Department of Veterans Affairs

Veterans Health Administration (VHA)

Office of Informatics and Analytics

Innovation Program

OneVA Pharmacy

System Design Document (SSD)



**Contract No: VA118-16-D-1009**

**Task Order: VA11817F10090006**

**CLIN: 0002AC**

Version 3.2

June 2017

Revision History

| Date | Version | Description | Author |
| --- | --- | --- | --- |
| 06/30/2017 | 3.2 | Upated Section 3.1.2.2 Use Case Name: Dispense Local Order with PSORPH. Update Use Case Name: Dispense Another VA Pharmacy order wiyth “Can not refill instructions”. | Brad Fisher |
| 10/19/16 | 3.1 | Added routines for the new OneVA Pharmacy label software; updated the description of how OneVA Pharmacy labels are created; HL7 protocol performance requirements updated; | Kathy Coupland |
| 08/22/16 | 3.0 | Modified to include Final Sprints; Technical edit to follow new VA Style Guides; Updates to OneVA Pharmacy Reporting Menu; Updates to identify items found in the OneVA Pharmacy ICD document and refer the user to the LINK. Added eMI and HDR/CDS Repository project documentation links. | Kathy Coupland |
| 07/25/16 | 2.7 | Updated for MUMPS Routines and HL7 messages | Brad Fisher |
| 05/19/16 | 2.6 | Updated Report 3 name per Rob Silverman’s feedback | Kathy Coupland |
| 05/17/16 | 2.5 | Modify for eMI full service integration. Updated Component Diagrams (feedback Rob Silverman); Updated Business Rules Section to contain programing logic for Discontinued Section; added FQDN and Port to RDT Segment; updated the source for VA Product ID; Modified Medication Instructions section to include first instance only. Added report layouts. | Kathy Coupland |
| 04/10/16 | 2.4 | Adding missing HL7 messaging and addressing AERB items. Add HDR/CDS Repository to VistA Status Code Mapping | Kathy Coupland |
| 03/25/16 | 2.3 | Change terminology to include host site and dispensing site; Include as reference the Essential Medication Directive publication; Modify status values to use VistA status values; Remove Section 508 Self-Certification document as a deliverable; Modified requirements based on the in-depth discussion conducted on 3/14/16 during the Weekly Informatics & Analytics Section Meeting. Included label processing. | Kathy Coupland |
| 03/04/16 | 2.2 | Technical edit and respond to the AERB comments. | Kathy Coupland |
| 03/03/16 | 2.1 | Updated eMI-Middleware areas, accommodating the direction from a Self-service model to a full-service. | Tony Burleson |
| 03/02/16 | 2.0 | Update to modify the eMI-Middleware direction from development of self-service components to integration directly with eMI-Middleware. | Kathy Coupland |
| 01/04/16 | 1.1 | Update Section 6.5 & namespace update. | Kathy Coupland |
| 12/30/2015 | 1.0 | Baseline | Kathy Coupland |
| 12/28/2015 | 0.5 | Updated section 6.2 and eMI areas | Tony Burleson |
| 11/28/2015 | 0.4 | Updated diagram and modified two requirements. | Kathy Coupland |
| 11/13/2015 | 0.3 | Updated Diagrams, spelled out acronyms, and applied TJ Cope’s comments. Added Brad Fisher’s updates. | Kathy Coupland |
| 10/29/2015 | 0.2 | Updated Sections 2, 3, 4, 5, and 8 | Tony Burleson |
| 10/26/2015 | 0.1 | Initial Draft | Kathy Coupland |

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# Introduction

Leadership at the Department of Veterans Affairs (VAs) Grassroots Innovations Program, a cooperative effort between the Chief Technology Officer, the Health and Medical Informatics Office, and the VAs Office of Information and Technology (OI&T) provided innovators (VA employees) with a forum to propose new opportunities and to develop new ideas into functional prototypes.

There are two (2) separate phases to the Innovations Program. The low bar phase was a proof-of-concept phase where all work was accomplished outside of the VAs network in a VA virtual testing environment (Innovations Sandbox). The high bar phase occurred when the concept was moved to a developmental environment where it has been further developed, tested, and approved for full scale deployment. This Systems Design Document (SDD) focuses on the full-scale development efforts.

The OneVA Pharmacy software provides the Department of Veterans Health Administration (VHA) the capability to allow Veterans traveling across the United States to refill or partial their active non-controlled substance VA prescription at any VA Pharmacy location regardless of where the prescription originated. The patch expands available pharmacy information in Veterans Health Information Systems and Technology Architecture (VistA) to Pharmacists, providing direct access to any active and refillable prescription from any VA Pharmacy location.

The OneVA Pharmacy software provides a foundation to build and extend new capabilities to the Veteran.

* Project Management Accountability System (PMAS) Project Number: N/A
* Enterprise Product Support (EPS) Code(s): 2015-11-03-11:54:05-00-00-00-00-00-000
* Proposed Production Install Date: Q4FY16
* Business Owner: Robert Silverman,
* Federal Information Security Modernization Act (FISMA) System Owner: N/A; This system falls under VistA Outpatient Pharmacy

## Scope

This System Design Document (SDD) will define the high-level design for the OneVA Pharmacy project objectives. It defines and describes the detailed system components, architectural views, system constraints, and design rationale.

## User Profiles

The user profile of the OneVA Pharmacy module is those users, specifically Pharmacists that use the Outpatient Pharmacy [PSO LM BACKDOOR ORDERS] menu to dispense prescriptions. It is assumed that the user has basic knowledge of the VistA system (such as the use of commands, menu options, and navigation tools), has access to the ‘Rx (PRESCRIPTIONS) [PSO RX]’ menu within VistA, and holds appropriate security keys for their user role, such as PSORPH, to identify the user as a Pharmacist.

## Acronyms and Abbreviations

The following table provides the list of acronyms used throughout the document along with their descriptions.

Table 1: Acronym & Abbreviation Table

| Acronym/Abbreviation | Description |
| --- | --- |
| [PSO LM BACKDOOR ORDERS] | Patient Prescription Processing Menu |
| [PSO REMOTE RX REPORT] | OneVA Pharmacy Prescription Report Menu |
| [PSO RX] | Rx (Prescriptions) Menu |
| ADT | Admission Discharge Transfer |
| AITC | Austin Information Technology Center |
| API | Application Programming Interface |
| BITS | Business Information Technology Solutions, Inc. |
| CDS | Clinical Data Services |
| CLIN | Contract Line Item Number |
| DFN | Data File Number |
| eMI | Enterprise Messaging Infrastructure |
| EPS | Enterprise Product Support |
| ESB | Enterprise Service Bus |
| FISMA | Federal Information Security Modernization Act |
| HDR | Health Data Repository |
| HL7 | Health Level 7 |
| https | Hypertext Transfer Protocol Secure |
| ICD | Integration Interface Control Document |
| ICN | Integration Control Number |
| IOC | Initial Operating Capability |
| IPT | Integrated Product Team |
| IT | Information Technology |
| MLLP | Minimal Lower Layer Protocol |
| MUMPS | Massachusetts General Hospital Utility Multi Programming System |
| MVI | Master Veteran Index |
| NPI | National Patient Index |
| OI&T | Office of Information and Technology |
| OIA | Office of Informatics and Analytics |
| OMB | Office of Management and Budget |
| OPAI | Outpatient Pharmacy Automation Interface |
| PII | Personally Identifiable Information |
| PSO | Outpatient Prescription Pharmacy |
| PSO\*7.0\*454 | OneVA Pharmacy VistA Patch Identification Number |
| RDNG | IBM Rational DOORS Next Generation |
| RSD | Requirements Specification Document |
| RTM | Requirements Traceability Matrix |
| SDD | System Design Document |
| SME | Subject Matter Expert |
| SOAP | Simple Object Access Protocol |
| TRM | Technical Reference Model |
| VA | Department of Veterans Affairs |
| VHA | Department of Veterans Health Administration |
| VIE | Vitria business ware Interface Engine |
| VistA | Veterans Health Information Systems and Technology Architecture |

## Processes and References

As mentioned, the OneVA Pharmacy initiative is an Innovations project therefore project and product documentation are being stored in two places:

* [OneVA Pharmacy VA SharePoint](http://DNS/pm/iehr/vista_evolution/pharmacy/OneVAPharm/Shared%20Documents/Forms/AllItems.aspx)
* [OneVA Pharmacy Rational Repository](https://DNS/ccm/web/projects/PHARM%20(CM)#action=com.ibm.team.scm.browseElement&workspaceItemId=_Aw70ADl0EeaBmIc4By_hMQ&componentItemId=_q3RZETlzEeaBmIc4By_hMQ&itemType=com.ibm.team.scm.Folder&itemId=_j19MwD-lEeayke8OFaxGHw)

The references that support the implementation of the OneVA Pharmacy SDD are:

* [OneVA Pharmacy Requirements Specification Document (RSD)](http://DNS/pm/iehr/vista_evolution/pharmacy/OneVAPharm/Shared%20Documents/Forms/AllItems.aspx?RootFolder=%2Fpm%2Fiehr%2Fvista%5Fevolution%2Fpharmacy%2FOneVAPharm%2FShared%20Documents%2FOneVA%20Pharmacy%20Option%20Year%20%2D%20Implementation%2FRSD" \o "OneVA Pharmacy RSD on VA SharePoint)

* [OneVA Pharmacy Interface Integration Control Document (ICD)](http://DNS/pm/iehr/vista_evolution/pharmacy/OneVAPharm/Shared%20Documents/Forms/AllItems.aspx?RootFolder=%2Fpm%2Fiehr%2Fvista%5Fevolution%2Fpharmacy%2FOneVAPharm%2FShared%20Documents%2FOneVA%20Pharmacy%20Option%20Year%20%2D%20Implementation%2FICD%20Integration%20Interface%20Control%20Document" \o "OneVA Pharmacy ICD on VA SharePoint LINK)
* HL7 Messaging Standard v2.5.1 <http://www.hl7.org/implement/standards/product_brief.cfm?product_id=144>
* Medical Domain Web Services (MDWS) documentation <http://va.gov/vdl/application.asp?appid=192>
* HL7 (VistA Messaging) documentation <http://va.gov/vdl/application.asp?appid=8>

### Documentation Conventions

All patient data displayed on screen images within this document consists of mocked up test data therefore there is no concern regarding misuse or violation of Personally Identifiable Information (PII) as defined in Office of Management and Budget (OMB) Memorandum M-07-1616.

Various symbols used throughout the documentation to alert the reader to special information.

The following table gives a description of each of these symbols.

Table 2: Documentation Symbols and Descriptions

| Symbol | Description |
| --- | --- |
| Symbol for additional information (letter "i") inside a circle. | NOTE: Used to inform the reader of general information including references to additional reading material |
| Triangle with an exclamation point (!) inside to indicate caution for the reader to take special notice of critical information. | CAUTION: Used to caution the reader to take special notice of critical information |

# Background

## Overview of the System

The overall OneVA Pharmacy software design has several components. They are:

1. Veterans Health Information Systems and Technology Architecture (VistA) (Patch PSO\*7.0\*454)
2. Health Level 7 (HL7) Messaging
3. Enterprise Messaging Infrastructure (eMI) Enterprise Service Bus (ESB)
4. Health Data Repository/Clinical Data Service (HDR/CDS) Repository

VistA is the user interface where a pharmacist uses the “Patient Prescription Processing [PSO LM BACKDOOR ORDERS]” menu (found within the VistA Pharmacy Outpatient Pharmacy package) to query for and refill patient’s active and refillable prescriptions from other VA Pharmacy VistA instances. Patch PSO\*7.0\*454 uses Health Level 7 (HL7) messaging to query and receive remote prescription details to and from the Health Data Repository/Clinical Data Services (HDR/CDS) Oracle Repository.

The VistA instance where the Veteran is requesting the refill or partial is considered the ‘dispensing’ VistA instance. This patch allows a Pharmacist from a ‘dispensing’ VistA instance to refill or partial a prescription that originated from another VA Pharmacy VistA instance and print a prescription label. The VA Pharmacy VistA instance where the prescription originated and currently exits is the ‘host’ VistA instance. The host VistA instance is where the update to the prescription record is made once the fill is processed. The label data elements are extracted from the host VistA instance and returned to the dispensing site via HL7 creating the OneVA Pharmacy label. The bar code on the label will be valid at the host site but not at the dispensing site.

The OneVA Pharmacy patch sends the HL7 query message through the Enterprise Service Bus (ESB) Enterprise Messaging Services (eMI). eMI executes a Web Service call to query the HDR/CDS Repository for specific medication information obtained from all VA Pharmacy’s VistA sites. The eMI configuration contains filtering processes that applies specific business rules against the HDR/CDS Web Service call to return the appropriate prescriptions to the dispensing VistA. VistA and eMI communicate using HL7 v2.5.1 over Minimal Layer Protocol (MLLP). Communication to the HDR/CDS Repository takes place via Simple Object Access Protocol (SOAP) Web Services.

The medication data elements return to the dispensing site via HL7 messaging. Once the prescriptions arrive at the dispensing site, they display below any 'local' prescriptions on the Medication Profile view. The prescriptions displayed to the Pharmacist sort by VA Pharmacy site and status. The dispensing Pharmacist can view the remote prescriptions and select one to refill or partially fill.

For label printing, VistA triggers the HL7 message stream that executes during the refill or partial fill prescription processes. The host label data elements are returned to the dispensing site within the HL7 segment. The event triggers the Pharmacist to select the dispensing sites printing device to print a host label.

## System Configuration

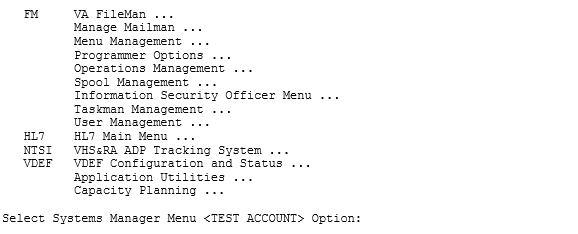
To use OneVA Pharmacy, the user turns on the ‘ONEVA PHARMACY FLAG (#3001)’. The 'ONEVA PHARMACY FLAG (#3001)’ is located on the ‘OUTPATIENT SITE NAME (#59)’ file. This field will allow each division to toggle the OneVA Pharmacy logic 'on' or 'off' depending on current needs. The user changes the field by using ‘FILEMAN [FM]’ and editing the 'ONEVA PHARMACY FLAG (#3001)’ field. The software patch delivers the ‘ONEVA PHARMACY FLAG (#3001)’ in the 'off' state. When this flag is in the 'off' state, the HDR/CDS Repository is not queried for external prescriptions and other VistA instances will not be able to refill prescriptions that belong to the VistA instance with the flag set to the 'off' state. When in the 'on' state, all prescription queries and actions may be taken for remote queries, refills, and partial fills. In order to process prescriptions from another VistA instance, that instance will also need to have its ‘ONEVA PHARMACY FLAG (#3001)’ set to the 'on' state.

