

Department of Veterans Affairs

Pharmacy Reengineering (PRE)

Medication Order Check Healthcare Application (MOCHA) v2.1

Outpatient Pharmacy

Requirements Specification Document



October 2014

Version 2.8

Revision History

Note: The revision history cycle begins once changes or enhancements are requested after the Requirements Specification Document has been baselined.

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| 04/25/2013 | 0.1 | Initial Version | J. [REDACTED] |

ProPath Template Version 1.1

Artifact Rationale

The Requirements Specification Document (RSD) records the results of the specification gathering processes carried out during the Requirements phase. The RSD is generally written by the functional analyst(s) and should provide the bulk of the information used to create the test plan and test scripts. It should be updated for each increment.

The level of detail contained in this RSD should be consistent with the size and scope of the project. It is not necessary to fill out any sections of this document that do not apply to the project. The resources necessary to create and maintain this document during the life cycle of a large project should be acknowledged and clearly reflected in project schedules. Do not duplicate data that is already defined in another document or a section in this document; note in the section where the information can be found.

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1. Introduction

This section outlines the purpose and scope for the Medication Order Check Healthcare Application (MOCHA) v2.1 project and lists all references and documents relevant to the product being enhanced.

1.1. Purpose

The purpose of this Requirements Specification Document (RSD) is to outline the functional requirements for the MOCHA v2.1 increment. This document details the modifications necessary to the Veterans Health Information Systems and Technology Architecture (VistA) Outpatient Pharmacy v7.0 application. Modifications necessary to the VistA Pharmacy Data Management and VistA Inpatient Medications applications will be addressed in separate documents.

The target audience of this RSD includes Pharmacy Benefits Management (PBM), Integrated Project Team (IPT) members, the MOCHA Dosing project team, and test site users.

1.2. Scope

The last increment (Increment 4) of functionality for the Pharmacy Reengineering (PRE) v0.5 (Enhanced Order Checking functionality) project remaining to be delivered is the new Dosing Order Checks. In 2011, a proposal was presented to and accepted by the business owners to deliver the Dosing functionality in four separate increments. This allowed for all issues to be corrected so the product was more acceptable to the users. The functionality delivered would be as follows:

- MOCHA v2.0 – Maximum Single Dose Order Check for simple and complex medication orders
- MOCHA 2 Enhancement 1 (MOCHA v2.1) – Dose Range Checking with Max Daily Dose limit for simple medication orders
- MOCHA 2 Enhancement 2 (MOCHA v2.2) – Dose Range Checking with Max Daily Dose limit for complex medication orders
- MOCHA 2 Enhancement 3 (MOCHA v2.3) – Remaining Dosing Functionality

MOCHA v2.0 is tentatively scheduled for national release in October 2013 with a phased deployment completing in February 2014.

The MOCHA v2.1 increment will implement the second of two new Dosing Order Checks; Dose Range Checking using the Max Daily Dose limit for simple medication orders entered through Outpatient Pharmacy, Inpatient Medications applications and Computerized Record Patient System (CPRS). This functionality will provide significant, enhanced patient safety features to reduce the risk of medication errors and adverse events.

1.3. Acronyms and Definitions

This subsection should provide the definitions of all terms, acronyms, and abbreviations required to properly interpret the RSD.

1.3.1. Acronyms

| Term | Definition |
|-------|---|
| ADPAC | Automated Data Processing Application Coordinator |
| API | Application Program Interface |
| BN | Business Need |
| BRD | Business Requirements Document |
| BSA | Body Surface Area |
| CPRS | Computerized Patient Record System |
| CR | Change Request |
| FDB | First Databank |
| FIPS | Federal Information Processing Standard |
| GUI | Graphical User Interface |
| HDR | Health Data Repository |
| HWSC | HealtheVet Web Services Client |
| IM | Inpatient Medications |
| IPT | Integrated Program/Project Team |
| IT | Information Technology |
| IV | Intravenous |
| LPD | Local Possible Dosage |
| M | Formerly known as MUMPS |
| M1E1 | MOCHA 1 Enhancement 1 |
| M2E1 | MOCHA v2.1 |
| MOCHA | Medication Order Check Healthcare Application |
| MUMPS | Massachusetts General Hospital Utility Multi-Programming System |
| NIST | National Institute of Standards and Technology |
| OP | Outpatient Pharmacy |
| PBM | Pharmacy Benefits Management |
| PD | Product Development |
| PDM | Pharmacy Data Management |
| PECS | Pharmacy Enterprise Customization System |
| PMAS | Program Management Accountability System |
| PRE | Pharmacy Re-Engineering |
| ROC | Regional Operations Center |

| Term | Definition |
|-------|---|
| SDS | Standard Data Services |
| SRS | Software Requirements Specification |
| VA | Department of Veterans Affairs |
| VAP | VA Product |
| VETS | VA Enterprise Terminology Services |
| VHA | Veterans Health Administration |
| VistA | Veterans Health Information Systems and Technology Architecture |

1.3.2. Definitions

| Term | Definition |
|-------------------------------------|---|
| Administration Schedule File | The ADMINISTRATION SCHEDULE file (#51.1) contains administration schedule names and standard dosage administration times. The name is a common abbreviation for an administration schedule (e.g., QID, Q4H, and PRN). The administration time is entered in military time. |
| Body Surface Area | A measured or calculated surface of a human body. |
| Complex Order (Outpatient) | An order consisting of greater than one dosing sequences. |
| CPRS | A VistA computer software package called Computerized Patient Record System. CPRS is an application in VistA that allows the user to enter all necessary orders for a patient in different packages from a single application. All pending orders that appear in the Unit Dose and IV modules are initially entered through the CPRS package. |
| DEA Special Handling | The Drug Enforcement Agency Special Handling code used for drugs to designate if they are over-the counter, narcotics, bulk compounds, supply items, etc. |
| Dispense Drug | The Dispense Drug name has the strength attached to it (e.g., Acetaminophen 325 mg). It is the GENERIC NAME field (#.01) entry in the DRUG file (#50). |
| Dosage Form | Refers to the physical presentation of a drug. Dosage Form includes aerosol, capsule, cream, and so on. |
| Dosage Ordered | Provides the single dose amount and Dose Unit for a drug within a medication order. |
| Dose Rate Unit | The unit of measure for rate of the dose (HOUR, HR, H, MINUTE, MIN, DAY). |
| Dose Route | A term which represents the method of administering the drug. |
| Dose Type | A term which identifies the purpose for which the dose is given (for example, loading dose, maintenance dose). |

| Term | Definition |
|------------------------------|--|
| Dose Unit | A unit of measure commonly reported in the medical literature and reference sources, such as 'MG', 'TABLET'. |
| Dose Units File | The DOSE UNITS file (#51.24) was created to accomplish the mapping to First Databank (FDB). All entries in this file have been mapped to an FDB Dose Unit. Although this file has not yet been standardized by Standards and Terminology Services (SRS), no local editing will be allowed. When Populating the Dose Unit field for a Local Possible Dosage, selection will be from this new file. |
| Dosing Order Checks | General term that refers to the Maximum Single Dose Order Check and the Max Daily Dose Order Check. |
| Drug Level Error | An error that prevents the mapping of a drug from the VistA database to the FDB MedKnowledge Framework (formerly known as Drug Information Framework or DIF) database. The GCNSEQNO is used to map between the VA PRODUCT file (#50.68) to a drug in the FDB MedKnowledge Framework database. Example: A dispense drug in the local DRUG file (#50) that is being ordered is not matched to a VA Product in the VA PRODUCT file (#50.68). Therefore a GCNSEQNO cannot be obtained. |
| Dummy data | Data that has been pre-determined based on business rules and which is sent into the interface to obtain general dosing information on a dispense drug when the Max Daily Dose Order Check or both Dosing Order Checks could not be determined. |
| Duration | A specific length of time. For Dosing Order Checks, the duration is set to 1 day. |
| Duration Rate Unit | The unit of measure for rate of the length of therapy (HOUR, HR, H, MINUTE, MIN, DAY) |
| Enhanced Order Checks | Drug – Drug Interaction, Duplicate Therapy, and Dosing order checks that are executed utilizing FDB's MedKnowledge Framework (formerly known as Drug Information Framework) APIs and database. |
| Free Text Dosage | Any combination of text, numbers, or special characters entered in no particular format in the DOSAGE ORDERED field for a medication order. |
| Frequency | The number of administrations per day of a drug. |
| Finish | Term used for completing orders from Order Entry/Results Reporting V. 3.0. |
| GCNSEQNO | A numeric value that represents a generic formulation. It is specific to the generic ingredient(s), route of administration, dosage form, and strength. The Formulation ID (GCN), in some cases, may have the same value for different dosage |

| Term | Definition |
|--|---|
| | forms, strengths, or non-active ingredient list differences and therefore may be linked to more than one GCNSENQ. But a GCNSEQNO is unique in its association with each combination of factors. |
| Local Possible Dosages | Local Possible Dosages are free text dosages that are associated with drugs that do not meet all of the criteria for Possible Dosages. |
| Maximum Single Dose | Maximum amount to be administered in a single dose |
| Maximum Single Dose Order Check | A safeguard incorporated in software when a new medication order is entered or acted upon to ensure that the single dose ordered for a patient does not exceed a recommended upper limit for a drug. |
| National Drug File | The National Drug File provides standardization of the local drug files in all VA medical facilities. Standardization includes the adoption of new drug nomenclature and drug classification and links the local drug file entries to data in the National Drug File. For drugs approved by the Food and Drug Administration (FDA), VA medical facilities have access to information concerning dosage form, strength and unit; package size and type; manufacturer's trade name; and National Drug Code (NDC). The NDF software lays the foundation for sharing prescription information among medical facilities. |
| Numeric Dose | A single dose amount entered as a numeric value. The Numeric Dose with the Dose Unit make up the dosage ordered for a medication order. |
| Order Level Error | An error that is returned from the FDB MedKnowledge Framework API or order information cannot be sent to the interface because of missing data. Example: Information is passed from VistA to FDB database, but the Dosing Order Check cannot be performed, because no FDB dosing information is available for the drug. |
| Orderable Item | An Orderable Item name that usually has no strength attached to it (e.g., Acetaminophen). The name with a strength attached to it is the Dispense drug name (e.g., Acetaminophen 325mg). |
| Order Check | Order checks (Drug-Allergy/ADR interactions, Drug-Drug, Duplicate Drug, Duplicate Therapy, and Dosing) are performed when a new medication order is placed through either the CPRS Outpatient Pharmacy or Inpatient Medications applications. They are also performed when medication orders are renewed, when Orderable Items are edited, or during the finishing process in Inpatient Medications or Outpatient Pharmacy. This functionality will ensure the user is alerted to possible adverse drug reactions and will reduce the possibility of a medication error. |

| Term | Definition |
|----------------------------------|--|
| Otic | Of, relating to, or located near the ear; auricular. |
| Pending Order | A pending order is one that has been entered and electronically signed by a provider through CPRS without Pharmacy finishing the order. Once Pharmacy has finished the order, it will become active. |
| Prescription | This term is now referred to throughout the software as medication orders. |
| Route | Refers to the route of administration, which is the site or method by which a drug is administered. |
| Schedule | The frequency of administration of a medication (e.g., QID, QDAILY, QAM, STAT, Q4H). |
| Schedule Type | Codes include: O - one time (i.e., STAT - only once), P - PRN (as needed; no set administration times), C - continuous (given continuously for the life of the order; usually with set administration times), R - fill on request (used for items that are not automatically put in the cart - but are filled on the nurse's request). These can be multidose items (e.g., eye wash, kept for use by one patient and is filled on request when the supply is exhausted), and OC - on call (one time with no specific time to be given, e.g., 1/2 hour before surgery). |
| Simple Order (Outpatient) | An order consisting of one dosing sequence. |
| Single Dose Amount | The numeric value of the dosage ordered for a medication order. For an IV order, this value can be represented by the IV Additive strength, numeric value of an IV Solution (PreMix) volume or IV order infusion rate or derived using a formula. |
| Strength | The potency of a drug usually expressed in a metric quantity consisting of a value and unit, such as 500MG. Strength is usually a whole number. |
| System Level Error | If this error occurs, no order checks can be performed. Example: Communication link to FDB database is down. |

1.4. References

- VA Handbook 6500 – Information Security Program
[REDACTED]
- PMAS Portal
[REDACTED] pmas/Pages/default.aspx
- ProPath Site
[REDACTED] process/Library/propath_process_home.pdf
- MOCHA Over-Arching BRD
[REDACTED] Pharmacy_Re-Engineering_MOCHA_FY14/MOCHA_Over-Arching_BRD.zip

- MOCHA v2.0 SRS
[REDACTED]Pharmacy_Re-Engineering_PRE_(PECS-MOCHA)/PRE%20V0%205%20OC%20SRS%20V11.doc
- MOCHA Dosing CRs
[REDACTED]projects/pre/PRE_MOCHA_2-1/Shared%20Documents/Inception/MOCHA%20Dosing%20CRs%20092313.xls
- MOCHA v2.1 IP RSD
[REDACTED]Pharmacy_Re-Engineering_MOCHA_FY14/M2-1_IPM_RSD_v2.pdf
- MOCHA v2.1 PDM RSD
[REDACTED]Pharmacy_Re-Engineering_MOCHA_FY14/M2-1_PDM_RSD_v2.pdf

2. Overall Description

This section describes the general factors that affect the product and its specifications.

2.1. Accessibility Specifications

Not applicable.

2.2. Business Rules Specification

The business rules are specified in the technical requirements.

2.3. Design Constraints Specification

- Software written in the Massachusetts General Hospital Utility Multi-Programming System (MUMPS) programming language.
- Utilizes MOCHA Server v3.0
- Utilizes First Databank (FDB) MedKnowledge Framework (formerly known as Drug Information Framework (DIF)) 3.3

2.4. Disaster Recovery Specification

Data protection measures, such as back-up intervals and redundancy shall be consistent with systems categorized as VistA.

2.5. Documentation Specifications

Changes to the following User Manuals will be required:

- Technical Manual/Security Guide
- Dosing Order Check manual

The following documentation will be created:

- Release Notes
- Installation Guide

2.6. Functional Specifications

This section describes the software modifications for MOCHA v2.1 to be made to the Outpatient Pharmacy application to incorporate Dose Range Checking with a Max Daily Dose limit for simple orders. General dosing information for a drug will be displayed to the user when the Max Daily Dose Order Check cannot be performed or when both the Maximum Single Dose and Max Daily Dose Order Checks cannot be performed. Any exceptions to this will be noted in the requirements that follow. These modifications will add to functionality implemented in MOCHA v2.0.

FDB's MedKnowledge Framework Application Program Interfaces (API), business logic and database will continue to be utilized. FDB custom tables will be used to store custom dosing changes made through the Pharmacy Enterprise Customization System (PECS) application.

Business Need (BN) 1 applies to all MOCHA v2.1 requirements as applicable.

2.6.1. Max Daily Dose Order Check

This section shall detail the functionality of the Max Daily Dose Order Check.

BN 2 in the Business Requirements Document (BRD) and associated Change Requests (CR) 5703, CR 6389, CR 5794, CR 3472, and CR 3651 are addressed by requirements in this section.

2.6.1.1 Functional Requirement 1

The Max Daily Dose Order Check shall replace the Daily Dose Range Order Check.

2.6.1.2 Functional Requirement 2

The Max Daily Dose Order Check shall be implemented for all simple medication orders entered through CPRS, and Outpatient Pharmacy applications.

2.6.1.3 Functional Requirement 3

The Max Daily Dose Order Check shall be incorporated in the following Outpatient Pharmacy order entry processes:

- Entering a new order
- Finishing a pending order
- Renewing an order
- Editing the following fields:
 - Orderable Item
 - Dispense Drug
 - Dosage
 - Dispense Units
 - Route
 - Schedule
- Verifying an order using the following options:
 - Patient Prescription Processing
 - Process Order Checks
 - Rx Verification by Clerk

- Copying an order
- Reinstating a discontinued order

2.6.1.4 Functional Requirement 4

The Max Daily Dose Order Check shall be performed with the Maximum Single Dose Order Check and results from both order checks displayed at the same time for a simple medication order.

2.6.1.5 Functional Requirement 5

If the daily dose exceeds the FDB recommended Max Daily Dose, a warning message shall be displayed to the user.

2.6.1.5.1 Functional Requirement 1

The warning message shall be indented and a single space shall be utilized between messages.

2.6.1.5.2 Functional Requirement 2

The drug name shall precede the warning message.

2.6.1.5.2.1 Functional Requirement 1

The dispense drug name shall be used for an outpatient order.

2.6.1.6 Functional Requirement 6

If a Max Daily Dose Order Check cannot be performed, the program shall display an order level error message to the user informing them of this along with general dosing information for the drug.

2.6.1.7 Functional Requirement 7

If both Dosing Order Checks (Maximum Single Dose and Max Daily Dose) cannot be evaluated, the software shall display an error message and provide general dosing information for the drug.

2.6.1.8 Functional Requirement 8

The user shall be required to log an intervention if a Max Daily Dose warning is displayed.

2.6.1.9 Functional Requirement 9

Only one pharmacy intervention shall be logged if multiple warnings (Maximum Single Dose and Max Daily Dose) are displayed for a drug.

2.6.1.9.1 Functional Requirement 1

The intervention type shall be set to 'MAX SINGLE DOSE & MAX DAILY DOSE'.

2.6.1.10 Functional Requirement 10

If one or more Max Daily Dose warning message(s) is displayed, the intervention type for the pharmacy intervention logged shall be set to 'MAX DAILY DOSE'.

2.6.1.11 Functional Requirement 11

No intervention shall be required for the display of only a general dosing information message and/or error/warning messages.

2.6.1.12 Functional Requirement 12

A 'Press Return to Continue' shall be placed where appropriate in the software so that no information scrolls off the screen before a user can review.

2.6.1.13 Functional Requirement 13

For a simple order, a top of form shall be performed before a dosing warning is displayed.

2.6.1.14 Functional Requirement 14

For a simple order, all information for a dosing warning shall be displayed in its entirety on a single screen.

