Checks Setup Menu*.
- The new Outpatient Pharmacy site parameter that can be edited with the Site Parameter Enter/Edit [PSO SITE PARAMETERS] option is RECENTLY DC'D/EXPIRED DAYS field (#3.2) of the OUTPATIENT SITE file (#59).

The *Site Parameter Enter/Edit* [PSO SITE PARAMETERS] option has been modified to include the ability for a user to edit a new outpatient site parameter created in the

OUTPATIENT SITE file (#59) to allow local facilities to set a timeframe for which a discontinued or expired outpatient medication order will be identified as ‘recently discontinued/expired’.

- The new Inpatient Medications system parameter that can be edited with the System Parameters Edit [PSJ SYS EDIT] option is HOURS OF RECENTLY DC/EXPIRED field (#26.8) of the PHARMACY SYSTEM file (#59.7).

The *Systems Parameters Edit* [PSJ SYS EDIT] option has been modified to allow the user to edit the value of the new system parameter which identifies the timeframe for which an inpatient medication order is identified as ‘recently discontinued/expired’.

- The new Inpatient Medications ward parameter that can be edited with the Inpatient Ward Parameters Edit [PSJ IWP EDIT] option is the HOURS OF RECENTLY DC/EXPIRED field (#7) of the INPATIENT WARD PARAMETERS file (#59.6).

The *Inpatient Ward Parameters Edit* [PSJ IWP EDIT] option has been modified to allow the user to enter/edit a value for the new ward parameter created in the INPATIENT WARD PARAMETERS file (#59.6) to allow local facilities to set a timeframe for which a discontinued and expired inpatient (IV & UD) medication order will be identified as ‘recently discontinued/expired’ for a ward.

- The *Process Drug/Drug Interactions* [PSO INTERACTION VERIFY] option was renamed to *Process Order Checks* [PSO ORDER CHECKS VERIFY].

3.3. Deleted Options

The following options have been deleted:

- *Enhanced Order Checks Setup Menu* [PSS ENHANCED ORDER CHECKS] – This menu and the five options listed below that were on this menu were removed. The rest of the options can be found throughout the *Pharmacy Data Management menu* [PSS MGR].
 - Find Unmapped Local Medication Routes [PSS MED ROUTES INITIAL MAPPING]
 - Map Local Medication Route to Standard [PSS MAP ONE MED ROUTE]
 - Find Unmapped Local Possible Dosages [PSS LOCAL DOSAGES EDIT ALL]
 - Map Local Possible Dosages [PSS LOCAL DOSAGES EDIT]
 - Strength Mismatch Report [PSS STRENGTH MISMATCH]
- *Enter/Edit Local Drug Interaction* [PSS INTERACTION LOCAL ADD]
- *Edit Drug Interaction Severity* [PSS INTERACTION SEVERITY] stand alone option

3.4. New Files

The following files have been added:

- A new VENDOR DISABLE/ENABLE file (#59.73) was created to keep track of when a particular user disabled or re-enabled the Vendor interface. The date/time, user and whether or not they enabled or disabled the vendor interface is recorded.
- A new VENDOR INTERFACE DATA file (#59.74) was created to keep track of when and for how long the Vendor interface is unavailable. A background process monitors the status of the interface and records in this file when the interface is down, when it becomes available again, and the total time it was unavailable.

3.5. New Fields

The following fields have been added:

- The DISPLAY STATUS field (#157) in the IV multiple (#55.01) and DISPLAY STATUS field (#136) in the UNIT DOSE multiple (#55.06) have been created in the PHARMACY PATIENT file (#55). These fields capture how a "Discontinued" action occurred. The 'Discontinued' action code is displayed on the short patient profile if the Stop Date/Time is within the time specified in the INPATIENT WARD PARAMETERS file (#59.6) or the PHARMACY SYSTEM file (#59.7) for the HOURS OF RECENTLY DC/EXPIRED. The "HP" is to display on the profile if the order was placed on hold by provider through CPRS.
- The HOURS OF RECENTLY DC/EXPIRED field (#7) has been created in the INPATIENT WARD PARAMETERS file (#59.6). The Inpatient Medications profiles will display the recently discontinued/expired orders that fall within the number of hours specified in this field. The inpatient ward parameter allows for a minimum value of one hour and a maximum value of 120 hours. A value in the inpatient ward parameter takes precedence over the inpatient system parameter. The Inpatient Ward Parameters Edit [PSJ IWP EDIT] option allows the user to edit this new ward parameter. If this parameter is not set the software will default to 24 hours.
- The HOURS OF RECENTLY DC/EXPIRED field (#26.8) has been created in the PHARMACY SYSTEM file (#59.7). The Inpatient Medications profiles will display the recently discontinued/expired orders that fall within the number of hours specified in this field. This parameter allows for a minimum value of one hour and a maximum value of 120 hours. The Systems Parameters Edit [PSJ SYS EDIT] option includes the ability for a user to edit this inpatient site parameter. If this parameter is not set the software will default to 24 hours.
- The RECENTLY DC'D/EXPIRED DAYS field (#3.2) has been created in the OUTPATIENT SITE file (#59). This field indicates the number of days a discontinued or expired medication order appears in reverse video on a patient's medication profile. Local facilities may set a timeframe for which a discontinued or expired outpatient medication order will be identified as 'recently discontinued/expired'. The outpatient site parameter

allows for a minimum value of seven days and a maximum value of 45 days. The Site Parameter Enter/Edit [PSO SITE PARAMETERS] option includes the ability for a user to edit this outpatient site parameter. If no value is found for the outpatient site parameter, the software will use seven days.