### Steps to Turn On ONEVA PHARMACY FLAG (#3001)

To turn on the ‘ONEVA PHARMACY FLAG (#3001)’ for all the divisions, use the ‘VA FILEMAN [DIUSER]’ utility and perform the following steps.

Sign-in to the VistA system and select the menu option: VA FILEMAN [DIUSER].

Figure 1: OneVA Pharmacy Flag: VA FileMan



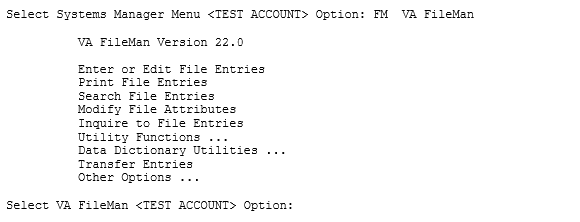
1. Enter <**FM>** and press **<ENTER>.**

Figure 2: OneVA Pharmacy Flag: Enter FM Prompt

The image displays the OneVA Pharmacy Flag:  Enter FM.


The system displays the option name and the prompt for the specific FileMan feature, as displayed in the following image.

Figure 3: OneVA Pharmacy Flag: VA FileMan Menu Prompt



1. Enter <**EN>** and press **<ENTER>.**

Figure 4: OneVA Pharmacy Flag: Enter <EN> to Enter or Edit File Entries Prompt

The image displays the OneVA Pharmacy Flag:  Enter EN to Enter or Edit File Entries

The system displays the option name and the prompt for the ‘INPUT TO WHAT FILE’, as displayed in the following image.

Figure 5: OneVA Pharmacy Flag: Input to What File Prompt

The image displays the OneVA Pharmacy Flag:  Input to What File Prompt

1. Enter <**59>** for the ‘OUTPATIENT SITE (#59)’ file and press **<ENTER>.**

The system displays the option name and the prompt for the ‘EDIT WHICH FILE’, as displayed in the following image.

Figure 6: OneVA Pharmacy Flag: Edit Which Filed Prompt

The image displays the OneVA Pharmacy Flag:  Edit Which Filed Prompt.

1. Enter <**3001>** for the ‘ONEVA PHARMACY FLAG (#3001)’ field and press **<ENTER>.**

The system displays the option name and the prompt for the ‘THEN EDIT FIELD’, as displayed in the following image.

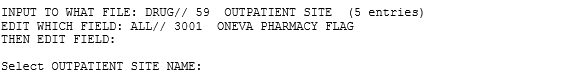
Figure 7: OneVA Pharmacy Flag: Then Edit Field Prompt

The image displays the OneVA Pharmacy Flag:  Then Edit Field Prompt

1. Press **<ENTER>.**

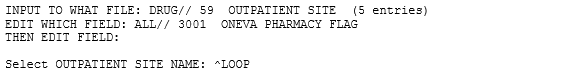
The system displays the option name and the prompt for the specific ‘OUTPATIENT SITE NAME’, as displayed in the following image.

Figure 8: OneVA Pharmacy Flag: Select OUTPATIENT SITE NAME Prompt



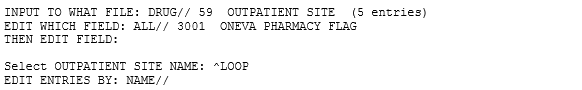
1. Enter the following command <**^LOOP>** and press **<ENTER>.**

Figure 9: OneVA Pharmacy Flag: ^LOOP Command



The system displays the option name and the prompt for the specific ‘EDIT ENTRIES BY: NAME//’, as displayed in the following image.

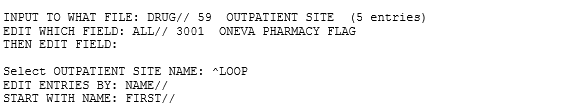
Figure 10: OneVA Pharmacy Flag: Edit Entries by: NAME// Prompt



1. Press **<ENTER>.**

The system displays the option name and the prompt for the specific ‘START WITH NAME: FIRST//’, as displayed in the following image.

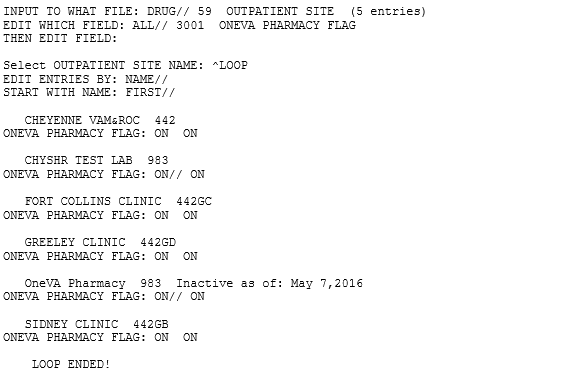
Figure 11: OneVA Pharmacy Flag: Start with Name Prompt



The ‘^LOOP’ command causes the system to display each division, one by one, allowing the user to set the ‘ON’ option for the ‘ONEVA PHARMACY FLAG’ for each division. After pressing the return key, the next division will display until the ‘LOOP ENDED!’ message displays.

1. Enter <**ON**> for each division press **<ENTER>** as displayed in the example for a test VistA instance in the following image.

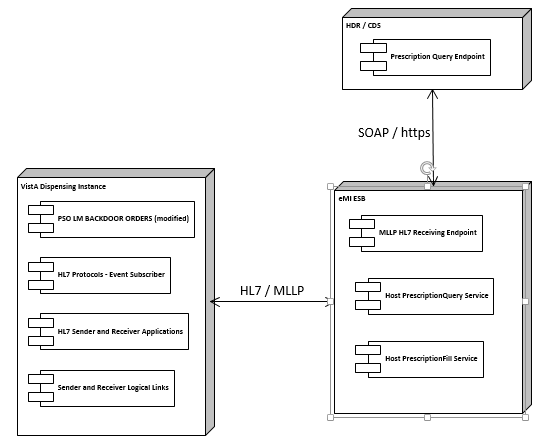
Figure 12: OneVA Pharmacy Flag: Loop Command Example



## Data Flows

The following figure displays the OneVA Pharmacy system design approach.

Figure 13: OneVA Pharmacy Design Overview



## Overview of the Business Process

OneVA Pharmacy provides VistA the functionality to allow Pharmacists to refill or partial a prescription at any VA Pharmacy location. It decrements the patients number of remaining refill balance at the host Pharmacy and manages controlled substances by displaying a message that a controlled substance cannot be refilled outside of the host Pharmacy.

## Overview of the Significant Requirements

### Business Rules

Business rules are a high-level functionality condition that the system must support in order to complete the business of the organization. Business rules describe the operations, definitions, and constraints that apply to an organization. The high-level overview of the business rules for OneVA Pharmacy includes filtering on only ‘active’ prescriptions with one or more refills remaining and the date of the next refill is no earlier than one week. The prescription cannot be a controlled substance and the patient must be registered in one or more VistAs.

The detailed business rules for OneVA Pharmacy can be found in the OneVA Pharmacy Requirements Specification Document (RSD), located on the VA SharePoint. The OneVA Pharmacy RSD is accessible by following this [LINK](#RSD).

### Design Constraints

Design constraints mandate design decisions that the system must support in order to complete the business of the organization. The high-level overview of the design constraints for OneVA Pharmacy includes using the VistA routine ‘Patient Prescription Processing’ [PSO LM BACKDOOR ORDERS] to access local patient information; HDR/CDS Repository will be accessed via eMI to retrieve data for the medication profile screen; and HL7 messages will be integrated for information exchange between VistA systems.

The details for the design constraints for OneVA Pharmacy can be found in the OneVA Pharmacy RSD, located on the VA SharePoint. The OneVA Pharmacy RSD is accessible by following this [LINK](#RSD).

### Documentation Specifications

The goal of the ‘Documentation Specifications’ is to ensure necessary documentation is developed according to standard. As stated, OneVA Pharmacy is an Innovations Program initiative therefore many of the shared documentation sites used by the Integrated Project Teams (IPT) is not available for this project therefore all OneVA Pharmacy product/project documents/artifacts can be access by following this [LINK](https://DNS/ccm/web/projects/PHARM%20(CM)#action=com.ibm.team.scm.browseElement&workspaceItemId=_Aw70ADl0EeaBmIc4By_hMQ&componentItemId=_q3RZETlzEeaBmIc4By_hMQ&itemType=com.ibm.team.scm.Folder&itemId=_j19MwD-lEeayke8OFaxGHw) to the VA IBM Rational Repository for OneVA Pharmacy.

The OneVA Pharmacy project does maintain all the product/project documents/artifacts including working documents and can be given access through SharePoint permissions. The OneVA Pharmacy VA SharePoint site is accessible by following this [LINK](http://URL/pm/iehr/vista_evolution/pharmacy/OneVAPharm/Shared%20Documents/Forms/AllItems.aspx).

### Functional Requirements

A requirement specifies functions that the application should be able to perform and constraints on application performance. The high-level overview functional specifications for OneVA Pharmacy includes displaying the Medication Profile for a patient from all other facilities, capability to refill full or partial active prescription for a patient from another VA Pharmacy location other than the site the prescription originated from, dispense local refills as currently designed, generate a prescription label, and generate new reports.

The functional requirements are detailed in the OneVA Pharmacy RSD, located on the VA SharePoint. The OneVA Pharmacy RSD is accessible by following this [LINK](#RSD).

# Conceptual Design

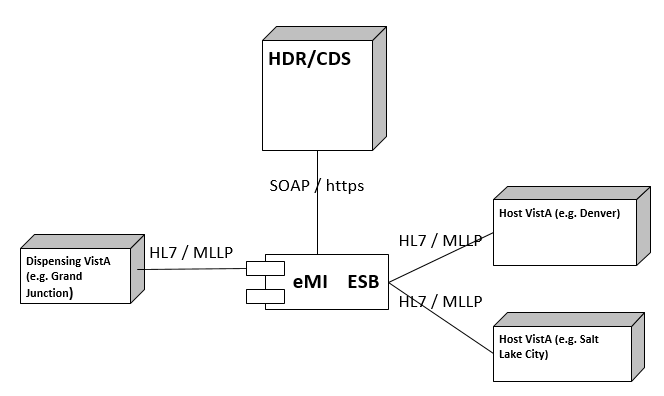
## Conceptual Application Design

The software architecture for OneVA Pharmacy follows the peer-to-peer architectural model, where one VistA instance sends and receives data to and from another VistA instance. The system utilizes the eMI ESB model providing message routing and coordination of multiple services to view a patient’s prescription record and modify that record in the host VistA system.

### Application Context

The following diagram shows an example of VistA and how it will exist within the design of the eMI ESB model when OneVA Pharmacy is implemented.

Figure 14: Application Architectural Diagram



The entities displayed in the Application Architecture Diagram are explained as follows:

* VistA is the user interface for initiating prescription queries and requesting prescription refills from other VistA instances.
* eMI ESB is the messaging component to handle MLLP HL7 endpoints and the SOAP web service call to the HDR/CDS Repository.
* HDR/CDS Repository is the VAs authoritative data service repository for VistA application and services containing nationalized, patient-centric, and clinical data.

### High-Level Application Design

The High-Level Application Design identifies the major components of the application and the relationships of the major application components to each other. Use Cases are used in this SDD to document the logical application design for OneVA Pharmacy.

The following use cases have the pre-condition that the patient is known and registered in one or more VistA instances.

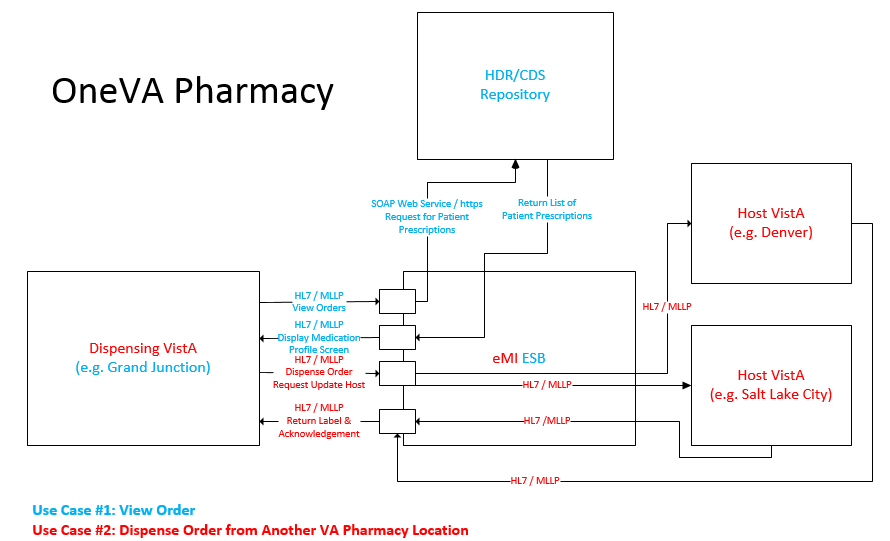
 The act of registering a patient in VistA triggers an Admission Discharge Transfer (ADT) registration message to be sent to the Master Veteran Index (MVI) located in the Austin Information Technology Center (AITC). For each new patient, the MVI creates and assigns an Integration Control Number (ICN) and sends this number along with other information to the initiating VistA in response to the ADT message. Further the MVI stores and correlates the local VistA Patient Data File Numbers (DFNs) with the national ICN. One national patient ICN is correlated to (among other systems’ patient identifiers) many local VistA patient identifiers. The ICN enables the sharing of patient data between operationally diverse systems.

Figure 15: High-level Use Case Context Diagram



The following figure provides an image of both the business capability with the technical components on the OneVA Pharmacy software. The words labeled in the color blue reflect Use Case 1 – View Order components – and the words labeled in the color red reflect Use Case 2 – Dispense Order from another VA Pharmacy location components.