Backdoor New Order Entry

```
Select Action: Quit// NO    New Order

Eligibility: COLLATERAL OF VET.
RX PATIENT STATUS: OPT NSC//
DRUG: LOVASTATIN
  Lookup: GENERIC NAME
    1  LOVASTATIN 10MG TAB          CV350    N/F          THIS DRUG IS RESTRICT
ED TO CARDIOLOGY
    2  LOVASTATIN 40MG TAB          CV350
CHOOSE 1-2: 2  LOVASTATIN 40MG TAB          CV350
  Restriction/Guideline(s) exist.  Display? : (N/D/O/B): No//    NO

Now Processing Enhanced Order Checks! Please wait...

VERB: TAKE
Available Dosage(s)
    1. 40MG
    2. 80MG

Select from list of Available Dosages, Enter Free Text Dose
or Enter a Question Mark (?) to view list: 120 120MG

You entered 120MG is this correct? Yes//    YES
VERB: TAKE
DISPENSE UNITS PER DOSE(TABLET(S)): 3// 3
Dosage Ordered: 120MG

NOUN: TABLETS
ROUTE: PO//    ORAL          PO MOUTH
Schedule: QAM// QPM (EVERY EVENING)
LIMITED DURATION (IN DAYS, HOURS OR MINUTES): CONJUNCTION:

  LOVASTATIN 40MG TAB: Single dose amount of 120 MILLIGRAMS exceeds the maximum single
  dose amount of 80 MILLIGRAMS.

  LOVASTATIN 40MG TAB: Total dose amount of 120 MILLIGRAMS/DAY exceeds the maximum
  daily dose amount of 80 MILLIGRAMS/DAY.

Do you want to Continue? Y// ES

Do you want to Process or Cancel medication?

LOVASTATIN 40MG TAB: P// ROCESS

Enter your Current Signature Code:    SIGNATURE VERIFIED

Now creating Pharmacy Intervention
for LOVASTATIN 40MG TAB

PROVIDER: OPPROVIDER, ONE
RECOMMENDATION: NO CHANGE
```

See 'Pharmacy Intervention Menu' if you want to delete this intervention or for more options.

Would you like to edit this intervention ? N// NO

VERB: TAKE

.

.

Or

Do you want to Continue? Y// n NO

RX DELETED

Finishing Pending Order

Select Item(s): Quit// fn Finish

Now Processing Enhanced Order Checks! Please wait...

LOVASTATIN 40MG TAB: Single dose amount of 120 MILLIGRAMS exceeds the maximum single dose amount of 80 MILLIGRAMS.

LOVASTATIN 40MG TAB: Total dose amount of 120 MILLIGRAMS/DAY exceeds the maximum daily dose amount of 80 MILLIGRAMS/DAY.

Do you want to Continue? Y// ES

Do you want to Process or Cancel medication?

LOVASTATIN 40MG TAB: P// ROCESS

Enter your Current Signature Code: SIGNATURE VERIFIED

Now creating Pharmacy Intervention
for LOVASTATIN 40MG TAB

PROVIDER: OPPROVIDER, ONE

RECOMMENDATION: NO CHANGE

See 'Pharmacy Intervention Menu' if you want to delete this intervention or for more options.

Would you like to edit this intervention ? N// NO

.

.

Or

Do you want to Continue? Y// No

*(1) Orderable Item: LOVASTATIN TAB **(N/F)** <DIN>
(2) Drug: LOVASTATIN 40MG TAB **(N/F)** <DIN>
(3) *Dosage: 1200 (MG)
Verb: TAKE
Dispense Units: 3
Noun: TABLETS
*Route: ORAL
*Schedule: QPM
(4) Pat Instruct:

ED Edit FN Finish

Select Item(s): Next Screen// NEXT SCREEN

Renewing an Order

Rx #: 2619
(1) *Orderable Item: AMITRIPTYLINE TAB
(2) Drug: AMITRIPTYLINE 25MG TAB
(3) *Dosage: 50 (MG)


```

                Verb: TAKE
        Dispense Units: 2
                Noun: TABLETS
                *Route: ORAL
                *Schedule: QID
(4)Pat Instructions:
                SIG: TAKE TWO TABLETS BY MOUTH FOUR TIMES A DAY
(5) Patient Status: OPT NSC
(6) Issue Date: 03/25/08                (7) Fill Date: 04/17/08
        Last Fill Date: 04/17/08 (Mail)
+ Enter ?? for more actions
DC Discontinue          PR Partial          RL Release
ED Edit                RF Refill           RN Renew
Select Action: Next Screen// RN Renew
FILL DATE: (4/17/2008 - 4/18/2009): TODAY//
MAIL/WINDOW: WINDOW// WINDOW
METHOD OF PICK-UP:
Nature of Order: WRITTEN// W
WAS THE PATIENT COUNSELED: NO// NO

Do you want to enter a Progress Note? No// NO

Now Renewing Rx # 2619 Drug: AMITRIPTYLINE 25MG TAB

Now Processing Enhanced Order Checks! Please wait...

AMITRIPTYLINE 25MG TAB: Total dose amount of 200 MILLIGRAMS/DAY exceeds the maximum
daily dose amount of 150 MILLIGRAMS/DAY.

Do you want to Continue? Y// NO

RENEWED RX DELETED

Or

Do you want to Continue? Y// ES

Do you want to Process or Cancel medication?
AMITRIPTYLINE 25MG TAB: P// ROCESS

Enter your Current Signature Code: SIGNATURE VERIFIED

Now creating Pharmacy Intervention
for AMITRIPTYLINE 25MG TAB

PROVIDER: OPPROVIDER, FOUR FPP 119
RECOMMENDATION: NO CHANGE

See 'Pharmacy Intervention Menu' if you want to delete this
intervention or for more options.

Would you like to edit this intervention ? N// O

2619A AMITRIPTYLINE 25MG TAB QTY: 240
# OF REFILLS: 5 ISSUED: 04-17-08
SIG: TAKE TWO TABLETS BY MOUTH FOUR TIMES A DAY
FILLED: 05-07-08
ROUTING: WINDOW PHYS: OPPROVIDER,FOUR

Edit renewed Rx ? Y//

```

Editing an Order

```

                Rx #: 2623
(1) *Orderable Item: AMLODIPINE/ATORVASTATIN TAB
(2) Drug: AMLODIPINE 5MG/ATORVASTATIN 40MG TAB
        Verb: TAKE
(3) *Dosage: 1 TABLET
        *Route: ORAL
        *Schedule: QAM

```

```

(4)Pat Instructions:
      SIG: TAKE 1 TABLET BY MOUTH EVERY EVENING
(5) Patient Status: OPT NSC
(6) Issue Date: 04/17/08          (7) Fill Date: 04/17/08
      Last Fill Date: 04/17/08 (Window)
      Last Release Date:          (8) Lot #:
ROUTE: ORAL// ORAL
Schedule: QPM//
LIMITED DURATION (IN MONTHS, WEEKS, DAYS, HOURS OR MINUTES):
CONJUNCTION:
      :
+      Enter ?? for more actions
DC Discontinue      PR Partial      RL Release
ED Edit            RF Refill        RN Renew
Select Action: Next Screen// ED Edit
Select fields by number: (1-19): 3
Available Dosage(s)
      1. 1 TABLET
      2. 2 TABLETS

Select from list of Available Dosages, Enter Free Text Dose
or Enter a Question Mark (?) to view list: 1 TABLET// 3 TABLETS

You entered 3 TABLETS is this correct? Yes// YES
VERB: TAKE// TAKE
ROUTE: ORAL// ORAL
Schedule: QPM// QAM
LIMITED DURATION (IN MONTHS, WEEKS, DAYS, HOURS OR MINUTES):
CONJUNCTION:

New OP Order (ROUTINE)          Apr 17, 2008@13:24:09          Page: 1 of 2
OPPATIENT, ONE                  <A>
PID: 000-00-0000                Ht(cm): _____ (_____)
DOB: JAN 1,1901 (107)           Wt(kg): _____ (_____)

      Orderable Item: AMLODIPINE/ATORVASTATIN TAB
(1) Drug: AMLODIPINE 5MG/ATORVASTATIN 40MG TAB
(2) Patient Status: OPT NSC
(3) Issue Date: APR 17,2008      (4) Fill Date: APR 17,2008
      Verb: TAKE
(5) Dosage Ordered: 3 TABLETS
      Route: ORAL
      Schedule: QAM
(6)Pat Instruction:
      SIG: TAKE 3 TABLETS BY MOUTH EVERY MORNING
(7) Days Supply: 30              (8) QTY ( ): 90
(9) # of Refills: 11             (10) Routing: WINDOW
(11) Clinic:
(12) Provider: OPPROVIDER,FOUR   (13) Copies: 1
+      This change will create a new prescription!
AC Accept                      ED Edit
Select Action: Next Screen// AC Accept

Press Return to Continue:

Now Processing Enhanced Order Checks! Please Wait...

      AMLODIPINE 5MG/ATORVASTATIN 40MG TAB: Total dose form amount of 3 TABLET(S)/DAY
      exceeds the maximum daily dose form amount of 2 TABLET(S)/DAY.

Do you want to Continue? Y// NO

      Rx #: 2623
(1) *Orderable Item: AMLODIPINE/ATORVASTATIN TAB
(2) Drug: AMLODIPINE 5MG/ATORVASTATIN 40MG TAB
      Verb: TAKE
(3) *Dosage: 1 TABLET
      *Route: ORAL
      *Schedule: QPM

```

```

(4)Pat Instructions:
      SIG: TAKE 1 TABLET BY MOUTH EVERY EVENING
(5) Patient Status: OPT NSC
(6) Issue Date: 04/17/08          (7) Fill Date: 04/17/08
    Last Fill Date: 04/17/08 (Window)
    Last Release Date:          (8) Lot #:
      Expires: 04/18/09          MFG:
+   Enter ?? for more actions
DC Discontinue      PR Partial      RL Release
ED Edit            RF Refill        RN Renew
Select Action: Next Screen//
.
.
Or

Do you want to Continue? Y// ES

Do you want to Process or Cancel medication?
AMLODIPINE 5MG/ATORVASTATIN 40MG TAB: P// ROCESS

Enter your Current Signature Code: SIGNATURE VERIFIED

Now creating Pharmacy Intervention
for AMLODIPINE 5MG/ATORVASTATIN 40MG TAB

PROVIDER: PSOPROVIDER, THREE      TPP
RECOMMENDATION: NO CHANGE

See 'Pharmacy Intervention Menu' if you want to delete this
intervention or for more options.

Would you like to edit this intervention ? N// O

```

Copying an Order

```

Select Action: Next Screen// CO CO

New OP Order (COPY)          Apr 17, 2008@12:01:46          Page: 1 of 2
OPPATIENT,ONE                <A>
  PID: 000-00-0000          Ht(cm): _____ (_____)
  DOB: JAN 1,1901 (107)    Wt(kg): _____ (_____)

  Orderable Item: AMITRIPTYLINE TAB
(1) Drug: AMITRIPTYLINE 25MG TAB
(2) Patient Status: OPT NSC
(3) Issue Date: APR 17,2008          (4) Fill Date: APR 17,2008
(5) Dosage Ordered: 50 (MG)
    Verb: TAKE
    Dispense Units: 2
        Noun: TABLETS
        Route: ORAL
        Schedule: QID
(6)Pat Instruction:
      SIG: TAKE TWO TABLETS BY MOUTH FOUR TIMES A DAY
(7) Days Supply: 30          (8) QTY ( ): 240
(9) # of Refills: 11        (10) Routing: MAIL
+   Enter ?? for more actions
AC Accept                  ED Edit
Select Action: Next Screen// AC Accept
-----
Duplicate Drug in Local RX:

      Rx #: 2621A
      Drug: AMITRIPTYLINE 25MG TAB
      SIG: TAKE TWO TABLETS BY MOUTH FOUR TIMES A DAY
      QTY: 240          Refills remaining: 11
      Provider: OPPROVIDER, ONE          Issued: 02/13/08
      Status: ACTIVE          Last filled on: 02/13/08

```

```

Processing Status: Released locally on 02/13/08@08:55:32 (Window)
Days Supply: 30
-----
Discontinue Rx #2621A AMITRIPTYLINE 25MG TAB? Y/N YES

Rx #2621A AMITRIPTYLINE 25MG TAB will be discontinued after the acceptance of the new order.

Now Processing Enhanced Order Checks! Please wait...

AMITRIPTYLINE 25MG TAB: Total dose amount of 200 MILLIGRAMS/DAY exceeds the maximum
daily dose amount of 150 MILLIGRAMS/DAY.

Do you want to Continue? Y// ES

Do you want to Process or Cancel medication?
AMITRIPTYLINE 25MG TAB: P// ROCESS

Enter your Current Signature Code: SIGNATURE VERIFIED

Now creating Pharmacy Intervention
for AMITRIPTYLINE 25MG TAB

PROVIDER: OPPROVIDER, FOUR FPP 119
RECOMMENDATION: NO CHANGE

See 'Pharmacy Intervention Menu' if you want to delete this
intervention or for more options.

Would you like to edit this intervention ? N// O

Nature of Order: WRITTEN//
.
.
Or

Do you want to Continue? Y// NO

Duplicate Drug Rx #2621A AMITRIPTYLINE 25MG TAB was NOT Discontinued.

```

Verifying an Order using Prescription Processing Option

```

Rx #: 2622
(1) *Orderable Item: ACETAMINOPHEN/CODEINE ELIXIR
(2) Drug: ACETAMINIOPHEN 120MG/COD 12MG/5ML EL
Verb: TAKE
(3) *Dosage: 2 TABLESPOONFULS
*Route: ORAL
*Schedule: Q4H PRN
(4) Pat Instructions:
SIG: TAKE 2 TABLESPOONFULS BY MOUTH EVERY 4 HOURS AS NEEDED
(5) Patient Status: OPT NSC
(6) Issue Date: 04/17/08 (7) Fill Date: 04/17/08
Last Fill Date: 04/17/08 (Window)
Last Release Date: (8) Lot #:
Expires: 04/18/09 MFG:
+ Enter ?? for more actions
DC Discontinue PR (Partial) RL (Release)
ED Edit RF (Refill) RN (Renew)
Select Action: Next Screen// VF VF

PSOPATIENT,TWO ID#:000-00-0000 RX #2622

```

| RX # | DRUG | QTY | ST | ISSUE DATE | LAST REF DATE | FILL | REM | SUP |
|------------------------|--------------------------------------|-----|----|------------|---------------|------|-----|-----|
| -----NON-VERIFIED----- | | | | | | | | |
| 1 2622 | ACETAMINIOPHEN 120MG/COD 12MG/5ML EL | 480 | N | 04-17 | 04-17 | 11 | 30 | |
| 2 2528\$ | AMINOPHYLLINE 200MG TAB | 120 | N | 04-17 | 04-17 | 11 | 30 | |
| 3 2529\$ | ASPIRIN 325MG EC TAB | 30 | N | 04-17 | 04-17 | 11 | 30 | |
| 4 2527\$ | CIMETIDINE 300MG TAB | 30 | N | 04-17 | 04-17 | 11 | 30 | |

| | | | | | | |
|----------|-----------------------|------|-------|-------|----|----|
| 5 2531\$ | INDOMETHACIN 25MG CAP | 90 N | 04-17 | 04-17 | 11 | 30 |
| 6 2530\$ | WARFARIN 2.5MG TAB | 30 N | 04-17 | 04-17 | 11 | 30 |

Press RETURN to Continue:

ACETAMINIOPHEN 120MG/COD 12MG/5ML EL: Single dose form amount of 2 TABLESPOONFULS exceeds the maximum single dose form amount of 1.66668 TABLESPOONFULS.

ACETAMINIOPHEN 120MG/COD 12MG/5ML EL: Total dose form amount of 12 TABLESPOONFULS/DAY exceeds the maximum daily dose form amount of 10.00005 TABLESPOONFULS/DAY.

Do you want to Continue? Y// NO

| | | | |
|----------------------|-----------------------|----------------|--------------|
| Medication Profile | Feb 13, 2008@08:50:04 | Page: | 1 of 1 |
| PSOPATIENT,TWO | | | <A> |
| PID: 000-00-0000 | | Ht(cm): 167.64 | (10/16/1993) |
| DOB: JUL 1,1934 (73) | | Wt(kg): 68.18 | (10/16/1993) |
| SEX: MALE | | | |

| # | RX # | DRUG | QTY | ST | ISSUE DATE | LAST FILL | REF REM | DAY SUP |
|------------------------|--------|--------------------------------------|-----|----|------------|-----------|---------|---------|
| -----NON-VERIFIED----- | | | | | | | | |
| 1 | 2622 | ACETAMINIOPHEN 120MG/COD 12MG/5ML EL | 480 | N | 04-17 | 04-17 | 11 | 30 |
| 2 | 2528\$ | AMINOPHYLLINE 200MG TAB | 120 | N | 04-17 | 04-17 | 11 | 30 |
| 3 | 2529\$ | ASPIRIN 325MG EC TAB | 30 | N | 04-17 | 04-17 | 11 | 30 |
| 4 | 2527\$ | CIMETIDINE 300MG TAB | 30 | N | 04-17 | 04-17 | 11 | 30 |
| 5 | 2531\$ | INDOMETHACIN 25MG CAP | 90 | N | 04-17 | 04-17 | 11 | 30 |
| 6 | 2530\$ | WARFARIN 2.5MG TAB | 30 | N | 04-17 | 04-17 | 11 | 30 |

Enter ?? for more actions

| | | |
|-----------|-------------|------------|
| ED (Edit) | RF (Refill) | RN (Renew) |
|-----------|-------------|------------|

.

.

Or

Do you want to Continue? Y// YES

Do you want to Process or Cancel medication?

Rx #2622 ACETAMINIOPHEN 120MG/COD 12MG/5ML ELIXIR: PROCESS//

Enter your Current Signature Code: SIGNATURE VERIFIED

Now creating Pharmacy Intervention
for ACETAMINIOPHEN 120MG/COD 12MG/5ML ELIXIR

| | | | |
|-----------------|-----------------|-----|-----|
| PROVIDER: | PSOPROVIDER,TWO | TPP | 119 |
| RECOMMENDATION: | NO CHANGE | | |

See 'Pharmacy Intervention Menu' if you want to delete this intervention or for more options.

Would you like to edit this intervention ? N// O

| | |
|---|---------------------------------------|
| RX: 2622 | PATIENT: PSOPATIENT,TWO (000-00-0000) |
| STATUS: Non-Verified | |
| DRUG: ACETAMINIOPHEN 120MG/COD 12MG/5ML EL | |
| QTY: 480 | 30 DAY SUPPLY |
| SIG: TAKE 2 TABLESPOONFULS BY MOUTH EVERY 4 HOURS AS NEEDED | |
| LATEST: 04/17/2008 | # OF REFILLS: 11 REMAINING: 11 |
| ISSUED: 04/17/08 | PROVIDER: |
| LOGGED: 04/17/08 | CLINIC: NOT ON FILE |
| EXPIRES: 04/18/09 | DIVISION: HINES (499) |
| CAP: SAFETY | ROUTING: WINDOW |
| ENTRY BY: PSOPHARMACIST,ONE | VERIFIED BY: |

EDIT: (Y/N/P): N// O
VERIFY FOR PSOPATIENT,TWO ? (Y/N/Delete/Quit): Y// ES

Verification Parameter set to Yes – Backdoor New Order Entry – No PSORPH key

PU Patient Record Update NO New Order
PI Patient Information SO Select Order
Select Action: Next Screen// NO New Order

Eligibility: SERVICE CONNECTED 50% to 100% SC%: 50

RX PATIENT STATUS: SC//

DRUG: CIMETIDINE

Lookup: GENERIC NAME

| | | | |
|---|----------------------|-------|---------------|
| 1 | CIMETIDINE 100MG TAB | GA301 | |
| 2 | CIMETIDINE 200MG TAB | GA301 | |
| 3 | CIMETIDINE 300MG TAB | GA301 | 90 DAY SUPPLY |
| 4 | CIMETIDINE 400MG TAB | GA301 | |
| 5 | CIMETIDINE 800MG TAB | GA301 | |

CHOOSE 1-5: 3 CIMETIDINE 300MG TAB GA301 90 DAY SUPPLY

Now Processing Enhanced Order Checks! Please wait...