- The DISCONTINUE TYPE field (#100.1) has been created in the PRESCRIPTION file (#52). This field is used to distinguish what type of external discontinue action occurred.
- DOSE WARNING field (#8) has been created in the RX VERIFY file (#52.4). This field is used to track what type of dosage order check warning has occurred.

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4. Other Functionality

PSS*1.0*136

The mail group PSS ORDER CHECKS was created by a previous patch. This mail group will receive various notifications that impact Enhanced Order Checks (drug-drug interactions, duplicate therapy and dosing checks) introduced with the utilization of a Commercial-Off-The-Shelf (COTS) database.

Two new bulletins have been created to notify members of the PSS ORDER CHECKS mail group with a priority MailMan message when communication to the COTS database goes down and when communication comes back up. These messages will be retained on the system for 3 days.

The POST-INIT routine PSSHRPST will perform the following tasks:

- Bring in the XML interface and load classes
- Generate the mail message indicating the POST-INIT routine has run to completion

PSO*7.0*251

The POST-INIT routine PSO251PO will perform the following tasks:

- Add the *Process Order Checks* [PSO ORDER CHECKS VERIFY] option to the *Outpatient Pharmacy Manager* [PSO MANAGER] and to the *Pharmacist Menu* [PSO USER1] menus
- Generate the mail message indicating the POST-INIT routine has run to completion

PSS*1.0*117

When the ENVIRONMENT CHECK routine PSS117EN is run, three new intervention types are added to the APSP INTERVENTION TYPE file (#9009032.3). They are MAX SINGLE DOSE, DAILY DOSE RANGE, and MAX SINGLE DOSE & DAILY DOSE RANGE.

The ENVIRONMENT CHECK routine will also check to see if Pre-Release setup work has been completed. The software will check if all local medication routes have been mapped and will check if all local possible dosage data (numeric dose and dose unit fields) have been populated. If either has not been completed, the installer will be displayed a message informing them of this and then prompted with whether or not they want to continue. If all work has been completed the user will be informed and the program will automatically continue on. The consequence of continuing installation if either of these tasks have not been completed is that dosage checks will not work for those orders that contain unmapped local medication routes and may not work for local possible dosages that have missing data. A MailMan message will also be generated with the same information to the installer and members of the PSS ORDER CHECKS mail group. Dosage checks will not occur until patch PSS*1*160 is released. The Environment check routine will also begin making modifications to the Pharmacy Data Management menu structure, which will be completed when the POST-INIT routine runs.

It should be noted that not all Medication routes can be mapped at this time. For a few medication routes (Intrathoracic, Intrafollicular) it was recommended that they be left unmapped. Because of this, all sites will see a warning message that not all Medication Routes have been mapped during the install and the installer will be prompted to continue. Below is an example of the warning message:

There are still local Medication Routes marked for 'ALL PACKAGES' not yet mapped. Any orders containing an unmapped medication route will not have dosage checks performed. Please refer to the 'Medication Route Mapping Report' option for more details.

If the pharmacy Automated Data Processing Application Coordinator (ADPAC) has completed the rest of the required mapping, then the installer should continue with the installation.

The POST-INIT routine PSS117PO will perform the following tasks:

- Rebuild the *Pharmacy Data Management* menu structure.
- Generate the mail message indicating the POST-INIT routine has run to completion

If you had any locally added menu options under the Pharmacy Data Management [PSS MGR] menu option or any of its sub-menus, please check to see if they need to be re-attached once the POST-INSTALL is complete and the VistA mail message indicating this has been received.

PSS*1.0*151

A new routine PSSDSAPA has been created to perform the following function: It returns a default value for the ADDITIVE FREQUENCY field (#18) of the IV ADDITIVES file (#52.6) for a specified entry in the PHARMACY ORDERABLE ITEM file (#50.7). All active IV ADDITIVES file (#52.6) entries that are matched to the PHARMACY ORDERABLE ITEM file (#50.7) entry are evaluated. For any value other than null to be returned, all values for the ADDITIVE FREQUENCY field (#18) in the matched IV ADDITIVES file (#52.6) entries must be set to the same value.

This function will be used for continuous IV orders with additives that are entered by CPRS. The ability for CPRS to use this call is documented in DBIA #5504. The entry point to call is \$\$IV^PSSDSAPA (pointer to the PHARMACY ORDERABLE ITEM file (#50.7)).

PSJ*5.0*226

Functionality is provided to send and receive Intravenous (IV) bags information between Inpatient Medications and CPRS for an IV order. This change supports CPRS GUI V28 release.

5. Impacts to Other Packages

OR*3* 272 will be released in the combined build with PSO*7*251 and PSJ*5*181. It provides CPRS functionality for the enhanced drug interaction and duplicate therapy order checks.

OR*3*280 and GUI V28 provide CPRS functionality for the new dosage checks and the ability to display a detailed professional drug interaction monograph. The Dosage checks will not be activated until the release of PSS*1.0*160. PSJ*5.0*226 was released with the GUI V28 and OR*3.0*280 bundle. PSS*1*151 will be released as a host file with CPRS v.28.