Figure 16: OneVA Pharmacy Business and Technical Components High-Level Overview



#### Use Case Name: View Orders

The ‘View Orders’ Use Case describes the process for users to view all of a patient’s active, suspended, on hold, discontinued, or expired prescription orders. This process allows a user to view prescription order information in one place whether the order originated from a dispensing or host VistA instance.

Triangle with an exclamation point (!) inside to indicate caution for the reader to take special notice of critical information. The OneVA Pharmacy’s feature to query the HDR/CDS Repository (step 2 in the flow of events) will not execute if the patient has not been treated at more than one VA Medical Center.

Actors

* User (e.g. Pharmacist)
* Dispensing VistA Instance
* HDR/CDS Repository
* eMI ESB (proxy to host VistAs)

Pre-Conditions

* Patient must have an Integration Control Number (ICN)
* Patient must have information populated in the system
* User must have accessed the ‘RX (PRESCRIPTIONS) [PSO RX]’ menu within VistA and hold the appropriate security keys for their user role, such as PSORPH to identify the user as a Pharmacist. (No separate Security Key required.)

Flow of Events

1. User enters the Medication Profile screen.
2. The dispensing VistA instance will retrieve the prescriptions from HDR/CDS Repository.
3. The dispensing VistA instance will send a request via the eMI ESB to the HDR/CDS Repository with the patient identifiers to retrieve the prescriptions with a status of ‘**Suspended’**, ‘**Active’**, ‘**Hold’,** “**Discontinued** (within the past 120 days)” or “**Expired** (within the past 120 days)” from all previous treatment facilities ***excluding*** local facility.
4. The eMI ESB will exclude the Clinical Data Health Care Repository/Department of Defense (CHDR/DoD) prescriptions that are available in the HDR/CDS Repository for active dual patients.

Exceptions

2a. Patient Not Found

2b. Patient Found, No Prescription Records

2c. eMI ESB is not accessible.

2d. HDR/CDS Repository is not accessible.

2e. Multiple Patients Found

3a. Patient Found, No Prescription Records Matching Filter

System Message

1a. Please wait. Checking for prescriptions at other VA Pharmacy locations. This may take a moment…

1b. Eligibility: RX PATIENT STATUS: OPT NSC

2a. Patient Identifier Not Found

2b. Patient Found with no Prescription Records

2c. The system is down or not responding. Press RETURN to continue.

2d. The RX Database is not Responding to the Request

2d. The RX Database responded with an error

2e. Multiple Patient Matches Found – Correct MVI (note: MVI is the Master Veteran Index. Please know the acronym is not spelled out in the error message.) Please know the acronym is not spelled out within the error message.)

3a. Patient Found with no Prescription Records Matching Search Criteria

#### Use Case Name: Dispense Local Order

The “Dispense Local Order’ Use Case describes the process for users to dispense local order.  Documented in the OneVA Pharmacy RSD is a business requirement that the system shall provide the ability to dispense local refills as currently designed therefore this Use Case is being presented for test case development and documentation purpose.

Actors

* User (Provider, Pharmacist, etc.)
* Dispensing VistA Instance

Pre-Conditions

* Patient must have an ICN.
* Dispensing VistA instance has the required amount of prescribed medication inventory on-hand.
* User must have accessed the ‘RX (PRESCRIPTIONS) [PSO RX]’ menu within VistA and hold the appropriate security keys for their user role, such as PSORPH to identify the user as a Pharmacist. (No separate Security Key required.) If the user does not hold the PSORPH key, the refill and partial fill options will be ‘unavailable’, and will appear in parenthesis (i.e RF (Refill)). If screening logic is not met within list manager, it will place parenthesis around the action indicating the action is unavailable. The screening logic checks to ensure the user has the appropriate security key (PSORPH) in order to use the refill and partial fill action items.

Flow of Events

1. User selects RF (Refill) for a local dispensing prescription from the Medication Profile screen.
2. The dispensing VistA will update the prescription; decrement refills, etc.
3. The dispensing VistA will dispense the prescription.

Alternate Flow

1. User selects PF (Partial fill) for a local dispensing prescription from the Medication Profile screen.
2. The local dispensing VistA will update the prescription; partial fill date, etc.
3. The local dispensing VistA will dispense the prescription.

#### Use Case Name: Dispense Another VA Pharmacy Order

The ‘Dispense another VA Pharmacy Order’ Use Case describes the process for users to dispense an order that originated from another VA Pharmacy location. Once the user executes the View Order Use Case, the user can select an active prescription from the Medication Profile screen that originated in another VA Pharmacy VistA instance to dispense. After selecting the prescription and executing the fill order request, the system will send a message to the originating host VistA instance. This request will decrement the prescription count, but will not affect the inventory of the host facility. When the decrement is successful, communication is made back to the dispensing VistA instance to complete the process and to print a prescription label.

Actors

* User (e.g. Pharmacist)
* Dispensing VistA Instance
* eMI ESB
* Host VistA Instance

Pre-Conditions

* Patient must have an ICN.
* Patient must have information populated in the system
* Dispensing VistA instance has the required amount of prescribed medication inventory on-hand.
* User must have accessed the ‘RX (PRESCRIPTIONS) [PSO RX]’ menu within VistA and hold the appropriate security keys for their user role, such as PSORPH to identify the user as a Pharmacist. (No separate Security Key required.)

Flow of Events

1. User selects a prescription that originated from another VA Pharmacy VistA instance and RF (Refill) from the Medication Profile screen.
2. The prescription must be in ‘Active’ status.
3. The dispensing VistA instance will send a refill order request to the eMI ESB.
4. The eMI ESB will route the refill order request to the host VistA instance.
5. The host VistA will conduct order checks.
6. The host VistA will update the prescription order and decrement refills.
7. The host VistA will create a prescription label.
8. The dispensing VistA instance will dispense medication.
9. The dispensing VistA instance will print the label to the dispensing location printer.

Alternate Flow

1. User selects a prescription that originated from another VA Pharmacy VistA instance and PF (Partial fill) from the Medication Profile screen.
2. The prescription must be in ‘Active’ status.
3. The dispensing VistA instance will send a partial fill order request to the eMI ESB.
4. The eMI ESB will send a partial fill order request to the host VistA instance.
5. The host VistA will conduct order checks.
6. The host VistA will update the prescription order and update partial fill date.
7. The host VistA will create a prescription label.
8. The dispensing VistA instance will dispense medication.
9. The dispensing VistA instance will print the label to the dispensing location printer.

Exceptions

2. Status is not ‘Active’

3a. eMI ESB is not accessible.

4a. The host VistA is not accessible

4b. The prescription is a controlled substance

5a. The host VistA instance fails the order.

System Message

1a. Please wait. Checking for remote prescriptions. This may take a moment…

1b. Eligibility: RX PATIENT STATUS: OPT NSC//

2. Only 'ACTIVE' remote prescriptions may be actioned at this time.

3a. The system is down or not responding. Press RETURN to continue.

3b. Invalid HL7 Data Format

4a. The system is down or not responding. Could not query other VA Pharmacy locations. Press RETURN to continue.

4b. Cannot refill Rx# xxxxxxx. This is a controlled substance.

5a. The following are the various standard system messages that could display

\*\*\* Drug is inactive for Rx # xxxxxxx cannot be refilled \*\*\*" (refill prescription allowed on inactive drugs)

Can't refill Rx # xxxxxxx it is not for this patient.

Cannot refill, Rx is discontinued or expired. Later Rx may exist.

Can't refill, no refills remaining.

This drug has been changed; No refills allowed.

The system is down or not responding. Could not query other VA Pharmacy locations. Press RETURN to continue.

The system is down or not responding. The other VA Pharmacy location has not installed the OneVA Pharmacy functionality.

The system is down or not responding. The other VA Pharmacy location has installed the OneVA Pharmacy software, but is currently not accepting refill or partial fill request.

BWF – ADDED BELOW ITEMS:

Cannot refill. Prescription is a Titration prescription.

Cannot complete partial fill. Prescription is a Titration prescription.

#### Use Case Name: OneVA Pharmacy Prescription Report

The ‘OneVA Pharmacy Prescription Report’ Use Case allows the user to access reports related to the orders created from the OneVA Pharmacy process. Once the user executes the OneVA Pharmacy Prescription Report Use Case, the user can generate three different reports. The reports allow the user to view what prescriptions were filled by another VA Pharmacy location or what other VA Pharmacy locations have filled prescriptions for a targeted facility.

Actors

* User (Provider, Pharmacist, etc.)
* Dispensing VistA Instance

Pre-Conditions

* User has accessed the PSOR OneVA Pharmacy Prescription Report [PSO REMOTE RX REPORT] menu. (No separate Security Key required.) This is a new menu off the ‘Rx (Prescriptions) [PSO RX]’ menu, already in production.

Flow of Events

1. User selects a report option from the ‘OneVA Pharmacy Prescription Report’ menu.
   1. User selects ‘Prescriptions dispensed for other Host Pharmacies’ report.
   2. User selects ‘Our prescriptions, filled by other facilities as the Dispensing Pharmacy’ report.
   3. User selects ‘All OneVA Pharmacy Prescription Activity’ report
2. User selects ‘D” - “Date Range” or go to step 3 or step 4
   1. User enters start date.
   2. User enters end date.
3. User selects “Patient” or go to step 4.
   1. User enters Patient Name
4. User selects “Site”.
   1. User enters Institution Name.

Alternate Flow

* N/A

Exceptions

* N/A

System Message

* N/A

### Application Locations

OneVA Pharmacy patch is an enhancement to the VistA Pharmacy> Outpatient Pharmacy Manager package. The OneVA Pharmacy patch extends the existing VistA to provide Pharmacists direct access to any active, refillable prescription from any VA Pharmacy location. However, integration with eMI and the HDR/CDS Repository are critical for the success of the deployment but are outside the development of the OneVA Pharmacy team’s deliverables.

## Conceptual Data Design

### Project Conceptual Data Model

Not applicable.

### Database Information

OneVA Pharmacy includes changes to the Remote Prescription Log File (#52.09), Refill Multiple (#52.1) of the Prescription File (#52), Partial Multiple (#52.2) of the Prescription File (#52), and the new Remote Prescription Log File (#52.09).

#### Remote Prescription Log File (#52.09)

The Remote Prescription Log File (#52.09) logs all activity related to ‘remote refills’ and ‘partial fills’. The log file will record all actions taken by the local or dispensing site as well as all actions taken by any external facility for any remote or host prescription.

| Field Number | Field Name | Pointers | Cross References and Record Indices | Description |
| --- | --- | --- | --- | --- |
| .01 | LOG DATE/TIME | N/A | 52.09^B | Date/Time of refill/partial fill transaction. |
| .02 | PATIENT | PATIENT (#2) | 52.09^C | This is the patient for which a refill or partial was executed by another VA Pharmacy other than the host site. |
| .03 | RX NUMBER | N/A | 52.9^D | This is the RX Number from the prescription file (#52). |
| .04 | SITE NUMBER | INSTITUTION (#4) | 5209^E |  |
| .05 | REQUEST TYPE | N/A |  | RF – REFILL  PR – PARTIAL FILL  OR – OUTSIDE REFILL  OP – OUTSIDE PARTIAL FILL |
| .06 | OUTGOING REQUEST PHARMACIST | NEW PERSON (#200) | N/A | This is the pharmacist who initiated the refill or partial fill request to the host facility |
| .061 | REMOTE FILLING PHARMACIST | N/A | N/A | This pharmacist requested a refill or partial fill from a host facility. |
| .07 | QUANTITY | N/A | N/A | This is the quantity dispensed. |
| .08 | DAYS SUPPLY | N/A | N/A | This is the day’s supply for the medication. |
| .09 | REFILL/PARTIAL DATE | N/A | N/A | This is the date of the refill or partial fill request. This represents the date as it is logged in the .01 field of either the refill or partial sub files within the prescription file. |
| .1 | DISPENSED DATE | N/A | N/A | This is the dispense date as it is held in the DISPENSED DATE within the REFILL or PARTIAL sub files of the PRESCRIPTION file. |
| 1 | REMOTE DRUG NAME | N/A | N/A | This is the name of the drug being dispensed for this request. |
| 1.1 | LOCAL (MATCHED) DRUG | DRUG (#50) | N/A | This drug was used locally for the ‘host’ refill or partial fill. |
| 1.2 | TOTAL REFILL/PARTIAL FILL COST | N/A | N/A | This is the total cost for the ‘host’/filling facility. The cost is derived by using the cost of the drug at the time of the refill or partial fill. The cost is being retrieved from file 50, field 13. |
| 2 | MESSAGE DETAILS | N/A | N/A | Any message details related to the transaction. |
| 3 | LABEL DATA | N/A | N/A | Label data word processing field. |
| 1.3 | VA PRODUCT ID | N/A | N/A | This is the VA product ID that will be passed in by the ‘host’ VistA system. |

##### STANDARD DATA DICTIONARY #52.09 -- REMOTE PRESCRIPTION LOG FILE (VistA)

52.09,.01’ LOG DATE/TIME’ 0;1 DATE (Required)

INPUT TRANSFORM: S %DT="ESTR" D ^%DT S X=Y K:Y<1 X

LAST EDITED:’ APR 26, 2014

HELP-PROMPT:’ Enter the date/time for this transaction.

DESCRIPTION:’ This is the date/time associated with this remote prescription transaction. The date/time represents the date/time the message was processed and filed locally.

CROSS-REFERENCE: 52.09^B

1)= S ^PSRXR(52.09,"B",$E(X,1,30),DA)=""

2)= K ^PSRXR(52.09,"B",$E(X,1,30),DA)

52.09,.02’ PATIENT’ 0;2 POINTER TO PATIENT FILE (#2) (Required)

LAST EDITED:’ APR 26, 2014

HELP-PROMPT:’ Enter the Patient for which this refill or partial fill occurred.

DESCRIPTION: This is the patient for which a refill or partial fill request was generated.

CROSS-REFERENCE: 52.09^C

1)= S ^PSRXR(52.09,"C",$E(X,1,30),DA)=""

2)= K ^PSRXR(52.09,"C",$E(X,1,30),DA)

Cross reference for patient IEN.

52.09,.03’ RX NUMBER’ 0;3 FREE TEXT (Required)

INPUT TRANSFORM: K:$L(X)>20!($L(X)<1) X

LAST EDITED:’ APR 26, 2014

HELP-PROMPT:’ Enter the remote RX number. This is the RX number from the remote facility. 1-20 characters.