VERB: TAKE

Available Dosage(s)

1. 300MG
2. 600MG

Select from list of Available Dosages, Enter Free Text Dose
or Enter a Question Mark (?) to view list:

This is a required response. Enter '^' to exit

Select from list of Available Dosages, Enter Free Text Dose
or Enter a Question Mark (?) to view list: 900MG

You entered 900MG is this correct? Yes// YES

VERB: TAKE

DISPENSE UNITS PER DOSE(TABLET): 3// 3

Dosage Ordered: 900MG

NOUN: TABLET

ROUTE: PO// ORAL PO MOUTH Schedule:

QID// TID (THREE TIMES DAILY) LIMITED

DURATION (IN DAYS, HOURS OR MINUTES):

CONJUNCTION:

CIMETIDINE 300MG TAB: Single dose amount of 900 MILLIGRAMS exceeds the maximum single dose amount of 800 MILLIGRAMS.

CIMETIDINE 300MG TAB: Total dose amount of 2700 MILLIGRAMS/DAY exceeds the maximum daily dose amount of 1600 MILLIGRAMS/DAY.

PATIENT INSTRUCTIONS:

(TAKE THREE TABLETS BY MOUTH THREE TIMES DAILY)

DAYS SUPPLY: (1-90): 90//

QTY (TAB) DISP IN MULTIPLES OF 100: 2160// 270

COPIES: 1// 1

OF REFILLS: (0-3): 3//

PROVIDER: OPPROVIDER,TWO

CLINIC:

MAIL/WINDOW: WINDOW// WINDOW

METHOD OF PICK-UP:

REMARKS:

ISSUE DATE: TODAY// (APR 23, 2008)

FILL DATE: (4/23/2008 - 4/24/2009): TODAY// (APR 23, 2008)

Nature of Order: WRITTEN// W

Rx # 2629 04/23/08
OPPATIENT,THREE #270
TAKE THREE TABLETS BY MOUTH THREE TIMES DAILY

CIMETIDINE 300MG TAB
OPTECH,ONE OPTECH,ONE
of Refills: 3

SC Percent: 50%
Disabilities: NONE STATED

Was treatment for a Service Connected condition? NO
Is this correct? YES//
Another New Order for OPPATIENT,THREE? YES// NO

Backdoor New Order Entry – Verification Parameter set to No – No PSORPH key

Select Action: Quit// NO New Order

Eligibility: SERVICE CONNECTED 50% to 100% SC%: 50
RX PATIENT STATUS: SC//
DRUG: INDINAVIR
 Lookup: GENERIC NAME
INDINAVIR 400MG CAP AM800
 ...OK? Yes// (Yes)

Now Processing Enhanced Order Checks! Please wait...

VERB: TAKE
Available Dosage(s)
 1. 400MG
 2. 800MG

Select from list of Available Dosages, Enter Free Text Dose
or Enter a Question Mark (?) to view list: 1200MG

You entered 1200MG is this correct? Yes// YES
VERB: TAKE
DISPENSE UNITS PER DOSE(CAPSULE): 3// 3
Dosage Ordered: 1200MG

NOUN: CAPSULE
ROUTE: ORAL// ORAL
Schedule: Q8H// (EVERY 8 HOURS)
LIMITED DURATION (IN DAYS, HOURS OR MINUTES):
CONJUNCTION:

INDINAVIR 400MG CAP: Total dose amount of 3600 MILLIGRAMS/DAY exceeds the maximum
daily dose amount of 3000 MILLIGRAMS/DAY.

PATIENT INSTRUCTIONS:

(TAKE THREE CAPSULES BY MOUTH EVERY 8 HOURS)

DAYS SUPPLY: (1-90): 90//
QTY (CAP) : 270// 810
COPIES: 1// 1
OF REFILLS: (0-3): 3//
PROVIDER:
PROVIDER: OPPROVIDER,TWO
CLINIC:
MAIL/WINDOW: WINDOW// WINDOW
METHOD OF PICK-UP:
REMARKS:
ISSUE DATE: TODAY// (APR 23, 2008)
FILL DATE: (4/23/2008 - 4/24/2009): TODAY// (APR 23, 2008)
Nature of Order: WRITTEN// W

Rx # 2630 04/23/08
 OPPATIENT,THREE #810
 TAKE THREE CAPSULES BY MOUTH EVERY 8 HOURS

INDINAVIR 400MG CAP
 OPTECH,ONE OPTECH,ONE
 # of Refills: 3

SC Percent: 50%
 Disabilities: NONE STATED

Was treatment for a Service Connected condition? n NO
 Is this correct? YES//

Another New Order for OPPATIENT,THREE? YES// n NO

Finishing a Pending Order – Verification site Parameter set to YES - No PSORPH key

Pending OP Orders (ROUTINE) Apr 24, 2008@08:56:23 Page: 1 of 5
 OPPATIENT,THREE <A>

PID: 666-00-0000 Ht (cm): ()
 DOB: JAN 25,1959 (49) Wt (kg): ()

CPRS Order Checks:

CRITICAL drug-drug interaction: CARBAMAZEPINE & CYCLOSPORINE (CYCLOSPORINE
 CAP,ORAL 100MG TAKE ONE CAPSULE BY MOUTH TWICE A DAY [ACTIVE])
 Overriding Provider: OPProvider,TWO
 Overriding Reason: TESTING VERIFICATION

Duplicate drug class order: ANTICONVULSANTS (PHENYTOIN CAP,SA 100MG TAKE
 ONE CAPSULE BY MOUTH THREE TIMES A DAY [ACTIVE])
 Overriding Provider: OPProvider,TWO
 Overriding Reason: TESTING VERIFICATION

CRITICAL drug-drug interaction: CARBAMAZEPINE & WARFARIN (WARFARIN TAB
 2.5MG TAKE ONE TABLET BY MOUTH AT BEDTIME [PENDING])
 Overriding Provider: OPProvider,TWO

+ Enter ?? for more actions

BY Bypass DC (Discontinue)
 ED (Edit) FN Finish

Select Item(s): Next Screen// FN Finish

Now Processing Enhanced Order Checks! Please wait...

CRITICAL Drug Interaction with Local Rx for INDINAVIR 400MG CAP

RX: #2630
 Drug: INDINAVIR 400MG CAP
 SIG: TAKE ONE CAPSULE BY MOUTH EVERY 8 HOURS
 QTY: 270 Refills remaining: 3
 Provider: OPProvider, ONE Issued: 02/12/08
 Status: ACTIVE Last filled on: 02/12/08
 Processing Status: Released locally on 02/12/08@08:55:32 (Window)
 Days Supply: 90

The concurrent use of indinavir and carbamazepine may result in higher than anticipated carbamazepine levels, decreased indinavir plasma levels, and antiretroviral therapy failure.(1,2)The concurrent use of amprenavir, fosamprenavir, lopinavir, nelfinavir, and saquinavir may result in decreased levels of these agents and antiretroviral therapy failure.(3-7)The concurrent use of ritonavir and carbamazepine may result in elevated levels of carbamazepine and signs of carbamazepine toxicity.(8-10)

Display Professional Interaction Monograph? No// No

CRITICAL Drug Interaction with Local Rx for WARFARIN 5MG TAB

RX: #2523
 Drug: WARFARIN 5MG TAB
 SIG: TAKE TWO TABLETS BY MOUTH AT BEDTIME
 QTY: 90 Refills remaining: 3


```

        Provider: OPPROVIDER, ONE                Issued: 02/12/08
        Status: ACTIVE                            Last filled on: 02/12/08
        Processing Status: Released locally on 02/12/08@08:55:32 (Window)
                                                Days Supply: 90

The hypoprothrombinemic effect of anticoagulants may be decreased.

Display Professional Interaction Monograph? No// No

***CRITICAL*** Drug Interaction with Local Rx for CYCLOSPRINE 100MG CAP

        RX: #2512
        Drug: CYCLOSPRINE 100MG CAP
        SIG: TAKE ONE CAPSULE BY MOUTH TWICE A DAY
        QTY: 180                                Refills remaining: 3
        Provider: OPPROVIDER, ONE                Issued: 02/12/08
        Status: ACTIVE                            Last filled on: 02/12/08
        Processing Status: Released locally on 02/12/08@08:55:32 (Window)
                                                Days Supply: 90

Decreased levels of cyclosporine, which may result in a decrease in the immunosuppressive
effects of cyclosporine.

Display Professional Interaction Monograph? No// No

***CRITICAL*** Drug Interaction with Local Rx for AMITRIPTYLINE 25MG TAB

        RX: #2520
        Drug: AMITRIPTYLINE 25MG TAB
        SIG: TAKE ONE TABLET BY MOUTH AT BEDTIME
        QTY: 90                                Refills remaining: 3
        Provider: OPPROVIDER, ONE                Issued: 02/12/08
        Status: ACTIVE                            Last filled on: 02/12/08
        Processing Status: Released locally on 02/12/08@08:55:32 (Window)
                                                Days Supply: 90

Decreased levels of cyclosporine, which may result in a decrease in the immunosuppressive
effects of cyclosporine.

Display Professional Interaction Monograph? No// No

        CARBAMAZEPINE 200MG S.T.: Single dose amount of 1000 MILLIGRAMS exceeds the maximum
        single dose amount of 600 MILLIGRAMS.

        CARBAMAZEPINE 200MG S.T.: Total dose amount of 4000 MILLIGRAMS/DAY exceeds the
        maximum daily dose amount of 2400 MILLIGRAMS/DAY.

Rx # 2631                04/24/08
OPPATIENT,THREE                #600
TAKE FIVE TABLETS BY MOUTH FOUR TIMES A DAY

CARBAMAZEPINE 200MG TAB
OPTECH,ONE                OPTECH,ONE
# of Refills: 3

        SC Percent: 50%
        Disabilities: NONE STATED

Was treatment for a Service Connected condition? YES//
Are you sure you want to Accept this Order? NO// YES
Press Return to Continue

```

Verification using PROCESS ORDER CHECK option

```

Select Outpatient Pharmacy Manager Option: PROCess Order Checks
Select RX with Order Checks: ?
Answer with RX VERIFY RX#
Do you want the entire RX VERIFY List? Y (Yes)
Choose from:
2853                PSOPATIENT,SEVEN                438-09-7123
2854                PSOPATIENT,THREE                666-07-9834
2945                PSOPATIENT,EIGHT                666-00-9999

```

2946 PSOPATIENT,EIGHT 666-00-9999
2947 PSOPATIENT,EIGHT 666-00-9999

Select RX with Order Checks: 2945 AMIODARONE 400MG TAB PSOPATIENT,EIGHT
666-00-9999

RX: 2945 PATIENT: PSOPATIENT,EIGHT (666-00-9999)

STATUS: Non-Verified CO-PAY STATUS
DRUG: AMIODARONE 400MG TAB
QTY: 90 30 DAY SUPPLY
SIG: TAKE ONE TABLET BY MOUTH THREE TIMES A DAY
LATEST: 07/13/2010 # OF REFILLS: 11 REMAINING: 11
ISSUED: 07/13/10 PROVIDER:
LOGGED: 07/13/10 CLINIC: NOT ON FILE
EXPIRES: 07/14/11 DIVISION: HINES (499)
CAP: SAFETY ROUTING: WINDOW
ENTRY BY: PSTECH,ONE VERIFIED BY:

FILLED: 07/13/10 PHARMACIST: LOT #:
DISPENSED: 07/13/10 RELEASED:

EDIT: (Y/N/P): N// O

PSOPATIENT,EIGHT ID#:666-00-9999 RX#: 2945

| RX # | DRUG | QTY | ST | ISSUE DATE | LAST FILL | REF | DAY SUP |
|---|---|---------|----|---------------------------|-----------|-----|---------|
| -----NON-VERIFIED----- | | | | | | | |
| 2946\$ | ACETAMINOPHEN 325MG TAB | 3420 | N | 07-13 | 07-13 | 11 | 30 |
| 2945\$ | AMIODARONE 400MG TAB | 90 | N | 07-13 | 07-13 | 11 | 30 |
| 2944\$ | INDINAVIR 400MG CAP | 90 | N | 07-13 | 07-13 | 11 | 30 |
| 2947\$ | SIMVASTATIN 20MG TAB | 1200 | N | 07-13 | 07-13 | 11 | 30 |
| -----PENDING----- | | | | | | | |
| | FUROSEMIDE 40MG TAB | QTY: 90 | | ISDT: 08-09> | REF: 3 | | |
| | LOVASTATIN 20MG TAB | QTY: 30 | | ISDT: 07-12 | REF: 11 | | |
| | MULTIVITAMIN CAP/TAB | QTY: 90 | | ISDT: 08-09 | REF: 3 | | |
| | PREDNISONE 20MG TAB | QTY: 30 | | ISDT: 06-21 | REF: 0 | | |
| -----Non-VA MEDS (Not dispensed by VA)----- | | | | | | | |
| | ASPIRIN 325MG TAB 325MG EVERY MORNING | | | Date Documented: 08/09/07 | | | |
| | HYDROCORTISONE 0.1% CREAM THIN FILM EVERY 8 HOURS | | | Date Documented: 08/09/07 | | | |

Now doing allergy checks. Please wait...

Now Processing Enhanced Order Checks! Please wait...

Enhanced Order Checks cannot be performed for Local Drug: HYDROCORTISONE 0.1% CREAM
Reason(s): Drug not matched to NDF

Enhanced Order Checks cannot be performed for Local Drug: LOVASTATIN 20MG TAB
Reason(s): Drug not matched to NDF

Enhanced Order Checks cannot be performed for Local Drug: MULTIVITAMIN CAP/TAB
Reason(s): Drug not matched to NDF

Critical Drug Interaction with Prospective Drug:
AMIODARONE 400MG TAB and

Press return to continue:

Local RX#: 2944
Drug: INDINAVIR 400MG CAP (Non-Verified)
SIG: TAKE ONE CAPSULE BY MOUTH EVERY 8 HOURS

```

Processing Status: Not released locally (Window)

The concurrent administration of amiodarone with indinavir,(1)
nelfinavir,(2) ritonavir,(3) or tipranavir coadministered with ritonavir(4)
may result in increased levels, clinical effects, and toxicity of
amiodarone.

Display Interaction Monograph? No//  NO
-----
***Critical*** Drug Interaction with Prospective Drug:
                AMIODARONE 400MG TAB and

                Local RX#: 2947
                Drug: SIMVASTATIN 20MG TAB (Non-Verified)
                SIG: TAKE 40 TABLETS BY MOUTH AT BEDTIME
                Processing Status: Not released locally (Window)

Concurrent use of amiodarone(1) or dronedarone(4) with certain HMG CoA
reductase inhibitors may increase the risk of rhabdomyolysis.

Display Interaction Monograph? No//  NO

Press return to continue:

Do you want to Continue? Y// ES

Do you want to Process or Cancel medication?
Rx #2945  Drug: AMIODARONE 400MG TAB: PROCESS//

Enter your Current Signature Code:  SIGNATURE VERIFIED

Now creating Pharmacy Intervention
for AMIODARONE 400MG TAB

PROVIDER:
RECOMMENDATION:  NO CHANGE

See 'Pharmacy Intervention Menu' if you want to delete this
intervention or for more options.

Would you like to edit this intervention ? N// O

Press return to continue:

AMIODARONE 400MG TAB: Total dose amount of 1200 MILLIGRAMS/DAY exceeds the maximum
daily dose amount of 800 MILLIGRAMS/DAY.

Do you want to Continue? Y// ES

Do you want to Process or Cancel medication?

AMIODARONE 400MG TAB: P// ROCESS MEDICATION

Enter your Current Signature Code:  SIGNATURE VERIFIED

Now creating Pharmacy Intervention
for AMIODARONE 400MG TAB

PROVIDER:
RECOMMENDATION:  NO CHANGE

See 'Pharmacy Intervention Menu' if you want to delete this
intervention or for more options.

Would you like to edit this intervention ? N// O

```

```

PSOPATIENT,EIGHT                                ID#:666-00-9999  RX#: 2945
AMIODARONE 400MG TAB

VERIFY FOR PSOPATIENT,EIGHT ? (Y/N/Delete/Quit): Y// ES

Label Printer: TELNET
LABEL: QUEUE/CHANGE PRINTER/HOLD/SUSPEND or '^' to bypass Q// UEUE

Select LABEL DEVICE: null  NULL DEVICE  NULL DEVICE

LABEL(S) QUEUED TO PRINT
-----

```

2.6.2. General Dosing Information Message

This section will describe the composition of the general dosing information message and under what circumstances it will be displayed.

BN 15 in the BRD and associated CR 6535 and CR 6464 are addressed by requirements in this section.