DESCRIPTION: The RX# as stored at the remote facility.

CROSS-REFERENCE: 52.09^D

1)= S ^PSRXR(52.09,"D",$E(X,1,30),DA)=""

2)= K ^PSRXR(52.09,"D",$E(X,1,30),DA)

Cross reference for remote RX number.

52.09,.04’ SITE NUMBER’ 0;4 POINTER TO INSTITUTION FILE (#4) (Required)

LAST EDITED:’ APR 28, 2014

HELP-PROMPT:’ Select the site associated with this remote RX.

DESCRIPTION: Site number for the remote facility.

CROSS-REFERENCE: 52.09^E

1)= S ^PSRXR(52.09,"E",$E(X,1,30),DA)=""

2)= K ^PSRXR(52.09,"E",$E(X,1,30),DA)

Site Number Cross reference.

52.09,.05’ REQUEST TYPE’ 0;5 SET

'RF' FOR REFILL;

PR' FOR PARTIAL FILL;

'OR' FOR OUTSIDE REFILL;

'OP' FOR OUTSIDE PARTIAL FILL;

LAST EDITED:’ AUG 04, 2014

HELP-PROMPT:’ Select the type of request being made. Refill(RF), Partial Fill(PR), Outside Refill (OR), or Outside Partial Fill (OP).

DESCRIPTION: This fields holds the type of request being made for this RX.

52.09,.06’ OUTGOING REQUEST PHARMACIST 0;6 POINTER TO NEW PERSON FILE (#200) (Required)

LAST EDITED:’ AUG 04, 2014

HELP-PROMPT:’ Enter the Pharmacist for this refill or partial fill request. DESCRIPTION: This is the Pharmacist who initiated the refill or partial fill request to the remote facility.

52.09,.061’REMOTE FILLING PHARMACIST 0;11 FREE TEXT

INPUT TRANSFORM: K:$L(X)>30!($L(X)<3) X

LAST EDITED:’ AUG 04, 2014

HELP-PROMPT:’ Answer must be 3-30 characters in length.

DESCRIPTION: This is the pharmacist taking action on the selected RX.

52.09,.07’ QUANTITY’ 0;7 NUMBER

INPUT TRANSFORM: K:+X'=X!(X>9999)!(X<0)!(X?.E1"."1N.N) X

LAST EDITED:’ APR 26, 2014

HELP-PROMPT:’ Enter the quantity that was dispensed with this refill or partial fill.

DESCRIPTION: This is the quantity associated with this refill or partial fill.

52.09,.08’ DAYS SUPPLY 0;8 NUMBER

INPUT TRANSFORM: K:+X'=X!(X>999)!(X<0)!(X?.E1"."1N.N) X

LAST EDITED:’ APR 26, 2014

HELP-PROMPT:’ Enter the days supply for this refill or partial fill. A numeric value 0-999.

DESCRIPTION: This is the days supply for this refill or partial fill action.

52.09,.09’ REFILL/PARTIAL DATE’0;9 DATE

INPUT TRANSFORM: S %DT="ETXR" D ^%DT S X=Y K:Y<1 X

LAST EDITED:’ MAR 08, 16

HELP-PROMPT:’ Enter the date/time for this refill or partial fill request.

DESCRIPTION:’ This is the date for the refill or partial fill request. This represents the date/time as it is logged in the .01 field of either the REFILL or PARTIAL fill. subfile within the PRESCRIPTION file (#52) on the remote system.

52.09,.1’ DISPENSED DATE’ 0;10 DATE

INPUT TRANSFORM: S %DT="ETXR" D ^%DT S X=Y K:Y<1 X

LAST EDITED:’ MAR 08, 16

HELP-PROMPT:’ Enter the dispense date for this refill or partial fill request.

DESCRIPTION:’ This is the Dispense date/time as it is held in the DISPENSED DATE within the REFILL subfile of the PRESCRIPTION (#52) file, or the DISPENSED DATE within the PARTIAL subfile of the PRESCRIPTION file.

52.09,1 ’REMOTE DRUG NAME’ 1;1 FREE TEXT

INPUT TRANSFORM: K:$L(X)>120!($L(X)<1) X

LAST EDITED:’ AUG 12, 2014

HELP-PROMPT:’ Enter the name of the drug associated with this refill or partial fill request, 1-120 characters.

DESCRIPTION: This is the name of the drug being dispense for this request.

52.09,1.1’ LOCAL (MATCHED) DRUG 1;2 POINTER TO DRUG FILE (#50)

LAST EDITED:’ AUG 12, 2014

HELP-PROMPT:’ Enter the name of the local drug that matches the remote (incoming) drug. DESCRIPTION:’ This is the drug that was used for locally for the 'remote' refill or partial fill. Since drug IENS and names may differ between sites, a user must match the remote drug name to a local drug.

52.09,1.2’ TOTAL REFILL/PARTIAL FILL COST 1;3 NUMBER

INPUT TRANSFORM: S:X["$" X=$P(X,"$",2) K:X'?.N.1".".2N!(X>9999999.9999999)!(X<0) X

LAST EDITED:’ AUG 12, 2014

HELP-PROMPT:’ Type a dollar amount between 0 and 9999999.99, 2 decimal digits.

DESCRIPTION:’ This is the total cost for the 'remote'/filling facility. The cost is derived by using the cost of the drug at the time of the refill or partial fill. The cost is being retrieved from file 50, field 13.

52.09,1.3’ VA PRODUCT ID’ 1;4 FREE TEXT

INPUT TRANSFORM: K:$L(X)>50!($L(X)<1) X

LAST EDITED:’ APR 06, 16

HELP-PROMPT:’ Answer must be 1-50 characters in length.

DESCRIPTION: This is the VA product ID that will be passed in by the 'host' vista system.

52.09,2 ’MESSAGE DETAILS’ 2;0 WORD-PROCESSING #52.092 (IGNORE "|")

DESCRIPTION: This is the HL7 message that is associated with the refill or partial fill request.

52.09,3’ LABEL DATA’3;0 WORD-PROCESSING #52.093 (NOWRAP) (IGNORE "|")

DESCRIPTION: This contains the label data returned from the remote facility for a refill or partial fill.

#### Refill Multiple (#52.1) of the Prescription File (#52)

| Field Number | Field Name | Pointers | Cross References and Record Indices | Description |
| --- | --- | --- | --- | --- |
| 91 | Remote Fill Site | Institution File (#4) | “RFIL” | The site that performed the refill action on behalf of the host site. |
| 92 | Remote Pharmacist | N/A | N/A | The name of the pharmacist that performed the refill action on behalf of the host site. |
| 93 | Remote Pharmacist Phone | N/A | N/A | This is the phone number for the pharmacist that performed the refill action. |

#### Partial Multiple (#52.2) of the Prescription File (#52)

| Field Number | Field Name | Pointers | Cross References and Record Indices | Description |
| --- | --- | --- | --- | --- |
| 91 | Remote Fill Site | Institution File (#4) | “RFIL” | The site that performed the partial action on behalf of the host site. |
| 92 | Remote Pharmacist | N/A | N/A | The pharmacist that performed the partial fill action on behalf of the host site. |
| 93 | Remote Pharmacist Phone | N/A | N/A | This is the phone number for the pharmacist that performed the partial fill action. |

#### OneVA Pharmacy Flag (#3001) of the Outpatient Site file (#59)

| Field Number | Field Name | Pointers | Cross References and Record Indices | Description |
| --- | --- | --- | --- | --- |
| 3001 | OneVA Pharmacy Flag | N/A | N/A | This is the OneVA pharmacy flag, which controls the remote prescription logic. The flag can be set to ‘On’ or ‘Off’. When in the On state, remote prescriptions can be queried, and actions can be taken on the active prescriptions. When in the ‘Off’ state, prescriptions will not be queried, and incoming refill/partial fill requests will not be processed. |

### User Interface Data Mapping

The OneVA Pharmacy patch uses the same VistA ‘roll and scroll’ user interface found in all the VistA instances deployed throughout the VA Enterprise. The patch will modify the functionality within the “Patient Prescription Processing” [PSO LM BACKDOOR ORDERS] menu and add a new menu to the ‘Rx (Prescriptions) [PSO RX]’called OneVA Pharmacy Prescription Report [PSO REMOTE RX REPORT] to access the new OneVA Pharmacy reports.

#### Application Screen Interface

The OneVA Pharmacy patch uses the same VistA ‘roll and scroll’ application screen interface found in the VistA instances deployed throughout the VA Enterprise.

#### Application Report Interface

The system shall provide the ability to generate and print prescription reports that were filled by another VA Pharmacy other than the originating host pharmacy. There are three reports being developed as part of OneVA Pharmacy and will be available in the new menu called: OneVA Pharmacy Prescription Report [PSO REMOTE RX REPORT]. They are:

* Prescriptions dispensed for other Host Pharmacies
* Our prescriptions, filled by other facilities as the Dispensing Pharmacy
* All OneVA Pharmacy Prescription Activity

##### Selecting a Report and Report Search Options

Three search options will be made available for each of the OneVA Pharmacy reports. They are:

1. D: Date Range
2. P: Patient
3. S: Site

When selecting ‘D: Date Range’ the user is prompted to enter a start date and end date. The system defaults to 30-days prior to current system date as the start date and the current date as the end date.

When selecting ‘P: Patient’ the user is prompted to specify the patient’s name, social security number, last four digits of the social security number, or first initial of last name with the last four digits of the social security number.

When selecting ‘S: Site’ the user is promoted to enter an Institution’s Name, Status, Station Number, Official VA Name, Current Location, Coding System/ID Pair, National Provider Identifier (NPI), Status, Name (Changed From), or Coding System.

The following table lists the data fields that will be displayed from the ‘REMOTE PRESCRIPTION LOG FILE (#52.09) and made available on the report page.

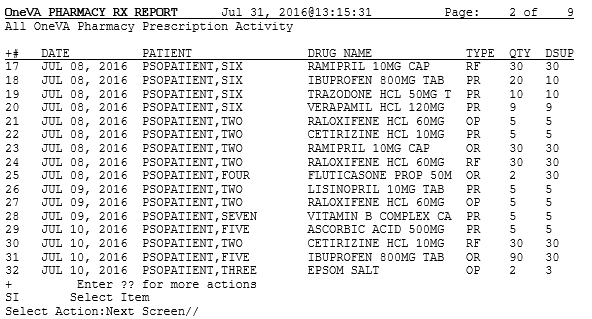
Table 3: Report Data Fields

| Report Column | Data Source |
| --- | --- |
| DATE FILLED | REMOTE PRESCRIPTION LOG FILE (#52.09) – REFILL/PARTIAL DATE (.09) |
| PATIENT | REMOTE PRESCRIPTION LOG FILE (#52.09) – PATIENT (.02) |
| DRUG NAME | REMOTE PRESCRIPTION LOG FILE (#52.09) – LOCAL (MATCHED) DRUG (1.1) |
| TYPE | REMOTE PRESCRIPTION LOG FILE (#52.09) – REQUEST TYPE (.05) |
| QTY | REMOTE PRESCRIPTION LOG FILE (#52.09) – QUANTITY (0.7) |
| DSUP | REMOTE PRESCRIPTION LOG FILE (#52.09) – DAYS SUPPLY (.08) |

All OneVA Pharmacy reports contain a summary page and a detailed page and all three reports have the same format and basic information regardless of the search option selected.

The following is an example of the summary page layout for the OneVA Pharmacy reports.

Figure 17: OneVA Pharmacy Report Example: Summary Page



The type of report selected determines the refills shown on a report and the search option specified as described within this document. A row number identifies each refill/partial fill. For each row the date processed, patient name, drug name, quantity dispensed, and the quantity supplied displays. There are four refill type values. They are:

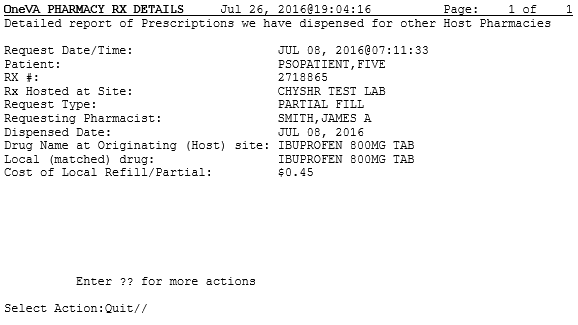
* RF – refills
* PR - partial refills
* OR – refills performed by other sites
* OP – partial fills performed by other sites

The total cost is the sum of the costs of all items included in this report and is available on the report ‘Prescriptions we have dispensed for other Host Pharmacies’.

The system will be designed to allow the user to enter the Select Item (SI) action or as a short-cut feature, enter the row number.

The following is an example of the detail page layout for the OneVA Pharmacy reports.

Figure 18: OneVA Pharmacy Report Example: Details Page



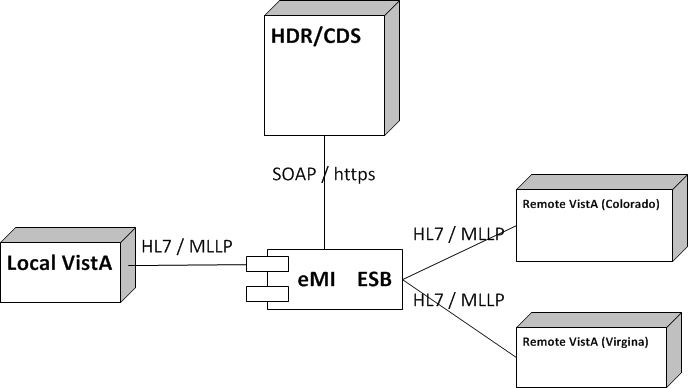
#### Unmapped Data Element

Not applicable.

## Conceptual Infrastructure Design

The OneVA Pharmacy project uses the eMI ESB for calls to the HDR/CDS Repository. The following diagram depicts the message flow through the system.

Figure 19: OneVA Pharmacy Components



### System Criticality and High Availability

The OneVA Pharmacy extends the VistA application and incorporates by default the same rules of engagement as VistA.

### Special Technology

The OneVA Pharmacy engages the eMI-middleware and the HDR/CDS Repository.

For information about eMI, please follow this [LINK](http://URL/warboard/anotebk.asp?proj=1709&Type=Active) to access the eMI project and product documentation.

For information about the HDR/CDS Repository, please follow this [LINK](http://URL.vista.med.va.gov/warboard/anotebk.asp?proj=918&Type=Active) to access the HDR/CDS project and product documentation repository.

### Technology Locations

The OneVA Pharmacy software uses the existing VistA instances deployed in the VA Enterprise. There are no changes to the technology locations.

The following table describes the technology components used and locations.

Table 4: Technology Components Used

|  |  |  |
| --- | --- | --- |
| **Technology Component** | **Location** | **Usage** |
| Workstations | VA VistA Pharmacy Locations | Pharmacists and support staff |
| Special Hardware | None |  |
| Interface Processors | Same as current | Same as current |
| Legacy Mainframe | None |  |
| Legacy Application Server | Same as current | Same as current. |
| Legacy Databases | Same as current | Same as current |
| Other |  |  |

### Conceptual Infrastructure Diagram

#### Location of Environments and External Interfaces

The OneVA Pharmacy software uses the existing VistA instances deployed in the VA Enterprise. There are no changes to the environments.

The OneVA Pharmacy engages the eMI-middleware and the HDR/CDS Repository.

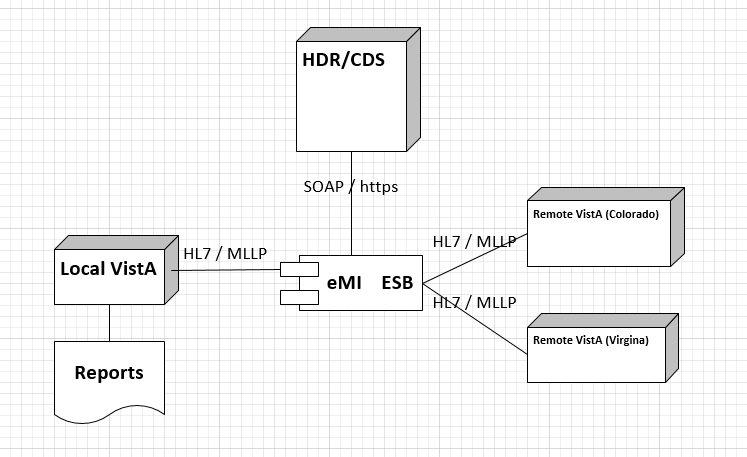
For information about eMI, please follow this [LINK](http://URL/warboard/anotebk.asp?proj=1709&Type=Active) to access the eMI project and product documentation.

For information about the HDR/CDS Repository, please follow this [LINK](http://URL/warboard/anotebk.asp?proj=918&Type=Active) to access the HDR/CDS project and product documentation repository

#### Conceptual Production String Diagram

The conceptual production string diagram, shown in the following figure, displays a broad overview of a production system. The Pharmacist will pull up a patient’s medication profile screen from a local VistA instance. A message will be routed to the HDR/CDS Repository to retrieve the list of prescriptions for a patient, regardless of where the prescription originated. The Pharmacist will fill the prescription sending the sending a message to the originating VistA instance to decrement the remaining balance and last fill date. Once the data is in the VistA server it can be used to produce a report.

Figure 20: Conceptual Production String Diagram



# System Architecture

## Hardware Architecture

Not applicable.

## Software Architecture

### eMI ESB

The eMI ESB is responsible for message passing, routing and transformation. By utilizing several communication protocols and handing various message formats, the eMI ESB is a critical component of the system. The protocol contains an MLLP Service to handle all incoming MLLP HL7 v2.x requests. The requests will be routed based on the message type and trigger event (MSH-10). The MLLP Service will route the following messages to the appropriate service.

For information about eMI, please follow this [LINK](http://URL/warboard/anotebk.asp?proj=1709&Type=Active) to access the eMI project and product documentation.

Also available is the OneVA Pharmacy ICD. To review the OneVA Pharmacy ICD follow this [LINK](#ICD).

The HL7 messages used by OneVA Pharmacy include those listed in the following table.

Table 5: MLLP HL7 Endpoint Messages

| Message | Response | Description |
| --- | --- | --- |
| QBP^Q13 | **RTB^K13** | Query by parameter |
| RDS^O13 | **RRD^O14** | Pharmacy/Treatment Dispense Message |

### HDR/CDS Repository

eMI accesses the HDR/CDS Repository via a web service call.

For information about the HDR/CDS Repository and the web service, please follow this [LINK](http://URL/warboard/anotebk.asp?proj=918&Type=Active) to access the HDR/CDS project and product documentation repository.

For information about eMI, please follow this [LINK](http://URL/warboard/anotebk.asp?proj=1709&Type=Active) to access the eMI project and product documentation.

Also available is the OneVA Pharmacy ICD. To review the OneVA Pharmacy ICD follow this [LINK](#ICD). The OneVA Pharmacy ICD contains the mapping information cross-referencing the HL7 data field and the Extended Markup Language (XML) tag.

### Sequence Diagrams – Use Cases

The next sections show the sequence of events among key entities when the Use Cases execute.

#### View Order View Order Use Case Message Flow

When the Pharmacist enters a request to display the Medication Profile screen from a dispensing VistA instance, an HL7 query message is sent to eMI. eMI will harvest the necessary information to send a SOAP request to the HDR/CDS Repository for the patient’s prescriptions. The SOAP response is transformed into another HL7 message that contains the patient’s prescription data. The patient’s prescription data is returned to the dispensing VistA instance and displayed on the Medication Profile screen on VistA. This process is refered to as the OneVA Pharmacy View Order Use Case.

The OneVA Pharmacy integration with the eMI will include the establishment of business rule filters and the parsing of data for mapping between the HDR/CDS Repository XML and the HL7 messages. The specific details for the ‘View Order’ use case business rule filters and XML mapping requirements please follow this [LINK](#ICD) to access the OneVA Pharmacy ICD.

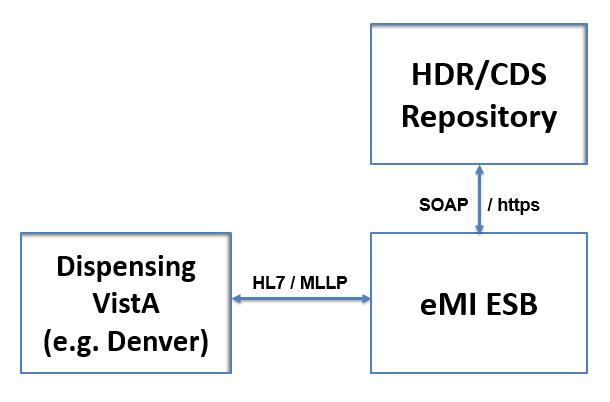
The following table displays the HL7 messages that flow in and out of the eMI for the View Order Use Case.

Table 6: View Order Use Case HL7 Messages

| Request | Response | Description |
| --- | --- | --- |
| QBP^Q13 | RTB^K13 | Query HDR/CDS Repository for patient medication |
| SOAP readClinicalData | SOAP  OutpatientMedicationPromises | eMI transforms the QBP^Q13 request into the SOAP request to the HDR/CDS Repository |

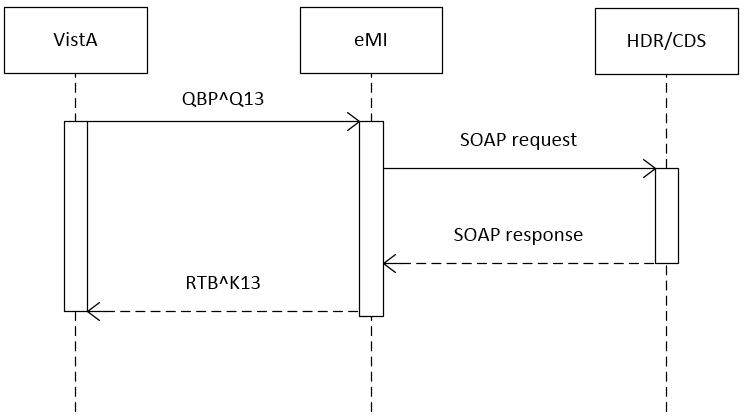
The following image represents a high-level overview of the View Order Use Case.

Figure 21: View Order Use Case High Level Overview



The following image depicts the View Order Use Case HL7 message flow.

Figure 22: View Order Use Case HL7 Message Flow



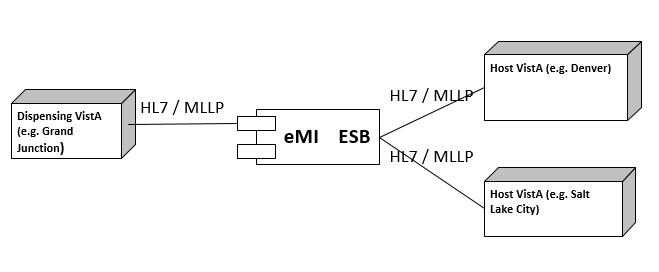
#### Dispense Order from another VA Pharmacy Location Message Flow

When a Pharmacist selects a prescription from the Medication Profile screen on a dispensing VistA instance (to refill a prescription for a Veteran visiting this location) the HL7 “Pharmacy Treatment Dispense’ message is sent to eMI. eMI will receive the request, determine the destination facility, and forward the message to the host VistA instance. The host VistA instance will process the message, decrement the number of refills remaining, update the last fill date, and if a partial request, update the partial information. The host VistA will create an HL7 message (Prescription Refill/Partial Services Response) which contains the prescription label information. eMI will route the HL7 message back to the dispensing VistA instance, displaying the completion of the transaction to the Pharmacist on the screen. The Medication Profile screen refreshes by executing the View Order Use Case again. The refilling or filling of a partial prescription order is refered to as the OneVA Pharamcy Dispense Order from another VA Pharamcy Location Use Case.

The OneVA Pharmacy integration with eMI will include the establishment of business rule filters and the parsing of data for mapping between the HDR/CDS Repository XML and HL7 messages. The specific details for the ‘Dispense Order from Another VA Pharmacy Location‘ use case XML/HL7 mapping are available on in the OneVA Pharmacy ICD. To review the OneVA Pharmacy ICD follow this [LINK](#ICD).

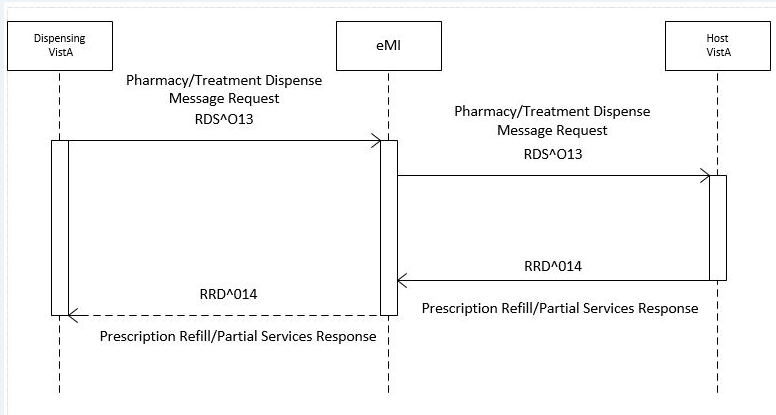
The following image represents a high-level overview of the Dispense Order from another VA Pharmacy Location Use Case.

Figure 23: Dispense Order from another VA Pharmacy Location Use Case High-Level Overview



The following image depicts the Dispense Order from another VA Pharmacy Location Use Case HL7 message flow.

Figure 24: Dispense Order from another VA Pharmacy Location HL7 Message Flow



### Design Rationale

The basis of this project is to allow standalone VistA instances to route, transform messages, and affect each other’s state, using the eMI ESB and integrating with the HDR/CDS Repository.

### HL7 Protocol

The communication protocol used between components is HL7 v2. HL7 v2.x is a standard messaging protocol used to communicate among health information systems.

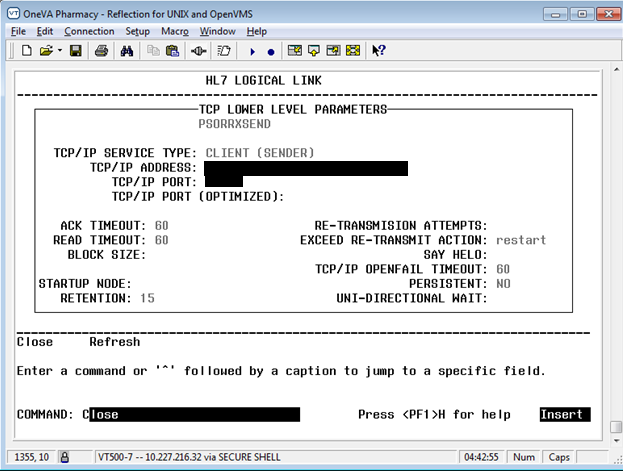
#### Performance

Performance and timing configurations adjust from the Edit Links (ED) option within the ‘HL MAIN’ menu. In order to modify timing parameters, stop the logical link PSORRXSEND using the Start/Stop Links (SL) option within the ‘HL MAIN’ option. To do this, follow these steps:

1. Stop PSORRXSEND
2. Use the provided list manager interface to navigate to any of the following fields:
   * ACK TIMEOUT
   * READ TIMEOUT
   * TCP/IP OPENFAIL TIMEOUT
3. Note the default settings for the HL7 logical link:
   * ACK TIMEOUT – 60
   * READ TIMEOUT – 60
   * TCP/IP OPENFAIL TIMEOUT – 60
4. Configure the timeouts in eMI to reduce the amount of time for a query or a refill/partial fill.
   1. Query connections configurations cause timeout to occur within 20 seconds.
   2. Query responses configurations cause timeouts to occur within 20 seconds.
   3. eMI will timeout the refill and partial fill connections within 20 seconds and a refill/partial fill response within 60 seconds.

The following image displays the ‘HL7 Logical Link Time out Parameters’ screen.

Figure 25: HL7 Logical Link Time out Parameters Example



## Network Architecture

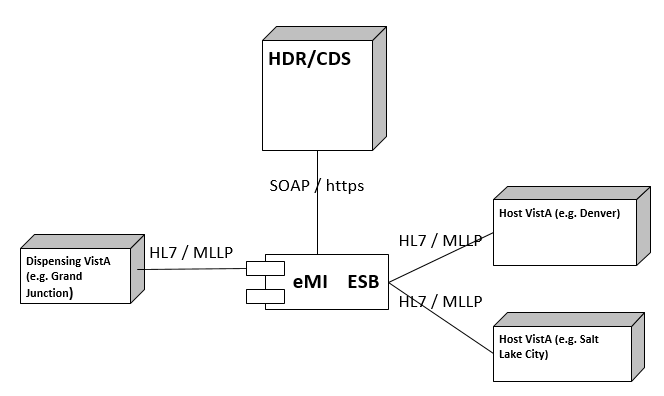
The eMI ESB is responsible for message passing, routing and transformation. By utilizing several communication protocols and handing various message formats, the eMI ESB is a critical component of the OneVA Pharmacy software. The protocol contains an MLLP Service to handle all incoming MLLP HL7 v2.x requests. The requests will be routed based on the message type and trigger event (MSH-10). The MLLP Service will route the following messages to the appropriate service. The eMI uses an HL7 message to communicate between a dispensing VistA instance and the HDR/CDS Repository.