2.6.2.1 Functional Requirement 1

The general dosing information message shall be comprised of the following:

- Drug Name
- FDB DoseRouteDescription
- FDB DoseLow or FDB DoseFormLow
- FDB DoseLowUnit or FDB DoseFormLowUnit
- FDB DoseHigh or FDB DoseFormHigh
- FDB DoseHighUnit or FDB DoseFormHighUnit
- FDB MaxDailyDose or FDB MaxDailyDoseForm
- FDB MaxDailyDoseUnit or FDB MaxDailyDoseFormUnit

2.6.2.2 Functional Requirement 2

The message format shall be defined as follows:

```
'General dosing range for' DRUG NAME (FDB DoseRouteDescription): DoseLow<sp>DoseLowUnit 'to'
DoseHigh<sp>DoseHighUnit. 'Maximum daily dose is 'MaxDailyDose<sp>MaxDailyDoseUnit.
```

Or

```
'General dosing range for' DRUG NAME (FDB DoseRouteDescription):
DoseFormLow<sp>DoseFormLowUnit 'to' DoseFormHigh<sp>DoseFormHighUnit. 'Maximum daily dose is
'MaxDailyDoseForm<sp>MaxDailyDoseFormUnit.
```

See example that follows:

```
General dosing range for GABAPENTIN 600MG TAB (ORAL): 300 milligrams per day to 1800
milligrams per day. Maximum daily dose is 1800 milligrams per day.
```

Or

```
General dosing range for GABAPENTIN 600MG TAB (ORAL): 0.5 each per day to 3 each per day.
Maximum daily dose is 3 each per day.
```


2.6.2.2.1 Functional Requirement 1

If a DoseRouteDescription is not returned from FDB, no Dose Route shall be included in the general dosing information message. See below:

```
'General dosing range for' DRUG NAME: DoseLow<sp>DoseLowUnit 'to'  
DoseHigh<sp>DoseHighUnit. 'Maximum daily dose is 'MaxDailyDose<sp>MaxDailyDoseUnit.
```

Or

```
'General dosing range for' DRUG NAME: DoseFormLow<sp>DoseFormLowUnit 'to'  
DoseFormHigh<sp>DoseFormHighUnit. 'Maximum daily dose is  
'MaxDailyDoseForm<sp>MaxDailyDoseFormUnit.
```

| | |
|---|---|
| Note: | If Dosing Order Checks are returned without a DoseRouteDescription that means that a FDB MIN/Max dosing record was used to perform the Dosing Order Check. Min/Max dosing records are not specific for a dose route or dose type. |
|  | |

2.6.2.2.2 Functional Requirement 2

If the FDB DoseLow and FDB DoseHigh values are the same, display the FDB DoseHigh value only.

```
General dosing range for CLOPIDOGREL 75MG TAB (ORAL): 75 milligrams per day. Maximum daily  
dose is 75 milligrams per day.
```

2.6.2.2.3 Functional Requirement 3

If the FDB DoseFormLow and FDB DoseFormHigh values are the same, display the FDB DoseFormHigh value only.

```
General dosing range for CLOPIDOGREL 75MG TAB (ORAL): 1 each per day. Maximum daily dose is 1  
each per day.
```

2.6.2.2.4 Functional Requirement 4

If the FDB MaxDailyDose or FDB MaxDailyDoseForm values are '0' and/or the FDB MaxDailyDoseUnit or FDB MaxDailyDoseFormUnit values are null, the General Dosing Information message shall display the following:

```
General dosing range for KETOROLAC 10MG TAB: 10 milligram per day to 40 milligram per day.  
Maximum daily dose is unavailable.
```

2.6.2.3 Functional Requirement 3

The DOSE FORM INDICATOR field (#3) in the DOSE UNITS file (#51.24) shall indicate whether or not the Dose Form type values shall be used.

2.6.2.4 Functional Requirement 4

The following display rules shall be applied for the DoseLow, DoseFormLow, DoseHigh, DoseFormHigh, MaxDailyDose, and MaxDailyDoseForm values:

- If after a decimal only zeroes exist, do not return (i.e. 600.0 or 600.00 display 600)
- Maintain leading zeroes (i.e. 0.25)

2.6.2.5 Functional Requirement 5

General dosing information messages shall be displayed when the Max Daily Dose Order Check cannot be performed.

2.6.2.6 Functional Requirement 6

General dosing information messages shall be displayed when both the Max Single Dose Order Check and Max Daily Dose Order Check cannot be performed.

2.6.2.7 Functional Requirement 7

General dosing information messages shall not be displayed for orders with a dose type of 'Single Dose'.

2.6.2.8 Functional Requirement 8

General dosing information messages shall not be displayed with FDB messages that have a severity of 'Not Screened' or 'Warning'.

2.6.2.9 Functional Requirement 9

If a Maximum Single Dose Order Check warning is generated for a simple order entered through CPRS that has a schedule that has been excluded from Daily Dose Order Checks, general dosing information messages shall be displayed with the Maximum Single Dose Order Check warning.

2.6.2.10 Functional Requirement 10

If a Maximum Single Dose Order Check warning is generated for a simple order entered through pharmacy backdoor options that has a schedule that has been excluded from Daily Dose Order Checks, general dosing information messages shall be displayed with the Maximum Single Dose Order Check warning.

2.6.2.11 Functional Requirement 11

If a Maximum Single Dose Order Check cannot be performed and an error message is generated for a simple order entered through CPRS that has a schedule that has been excluded from Daily Dose Order Checks, general dosing information messages shall be displayed with the order level error message.

2.6.2.12 Functional Requirement 12

If a Maximum Single Dose Order Check cannot be performed and an error message is generated for a simple order entered through pharmacy backdoor options that has a schedule that has been excluded from Daily Dose Order Checks, general dosing information messages shall be displayed with the order level error message.

2.6.3. System Level Error Message Changes


This section will document all the system level error message changes for MOCHA v2.1. A listing of all system level error messages displayed in MOCHA v2.1 is available in Appendix A2 of this document.

BN 4 in the BRD and associated CR 5704 is addressed by requirements in this section for system level error messages.

2.6.3.1 Functional Requirement 1

If Dosing Order Checks have been disabled, the system level error message displayed to the pharmacy user through backdoor pharmacy options shall be the following:

Dosing Checks are not available; please complete a manual check for appropriate Dosing.

| | |
|---|--|
| Note: | Dosing Order Checks are disabled using the <i>Enable/Disable Dosing Order Checks</i> [PSS Dosing Order Checks] option. |
|  | |

2.6.3.2 Functional Requirement 2


If Dosing Order Checks cannot be performed because the vendor database cannot be reached, the system level error message displayed to the pharmacy user through backdoor pharmacy options shall be the following:

```
Dosing Checks could not be performed.  
Reason(s): Vendor Database cannot be reached
```

2.6.3.3 Functional Requirement 3

If Dosing Order Checks cannot be performed because the vendor database has been disabled, the system level error message displayed to the pharmacy user through backdoor pharmacy options shall be the following:

```
Dosing Checks could not be performed.  
Reason(s): The connection to the vendor database has been disabled.
```

| | |
|---|---|
| Note: | Vendor database is disabled using the <i>Enable/Disable Vendor Database Link</i> [PSS ENABLE/DISABLE DB LINK] option. |
|  | |

2.6.3.4 Functional Requirement 4

If Dosing Order Checks cannot be performed because vendor database updates are being processed, the system level error message displayed to the pharmacy user through backdoor pharmacy options shall be the following:

```
Dosing Checks could not be performed.  
Reason(s): Vendor database updates are being processed.
```

2.6.3.5 Functional Requirement 5

If Dosing Order Checks cannot be performed because an unexpected error has occurred, the system level error message displayed to the pharmacy user through backdoor pharmacy options shall be the following:

```
Dosing Checks could not be performed.  
Reason(s): An unexpected error has occurred
```

2.6.4. Order Level Error Messages Changes

This section will document all the order level error message changes for MOCHA v2.1. A listing of all order level error and warning messages displayed in MOCHA v2.1 is available in Appendix A2 and A3 of this document.


BNs 3, 4, and 13 in the BRD and associated CR 4058, CR 3613, CR 3099, CR 5704, CR 3567, CR 3137, CR 5948, CR 5250, and CR 5777 are addressed by requirements in this section for order level error messages.

2.6.4.1 Functional Requirement 1

If the patient's age is not available, Dosing Order Checks will not be performed and the user through pharmacy backdoor options shall see the following order level error message:

Age required (Pharmacy)

Dosing Checks could not be performed for Drug: <DRUG NAME>
Reason(s): One or more required patient parameters unavailable: AGE


| | |
|---|--|
| Note: | General dosing information cannot be provided because age is a required parameter. |
|  | |

2.6.4.2 Functional Requirement 2

If the patient's age is not available, Dosing Order Checks will not be performed and the user through CPRS shall see the following order level error message without a specific reason:

Age required (CPRS)

Dosing Checks could not be done for Drug: <DRUG NAME>, please complete a manual check for appropriate Dosing.

| | |
|---|--|
| Note: | General dosing information cannot be provided because age is a required parameter. |
|  | |

2.6.4.3 Functional Requirement 3

If the patient's weight is not available and a weight is required for a Max Daily Dose Order Check to be performed, an order level error message along with general dosing information messages shall be displayed to the user through pharmacy backdoor options.

Weight required (Pharmacy)

Max Daily Dose Check could not be performed for Drug: GENTAMICIN 40MG/ML 2ML INJ
Reason(s): Weight required

General dosing range for GENTAMICIN 40MG/ML 2ML INJ (INTRAMUSCULAR): 1.5 milligrams per kilogram per day to 7 milligrams per kilogram per day. Maximum daily dose is 630 milligrams per day.

2.6.4.4 Functional Requirement 4

If both the Maximum Single Dose and Max Daily Dose Order Checks cannot be performed because a weight is required and the patient's weight is not available, only one error message with general dosing information messages shall be displayed to the user through pharmacy backdoor options.

Weight Required (Pharmacy)

Dosing Checks could not be performed for Drug: GENTAMICIN 40MG/ML 2ML INJ
Reason(s): Weight required

General dosing range for GENTAMICIN 40MG/ML 2ML INJ (INTRAMUSCULAR): 1.5 milligrams per kilogram per day to 7 milligrams per kilogram per day. Maximum daily dose is 630 milligrams per day.

2.6.4.5 Functional Requirement 5

If the patient's weight is not available and a weight is required for a Maximum Single Dose Order Check to be performed, an order level error message with a reason shall be displayed to the user through CPRS.

2.6.4.5.1 Functional Requirement 1

The order level error message reason that shall be displayed when a weight is required but unavailable to the CPRS user is 'No weight documented for patient'.

Weight required (CPRS)

Maximum Single Dose Check could not be done for Drug: GENTAMICIN 40MG/ML 2ML INJ
Reason(s): No weight documented for patient

2.6.4.6 Functional Requirement 6

If the patient's weight is not available and a weight is required for a Max Daily Dose Order Check to be performed, an order level error message with a reason along with general dosing information messages shall be displayed to the user through CPRS.

2.6.4.6.1 Functional Requirement 1

The order level error message reason that shall be displayed when a weight is required but unavailable to the CPRS user is 'No weight documented for patient'.

Weight required (CPRS)

Max Daily Dose Check could not be done for Drug: GENTAMICIN 40MG/ML 2ML INJ
Reason(s): No weight documented for patient

General dosing range for GENTAMICIN 40MG/ML 2ML INJ (INTRAMUSCULAR): 1.5 milligrams per kilogram per day to 7 milligrams per kilogram per day. Maximum daily dose is 630 milligrams per day.

2.6.4.7 Functional Requirement 7

If both the Maximum Single Dose Order Check and Max Daily Dose Order Check cannot be performed because a weight is required and the patient's weight is not available, only one error message with a reason along with general dosing information messages shall be displayed to the user through CPRS.

2.6.4.7.1 Functional Requirement 1

The order level error message reason that shall be displayed when a weight is required but unavailable to the CPRS user is 'No weight documented for patient'.

Weight required (CPRS)

Dosing Checks could not be done for Drug: GENTAMICIN 40MG/ML 2ML INJ
Reason(s): No weight documented for patient

General dosing range for GENTAMICIN 40MG/ML 2ML INJ (INTRAMUSCULAR): 1.5 milligram per kilogram per day to 7 milligram per kilogram per day. Maximum daily dose is 630 milligram per day.

2.6.4.8 Functional Requirement 8

If the patient's Body Surface Area (BSA) is not available because a height and/or weight was not available to perform the calculation and a BSA is required for a Max Daily Dose Order Check to be performed, an order level error message along with general dosing information messages shall be displayed to the user through pharmacy backdoor options.

BSA required (Pharmacy)

Max Daily Dose Check could not be performed for Drug: LOMUSTINE 100MG CAP
Reason(s): Body surface area required

General dosing range for LOMUSTINE 100MG CAP (ORAL): 100 milligrams per meter squared per day to 130 milligrams per meter squared per day. Maximum daily dose is 261.780 milligrams per day.

2.6.4.9 Functional Requirement 9

If both the Maximum Single Dose Order Check and the Max Daily Dose Order Check cannot be performed because a BSA is required and the patient's weight and/or height is not available, only one error message along with general dosing information messages shall be displayed to the user.

BSA required (Pharmacy)

Dosing Checks could not be performed for Drug: <Drug Name>
Reason(s): Body surface area required

General dosing range for LOMUSTINE 100MG CAP (ORAL): 100 milligrams per meter squared per day to 130 milligrams per meter squared per day. Maximum daily dose is 261.780 milligrams per day.

2.6.4.10 Functional Requirement 10

If the patient's BSA is not available because a height and/or weight was not available to perform the calculation and a BSA is required for a Maximum Single Dose Order Check to be performed, an order level error message with a reason shall be displayed to the user through CPRS.

2.6.4.10.1 Functional Requirement 1

The order level error message reason that shall be displayed to the CPRS user when a BSA is required but the height and/or weight was unavailable is 'No weight and/or height documented for patient'.

BSA required (CPRS)

Maximum Single Dose Check could not be done for Drug: LOMUSTINE 100MG CAP
Reason(s): No weight and/or height documented for patient

2.6.4.11 Functional Requirement 11

If the patient's BSA is not available because a height and/or weight was not available to perform the calculation and a BSA is required for a Max Daily Dose Order Check to be performed, an order level error message with a reason along with general dosing information messages shall be displayed to the user through CPRS.

2.6.4.11.1 Functional Requirement 1

The order level error message reason that shall be displayed to the CPRS user when a BSA is required but the height and/or weight was unavailable is 'No weight and/or height documented for patient'.

BSA required (CPRS)

Max Daily Dose Check could not be done for Drug: LOMUSTINE 100MG CAP
Reason(s): No weight and/or height documented for patient

General dosing range for LOMUSTINE 100MG CAP (ORAL): 100 milligrams per meter squared per day to 130 milligrams per meter squared per day. Maximum daily dose is 261.780 milligrams per day.

2.6.4.12 Functional Requirement 12

If both the Maximum Single Dose Order Check and Max Daily Dose Order Check cannot be performed because a BSA is required and the patient's weight and/or height is not available, only one error message with a reason along with general dosing information messages shall be displayed to the CPRS user.

2.6.4.12.1 Functional Requirement 1

The order level error message reason that shall be displayed to the CPRS user when a BSA is required but the height and/or weight was unavailable is 'No weight and/or height documented for patient'.

BSA required (CPRS)

Dosing Checks could not be done for Drug: LOMUSTINE 100MG CAP
Reason(s): No weight and/or height documented for patient


General dosing range for LOMUSTINE 100MG CAP (ORAL): 100 milligrams per meter squared per day to 130 milligrams per meter squared per day. Maximum daily dose is 261.780 milligrams per day.

2.6.4.13 Functional Requirement 13

If Dosing Order Checks cannot be performed because a FDB Dose Route cannot be determined, an order level error message shall be displayed to the user through pharmacy backdoor options.

FDB Dose Route Undefined (Pharmacy)

Dosing Checks could not be performed for Drug: GABAPENTIN 600MG TAB
Reason(s): Invalid or Undefined Dose Route


| | |
|---|---|
| Note: | General dosing information cannot be provided if the medication route is not defined. |
|  | |

2.6.4.14 Functional Requirement 14

If Dosing Order Checks cannot be performed because a FDB Dose Route cannot be determined, an order level error message without a specific reason shall be displayed to the user through CPRS.

FDB Dose Route Undefined (CPRS)

Dosing Checks could not be done for Drug: GABAPENTIN 600MG TAB, please complete a manual check for appropriate Dosing.

| | |
|---|---|
| Note: | General dosing information cannot be provided if the medication route is not defined. |
|  | |

2.6.4.15 Functional Requirement 15

If a Max Daily Dose Order Check cannot be performed because the frequency for the order is invalid or undefined, an order level error message along with general dosing information messages shall be displayed to the user through pharmacy backdoor options.

Frequency Invalid or undefined (Pharmacy)

Max Daily Dose Check could not be performed for Drug: GABAPENTIN 600MG TAB
Reason(s): Invalid or Undefined Frequency

General dosing range for GABAPENTIN 600MG TAB (ORAL): 300 milligrams per day to 1800 milligrams per day. Maximum daily dose is 1800 milligrams per day.

2.6.4.16 Functional Requirement 16

If a Max Daily Dose Order Check cannot be performed because the frequency for the order is invalid or undefined, an order level error message without a specific reason along with general dosing information messages shall be displayed to the user through CPRS.

Frequency Invalid or undefined (CPRS)

Max Daily Dose Check could not be done for Drug: GABAPENTIN 600MG TAB, please complete a manual check for appropriate Dosing.

General dosing range for GABAPENTIN 600MG TAB (ORAL): 300 milligrams per day to 1800 milligrams per day. Maximum daily dose is 1800 milligrams per day.

2.6.4.17 Functional Requirement 17

In order to obtain general dosing information for a drug when a frequency could not be determined, the following ‘dummy data’ shall be sent into the interface for the Dosing Order Checks.

2.6.4.17.1 Functional Requirement 1

The duration rate shall be set to the dose rate value (as determined from the order) and sent into the interface.

2.6.4.17.2 Functional Requirement 2

The value of ‘1’ shall be sent into the interface for the frequency and duration.

2.6.4.18 Functional Requirement 18

No messages referencing the Max Daily Dose Order Check returned from the Dosing Order Check using ‘dummy data’ to obtain general dosing information for a drug when a frequency could not be determined shall be displayed to the user.

2.6.4.19 Functional Requirement 19

If the frequency calculated from an order’s schedule is greater than the order duration (i.e. Q4H for 2 hours), a Max Daily Dose Order Check shall not be performed and an order level error message along with general dosing information messages shall be displayed to the user through pharmacy backdoor options.

Frequency greater than order duration (Pharmacy)

Max Daily Dose Check could not be performed for Drug: GABAPENTIN 600MG TAB
Reason(s): Frequency greater than order duration

General dosing range for GABAPENTIN 600MG TAB (ORAL): 300 milligrams per day to 1800 milligrams per day. Maximum daily dose is 1800 milligrams per day.

2.6.4.20 Functional Requirement 20

If the frequency calculated from an order’s schedule is greater than the order duration (i.e. Q4H for 2 hours), a Max Daily Dose Order Check shall not be performed, and an order level error message without a specific reason along with general dosing information message shall be displayed to the user through CPRS.

Frequency greater than order duration (CPRS)

Max Daily Dose Check could not be done for Drug: GABAPENTIN 600MG TAB, please complete a manual check for appropriate Dosing.

General dosing range for GABAPENTIN 600MG TAB (ORAL): 300 milligrams per day to 1800 milligrams per day. Maximum daily dose is 1800 milligrams per day.