For information about the HDR/CDS Repository and the web service, please follow this [LINK](http://URL/warboard/anotebk.asp?proj=918&Type=Active) to access the HDR/CDS project and product documentation repository.

For information about eMI, please follow this [LINK](http://URL/warboard/anotebk.asp?proj=1709&Type=Active) to access the eMI project and product documentation.

Also available is the OneVA Pharmacy ICD document. To review the OneVA Pharmacy ICD follow this [LINK](#ICD).

Figure 26: OneVA Pharmacy Network Architecture



## Service Oriented Architecture

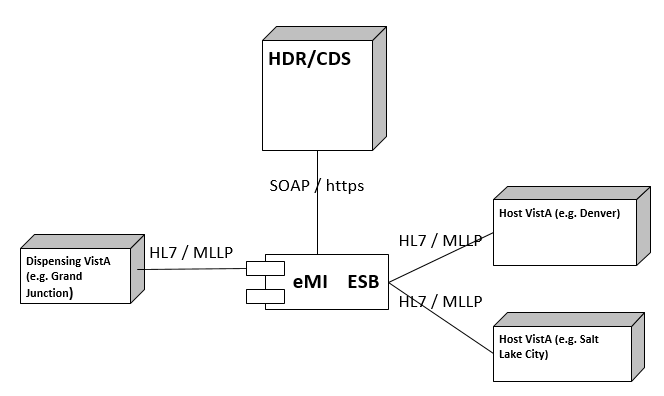
As previously stated, eMI is used to communicate HL7 messages between a dispensing VistA instance the HDR/CDS Repository.

For information about eMI, please follow this [LINK](http://URL/warboard/anotebk.asp?proj=1709&Type=Active) to access the eMI project and product documentation.

Also available is the OneVA Pharmacy ICD document. To review the OneVA Pharmacy ICD follow this [LINK](#ICD).

The following diagram displays the VistA application and how it will exist within the design of the ESB model.

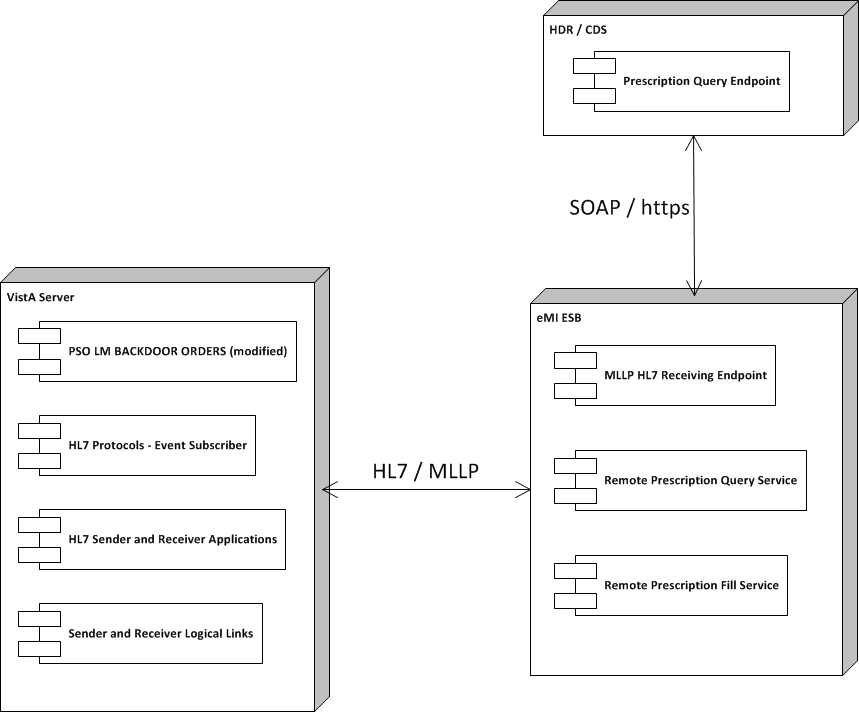
Figure 27: VistA and eMI ESB Integration



The descriptions of the entities displayed in the diagram are as follows:

* VistA is the user interface for initiating prescription queries and requesting prescription refills from remote VistAs.
* eMI ESB is the messaging component to handle MLLP HL7 endpoints to the HDR/CDS Repository and other VistA instances.

Figure 28: HL7/MLLP and SOAP/https Integration



## Enterprise Architecture

The Enterprise Architecture of OneVA Pharmacy design consists of several components. They are:

* VistA (Patch PSO\*7.0\*454)
* HL7 Messaging
* eMI ESB
* HDR/CDS Repository

To use an example to explain the architecture, a Pharmacist at one VA Pharmacy location will use VistA to display all the prescriptions for a Veteran that originated at other VA Pharmacy locations. The dispensing VistA instance will send an HL7 message to the eMI ESB. The eMI ESB will transform the HL7 message into a SOAP request over https to the HDR/CDS Repository service endpoint. The SOAP response from the HDR/CDS Repository transforms into an RTB^K13 HL7 message and sent as a response to the calling VistA instance. The dispensing VistA instance will display the entire prescription record for the user. Once the Pharmacist selects a prescription originating from another VA Pharmacy location another message generates and sends to the eMI ESB. The eMI ESB will detect that the message is a prescription fill request and then route the message to the host VistA. The host VistA instance receives the message on its logical link and performs the necessary decrement to the patient’s prescription refill allotment without affecting the host facilities inventory.

# Data Design

## DBMS Files

### Refill Multiple (#52.1) of the Prescription File (#52)

| Field Number | Field Name | Pointers | Cross References and Record Indices | Description |
| --- | --- | --- | --- | --- |
| 91 | Remote Fill Site | Institution File (#4) | “RFIL” | This site performed the remote refill action. |
| 92 | Remote Pharmacist | N/A | N/A | The name of the remote pharmacist that performs the refill action. |
| 93 | Remote Pharmacist Phone | N/A | N/A | This is the phone number for the pharmacist that performed the refill action. |

### Partial Multiple (#52.2) of the Prescription File (#52)

| Field Number | Field Name | Pointers | Cross References and Record Indices | Description |
| --- | --- | --- | --- | --- |
| 91 | Remote Fill Site | Institution File (#4) | “RFIL” | This site performed the remote partial fill action. |
| 92 | Remote Pharmacist | N/A | N/A | The name of the remote pharmacist that performed the partial fill action. |
| 93 | Remote Pharmacist Phone | N/A | N/A | This is the phone number for the pharmacist that performed the partial fill action. |

### OneVA Pharmacy Flag (#3001) of the Outpatient Site file (#59)

| Field Number | Field Name | Pointers | Cross References and Record Indices | Description |
| --- | --- | --- | --- | --- |
| 3001 | OneVA Pharmacy Flag | N/A | N/A | This is the OneVA pharmacy flag, which controls the remote prescription logic. The flag can be set to ‘On’ or ‘Off’. When in the On state, remote prescriptions can be queried, and actions can be taken on the active prescriptions. When in the ‘Off’ state, prescriptions will not be queried, and incoming refill/partial fill requests will not be processed. |

### Remote Prescription Log (#52.09)

| Field Number | Field Name | Pointers | Cross References and Record Indices | Description |
| --- | --- | --- | --- | --- |
| .01 | LOG DATE/TIME | N/A | 52.09^B | Date/Time of refill/partial fill transaction. |
| .02 | PATIENT | PATIENT (#2) | 52.09^C | This is the patient for which a refill or partial was executed by another VA Pharmacy other than the host site. |
| .03 | RX NUMBER | N/A | 52.9^D | This is the RX Number from the prescription file (#52). |
| .04 | SITE NUMBER | INSTITUTION (#4) | 5209^E |  |
| .05 | REQUEST TYPE | N/A |  | RF – REFILL  PR – PARTIAL FILL  OR – OUTSIDE REFILL  OP – OUTSIDE PARTIAL FILL |
| .06 | OUTGOING REQUEST PHARMACIST | NEW PERSON (#200) | N/A | This is the pharmacist who initiated the refill or partial fill request to the host facility |
| .061 | REMOTE FILLING PHARMACIST | N/A | N/A | The pharmacist that requested a refill or partial fill from a host facility. |
| .07 | QUANTITY | N/A | N/A | This is the quantity dispensed. |
| .08 | DAYS SUPPLY | N/A | N/A | This is the day’s supply for the medication. |
| .09 | REFILL/PARTIAL DATE | N/A | N/A | This is the date of the refill or partial fill request. This is the date the transaction logs in the .01 field of either the refill or partial sub files within the prescription file. |
| .1 | DISPENSED DATE | N/A | N/A | This is the dispense date as it is held in the DISPENSED DATE within the REFILL or PARTIAL sub files of the PRESCRIPTION file. |
| 1 | REMOTE DRUG NAME | N/A | N/A | This is the name of the drug dispensed for this request. |
| 1.1 | LOCAL (MATCHED) DRUG | DRUG (#50) | N/A | This is the drug used locally for the ‘host’ refill or partial fill. |
| 1.2 | TOTAL REFILL/PARTIAL FILL COST | N/A | N/A | This is the total cost for the ‘host’/filling facility. The cost is derived by using the cost of the drug at the time of the refill or partial fill. The cost is being retrieved from file 50, field 13. |
| 2 | MESSAGE DETAILS | N/A | N/A | Any message details related to the transaction. |
| 3 | LABEL DATA | N/A | N/A | Label data word processing field. |
| 1.3 | VA PRODUCT ID | N/A | N/A | This is the VA product ID that passes from the ‘host’ VistA system. |

## Non-DBMS Files

Not applicable.

## Data View

Not applicable.

# Detailed Design

## Hardware Detailed Design

The OneVA Pharmacy patch is limited to implementing the software on each VistA instance for all VA Pharmacy locations. The VistA hardware is unchanged. However, the full integration of the OneVA Pharmacy software includes the eMI and the HDR/CDS Repository components. The hardware interface will utilize the existing architecture found within the VA Enterprise.

For information about the HDR/CDS Repository and the hardware design, please follow this [LINK](http://URL/warboard/anotebk.asp?proj=918&Type=Active) to access the HDR/CDS project and product documentation repository.

For information about eMI's hardware design follow this [LINK](http://URL/warboard/anotebk.asp?proj=1709&Type=Active) to access the eMI project and product documentation.

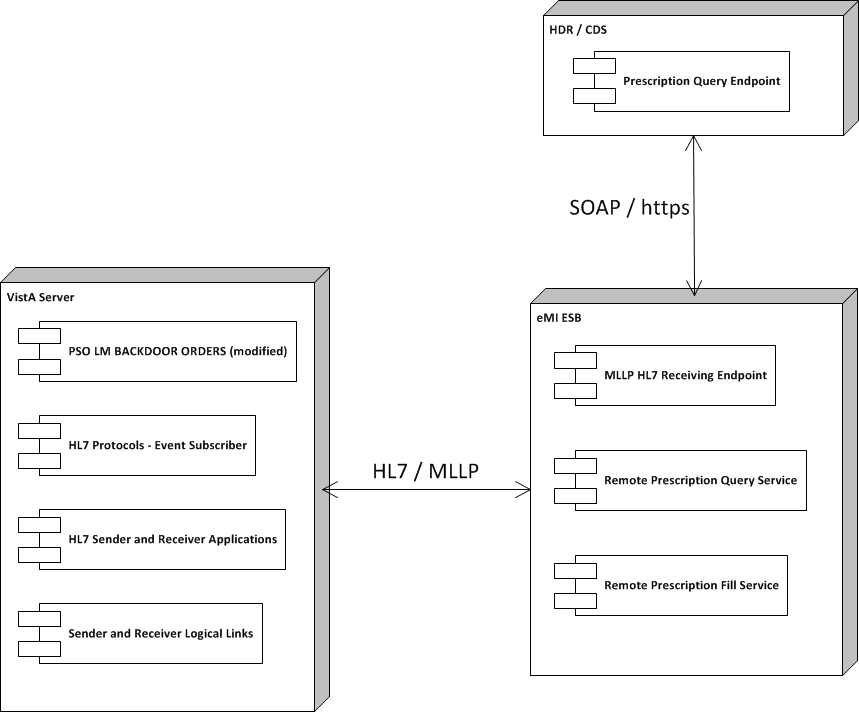
Figure 29: OneVA Pharmacy Hardware Design

The image displays the OneVA Pharmacy Hardware Design.


## Software Detailed Design

### Conceptual Design

Figure 30: OneVA Pharmacy Conceptual Design



#### Product Perspective

The OneVA Pharmacy patch uses the same VistA ‘roll and scroll’ user interface found in all the VistA instances deployed throughout the VA Enterprise. The patch will modify the functionality within the “Patient Prescription Processing” [PSO LM BACKDOOR ORDERS] menu and add a new menu to the ‘Rx (Prescriptions) [PSO RX]’called OneVA Pharmacy Prescription Report [PSO REMOTE RX REPORT] to access the new OneVA Pharmacy reports.

##### User Interfaces

The OneVA Pharmacy extends the existing VistA application, using the same ‘roll and scroll’ user interface: [PSO LM BACKDOOR ORDERS]. In addition, provide a new menu to the ‘Rx (Prescriptions) [PSO RX]’called OneVA Pharmacy Prescription Report [PSO REMOTE RX REPORT] to access the new OneVA Pharmacy reports.

##### Hardware Interfaces

The hardware interface will utilize the existing architecture found within the VA Enterprise.