2.6.4.21 Functional Requirement 21

If Dosing Order Checks cannot be performed because the single dose amount cannot be determined, an order level error message along with general dosing information messages shall be displayed to the user through pharmacy backdoor options.

Single Dose Amount cannot be determined (Pharmacy)

Dosing Checks could not be performed for Drug: GABAPENTIN 600MG TAB
Reason(s): Free Text Dosage could not be evaluated.

General dosing range for GABAPENTIN 600MG TAB (ORAL): 300 milligrams per day to 1800 milligrams per day. Maximum daily dose is 1800 milligrams per day.

2.6.4.22 Functional Requirement 22

If Dosing Order Checks cannot be performed because the single dose amount cannot be determined, an order level error message without a specific reason along with general dosing information messages shall be displayed to the user through CPRS.

Single Dose Amount cannot be determined (CPRS)

Dosing Checks could not be done for Drug: <Drug Name>, please complete a manual check for appropriate Dosing.

'General dosing range for' DRUG NAME (FDB DoseRouteDescription): DoseLow<sp>DoseLowUnit 'to' DoseHigh<sp>DoseHighUnit. 'Maximum daily dose is 'MaxDailyDose<sp>MaxDailyDoseUnit.

Or

Dosing Checks could not be done for Drug: <Drug Name>, please complete a manual check for appropriate Dosing.

'General dosing range for' DRUG NAME (FDB DoseRouteDescription): DoseFormLow<sp>DoseFormLowUnit 'to' DoseFormHigh<sp>DoseFormHighUnit. 'Maximum daily dose is 'MaxDailyDoseForm<sp>MaxDailyDoseFormUnit.

2.6.4.23 Functional Requirement 23

If Dosing Order Checks cannot be performed because the Dose Unit cannot be determined, an order level error message along with general dosing information messages shall be displayed to the user through pharmacy backdoor options.

Dose Units cannot be determined (Pharmacy)

Dosing Checks could not be performed for Drug: GABAPENTIN 600MG TAB
Reason(s): Free Text Dosage could not be evaluated.

General dosing range for GABAPENTIN 600MG TAB (ORAL): 300 milligrams per day to 1800 milligrams per day. Maximum daily dose is 1800 milligrams per day.

2.6.4.24 Functional Requirement 24

If Dosing Order Checks cannot be performed because the Dose Unit cannot be determined, an order level error message without a specific reason along with general dosing information messages shall be displayed to the user through CPRS.

Dose Unit cannot be determined (CPRS)

Dosing Checks could not be done for Drug: <Drug Name>, please complete a manual check for appropriate Dosing.

'General dosing range for' DRUG NAME (FDB DoseRouteDescription): DoseLow<sp>DoseLowUnit 'to' DoseHigh<sp>DoseHighUnit. 'Maximum daily dose is 'MaxDailyDose<sp>MaxDailyDoseUnit.

Or

Dosing Checks could not be done for Drug: <Drug Name>, please complete a manual check for appropriate Dosing.

'General dosing range for' DRUG NAME (FDB DoseRouteDescription):

```
DoseFormLow<sp>DoseFormLowUnit 'to' DoseFormHigh<sp>DoseFormHighUnit. 'Maximum daily dose is  
'MaxDailyDoseForm<sp>MaxDailyDoseFormUnit.
```

2.6.4.25 Functional Requirement 25

If Dosing Order Checks cannot be performed because a local possible dosage (LPD) defined for a dispense drug is selected for an order which does not have a numeric dose and dose unit defined, and for which a numeric dose and dose unit cannot be derived using the free text logic, an order level error message along with general dosing information messages shall be displayed to the user through pharmacy backdoor options.

Single Dose Amount & Dose Unit cannot be derived from LPD (Pharmacy)

```
Dosing Checks could not be performed for Drug: GABAPENTIN 600MG TAB  
Reason(s): Free Text Dosage could not be evaluated.
```

```
General dosing range for GABAPENTIN 600MG TAB (ORAL): 300 milligrams per day to 1800  
milligrams per day. Maximum daily dose is 1800 milligrams per day.
```

2.6.4.26 Functional Requirement 26

If Dosing Order Checks cannot be performed because a local possible dosage defined for a dispense drug is selected for an order which does not have a numeric dose and dose unit defined, and for which a numeric dose and dose unit cannot be derived using the free text logic, an order level error message without a specific reason along with general dosing information messages shall be displayed to the user through CPRS.

Single Dose Amount & Dose Unit cannot be derived from LPD (CPRS)

```
Dosing Checks could not be done for Drug: <Drug Name>, please complete a manual check for  
appropriate Dosing.
```

```
'General dosing range for' DRUG NAME (FDB DoseRouteDescription): DoseLow<sp>DoseLowUnit 'to'  
DoseHigh<sp>DoseHighUnit. 'Maximum daily dose is 'MaxDailyDose<sp>MaxDailyDoseUnit.
```

Or

```
Dosing Checks could not be done for Drug: <Drug Name>, please complete a manual check for  
appropriate Dosing.
```

```
'General dosing range for' DRUG NAME (FDB DoseRouteDescription):  
DoseFormLow<sp>DoseFormLowUnit 'to' DoseFormHigh<sp>DoseFormHighUnit. 'Maximum daily dose is  
'MaxDailyDoseForm<sp>MaxDailyDoseFormUnit.
```

2.6.4.27 Functional Requirement 27

In order to obtain general dosing information for a dispense drug for which a dosage ordered could not be evaluated the following 'dummy data' shall be sent into the interface.

2.6.4.27.1 Functional Requirement 1

The value of '1' shall be sent into the interface for the single dose amount.

2.6.4.27.2 Functional Requirement 2

The following logic shall be used to determine the dose unit.

- a. Retrieve the drug unit from the Dispense Drug's VA Product match and do a look up on the NAME, SYNONYM, and FIRST DATABANK DOSE UNIT fields in the DOSE UNITS file (#51.24). If an exact match is found get the FDB dose unit equivalent and send to interface.
- b. If nothing is found in (a), loop through all local possible dosages for the dispense drug to find a dose unit. If found, send FDB dose unit equivalent to interface.

- c. If nothing is found in (b), look at the nouns associated with the orderable item's dosage form. Do a lookup on the NAME, SYNONYM, and FIRST DATABANK DOSE UNIT fields in the DOSE UNITS file using the nouns to see if a match can be made. If found, send the FDB dose unit equivalent to the interface.
- d. If nothing is found in (c) send 'EACH' to the interface for dose unit.

2.6.4.27.3 Functional Requirement 3

The value of 'DAY' shall be sent into the interface for dose rate and duration rate.

2.6.4.27.4 Functional Requirement 4

The value of '1' shall be sent into the interface for frequency and duration.

2.6.4.28 Functional Requirement 28

If a free text dosage is entered through CPRS for a multi-ingredient product for which a dispense drug cannot be determined; more than one dispense drug is associated with the orderable item; and none of the dosing order check exclusion criteria apply, no general dosing information shall be returned to CPRS.

2.6.4.29 Functional Requirement 29

If a free text dosage is entered through CPRS for a single ingredient or multi-ingredient product where the derived dose unit is a dose form type for which a dispense drug cannot be determined; more than one dispense drug is associated with the orderable item; and none of the dosing order check exclusion criteria apply, no general dosing information shall be returned to CPRS.

2.6.4.30 Functional Requirement 30

FDB messages with a severity of 'Not Screened' shall be treated as order level error messages and displayed to the user through the pharmacy backdoor.

FDB messages with severity of 'Not Screened' (Pharmacy)

```
Dosing Order Check could not be performed for Drug: <DRUG NAME>  
Reason(s): FDB dosing information is not available for this drug.
```

2.6.4.31 Functional Requirement 31

FDB messages with a severity of 'Not Screened' shall be treated as order level error messages and displayed without a specific reason to the user through CPRS.

FDB messages with severity of 'Not Screened' (CPRS)

```
Dosing Order Check could not be done for Drug: <DRUG NAME>, please complete a manual check  
for appropriate Dosing.
```

2.6.4.32 Functional Requirement 32

FDB messages with a severity of 'Warning' shall be treated as order level error messages and displayed to the user through the pharmacy backdoor.

FDB messages with severity of 'Warning' (Pharmacy)

```
Dosing Order Check Warning for <DRUG NAME>:  
Dosing is not established for a patient of this age.
```

2.6.4.33 Functional Requirement 33

FDB messages with a severity of 'Warning' shall be treated as order level error messages and displayed to the user through CPRS.

FDB messages with severity of 'Warning' (CPRS)

Dosing Order Check Warning for <DRUG NAME>:
Dosing is not established for a patient of this age.

2.6.4.34 Functional Requirement 34

A 'Press Return to Continue' shall be inserted so that the Dosing Order Check warnings, order level error messages, and general dosing information messages do not scroll off the screen during user review.

2.6.4.35 Functional Requirement 35

For a simple order, a top of form shall be performed before a Dosing Order Check warning is displayed.

2.6.4.36 Functional Requirement 36

For a simple order, all information for a Dosing Order Check warning shall be displayed in its entirety on a single screen.

2.6.5.37 Functional Requirement 37

If FDB returns a MaxDailyDoseStatusCode of '5' – 'Unable to Check' without a MaxDailyDoseMessage, the following error message along with the general dosing information message shall be displayed to the user through the pharmacy backdoor.

Pharmacy

Max Daily Dose Check could not be performed for Drug: KETOROLAC 10MG TAB
Reason: Unavailable

General dosing range for KETOROLAC 10MG TAB: 10 milligram per day to 40 milligram per day.
Maximum daily dose is unavailable.

2.6.5.38 Functional Requirement 38

If FDB returns a MaxDailyDoseStatusCode of '5' – 'Unable to Check' without a MaxDailyDoseMessage, the following error message along with the general dosing information message shall be displayed through CPRS.

CPRS

Max Daily Dose Check could not be done for Drug: KETOROLAC 10MG TAB, please complete a manual check for appropriate Dosing.

General dosing range for KETOROLAC 10MG TAB: 10 milligram per day to 40 milligram per day.
Maximum daily dose is unavailable.

2.6.5.39 Functional Requirement 39

As a general rule, if both the Maximum Single Dose and Max Daily Dose Order Checks cannot be performed and the reason for both order checks is identical, a single error message shall be displayed to the user. See below:

(Pharmacy)

Dosing Checks could not be performed for Drug: <DRUG NAME>
Reason(s): XXXXX XXXXX XXXXX

(CPRS)

Dosing Checks could not be done for Drug: <DRUG NAME>, please complete a manual check for appropriate Dosing.

2.6.5. Frequency

This section will describe the logic used to determine frequency for outpatient medication orders. Almost all, if not all of this frequency logic will be provided by the PDM application. The requirements are included in the document for convenient retrieval/referral.

BN 2 and 6 in the BRD and associated CR 5703, CR 6389, CR 3208, CR 3513, CR 4477, and CR 2677 are addressed by requirements in this section.


2.6.5.1 Functional Requirement 1

The frequency shall be derived from the VistA schedule associated with the order. The user can select from the ADMINISTRATION SCHEDULE file (#51.1), the MEDICATION INSTRUCTION file (#51) or can enter a free text value.

2.6.5.2 Functional Requirement 2

ADMINISTRATION SCHEDULE file (#51.1) lookup shall utilize the following fields and in the order in which they are displayed below:


- NAME field (#.01) in the ADMINISTRATION SCHEDULE file (#51.1)
- OLD SCHEDULE NAME(S) field in the ADMINISTRATION SCHEDULE file (#51.1)

| | |
|--|---|
| Note: | The OLD SCHEDULE NAME(S) field is a new field that has been created in the ADMINISTRATION SCHEDULE file (#51.1). Please see section 2.6.13 in the M2-1_PDM_RSD_v2 for more information on this new field. |
|  | |

2.6.5.3 Functional Requirement 3

MEDICATION INSTRUCTION file (#51) lookup shall utilize the following fields and in the order in which they are displayed below:

- NAME field (#.01) in the MEDICATION INSTRUCTION file (#51)
- SYNONYM field (#.5) in the MEDICATION INSTRUCTION file (#51)
- OLD MED INSTRUCTION NAME(S) field in the MEDICATION INSTRUCTION file (#51)

| | |
|---|---|
| Note: | The OLD MED INSTRUCTION NAME(S) field is a new field that has been created in the MEDICATION INSTRUCTION file (#51). Please see section 2.6.14 in the M2-1_PDM_RSD_v2 for more information on this new field. |
|  | |

2.6.5.4 Functional Requirement 4

If a '@' sign is found in the name of the schedule, the schedule shall be considered DAY OF THE WEEK.

2.6.5.4.1 Functional Requirement 1

The number of administration times, if defined after the '@' sign separated by '-', shall determine the frequency. An example of such a schedule is 'MO-WE-FR@09-17', where the frequency would be equal to '2'.

2.6.5.4.2 Functional Requirement 2

If there is no value after the '@' sign, the frequency shall be set to '1'.

2.6.5.4.3 Functional Requirement 3

If text is found after the '@' sign (i.e. BID), the text shall be used to determine the frequency.

2.6.5.4.3.1 Functional Requirement 1

The software shall attempt to match the text after the '@' sign to an entry in the ADMINISTRATION SCHEDULE file (#51.1), MEDICATION INSTRUCTION file (#51), or if not found in either file, treat it as free text.

2.6.5.5 Functional Requirement 5

The system shall first check if a value entered for the schedule is found in the ADMINISTRATION SCHEDULE file (#51.1).

2.6.5.5.1 Functional Requirement 1

Only schedules marked for Pharmacy (PSJ in Package Prefix field) shall be used to determine the frequency.

2.6.5.5.2 Functional Requirement 2

If the text found after the '@' sign matches more than one entry in the ADMINISTRATION SCHEDULE file (#51.1), the entry that is designated as DAY OF THE WEEK from the schedule type shall be used.

2.6.5.5.2.1 Functional Requirement 1

If more than one entry is designated as DAY OF THE WEEK, the first entry found shall be used.

2.6.5.5.3 Functional Requirement 3


If the text found after the '@' sign matches one or more entries in the ADMINISTRATION SCHEDULE file (#51.1), but none are designated as DAY OF THE WEEK from the schedule type, the first entry marked for Pharmacy (PSJ in Package Prefix field) shall be used.

2.6.5.5.3.1 Functional Requirement 1

If none of the schedules are marked for Pharmacy (PSJ in Package Prefix field) none of the schedules shall be used to determine the frequency.

2.6.5.5.4 Functional Requirement 4

If the schedule entered for the order is found in the ADMINISTRATION SCHEDULE file (#51.1), the value found in the DOSING CHECK FREQUENCY field shall be used to determine the frequency.

| | |
|---|--|
| Note: | The DOSING CHECK FREQUENCY field is a new field that has been created in the ADMINISTRATION SCHEDULE file (#51.1). Please see section 2.6.6 in the M2-1_PDM_RSD_v2 for more information on this new field. |
|  | |

2.6.5.5.4.1 Functional Requirement 1

If there are drug(s) associated with the DOSING CHECK FREQUENCY, the value in the DOSING CHECK FREQUENCY field shall only be used to calculate the schedule frequency if the drug within the order matches a drug associated with the DOSING CHECK FREQUENCY.

2.6.5.5.5 Functional Requirement 5

If the schedule entered for the order is found in the ADMINISTRATION SCHEDULE file (#51.1) and the schedule type is ONE-TIME or ON CALL, the frequency shall be set to '1'.

2.6.5.5.6 Functional Requirement 6

If the schedule entered for the order is found in the ADMINISTRATION SCHEDULE file (#51.1) and the schedule type is DAY OF THE WEEK, no value is found in the DOSING CHECK FREQUENCY field, and administration times have been defined for the schedule, the number of administration times shall determine the frequency.

2.6.5.5.6.1 Functional Requirement 1

If no administration times have been defined for the schedule, and a value is found in the FREQUENCY (IN MINUTES) field (#2) for that entry, that value shall be used to calculate the frequency.

2.6.5.5.7 Functional Requirement 7


If the schedule entered for the order is found in the ADMINISTRATION SCHEDULE file (#51.1) and the schedule type is not DAY OF THE WEEK, ONE-TIME OR ON CALL, no value is found in the DOSING CHECK FREQUENCY field and a value is found in the FREQUENCY (IN MINUTES) field for that entry, that value shall be used to calculate the frequency.

2.6.5.6 Functional Requirement 6

If the schedule is not found in the ADMINISTRATION SCHEDULE file (#51.1), the program shall check if a value entered for the schedule is found in the MEDICATION INSTRUCTION file (#51).

2.6.5.6.1 Functional Requirement 1

If a value entered for the schedule is found in the MEDICATION INSTRUCTION file (#51), the value found in the DOSING CHECK FREQUENCY field shall be used to calculate the frequency.

| | |
|---|---|
| Note: | The DOSING CHECK FREQUENCY field is a new field that has been created in the MEDICATION INSTRUCTION file (#51). Please see section 2.6.7 in the M2-1_PDM_RSD_v2 for more information on this new field. |
|  | |

2.6.5.6.1.1 Functional Requirement 1

If there are drug(s) associated with the DOSING CHECK FREQUENCY, the value in the DOSING CHECK FREQUENCY field shall only be used to calculate the schedule frequency if the drug within the order matches a drug associated with the DOSING CHECK FREQUENCY.

2.6.5.6.2 Functional Requirement 2

If no value is found in the DOSING CHECK FREQUENCY field, but a value is found in the FREQUENCY (IN MINUTES) field (#31) for that entry in the MEDICATION INSTRUCTION file (#51), that value shall be used to calculate the frequency.

2.6.5.7 Functional Requirement 7

If NOT found in the MEDICATION INSTRUCTION file (#51), the system shall check if the free text value matches the 'QXH' format, where 'X' is a whole number.

2.6.5.7.1 Functional Requirement 1

If a match is found, the free text value shall be passed into the interface for frequency.

2.6.5.7.2 Functional Requirement 2

If a match is not found, the frequency shall be left undefined.

2.6.5.8 Functional Requirement 8

The frequency shall be calculated by dividing 1440 by the value found in the FREQUENCY (IN MINUTES) field.

2.6.5.9 Functional Requirement 9

If a frequency is determined to be less than 1, a free text format as specified by FDB in the table below shall be passed into the interface to represent a decimal value.

2.6.5.10 Functional Requirement 10

If the frequency calculated is not a whole number, a free text format as specified by FDB in the table below shall be passed into the interface.

FDB TABLE

| FREE TEXT VALUE | FREQUENCY |
|---|-------------------------|
| QOD | 0.5 |
| Q#H (such as every 4 hours) | $24 \div \#$ |
| Q#D (number must be greater than 1 (such as every 3 days) | $1 \div \#$ |
| Q#W (such as every 4 weeks) | $1 \div (\# \times 7)$ |
| Q#L (such as every 3 months) | $1 \div (\# \times 30)$ |
| X#D (such as 4 times per day) | # |
| X#W (such as 2 times per week) | $\# \div 7$ |
| X#L (such as 1 time per month) | $\# \div 30$ |

2.6.5.11 Functional Requirement 11

If the schedule entered cannot be found as a whole in either the ADMINISTRATION SCHEDULE (#51.1) file or the MEDICATION INSTRUCTION (#51) file, the schedule shall be broken down using space as a delimiter and each word looked up in the ADMINISTRATION

SCHEDULE (#51.1) file and if not found then looked up in the MEDICATION INSTRUCTION (#51) file.

2.6.5.11.1 Functional Requirement 1

If only one frequency value is found for any of the words in either file, that frequency value shall be used.

2.6.5.11.2 Functional Requirement 2

If multiple frequency values are found, but the values are the same, that value shall be used for the frequency.

2.6.5.11.3 Functional Requirement 3

If multiple frequency values are found, but the values are not the same, none of the values shall be used and an error displayed to the user that the Max Daily Dose Order Check could not be performed.

2.6.5.11.4 Functional Requirement 4

Only schedules marked as Pharmacy use shall be used to determine the frequency value.

2.6.5.11.5 Functional Requirement 5

If more than one schedule is found and at least one of the schedules is marked as ONE-TIME or ON-CALL, the frequency shall be set to '1' and only a Maximum Single Dose Check shall be performed.

2.6.5.11.6 Functional Requirement 6

If more than one schedule is found and at least one of the schedules is marked as DAY OF THE WEEK, and no value is found in the DOSING CHECK FREQUENCY field, the day of the week logic shall be used to determine the frequency value.

2.6.5.12 Functional Requirement 12

When entering an outpatient order that has a schedule which contains a '<space>PRN', the software shall run the schedule as entered through the logic to determine a frequency.

2.6.5.12.1 Functional Requirement 1

If no frequency can be determined, the software shall remove the '<space>PRN' from the schedule and run through the logic a second time to determine a frequency.

2.6.5.13 Functional Requirement 13

For a simple outpatient medication order, if the order duration is less than 24 hours (i.e. Q4H for 8 hours), the software shall perform a Maximum Single Dose Order Check and a Max Daily Dose Order Check. The Max Daily Dose Order Check shall reflect only those doses ordered.

For example: Ibuprofen 600mg Q4H for 12 hours. Only 3 doses of Ibuprofen 600mg will be administered in 24 hours. The frequency sent to the interface will be '3' and NOT 6.

2.6.6. Duration/Duration Rate

The duration is a numeric representation in terms of a specific duration rate (i.e. HOUR, DAY, etc.) that a dosing regimen is administered. We are not evaluating dosing periods greater than 1 day.

BN 2 in the BRD and associated CR 5703 and CR 6389 are addressed by requirements in this section.

2.6.6.1 Functional Requirement 1

The value for duration sent to the interface shall always be in terms of a duration rate of DAY.

2.6.6.2 Functional Requirement 2

For outpatient medication orders, the duration shall always be equal to '1' unless otherwise specified.

2.6.6.3 Functional Requirement 3

For an outpatient order with duration greater than one day, the duration sent to the interface shall be '1'.

2.6.6.4 Functional Requirement 4

If the dose type for the order is determined to be 'Single Dose', a duration of '1' shall be sent to the interface.

2.6.6.5 Functional Requirement 5

If the duration is not defined for an order, a duration of '1' and a duration rate of 'DAY' shall be assumed.

2.6.6.6 Functional Requirement 6

For a simple outpatient medication order, if the period of time (duration), regardless of duration rate (i.e. HOUR, DAY, etc.) is less than 24 hours (1 day), a duration of '1' shall be sent to the interface. An example of this would be Q4H for 8 hours.

2.6.6.7 Functional Requirement 7

The duration rate shall be set to the dose rate value for all outpatient orders.

2.6.6.8 Functional Requirement 8

For a simple outpatient medication order, if the order duration is less than 24 hours (i.e. Q4H for 8H), the software shall perform a Maximum Single Dose and Max Daily Dose Order Check. The Max Daily Dose Order Check shall reflect only those doses ordered.

For example: Ibuprofen 600mg Q4H for 12 hours. Only 3 doses of Ibuprofen 600mg will be administered in 24 hours. The frequency sent to the interface will be '3' and NOT 6. The duration sent to the interface will be 1.

2.6.7. Schedule Exclusions


This section describes the implementation of the daily dose exclusion for a schedule and how it affects the Maximum Single Dose Order Check and the Max Daily Dose Order Check. The all

Dosing Order Checks schedule exclusion will also be applied to the Max Daily Dose Order Check in MOCHA v2.1.

BN 7 in the BRD and associated CR 3921, CR 3923, and CR 3925 is addressed by requirements in this section.

2.6.7.1 Functional Requirement 1

No Max Daily Dose Order Check shall be performed for a simple medication order processed through CPRS using the outpatient medication dialog or as a quick order with a schedule that has been excluded from all Dosing Order Checks.


| | |
|---|---|
| Note: | A schedule which has been excluded from all Dosing Order Checks has the EXCLUDE FROM ALL DOSING CHECKS field (#9) in the ADMINISTRATION SCHEDULE file (#51.1) set to YES. |
|  | |

2.6.7.1.1 Functional Requirement 1

No message shall be displayed to the user informing them that the Max Daily Dose Order Check will not be performed.

2.6.7.2 Functional Requirement 2

No Max Daily Dose Order Check shall be performed for a simple medication order processed through CPRS using the outpatient medication dialog or as a quick order with a schedule that has been excluded from the Daily Dose Order Check.

| | |
|---|--|
| Note: | A schedule which has been excluded from the Max Daily Dose Order Check has the EXCLUDE FROM DAILY DOSE CHECK field (#10) in the ADMINISTRATION SCHEDULE file (#51.1) set to YES. |
|  | |

2.6.7.2.1 Functional Requirement 1

No message shall be displayed to the user informing them that the Max Daily Dose Order Check will not be performed.

2.6.7.3 Functional Requirement 3

No Max Daily Dose Order Check shall be performed for a simple medication order processed through pharmacy backdoor options with a schedule that has been excluded from all Dosing Order Checks.

2.6.7.3.1 Functional Requirement 1

No message shall be displayed to the user informing them that the Max Daily Dose Order Check will not be performed.

2.6.7.4 Functional Requirement 4

No Max Daily Dose Order Check shall be performed for a simple medication order processed through the pharmacy backdoor with a schedule that has been excluded from the Daily Dose Order Check.

2.6.7.4.1 Functional Requirement 1

No message shall be displayed to the user informing them that the Max Daily Dose Order Check will not be performed.

2.6.7.5 Functional Requirement 5

Only a Maximum Single Dose Order Check shall be performed for a simple medication order processed through CPRS using the outpatient medication or as a quick order with a schedule that has been excluded from a Daily Dose Order Check.

2.6.7.5.1 Functional Requirement 1

If the Maximum Single Dose Order Check fails, general dosing information messages shall be displayed along with the warning message. See below:

Max Single Dose Check Fails (exceeds recommended dose):

HALOPERIDOL 10MG TAB: Single dose amount of 60 MILLIGRAMS exceeds the maximum single dose amount of 33.34 MILLIGRAMS.

General dosing range for HALOPERIDOL 10MG TAB (ORAL): 1 milligram per day to 100 milligrams per day. Maximum daily dose is 100 milligrams per day.

2.6.7.5.2 Functional Requirement 2

If the Maximum Single Dose Order Check results in an error, a general dosing information messages shall be displayed along with the error message. See below:

Max Single Dose Check error occurs:

Maximum Single Dose Check could not be done for Drug: GENTAMICIN 40MG/ML 2ML INJ, please complete a manual check for appropriate Dosing.

General dosing range for GENTAMICIN 40MG/ML 2ML INJ (INTRAMUSCULAR): 1.5 milligrams per kilogram per day to 7 milligrams per kilogram per day. Maximum daily dose is 630 milligrams per day.

2.6.7.6 Functional Requirement 6

Only a Maximum Single Dose Order Check shall be performed for a simple medication order processed through the pharmacy backdoor with a schedule that has been excluded from a Daily Dose Order Check.

2.6.7.6.1 Functional Requirement 1

If the Maximum Single Dose Order Check fails, general dosing information messages shall be displayed along with the warning message. See below:

Max Single Dose Check Fails (exceeds recommended dose):

HALOPERIDOL 10MG TAB: Single dose amount of 60 MILLIGRAMS exceeds the maximum single dose amount of 33.34 MILLIGRAMS.

General dosing range for HALOPERIDOL 10MG TAB (ORAL): 1 milligram per day to 100 milligrams per day. Maximum daily dose is 100 milligrams per day.

2.6.7.6.2 Functional Requirement 2

If the Maximum Single Dose Order Check results in an error, general dosing information messages shall be displayed along with the error message. See below:

Maximum Single Dose Order Check error occurs:

Maximum Single Dose Check could not be performed for Drug: GENTAMICIN 40MG/ML 2ML INJ
Reason(s): Weight required

General dosing range for GENTAMICIN 40MG/ML 2ML INJ (INTRAMUSCULAR): 1.5 milligrams per kilogram per day to 7 milligrams per kilogram per day. Maximum daily dose is 630 milligrams per day.

2.6.7.7 Functional Requirement 7

Schedule exclusions shall be applied to the following Outpatient Pharmacy order entry processes:

- Entering a new order
- Finishing a pending order
- Renewing an order
- Editing the following fields:
 - Orderable Item
 - Dispense Drug
 - Dosage
 - Dispense Units
 - Route
 - Schedule
- Verifying an order
- Copying an order
- Reinstating a discontinued order

2.6.8. Per Orifice Note

When a high dose warning or general dosing information message is displayed to the user it will be prefaced with a note informing the user that the dosing information is per orifice. This will be done for drugs administered by eye, ear or nose.

BN 8 in the BRD and associated CR 3266 is addressed by requirements in this section.

2.6.8.1 Functional Requirement 1

If a high dose warning is displayed after Dosing Order Checks are performed when a simple order is processed through CPRS, it shall be prefaced with additional text if the medication route within the order is mapped to a standard medication route of 'NASAL' or 'OPHTHALMIC' or 'OTIC'.

2.6.8.1.1 Functional Requirement 1


If the medication route within the order is mapped to a standard medication route of 'NASAL', the following text shall display before the high dose warning: 'Dosing Information provided is PER NOSTRIL: '

2.6.8.1.2 Functional Requirement 2

If the medication route within the order is mapped to a standard medication route of 'OPHTHALMIC', the following text shall display before the high dose warning: 'Dosing Information provided is PER EYE: '

2.6.8.1.3 Functional Requirement 3

If the medication route within the order is mapped to a standard medication route of 'OTIC', the following text shall display before the high dose warning: 'Dosing Information provided is PER EAR: '

| | |
|---|---|
| Note: | A high dose warning for the Maximum Single Dose Order Check will have a single dose status code of '2' – 'Exceeds Max'. A high dose warning for the Max Daily Dose Order Check will have a max daily dose status code of '2' – 'Exceeds Max.' |
|  | |

2.6.8.2 Functional Requirement 2

If general dosing information is displayed after Dosing Order Checks are performed when a simple order is processed through CPRS, it shall be prefaced with additional text if the medication route within the order is mapped to a standard medication route of 'NASAL' or 'OPHTHALMIC' or 'OTIC'.

2.6.8.2.1 Functional Requirement 1

If the medication route within the order is mapped to a standard medication route of 'NASAL', the following text shall display before the general dosing information message: 'Dosing Information provided is PER NOSTRIL: '

2.6.8.2.2 Functional Requirement 2

If the medication route within the order is mapped to a standard medication route of 'OPHTHALMIC', the following text shall display before the general dosing information message: 'Dosing Information provided is PER EYE: '

2.6.8.2.3 Functional Requirement 3

If the medication route within the order is mapped to a standard medication route of 'OTIC', the following text shall display before the general dosing information message: 'Dosing Information provided is PER EAR: '

2.6.8.3 Functional Requirement 3

If a high dose warning is displayed for a dosing sequence after a Maximum Single Dose Order Check is performed when a complex order is processed through CPRS, it shall be prefaced with additional text if the medication route within the dosing sequence is mapped to a standard medication route of 'NASAL' or 'OPHTHALMIC' or 'OTIC'.

2.6.8.3.1 Functional Requirement 1


If the medication route within the dosing sequence is mapped to a standard medication route of 'NASAL', the following text shall display before the high dose warning: 'Dosing Information provided is PER NOSTRIL: '

2.6.8.3.2 Functional Requirement 2

If the medication route within the dosing sequence is mapped to a standard medication route of 'OPHTHALMIC', the following text shall display before the high dose warning: 'Dosing Information provided is PER EYE: '

2.6.8.3.3 Functional Requirement 3

If the medication route within the dosing sequence is mapped to a standard medication route of 'OTIC', the following text shall display before the high dose warning: 'Dosing Information provided is PER EAR: '

| | |
|---|---|
| Note: | A high dose warning for the Maximum Single Dose Order Check will have a single dose status code of '2' – 'Exceeds Max'. |
|  | |

2.6.8.4 Functional Requirement 4

If more than one high dose warning or a high dose warning and general dosing information messages are displayed after Dosing Order Checks are performed when a simple order is processed through CPRS whose medication route is mapped to a standard medication route of 'NASAL' or 'OPHTHALMIC' or 'OTIC', the additional text shall be displayed first and only once.

2.6.8.5 Functional Requirement 5

If a high dose warning is displayed after Dosing Order Checks are performed when a simple order is processed through pharmacy backdoor options, it shall be prefaced with additional text if the medication route within the order is mapped to a standard medication route of 'NASAL' or 'OPHTHALMIC' or 'OTIC'.

2.6.8.5.1 Functional Requirement 1

If the medication route within the order is mapped to a standard medication route of 'NASAL', the following text shall display before the high dose warning: 'Dosing Information provided is PER NOSTRIL:'

2.6.8.5.2 Functional Requirement 2

If the medication route within the order is mapped to a standard medication route of 'OPHTHALMIC', the following text shall display before the high dose warning: 'Dosing Information provided is PER EYE: '

2.6.8.5.3 Functional Requirement 3

If the medication route within the order is mapped to a standard medication route of 'OTIC', the following text shall display before the high dose warning: 'Dosing Information provided is PER EAR: '

2.6.8.6 Functional Requirement 6

If general dosing information is displayed after Dosing Order Checks are performed when a simple order is processed through pharmacy backdoor options, it shall be prefaced with additional text if the medication route within the order is mapped to a standard medication route of 'NASAL' or 'OPHTHALMIC' or 'OTIC'.

2.6.8.6.1 Functional Requirement 1

If the medication route within the order is mapped to a standard medication route of 'NASAL', the following text shall display before the general dosing information messages: 'Dosing Information provided is PER NOSTRIL: '

2.6.8.6.2 Functional Requirement 2

If the medication route within the order is mapped to a standard medication route of 'OPHTHALMIC', the following text shall display before the general dosing information messages: 'Dosing Information provided is PER EYE: '

2.6.8.6.3 Functional Requirement 3

If the medication route within the order is mapped to a standard medication route of 'OTIC', the following text shall display before the general dosing information messages: 'Dosing Information provided is PER EAR: '

2.6.8.7 Functional Requirement 7

If a high dose warning is displayed for a dosing sequence after a Maximum Single Dose Order Check is performed when a complex order is processed through pharmacy backdoor options, it shall be prefaced with additional text if the medication route within the dosing sequence is mapped to a standard medication route of 'NASAL' or 'OPHTHALMIC' or 'OTIC'.

2.6.8.7.1 Functional Requirement 1

If the medication route within the dosing sequence is mapped to a standard medication route of 'NASAL', the following text shall display before the high dose warning: 'Dosing Information provided is PER NOSTRIL: '

2.6.8.7.2 Functional Requirement 2

If the medication route within the dosing sequence is mapped to a standard medication route of 'OPHTHALMIC', the following text shall display before the high dose warning: 'Dosing Information provided is PER EYE: '

2.6.8.7.3 Functional Requirement 3

If the medication route within the dosing sequence is mapped to a standard medication route of 'OTIC', the following text shall display before the high dose warning: 'Dosing Information provided is PER EAR: '

2.6.8.8 Functional Requirement 8

If more than one high dose warning or a high dose warning and general dosing information messages are displayed after Dosing Order Checks are performed when a simple order is processed through pharmacy backdoor options whose medication route is mapped to a standard medication route of 'NASAL' or 'OPHTHALMIC' or 'OTIC', the additional text shall be displayed first and only once.

2.6.8.8.1 Functional Requirement 1

The additional text shall only be repeated if the high dose warnings and/or general dosing information messages are displayed on more than one page.

2.6.8.9 Functional Requirement 9

If a dosing check summary is displayed for a complex order processed through pharmacy backdoor options, it shall be prefaced with additional text if the medication route within the dosing sequence is mapped to a standard medication route of 'NASAL' or 'OPHTHALMIC' or 'OTIC'.

2.6.8.9.1 Functional Requirement 1

The additional text shall be displayed first and only once before the dosing sequence information.

2.6.8.9.2 Functional Requirement 2

The additional text shall only be repeated if the high dose warnings and/or general dosing information messages are displayed on more than one page.

2.6.8.10 Functional Requirement 10

Processing through Outpatient Pharmacy backdoor options shall apply to the following actions:

- Entering a new order
- Finishing a pending order
- Renewing an order
- Editing the following fields:
 - Orderable Item
 - Dispense Drug
 - Dosage
 - Dispense Units
 - Route
 - Schedule
 - Conjunction
- Verifying an order
- Copying an order
- Reinstating a discontinued order

Display examples follow below:

Max Single Dose Check generates high dose warning for standard med route of 'NASAL' (CPRS and Pharmacy)

```
Dosing Information provided is PER NOSTRIL:
Cromolyn 5.2 mg/Actuation (4 %) Nasal Spray: Single dose form amount of 5 SPRAY(S)
exceeds the maximum single dose form amount of 2 SPRAY(S).
```

Max Daily Dose Check generates high dose warning for standard med route of 'OPHTHALMIC' (CPRS and Pharmacy)

```
Dosing Information provided is PER EYE:
BETAXOLOL 0.5% EYE DROPS 10ML: Total dose form amount of 6 DROP(S)/DAY exceeds the
maximum daily dose form amount of 4 DROP(S)/DAY.
```

Max Single Dose Check warning + Max Daily Dose Check warning for standard med route of 'NASAL' (CPRS and Pharmacy)

```
Dosing Information provided is PER NOSTRIL:
CROMOLYN 40MG/ML (4%) NASAL SPRAY 26ML: Single dose form amount of 5 SPRAY(S) exceeds
the maximum single dose form amount of 1 SPRAY(S).
```

CROMOLYN 40MG/ML (4%) NASAL SPRAY 26ML: Total dose form amount of 10 SPRAY(S)/DAY exceeds the maximum daily dose form amount of 6 SPRAY(S)/DAY.