##### Software Interfaces

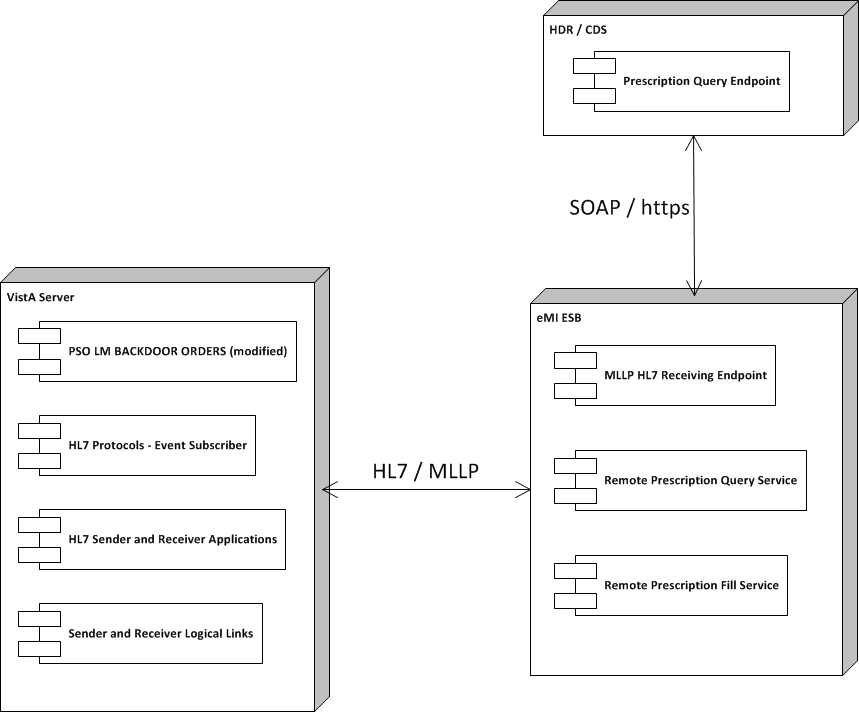
The OneVA Pharmacy software will use eMI to access the HDR/CDS Repository to allow the Pharmacist to retrieve and display all of the prescriptions related to a patient. It will do so by sending and receiving HL7 messages. The eMI will also be routing the HL7 messages between two VistAs instances in order to decrement the remaining balance, update the last fill date, and capture label information from the host VistA instance to provide to the dispensing VistA instance.

##### Communications Interfaces

Communication interface within the OneVA Pharmacy software will include using eMI. The services displayed in the following image are logical capabilities the ESB is expected to perform. The actual service names may be different due to the eMI team’s implementation.

For information about eMI's communication interfaces follow this [LINK](http://URL/warboard/anotebk.asp?proj=1709&Type=Active) to access the eMI project and product documentation.

Figure 31: OneVA Pharmacy Communications Interface



##### Memory Constraints

Not applicable.

##### Special Operations

Not applicable.

#### Product Features

The OneVA Pharmacy Implementation at a high level includes:

* VistA (Patch PSO\*7.0\*454)
* HL7 messaging
* eMI ESB
* HDR/CDS Repository

The OneVA Pharmacy RSD contains the additional product requirements. Review the OneVA Pharmacy RSD by following this [LINK](#RSD).

#### User Characteristics

The user profile of the OneVA Pharmacy module is those users, specifically Pharmacists that use the Outpatient Pharmacy [PSO LM BACKDOOR ORDERS] menu to dispense prescriptions. It is assumed that the user has basic knowledge of the VistA system (such as the use of commands, menu options, and navigation tools), has access to the ‘Rx (PRESCRIPTIONS) [PSO RX]’ menu within VistA, and holds appropriate security keys for their user role, such as PSORPH, to identify the user as a Pharmacist.

#### Dependencies and Constraints

The OneVA Pharmacy implementation is dependent upon the availability of the eMI ESB and its connectivity to the HDR/CDS Repository and the entire approximate 130 VistA instances where Pharmacy locations are included.

### Specific Requirements

#### Database Repository

Not applicable.

#### System Features

The system features include functional requirements, sub-requirements, business rules, design constraints, etc. The OneVA Pharmacy RSD contains the details of these features. Review the VA Pharmacy RSD by following this [LINK](#RSD).

#### Design Element Tables

Not applicable.

##### Routines

###### PSOORNE2

The ‘PSOORNE2’ routine has been modified to include the display of the remote prescriptions. This routine will display the details related to the remote Rx that has been selected.

Table 15 (Grouping): Routines

| Routines | Activities | | | |
| --- | --- | --- | --- | --- |
| **Routine Name** | PSOORNE2 | | | |
| **Enhancement Category** | New | Modify | Delete | No Change |
| **RTM** |  | | | |
| **Related Options** | PSO LM BACKDOOR ORDERS | | | |

| Related Routines | Routines “Called By” | Routines “Called” |
| --- | --- | --- |
|  | PSODISPS, PSOLMUTL, PSOMPHRC, PSOORCPY, PSOOREDT, PSOREF, PSORREF, PSORXEDT | PSOORNE6, PSOVER1, PSORRX1, PSOBUILD, PSOORUT1, PSODRG, PSOORNE5, PSONFI, PSOBPSUT, PSOHELP, PSOUTLA2, PSOORNE3, PSODAWUT, PSSDAWUT, PSOLMLST, PSOROS |

| Routines | Activities | | | | |
| --- | --- | --- | --- | --- | --- |
| **Data Dictionary (DD) References** | ^PSDRUG (  ^YSCL (603.01,  ^PS (50.606,  ^PS (50.7,  ^PS (52.5  ^PSRX (  ^DIC (4, | | | | |
| **Related Protocols** | N/A | | | | |
| **Related Integration Control Registrations (ICRs)** | 4708 – Call to DAWEXT^PSSDAWUT (Active/Controlled Subscription) | | | | |
| **Data Passing** | Input | Output Reference | Both | Global Reference | Local |
| **Input Attribute Name and Definition** | Name: N/A  Definition: | | | | |
| **Output Attribute Name and Definition** | Name: N/A  Definition: | | | | |

| Current Logic |
| --- |
| Cannot get current logic until we have all patches associated with this routine. |

| Modified Logic (Changes are in bold) |
| --- |
|  |

###### PSOORUT1

The ‘PSOORUT1’ routine has been modified to include the display of remote prescriptions within the [PSO LM BACKDOOR ORDER] prescription list. The prescriptions are sorted by facility and include the same display elements at eh local prescription. Each remote facility’s prescription list has a programmatically generated header that separates the prescriptions by status (Active, Suspended, Hold, etc.)

| Routines | Activities | | | |
| --- | --- | --- | --- | --- |
| **Routine Name** | PSOORUT1 | | | |
| **Enhancement Category** | New | Modify | Delete | No Change |
| **RTM** |  | | | |
| **Related Options** | PSO LM BACKDOOR ORDERS | | | |

| Related Routines | Routines “Called by” | Routines “Called” |
| --- | --- | --- |
|  | PSOCAN4, PSODISP3, PSOHLNEW, PSOLMUTL, PSONEW, PSOORFI2, PSOORFL, PSOORNE2, PSOORUTL, PSOREF, PSORENW4, PSORX1, PSOTPRX1, PSOVER | %DTC, DICN, DIK, DIQ, PSOBPSU1, PSOBPSUT, PSOHLSN1, PSOORUTL, PSOREJUT, PSOUTL, |

| Routines | Activities | | | | |
| --- | --- | --- | --- | --- | --- |
| **Data Dictionary (DD) References** | ^PS (52.41,  ^PSRX (  ^PS (52.5,  ^DIC (4, | | | | |
| **Related Protocols** |  | | | | |
| **Related Integration Control Registrations (ICRs)** | IA #221 – Access to ^PSDRUG  IA #2203 – Call to ^PSXOPUTL | | | | |
| **Data Passing** | Input | Output Reference | Both | Global Reference | Local |
| **Input Attribute Name and Definition** | Name: N/A  Definition: N/A | | | | |
| **Output Attribute Name and Definition** | Name: N/A  Definition: N/A | | | | |

| Current Logic |
| --- |
| Cannot get current logic until we have all patches associated with this routine. |

| Modified Logic (Changes are in bold) |
| --- |
|  |

###### PSOROS

The ‘PSOROS’ routine is the driving routine for selection of a ‘remote’ prescription within list manager. This routine controls the list template [PSO LM REMOTE ORDER SELECTION].

| Routines | Activities | | | |
| --- | --- | --- | --- | --- |
| **Routine Name** | PSOROS | | | |
| **Enhancement Category** | New | Modify | Delete | No Change |
| **RTM** |  | | | |
| **Related Options** |  | | | |

| Related Routines | Routines “Called by” | Routines “Called” |
| --- | --- | --- |
|  |  | VALM, PSONFI, XQORM1 |

| Routines | Activities | | | | |
| --- | --- | --- | --- | --- | --- |
| **Data Dictionary (DD) References** |  | | | | |
| **Related Protocols** | PSO LM REMOTE ORDER MENU  PSO LM REFILL REMOTE ORDER  PSO LM REMOTE PARTIAL | | | | |
| **Related Integration Control Registrations (ICRs)** | N/A | | | | |
| **Data Passing** | Input | Output Reference | Both | Global Reference | Local |
| **Input Attribute Name and Definition** | Name: N/A  Definition: N/A | | | | |
| **Output Attribute Name and Definition** | Name: N/A  Definition: N/A | | | | |

| Current Logic |
| --- |
| N/A |

| Modified Logic (Changes are in bold) |
| --- |
|  |

###### PSORRD

The ‘PSORRD’ routine is the routine that controls the PSO LM REMOTE REPORTS DETAILS list manager template. This routine is part of the Remote Prescription Report functionality.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| | Routines | Activities | | | | | --- | --- | --- | --- | --- | | **Routine Name** | PSORRD | | | | | **Enhancement Category** | New | Modify | Delete | No Change | | **RTM** |  | | | | | **Related Options** |  | | | | |

| Related Routines | Routines “Called by” | Routines “Called” |
| --- | --- | --- |
|  |  | VALM, XQORM1 |

| Routines | Activities | | | | |
| --- | --- | --- | --- | --- | --- |
| **Data Dictionary (DD) References** | N/A | | | | |
| **Related Protocols** | N/A | | | | |
| **Related Integration Control Registrations (ICRs)** | N/A | | | | |
| **Data Passing** | Input | Output Reference | Both | Global Reference | Local |
| **Input Attribute Name and Definition** | Name:  Definition: | | | | |
| **Output Attribute Name and Definition** | Name:  Definition: | | | | |

| Current Logic |
| --- |
| N/A |

| Modified Logic (Changes are in bold) |
| --- |
|  |

###### PSORREF

The ‘PSORREF’ routine is the main driving routine for the ‘receiving’ or ‘originating’ facility to process incoming refill requests

| Routines | Activities | | | |
| --- | --- | --- | --- | --- |
| **Routine Name** | PSORREF | | | |
| **Enhancement Category** | New | Modify | Delete | No Change |
| **RTM** |  | | | |
| **Related Options** | PSO LM BACKDOOR ORDERS | | | |

| Related Routines | Routines “Called by” | Routines “Called” |
| --- | --- | --- |
|  |  | %DTC, %ZISH, DIE, DIQ, PSOBUILD, PSOCPTRI, PSOREJU1, PSORREF0, PSORREF1, PSORRX1, PSSLOCK, XLFDT, XUAF4 |

| Routines | Activities | | | | |
| --- | --- | --- | --- | --- | --- |
| **Data Dictionary (DD) References** | ^PSRX (  %ZIS (1,  ^PS (55, | | | | |
| **Related Protocols** | N/A | | | | |
| **Related Integration Control Registrations (ICRs)** | Need to see if we need any IA’s | | | | |
| **Data Passing** | Input | Output Reference | Both | Global Reference | Local |
| **Input Attribute Name and Definition** | Name: RXNUM  Definition: Prescription Number  Name: FDATE  Definition: Fill Date  Name: MW  Definition: Mail/Window  Name: RPHARM  Definition: Remote Pharmacists Name  Name: RPHONE  Definition: Remote Pharmacists Telephone Number  Name: RISTE  Definition: Remote site requesting the refill | | | | |
| **Output Attribute Name and Definition** | Name: RET  Definition: Return array “Rx # xxxxx refilled.”, or error message. | | | | |

| Current Logic |
| --- |
| N/A |
| Modified Logic (Changes are in bold) |
|  |

###### PSORREF0

The ‘PSORREF0’ is a supporting routine to ‘PSORREF’.

| Routines | Activities | | | |
| --- | --- | --- | --- | --- |
| **Routine Name** | PSORREF0 | | | |
| **Enhancement Category** | New | Modify | Delete | No Change |
| **RTM** |  | | | |
| **Related Options** | PSO LM BACKDOOR ORDERS | | | |

| Related Routines | Routines “Called by” | Routines “Called” |
| --- | --- | --- |
|  | PSORREF1 | %DT, DIR, PSOPTPST, PSOR52, PSOREF1, PSOREF2, PSOUTIL, PSOUTLA, PSOUTLA1, VALM1 |

| Routines | Activities | | | | |
| --- | --- | --- | --- | --- | --- |
| **Data Dictionary (DD) References** | ^PSRX | | | | |
| **Related Protocols** |  | | | | |
| **Related Integration Control Registrations (ICRs)** | Will need to get included in IA 221 | | | | |
| **Data Passing** | Input | Output Reference | Both | Global Reference | Local |
| **Input Attribute Name and Definition** | Name:  Definition: | | | | |
| **Output Attribute Name and Definition** | Name: PSORMSG  Definition: Output message containing information about the refill request. | | | | |

| Current Logic |
| --- |
| N/A |

| Modified Logic (Changes are in bold) |
| --- |
|  |

###### PSORREF1

The ‘PSORREF1’ is a supporting routine for ‘PSORREF’.

| Routines | Activities | | | |
| --- | --- | --- | --- | --- |
| **Routine Name** | PSORREF1 | | | |
| **Enhancement Category** | New | Modify | Delete | No Change |
| **RTM** |  | | | |
| **Related Options** | PSO LM BACKDOOR ORDERS | | | |

| Related Routines | Routines “Called by” | Routines “Called” |
| --- | --- | --- |
|  | PSORREF | %DT |

| Routines | Activities | | | | |
| --- | --- | --- | --- | --- | --- |
| **Data Dictionary (DD) References** | ^PSRX | | | | |
| **Related Protocols** | N/A | | | | |
| **Related Integration Control Registrations (ICRs)** | N/A | | | | |
| **Data Passing** | Input | Output Reference | Both | Global Reference | Local |
| **Input Attribute Name and Definition** | N/A | | | | |
| **Output Attribute Name and Definition** | N/A | | | | |

| Current Logic |
| --- |
| N/A |

| Modified Logic (Changes are in bold) |
| --- |
|  |

###### PSORRP

The ‘PSORRP’ routine assists in prompting for search criteria and display of the Remote Prescription Report.