Max Daily Dose Check cannot be done; General Dosing Information message displayed; standard med route of 'OTIC' (CPRS)

Max Daily Dose Check could not be done for Drug: ciprofloxacin 0.2 % Ear Dropperette, please complete a manual check for appropriate Dosing.

Dosing Information provided is PER EAR:

General dosing range for ciprofloxacin 0.2 % Ear Dropperette (OTIC): 10 DROP(S)/DAY to 10 DROP(S)/DAY

Both Dosing Checks could not be done; General Dosing message displayed for med route of 'OTIC' (Pharmacy)

Dosing Checks could not be performed for Drug: CIPROFLOXACIN 0.2 % EAR DROPPERETTE
Reason(s): Free Text Dosage could not be evaluated.

Dosing Information provided is PER EAR:

General dosing range for ciprofloxacin 0.2 % Ear Dropperette (OTIC): 10 DROP(S)/DAY to 10 DROP(S)/DAY

Max Single Dose Check and Max Daily Dose Check displayed on separate pages for standard med route of 'NASAL' (Pharmacy)

Dosing Information provided is PER NOSTRIL:

CROMOLYN 40MG/ML (4%) NASAL SPRAY 26ML: Single dose form amount of 5 SPRAY(S) exceeds the maximum single dose form amount of 1 SPRAY(S).

Press Return to continue...:

< Page 1 >

Dosing Information provided is PER NOSTRIL:

CROMOLYN 40MG/ML (4%) NASAL SPRAY 26ML: Total dose form amount of 10 SPRAY(S)/DAY exceeds the maximum daily dose form amount of 6 SPRAY(S)/DAY.

< Page 2 >

Complex order for Prednisolone (using 'THEN' conjunction) which has a Dosing Check summary (Pharmacy)

DOSING CHECK SUMMARY:

Dosing Information provided is PER EYE:

DOSE SEQ 1:

PREDNISOLONE 0.12% OPTH SOL: Single dose form amount of 5 DROP(S) exceeds the maximum single dose form amount of 2 DROP(S).

DOSE SEQ 2:

PREDNISOLONE 0.12% OPTH SOL: Single dose form amount of 4 DROP(S) exceeds the maximum single dose form amount of 2 DROP(S).

Press Return to continue...:

< Page 1 >

Dosing Information provided is PER EYE:

DOSE SEQ 3:

PREDNISOLONE 0.12% OPTH SOL: Single dose form amount of 3 DROP(S) exceeds the maximum single dose form amount of 2 DROP(S).

Do you want to Continue? Y//

< Page 2 >

2.6.9. Verification Labels

A prescription (Rx) label is generated to inform the pharmacist of a critical drug interaction which has occurred for an outpatient medication order entered by a user who does not hold the PSORPH key.

BN 2 in the BRD and associated CR 5703, CR 6389, and CR5794 is addressed by requirements in this section.

2.6.9.1 Functional Requirement 1

If either a Maximum Single Dose Order Check or Max Daily Dose Order Check warning occurs, the following text shall be used for the verification labels.

- DOSAGE EXCEEDS MAX SINGLE DOSE AND/OR MAX DAILY DOSE

See examples of label output that follows:

Critical Drug Interaction and Dosing Check

```
499 (5/ ) APR 23,2008@15:32
Rx# 2629 has caused a DRUG-DRUG INTERACTION with the following prescription(s):
2523     CRITICAL INTERACTION     WARFARIN 5MG TAB
2519     CRITICAL INTERACTION     PHENYTOIN NA (DILANTIN) 100MG SA CAP
2516     SIGNIFICANT INTERACTION   NIFEDIPINE 10MG CAP
2520     SIGNIFICANT INTERACTION   AMITRIPTYLINE 25MG TAB
DOSAGE EXCEEDS MAX SINGLE DOSE AND/OR MAX DAILY DOSE
This prescription was entered by: PSOTECH,ONE
This prescription requires intervention by a pharmacist
APR 23,2008  Fill 1 of 4
OPPATIENT,TWO  00-0000
TAKE TWO TABLETS BY MOUTH FOUR TIMES DAILY
Qty: 240  PSOTECH,ONE
Tech_____RPh_____
CIMETIDINE 300MG TAB
Routing: WINDOW
Days supply: 90 Cap: SAFETY
Isd: APR 23,2008 Exp: APR 24,2009
Stat SC Clinic: UNKNOWN
```

Dosing Check Only

```
499 (5/ ) APR 23,2008@15:38
DOSAGE EXCEEDS MAX SINGLE DOSE AND/OR MAX DAILY DOSE
This prescription was entered by: PSOTECH,ONE
This prescription requires intervention by a pharmacist
APR 23,2008  Fill 1 of 4
OPPATIENT,TWO  00-0000
TAKE ONE CAPSULE BY MOUTH EVERY 8 HOURS
Qty: 270  PSOTECH, ONE
Tech_____RPh_____
INDINAVIR 400MG CAP
Routing: WINDOW
Days supply: 90 Cap: SAFETY
Isd: APR 23,2008 Exp: APR 24,2009
Last Fill: N/A
Pat. Stat SC Clinic: UNKNOWN
```

2.6.10. Available Dosage List (CR6583)

There will be changes made to the display of the available dosage list to break only after the third dosage. The scenarios that should be looked at are after a Therapeutic Duplication warning is displayed with or without a discontinuation prompt and when a significant Drug Interaction warning is displayed and the user responds 'No' to logging an intervention.

BN 12 in the BRD and associated CR 6583 is addressed by requirements in this section.

2.6.10.1 Functional Requirement 1

The software shall only perform a page break within a list of available dosages after the third dosage.

2.6.10.2 Functional Requirement 2

The following text changes shall be made to existing prompts (with or without a page break):

- ‘Available Dosage(s):’ **changed to** ‘There are X Available Dosage(s):’ where X represents the total number of dosages for the drug being ordered.
- ‘Select from list of Available Dosages, Enter Free Text Dose Or Enter a Question Mark (?) to view list:’ **changed to** ‘Select from list of Available Dosages (1-X), Enter Free Text Dose or Enter a Question Mark (?) to view list:’ where X is the total number of dosages for the drug being ordered.

2.6.10.3 Functional Requirement 3

The following text changes shall be made to the existing prompt when a page break occurs:

```
'Enter RETURN to continue or '^' to exit the list of dosages:'
```

changed to

```
'Enter RETURN to view additional dosages or '^' to exit the list of dosages:'
```

2.6.10.4 Functional Requirement 4

If there are no available dosages for the drug being ordered, the following text shall be displayed;

```
'There are NO Available Dosage(s). Please Enter a Free Text Dosage:'
```

See output displays below.

Break only after 3 dosages with text changes

```
There are 5 Available Dosage(s):
  1. 10MG
  2. 20MG
  3. 40MG
Enter RETURN to view additional dosages or '^' to exit list of dosages:
-----<Page Break>-----
  4. 80MG
  5. 120MG

Select from list of Available Dosages (1-5), Enter Free Text Dose
or Enter a Question Mark (?) to view list:
```

No break; additional text changes

```
There are 2 Available Dosage(s):
  1. 10MG
  2. 20MG

Select from list of Available Dosages (1-2), Enter Free Text Dose
or Enter a Question Mark (?) to view list:
```

No Available Dosages

```
There are NO Available Dosage(s).

Please Enter a Free Text Dose:
```


2.6.11. Max Daily Dose Order Check Not Done – Frequency Check Fails


There are two instances illustrated in the table below when the FDB MedKnowledge Framework logic does not perform a Max Daily Dose Order Check. For these two instances, the PDM application will perform the Max Daily Dose Order Check and return the results to Outpatient Pharmacy application and CPRS which will in turn display the results to the Pharmacy and CPRS user respectively.

| FDB's Drug Frequency | Order Frequency | Daily Dose Performed? (Yes/No) | Example |
|-----------------------------------|---------------------|--------------------------------|---|
| Equal to or greater than once/day | Out of Range | No | Metformin 500mg Q48H FDB Frequency = (low=1 and high=3) |
| Less than once/day | Once/day or greater | No | Risperidone 25mg/vial Inj SA SUSP (Inject 25mg IM daily) FDB Frequency= (low= .07 and high= .07) |

BN 5 in the BRD and associated CR 3159, CR 3171, CR 2863, CR 2684, CR 3214, CR 3096, CR 2653, and CR 3806 are addressed by requirements in this section.

2.6.11.1 Functional Requirement 1

If the Max Daily Dose Order Check cannot be performed when processing orders through CPRS and the reason that is returned by FDB is 'Maximum daily dose check could not be done since frequency check failed', the PDM application shall perform the Max Daily Dose Order Check and return the results to CPRS.

| | |
|---|--|
| Note:  | Max Daily Dose Status code will be set to '5' – Unable to Check. Frequency Status Code will be set to either '3' – Exceeds Recommended or '4' – Below Recommended. See section 2.6.16 in the PDM RSD for details on the daily dose calculation. |
|---|--|

2.6.11.1.1 Functional Requirement 1

A customized frequency message shall be displayed to the CPRS user if the daily dose calculated by the PDM application passes the Max Daily Dose Order Check.

Please see the M2-1_PDM_RSD_v2, section 2.6.20 (Customized Frequency Message) for details on the customized frequency message. See examples that follow:

Recommended frequency of METFORMIN 500MG TAB is 1 to 3 times per day

Or

Recommended frequency of NITROGLYCERIN PATCHES 0.1MG/HR is 1 time(s) per day.

Or

Recommended frequency of EPOETIN ALFA, RECOMB 10,000UNIT/ML INJ is every 2 day(s) to 7 days.

Or

Recommended frequency of RISPERIDONE 25MG/VI SUSP SA INJ is every 14 days.

2.6.11.1.2 Functional Requirement 2

If the daily dose calculated by the PDM application fails the Max Daily Dose Order Check, a Max Daily Dose Order Check warning message with a customized frequency message shall be displayed to the CPRS user.

Please see the M2-1_PDM_RSD_v2, section 2.6.22 (Display of Max Daily Warning when Daily Dose Calculated) for details on the Max Daily Dose warning message when the Max Daily Dose Order Check is performed by the PDM application. See an example that follows:

```
ENOXAPARIN 40MG/0.4ML INJ: Total dose amount of 500 MILLIGRAMS/DAY exceeds the maximum daily dose amount of 204.55 MILLIGRAMS/DAY.
```

```
Recommended frequency of ENOXAPARIN 40MG/0.4ML INJ is 1 to 2 times per day.
```

2.6.11.1.3 Functional Requirement 3

If the daily dose could not be calculated by the PDM application, an error message, general dosing information messages, and a customized frequency message shall be displayed to the CPRS user.

```
Max Daily Dose Check could not be done for Drug: ENOXAPARIN 40MG/0.4ML INJ, please complete a manual check for appropriate Dosing.
```

```
Recommended frequency of ENOXAPARIN 40MG/0.4ML INJ is 1 to 2 times per day.
```

```
General dosing range for ENOXAPARIN 40MG/0.4ML INJ (SUBCUTANEOUS): 40 milligram per day to 3 milligram per kilogram per day.
```

2.6.11.2 Functional Requirement 2

If the Max Daily Dose Order Check cannot be performed when processing orders through the pharmacy backdoor and the reason that is returned by FDB is 'Maximum daily dose check could not be done since frequency check failed', the PDM application shall perform the Max Daily Dose Order Check and return the results to Outpatient Pharmacy.

2.6.11.2.1 Functional Requirement 1

A customized frequency message shall be displayed to the pharmacy user if the daily dose calculated by the PDM application passes the Max Daily Dose Order Check.

Please see the M2-1_PDM_RSD_v2, section 2.6.20 (Customized Frequency Message) for details on the customized frequency message. See examples that follow:

```
Recommended frequency of METFORMIN 500MG TAB is 1 to 3 times per day
```

Or

```
Recommended frequency of NITROGLYCERIN PATCHES 0.1MG/HR is 1 time(s) per day.
```

Or

```
Recommended frequency of EPOETIN ALFA,RECOMB 10,000UNIT/ML INJ is every 2 day(s) to 7 days.
```

Or

```
Recommended frequency of RISPERIDONE 25MG/VI SUSP SA INJ is every 14 days.
```

2.6.11.2.2 Functional Requirement 2

If the daily dose calculated by the PDM application fails the Max Daily Dose Order Check, a Max Daily Dose Order Check warning message with a customized frequency message shall be displayed to the pharmacy user.

Please see the M2-1_PDM_RSD_v2, section 2.6.22 (Display of Max Daily Warning when Daily Dose Calculated) for details on the Max Daily Dose warning message when the Max Daily Dose Order Check is performed by the PDM application. See an example that follows:

```
ENOXAPARIN 40MG/0.4ML INJ: Total dose amount of 500 MILLIGRAMS/DAY exceeds the maximum daily dose amount of 204.55 MILLIGRAMS/DAY.  
  
Recommended frequency of ENOXAPARIN 40MG/0.4ML INJ is 1 to 2 times per day.
```

2.6.11.2.3 Functional Requirement 3

If the daily dose could not be calculated by the PDM application, an error message, general dosing information messages, and a customized frequency message shall be displayed to the pharmacy user.

```
Max Daily Dose Check could not be performed for Drug: ENOXAPARIN 40MG/0.4ML INJ  
Reason(s): Maximum daily dose check could not be done since frequency check failed.  
  
Recommended frequency of ENOXAPARIN 40MG/0.4ML INJ is 1 to 2 times per day.  
  
General dosing range for ENOXAPARIN 40MG/0.4ML INJ (SUBCUTANEOUS): 40 milligram per day to 3 milligram per kilogram per day
```

2.6.11.3 Functional Requirement 3

Processing through Outpatient Pharmacy backdoor options shall apply to the following actions:

- Entering a new order
- Finishing a pending order
- Renewing an order
- Editing the following fields:
 - Orderable Item
 - Dispense Drug
 - Dosage
 - Dispense Units
 - Route
 - Schedule
- Verifying an order
- Copying an order
- Reinstating a discontinued order

2.6.12. Drug Interaction Order Checks – Exclude Expired OP Orders

Outpatient Pharmacy screens out medication orders with an expired status for Drug Interaction Order Checks, but CPRS does not. Changes will be made to screen out expired orders for Drug Interaction Order Checks on the CPRS side to be consistent with the Outpatient Pharmacy application.

BN 16 in the BRD and associated CR 6556 is addressed by requirements in this section.

2.6.12.1 Functional Requirement 1

Expired Outpatient orders on a patient's profile in CPRS shall not participate in Drug Interaction Order Checks.

2.7. Graphical User Interface (GUI) Specifications

Not applicable.

2.8. Multi-divisional Specifications

Not applicable.

2.9. Performance Specifications

Not applicable.

2.10. Quality Attributes Specification

Not applicable.

2.11. Reliability Specifications

The Regional Operations Center (ROC) will be the primary monitoring entity of the system's health and uptime and will engage the Regional Service Lines as appropriate when issues are seen.

2.12. Scope Integration

Integration Agreements can be viewed on FORUM using the *Integration Agreement Menu* [DBA IA ISC] option under the *DBA* [DBA] option on FORUM.

The following software is not included in this package and must be installed before this version of Outpatient Pharmacy is completely functional.

| Package | Minimum Version Needed |
|---|------------------------|
| Accounts Receivable (AR) | 4.5 |
| Adverse Reaction Tracking (ART) | 4.0 |
| Clinical Information Resources Network (CIRN) | 1.0 |
| Consolidated Mail Outpatient Pharmacy (CMOP) | 2.0 |
| Computerized Patient Record System (CPRS) | 3.0 |
| Decision Support System (DSS) | 3.0 |
| Fee Basis | 3.5 |
| VA FileMan | 22.0 |
| HealtheVet Web Services Client (HWSC) | 1.0 |
| Integrated Funds Control, Accounting, and Procurement (IFCAP) | 5.0 |
| Inpatient Medications (IP) | 5.0 |
| Integrated Billing (IB) | 2.0 |
| Kernel | 8.0 |
| Laboratory | 5.2 |

| Package | Minimum Version Needed |
|--|------------------------|
| MailMan | 7.1 |
| Master Patient Index/Patient Demographics (MPI/PD) | 1.0 |
| National Drug File (NDF) | 4.0 |
| Order Entry/Results Reporting (OERR) | 3.0 |
| Patient Information Management System (PIMS) | 5.3 |
| Pharmacy Data Management (PDM) | 1.0 |
| Remote Procedure Call (RPC) Broker | 1.1 |
| VistALink | 1.5 |

2.13. Security Specifications

All VA security requirements will be adhered to. Based on Federal Information Processing Standard (FIPS) 199 and National Institute of Standards and Technology (NIST) SP 800-60, recommended Security Categorization is High.

The Security Categorization will drive the initial set of minimal security controls required for the information system. Minimum security control requirements are addressed in NIST SP 800-53 and VA Handbook 6500, Appendix D.

2.14. System Features

- Implement Dose Range Checking with a Max Daily Dose limit for simple medication orders entered through Outpatient Pharmacy, Inpatient Medications applications and CPRS.
- Display a generic error message when the Max Daily Dose Order Check cannot be performed in CPRS.
- Display an error message when the Max Daily Dose Order Check cannot be performed in Pharmacy with a detailed reason.
- Correct all daily dose errors due to frequency failure.
- Resolve miscellaneous frequency issues.
- Apply Daily Dose Check exclusion for schedule to medication orders entered through Outpatient Pharmacy, Inpatient Medications, and CPRS.
- Apply note to Max Daily Dose warning and General Dosing Guidelines for medication administered through eye, ear or nose.
- Enhance free text dosage logic for dosing ranges.
- Enhance free text logic to screen out informational data placed in parenthesis which is found in the dosage ordered field for an order.
- Enhance free text logic for a multi-ingredient.
- Display a customized frequency message.
- Display a Max Daily Dose Warning message for the calculated Daily Dose.
- Exclude expired Outpatient orders from Drug Interaction Order Checks for CPRS.
- Modifications to the 'Available Dosage(s)' list when a screen break occurs during order entry through the Outpatient Pharmacy application.

- Modifications to the accompanying dialog for the 'Available Dosage(s)' list displayed during order entry through the Outpatient Pharmacy application.

2.15. Usability Specifications

User acceptance testing personnel shall include Pharmacy staff that is able to confirm acceptable changes to their workflow.

A training curriculum, user manuals and other training tools shall be updated by Product Development (PD), and then delivered to Pharmacy Automated Data Processing Application Coordinators (ADPAC) and Pharmacists. Updated User manuals will be provided at the time of software release. A Pharmacy ADPAC training power point will be presented a few weeks prior to a site's installation of software in production. The training will be done as part of a phased deployment. A training power point directed at staff Pharmacists working in an Inpatient or Outpatient settings will be provided to the Pharmacy ADPAC at each facility to assist in the training of their staff. The curriculum shall include all aspects of the enhanced VistA PDM, Outpatient Pharmacy, and Inpatient Medications application(s).

3. Applicable Standards

All VA Privacy requirements will be adhered to. Efforts that involve the collection and maintenance of individually identifiable information must be covered by a Privacy Act system of records notice.

All Enterprise Identity Management requirements will be adhered to. These requirements are applicable to any application that adds, updates, or performs lookups on persons.

Application/services shall reference the Standard Data Services (SDS) as the authoritative source to access non-clinical reference terminology.

Application/Services shall use the VA Enterprise Terminology Services (VETS) as the authoritative source to access clinical reference terminology.

4. Interfaces

4.1. Communications Interfaces

Not applicable.

4.2. Hardware Interfaces

This product shall run on standard hardware platforms that VHA facilities use. These systems consist of standard or upgraded Alpha AXP clusters and operate Open M products.

These enhancements are compatible with existing hardware. No hardware issues are involved with these enhancements.

4.3. Software Interfaces

Within VistA, the MOCHA project will use an existing interface via API to and from CPRS. These API's will allow for:

- CPRS to request and receive order checks for provider entry of medication orders
- Inpatient Medication and Outpatient Pharmacy VistA packages to request and receive remote order data from the Health Data Repository (HDR) via CPRS.

Within VistA, the MOCHA project will interface via API to HWSC to request order check data from FDB's MedKnowledge Framework (formerly Drug Information Framework) database.

4.4. User Interfaces

The software product will conform to the existing VistA conventions. Reports, menus, options, and screen formats will conform to the existing VistA conventions. Report formats and option process steps, such as "roll & scroll," will be fielded and tested for usability by test site personnel, as well as user representatives and subject matter experts.

5. Legal, Copyright, and Other Notices

Not Applicable.

6. Purchased Components

Not Applicable.

7. User Class Characteristics

The intended users of this enhancement are providers with prescriptive authority, pharmacists, pharmacy technicians, licensed practical nurses, and PBM. The goal of this enhancement provides significant, enhanced patient safety features which reduce the risk of medication errors and adverse events.

8. Estimation

The Function Point Estimate of the Pharmacy Re-Engineering - PRE (PECS/MOCHA) MOCHA v2.1 UFT (aka Increment #58 on the PMAS Dashboard) (1474) project is complete. The functional size of the project is 139 FP (Function Points). The detailed FP Estimate was recorded in a FP Excel Workbook, M2E1_SRS_FPEst_20130814.xlsm. The FP Estimate Workbook was stored in the TSPR notebook for this project. (Please note that all the graphs below are created in the FP Excel Workbook.)

Link to FP Estimate Workbook:

 Pharmacy_Re-Engineering_PRE_(PECS-MOCHA)/M2E1_SRS_FPEst_20130814.xlsm

Project Software Functional Size and Size-Based Effort and Duration Estimate

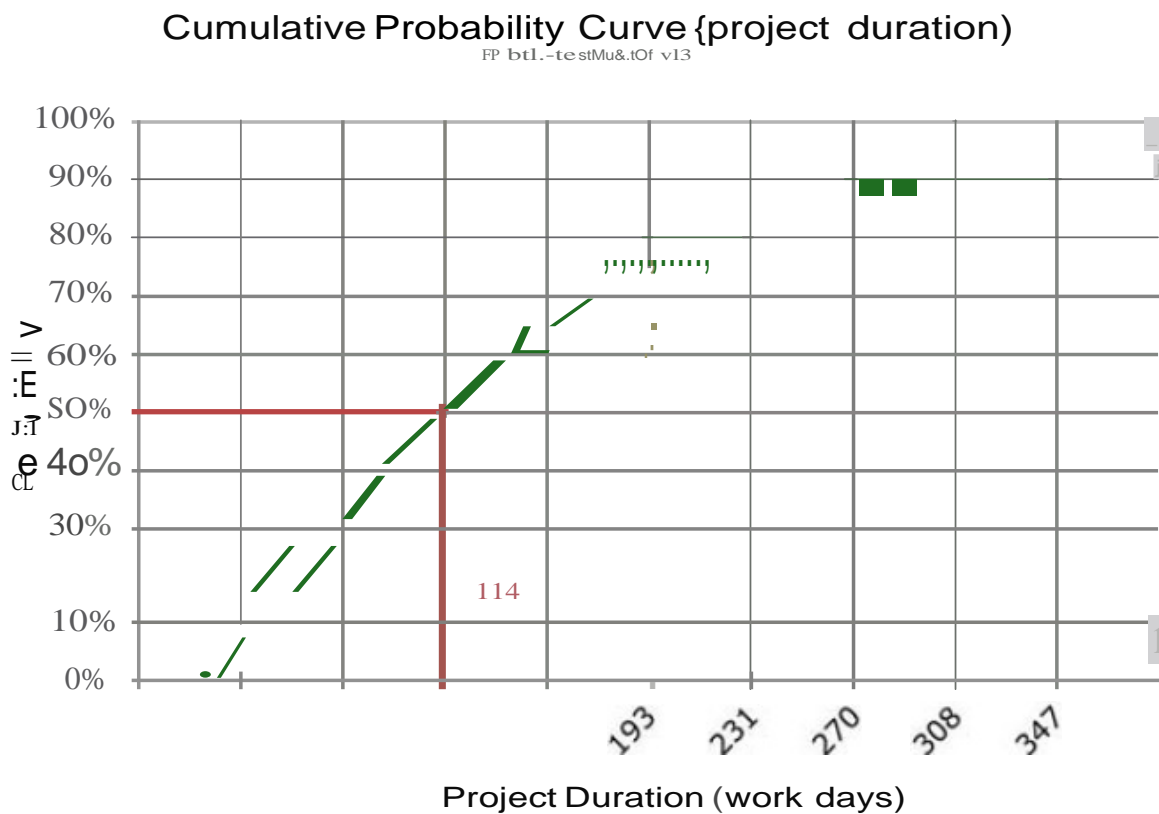
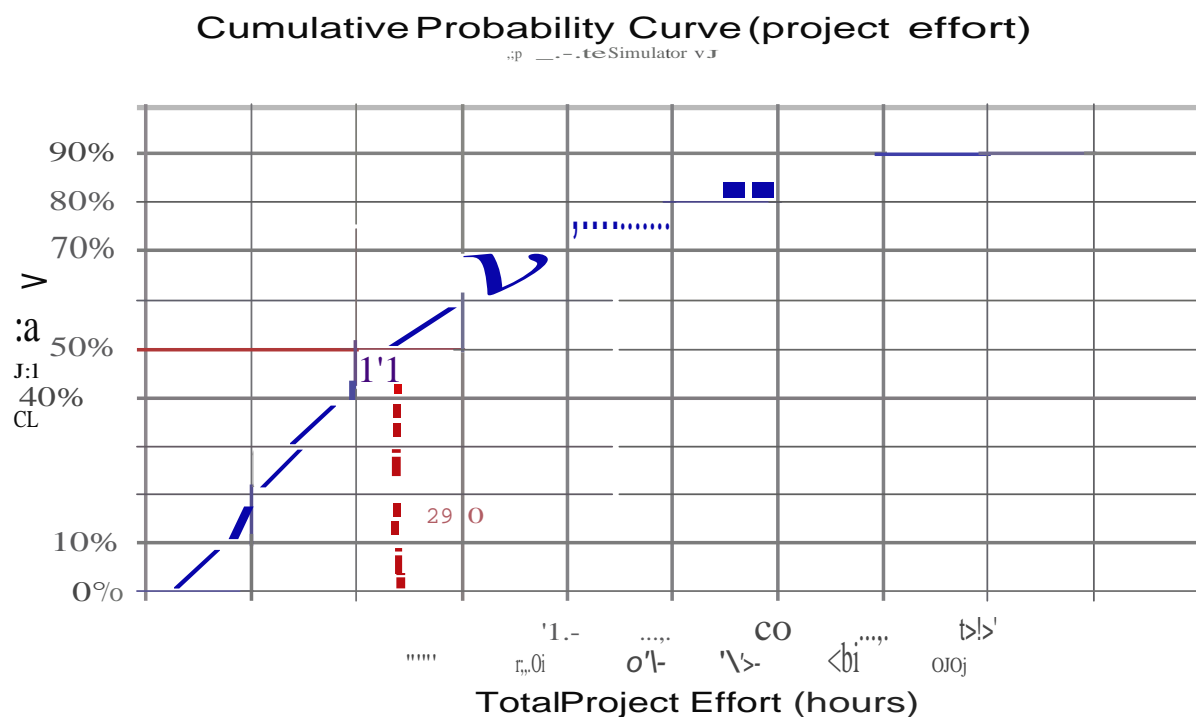
Application

| Item | Outpatient Pharmacy | Inpatient Medications | Pharmacy Data Management | Total |
|---------------------------|---------------------|-----------------------|--------------------------|-------|
| Counted Function Points | 24 | 48 | 67 | 139 |
| Estimated Scope Growth | | | | |
| Estimated Size at Release | | | | |

| Size-Based Effort Estimates | Labor Hours | Probability |
|---|-------------|-------------|
| Low-Effort Estimate – With indicated probability, project will consume no more than: | 2900 | 50% |
| High-Effort Estimate – With indicated probability, project will consume no more than: | 5550 | 75% |

| Size-Based Duration Estimates | Work Days | Probability |
|--|-----------|-------------|
| Low-Duration Estimate – With indicated probability, project will consume no more than: | 114 | 50% |
| High-Duration Estimate -- With indicated probability, project will consume no more than: | 193 | 75% |

Figure 1: Cumulative Probability ("S-curve") Chart



9. Approval Signatures

REVIEW DATE: *10/28/2014*

SCRIBE: [REDACTED] [REDACTED]

[Signatures in the PDF document]

Signed:

[REDACTED], *Project Manager, Pharmacy Reengineering*

Signed:

[REDACTED] *Program Manager, Pharmacy Reengineering*
Integrated Project Team (IPT) Chair & IT Program Manager

Signed:

[REDACTED] *PBM, Director, Clinical Informatics/Reengineering*
Business Sponsor

Appendix A

A1. Error Messages

| Error Level | Error Message | Reason |
|---|--|---|
| MOCHA v2.1 – CPRS System Level Errors | | |
| System | These checks could not be completed for this patient: Drug Interactions Duplicate Therapy Dosing | N/A |
| System | These checks could not be completed for this patient: Dosing | An unexpected error has occurred* or Dosing Checks have been disabled.* |
| MOCHA v2.1 – Backdoor Pharmacy System Level Errors | | |
| System | No Enhanced Order Checks can be performed | Vendor Database cannot be reached. |
| System | No Enhanced Order Checks can be performed | The connection to the vendor database has been disabled. |
| System | No Enhanced Order Checks can be performed | Vendor database updates are being processed |
| System | No Enhanced Order Checks can be performed | An unexpected error has occurred |
| System | Dosing Checks could not be performed | Vendor Database cannot be reached |
| System | Dosing Checks could not be performed | The connection to the vendor database has been disabled. |
| System | Dosing Checks could not be performed | Vendor database updates are being processed |
| System | Dosing Checks could not be performed | An unexpected error has occurred |
| System | Dosing Checks are not available; please complete a manual check for appropriate Dosing. | Dosing Order Checks have been disabled.* |
| MOCHA v2.1 – Backdoor Pharmacy Drug Level Errors | | |
| Drug (prospective) | Order Checks could not be done for Drug: <DRUG NAME>, please complete a manual check for Drug Interactions, Duplicate Therapy and appropriate Dosing | No GCNSEQNO exists for VA Product* Bad GCNSEQNO assigned to VA Product* |

| Error Level | Error Message | Reason |
|--|---|--|
| Drug (remote profile) | Order Checks could not be done for <Remote> Drug: <DRUG NAME>, please complete a manual check for Drug Interactions and Duplicate Therapy | No GCNSEQNO exists for VA Product* Bad GCNSEQNO assigned to VA Product* |
| Drug | Enhanced Order Checks cannot be performed for <Local> or <Local Outpatient> Drug: <DRUG NAME> | Drug not matched to NDF |
| Drug (profile – pending outpatient or pending unit dose order) | Enhanced Order Checks cannot be performed for Orderable Item: <OI NAME> | No Dispense Drug found |
| Drug | Dosing Checks cannot be performed for Drug: <DRUG NAME> (only if edit performed on IP order and only when dosage check performed) | Drug not matched to NDF |
| Drug | Dosing Checks could not be done for Drug: <DRUG NAME>, please complete a manual check for appropriate Dosing (only if edit performed on IP order and only when dosage check performed) | No GCNSEQNO exists for VA Product* Bad GCNSEQNO assigned to VA Product* |
| MOCHA v2.1 – CPRS Drug Level Errors | | |
| Drug (prospective) | Order Checks could not be done for Drug: <Drug Name>, please complete a manual check for Drug Interactions, Duplicate Therapy and appropriate Dosing. | No GCNSEQNO exists for VA Product* Bad GCNSEQNO assigned to VA Product* Drug not matched to NDF* |
| Drug (profile) | Order Checks could not be done for Drug: <Drug Name>, please complete a manual check for Drug Interactions and Duplicate Therapy. | No GCNSEQNO exists for VA Product* Bad GCNSEQNO assigned to VA Product* Drug not matched to NDF* |
| Drug (remote profile) | Order Checks could not be done for <Remote> Drug: <Drug Name>, please complete a manual check for Drug Interactions and Duplicate Therapy. | No GCNSEQNO exists for VA Product* Bad GCNSEQNO assigned to VA Product* Drug not matched to NDF* |

| Error Level | Error Message | Reason |
|--|---|---|
| Drug (prospective – outpatient and inpatient (UD)) | Order Checks could not be done for Drug: <Drug Name>, please complete a manual check for Drug Interactions, Duplicate Therapy and appropriate Dosing. | No active dispense drug could be found* |
| Drug (prospective) | Dosing Checks could not be done for Drug: <DRUG NAME>, please complete a manual check for appropriate Dosing | No active IV Additive/Solution marked for IV fluid order entry could be found.* |
| MOCHA v2.1 – Backdoor Pharmacy Order Level Errors | | |
| Order Level | Dosing Checks could not be performed for Drug: <DRUG NAME> | One or more required patient parameters unavailable: Age |
| Order Level | Maximum Single Dose Check could not be performed for Drug:<DRUG NAME> | Weight required |
| Order Level | Max Daily Dose Check could not be performed for Drug:<DRUG NAME> | Weight required |
| Order Level | Dosing Checks could not be performed for Drug: <DRUG NAME> | Weight required |
| Order Level | Maximum Single Dose Check could not be performed for Drug:<DRUG NAME> | Body surface area required |
| Order Level | Max Daily Dose Check could not be performed for Drug:<DRUG NAME> | Body surface area required |
| Order Level | Dosing Checks could not be performed for Drug: <DRUG NAME> | Body surface area required |
| Order Level | Dosing Checks could not be performed for Drug: <DRUG NAME> | Invalid or Undefined Dose Route |
| Order Level | Dosing Checks could not be performed for Drug: <DRUG NAME> | Invalid or Undefined Dose Type |
| Order Level | Max Daily Dose Check could not be performed for Drug: <DRUG NAME> | Invalid or Undefined Frequency |

| Error Level | Error Message | Reason |
|--|--|--|
| Order Level | Max Daily Dose Check could not be performed for Drug: <DRUG NAME> | Frequency greater than order duration |
| Order Level | Dosing Checks could not be performed for Drug: <DRUG NAME> | Free Text Dosage could not be evaluated |
| Order Level | Dosing Checks could not be performed for Drug: <DRUG NAME> | FDB dosing information is not available for this drug. |
| Order Level | Dosing Checks could not be performed for Drug:<DRUG NAME> | No dosing information found in database. |
| Order Level | Dosing Checks could not be performed for Drug: <DRUG NAME> | Free Text Infusion Rate could not be evaluated. |
| MOCHA v2.1 – CPRS Order Level Error | | |
| Order Level | Dosing Checks could not be done for Drug: <Drug Name>, please complete a manual check for appropriate Dosing | N/A |
| Order Level | Max Daily Dose Check could not be done for Drug:<DRUG NAME>, please complete a manual check for appropriate Dosing | N/A |
| Order Level | Maximum Single Dose Check could not be done for Drug:<DRUG NAME> | No weight documented for patient |
| Order Level | Max Daily Dose Check could not be done for Drug:<DRUG NAME> | No weight documented for patient |
| Order Level | Dosing Checks could not be done for Drug:<DRUG NAME> | No weight documented for patient |
| Order Level | Maximum Single Dose Check could not be done for Drug:<DRUG NAME> | No weight and/or height documented for patient |
| Order Level | Max Daily Dose Check could not be done for Drug:<DRUG NAME> | No weight and/or height documented for patient |
| Order Level | Dosing Checks could not be done for Drug:<DRUG NAME> | No weight and/or height documented for patient |

*Reason not displayed to user.

Note:



<DRUG NAME> for error messages:

- CPRS simple orders (OP & IP & IV) →OI Name + Dosage Form (DF)
- CPRS complex orders (OP & IP & IV) → OI Name + DF (Dose=XX)
- OP & UD backdoor simple orders →Dispense Drug
- OP backdoor complex orders →Dispense Drug
- IV order with IV Additives (backdoor) →IV Additive print name + Strength + Unit
- IV order with IV Solution (PreMix) backdoor → IV solution print name (1) + Volume

A2. Warning Messages

| Level | Warning Message | Warning |
|--|--|---|
| MOCHA v2.1 – Backdoor Pharmacy and CPRS | | |
| Order Level | Dosing Order Check Warning for <DRUG NAME>: | This drug is not recommended for a patient of this age. |
| Order Level | Dosing Order Check Warning for <DRUG NAME>: | Dosing is not established for a patient of this age. |

Note:



<DRUG NAME> for warning messages:

- CPRS simple orders (OP & IP & IV) →OI Name + Dosage Form (DF)
- CPRS complex orders (OP & IP & IV) → OI Name + DF (Dose=XX)
- OP & UD backdoor simple orders →Dispense Drug
- OP backdoor complex orders →Dispense Drug
- IV order with IV Additives (backdoor) →IV Additive print name + Strength + Unit
- IV order with IV Solution (PreMix) backdoor → IV solution print name (1) + Volume