| Routines | Activities | | | |
| --- | --- | --- | --- | --- |
| **Routine Name** | PSORRP | | | |
| **Enhancement Category** | New | Modify | Delete | No Change |
| **RTM** |  | | | |
| **Related Options** | PSO REMOTE RX REPORT | | | |

| Related Routines | Routines “Called by” | Routines “Called” |
| --- | --- | --- |
|  | N/A | %DT, DIC, DIQ, DIR, PSOROS, PSORRD, VALM, VALM1, VALM10, XLFDT, XQORM1 |

| Routines | Activities | | | | |
| --- | --- | --- | --- | --- | --- |
| **Data Dictionary (DD) References** | ^PSRXR (52.09, | | | | |
| **Related Protocols** |  | | | | |
| **Related Integration Control Registrations (ICRs)** | N/A | | | | |
| **Data Passing** | Input | Output Reference | Both | Global Reference | Local |
| **Input Attribute Name and Definition** | N/A | | | | |
| **Output Attribute Name and Definition** | N/A | | | | |

| Current Logic |
| --- |
| N/A |

| Modified Logic (Changes are in bold) |
| --- |
|  |

###### PSORRPA1

The ‘PSORRPA1’ is the main routine for processing an incoming partial fill request.

| Routines | Activities | | | |
| --- | --- | --- | --- | --- |
| **Routine Name** | PSORRPA1 | | | |
| **Enhancement Category** | New | Modify | Delete | No Change |
| **RTM** |  | | | |
| **Related Options** | PSO LM BACKDOOR ORDERS | | | |

| Related Routines | Routines “Called by” | Routines “Called” |
| --- | --- | --- |
|  | N/A | %ZISH, DIE, DIK, DIQ, PSOBPSUT, PSOCAN3, PSOCPTRI, PSOHLSN1, PSORRX1, PSORXL1, PSSLOCK, VADPT, XLFDT, XUAF4 |

| Routines | Activities | | | | |
| --- | --- | --- | --- | --- | --- |
| **Data Dictionary (DD) References** | ^PSRX (  ^PS (59,  ^PS (52.5,  ^%ZIS (1,  ^PS (55, | | | | |
| **Related Protocols** |  | | | | |
| **Related Integration Control Registrations (ICRs)** | IA 221?  IA 999?? | | | | |
| **Data Passing** | Input | Output Reference | Both | Global Reference | Local |
| **Input Attribute Name and Definition** | Name: RXNUM  Definition:  Name: PFDATE  Definition: Partial fill date  Name: MW  Definition: Mail/Window  Name: QTY  Definition: Quantity  Name: DSUPP  Definition: Days supply  Name: REMARKS  Definition: Remarks (if applicable)  Name: PHARM  Definition: Name of Filling pharmacist (remote)  Name: PHONE  Definition: Phone number of remote pharmacist  Name: SITE  Definition: Remote Site number | | | | |
| **Output Attribute Name and Definition** | Name: VALMSG  Definition: Response message for partial fill | | | | |

| Current Logic |
| --- |
| N/A |

| Modified Logic (Changes are in bold) |
| --- |
|  |

###### PSORRX1

The ‘PSORRX1’ routine builds the HL7 messages that are sent to the Pharmacy Remote Prescription Manager to retrieve, refill, and partial fill prescriptions from another facility. This routine uses the treating facility list to properly build the HL7 information to send to the ‘remote’ site(s).

| Routines | Activities | | | |
| --- | --- | --- | --- | --- |
| **Routine Name** | PSORRX1 | | | |
| **Enhancement Category** | New | Modify | Delete | No Change |
| **RTM** |  | | | |
| **Related Options** | PSO LM BACKDOOR ORDERS | | | |

| Related Routines | Routines “Called by” | Routines “Called” |
| --- | --- | --- |
|  | PSORX1 | %ZIS, DIC, DIE, DILFD, DIQ, DIR, HLFNC2, HLMA, PSODIR2, VAFCTFU2, VALM1, XLFDT, XUAF4 |

| Routines | Activities | | | | |
| --- | --- | --- | --- | --- | --- |
| **Data Dictionary (DD) References** |  | | | | |
| **Related Protocols** |  | | | | |
| **Related Integration Control Registrations (ICRs)** |  | | | | |
| **Data Passing** | Input | Output Reference | Both | Global Reference | Local |
| **Input Attribute Name and Definition** | Name: DFN  Definition: Patients local IEN | | | | |
| **Output Attribute Name and Definition** | HL7 MESSAGE IN HL7 QUEUE | | | | |

| Current Logic |
| --- |
| N/A |

| Modified Logic (Changes are in bold) |
| --- |
|  |

###### PSORWRAP

The ‘PSORWRAP’ routine is the wrapper utility for the calls into VistA.

| Routines | Activities | | | |
| --- | --- | --- | --- | --- |
| **Routine Name** | PSORWRAP | | | |
| **Enhancement Category** | New | Modify | Delete | No Change |
| **RTM** |  | | | |
| **Related Options** | N/A | | | |

| Related Routines | Routines “Called by” | Routines “Called” |
| --- | --- | --- |
|  | N/A | PSORREF, PSORRPA1, XLFDT, XUP |

| Routines | Activities | | | | |
| --- | --- | --- | --- | --- | --- |
| **Data Dictionary (DD) References** | N/A | | | | |
| **Related Protocols** | N/A | | | | |
| **Related Integration Control Registrations (ICRs)** | N/A | | | | |
| **Data Passing** | Input | Output Reference | Both | Global Reference | Local |
| **Input Attribute Name and Definition** | Name: QBSESSID  Definition: Session ID  Name: QBDUZ  Definition: Users DUZ value | | | | |
| **Output Attribute Name and Definition** | Name: Status  Definition: returns session id and 1 if successful | | | | |

| Current Logic |
| --- |
| N/A |

| Modified Logic (Changes are in bold) |
| --- |
|  |

###### PSORX1

The ‘PSORX1’ routine has been modified to call ‘PSORRX1’ for retrieval of remote prescription data.

| Routines | Activities | | | |
| --- | --- | --- | --- | --- |
| **Routine Name** | PSORX1 | | | |
| **Enhancement Category** | New | Modify | Delete | No Change |
| **RTM** |  | | | |
| **Related Options** |  | | | |

| Related Routines | Routines “Called by” | Routines “Called” |
| --- | --- | --- |
|  |  | DTC, $ZISS, DGPFAPI, DIC, DICN, DIE, DIK, DIQ1, DIR, ORRDI1, PSOBAI, PSOBING, PSOBUILD, PSODDPR2, PSODEM, PSOHLUP, PSOLMAO, PSOLMUTL, PSOLSET, PSOORFI2, PSOORUT1, PSOORUT2, PSOPATLK, PSOPTPST, PSORMRX, PSORRX1, PSORXL, PSOSUPOE, PSUHL, VADPT, VALM1 |

| Routines | Activities | | | | |
| --- | --- | --- | --- | --- | --- |
| **Data Dictionary (DD) References** | ^PS (55,  ^DIC (31,  ^DPT (DO,.372,  ^XTMP (“ORRDI”  ^PSUHL  ^PSRX | | | | |
| **Related Protocols** | N/A | | | | |
| **Related Integration Control Registrations (ICRs)** | External reference ^PS (55 supported by DBIA 2228  External reference ^DIC (31 supported by DBIA 658  external reference ^DPT (D0,.372 supported by DBIA 1476  External reference DISPPRF^DGPFAPI supported by DBIA #4563  External reference ^ORRDI1 is supported by DBIA 4659  External reference ^XTMP ("ORRDI" is supported by DBIA 4660  External reference ^PSUHL supported by DBIA 4803 | | | | |
| **Data Passing** | Input | Output Reference | Both | Global Reference | Local |
| **Input Attribute Name and Definition** | N/A | | | | |
| **Output Attribute Name and Definition** | N/A | | | | |

| Current Logic |
| --- |
| Cannot get current logic until we have all patches associated with this routine. |

|  |  |  |
| --- | --- | --- |
| | Modified Logic (Changes are in bold) | | --- | |  | |

###### PSORLLL1

The routine PSORLLL1 is a cloned and modified copy of PSOLLL1 and is used to create the OneVA Pharmacy label.

| Routines | Activities | | | |
| --- | --- | --- | --- | --- |
| **Routine Name** | PSORLLL1 | | | |
| **Enhancement Category** | New | Modify | Delete | No Change |
| **RTM** |  | | | |
| **Related Options** | N/A | | | |

| Related Routines | Routines “Called By” | Routines “Called” |
| --- | --- | --- |
|  | PSORLLLI | ^%DTC, C^%DTC, NOW^%DTC, PSOLLLW, PSOLLU1, PSORLLL2, PSORLLL3, PSORLLL4, PSORLLL5, PSORLLLH, FMTE^XLFDT |

| Routines | Activities | | | | |
| --- | --- | --- | --- | --- | --- |
| **Data Dictionary (DD) References** | ^DD("DD"  ^DIC(5  ^PS(55  ^PS(59  ^PSDRUG(  ^PSRX(  ^TMP($J | | | | |
| **Related Protocols** | N/A | | | | |
| **Related Integration Control Registrations (ICRs)** | Reference to ^PSDRUG supported by DBIA 221  Reference ^VA(200,D0,"PS" supported by DBIA 224  External reference to ^PS(55 supported by DBIA 2228 | | | | |
| **Data Passing** | Input | Output Reference | Both | Global Reference | Local |
| **Input Attribute Name and Definition** | Name: N/A  Definition: | | | | |
| **Output Attribute Name and Definition** | Name: N/A  Definition: | | | | |

| Current Logic |
| --- |
| N/A |

| Modified Logic (Changes are in bold) |
| --- |
| Modified copy of PSOLLL1. |

###### PSORLLL2

The routine PSORLLL2 is a cloned and modified copy of PSOLLL2 and is used to create the OneVA Pharmacy label.

| Routines | Activities | | | |
| --- | --- | --- | --- | --- |
| **Routine Name** | PSORLLL2 | | | |
| **Enhancement Category** | New | Modify | Delete | No Change |
| **RTM** |  | | | |
| **Related Options** | N/A | | | |

| Related Routines | Routines “Called By” | Routines “Called” |
| --- | --- | --- |
|  | PSORLLL1 | ECMEON^BPSUTIL, GET1^DIQ, COUNTSGF^PSOLLLW, STRT^PSOLLU1, NDCFMT^PSSNDCUT |

| Routines | Activities | | | | |
| --- | --- | --- | --- | --- | --- |
| **Data Dictionary (DD) References** | ^TMP($J, | | | | |
| **Related Protocols** | N/A | | | | |
| **Related Integration Control Registrations (ICRs)** | Reference to $$ECMEON^BPSUTIL supported by DBIA 4410  Reference to $$NDCFMT^PSSNDCUT supported by IA 4707 | | | | |
| **Data Passing** | Input | Output Reference | Both | Global Reference | Local |
| **Input Attribute Name and Definition** | Name: N/A  Definition: | | | | |
| **Output Attribute Name and Definition** | Name: N/A  Definition: | | | | |

| Current Logic |
| --- |
| N/A |

| Modified Logic (Changes are in bold) |
| --- |
| Modified copy of PSOLLL2. |

###### PSORLLL3

The routine PSORLLL3 is a cloned and modified copy of PSOLLL3 and is used to create the OneVA Pharmacy label.

| Routines | Activities | | | |
| --- | --- | --- | --- | --- |
| **Routine Name** | PSORLLL3 | | | |
| **Enhancement Category** | New | Modify | Delete | No Change |
| **RTM** |  | | | |
| **Related Options** | N/A | | | |

| Related Routines | Routines “Called By” | Routines “Called” |
| --- | --- | --- |
|  | PSORLLL1 | $$GET1^DIQ, STRT^PSOLLU1, NDCFMT^PSSNDCUT |

| Routines | Activities | | | | |
| --- | --- | --- | --- | --- | --- |
| **Data Dictionary (DD) References** | N/A | | | | |
| **Related Protocols** | N/A | | | | |
| **Related Integration Control Registrations (ICRs)** | References to $$GETNDC^PSSNDCUT,$$NDCFMT^PSSNDCUT,SAVNDC^PSSNDCUT supported by IA 4707 | | | | |
| **Data Passing** | Input | Output Reference | Both | Global Reference | Local |
| **Input Attribute Name and Definition** | Name: N/A  Definition: | | | | |
| **Output Attribute Name and Definition** | Name: N/A  Definition: | | | | |

| Current Logic |
| --- |
| N/A |

| Modified Logic (Changes are in bold) |
| --- |
| Modified copy of PSOLLL3. |

###### PSORLLL4

The routine PSORLLL4 is a cloned and modified copy of PSOLLL4 and is used to create the OneVA Pharmacy label.

| Routines | Activities | | | |
| --- | --- | --- | --- | --- |
| **Routine Name** | PSORLLL4 | | | |
| **Enhancement Category** | New | Modify | Delete | No Change |
| **RTM** |  | | | |
| **Related Options** | N/A | | | |

| Related Routines | Routines “Called By” | Routines “Called” |
| --- | --- | --- |
|  | PSORLLL1 | EN^PSNPPIO, STRT^PSOLLU1, WTEXT^PSSWRNA |

| Routines | Activities | | | | |
| --- | --- | --- | --- | --- | --- |
| **Data Dictionary (DD) References** | N/A | | | | |
| **Related Protocols** | N/A | | | | |
| **Related Integration Control Registrations (ICRs)** | Reference to PSNPPIO supported by DBIA 3794 | | | | |
| **Data Passing** | Input | Output Reference | Both | Global Reference | Local |
| **Input Attribute Name and Definition** | Name: N/A  Definition: | | | | |
| **Output Attribute Name and Definition** | Name: N/A  Definition: | | | | |

| Current Logic |
| --- |
| N/A |

| Modified Logic (Changes are in bold) |
| --- |
| Modified copy of PSOLLL4. |

###### PSORLLL5

The routine PSORLLL5 is a cloned and modified copy of PSOLLL5 and is used to create the OneVA Pharmacy label.

| Routines | Activities | | | |
| --- | --- | --- | --- | --- |
| **Routine Name** | PSORLLL5 | | | |
| **Enhancement Category** | New | Modify | Delete | No Change |
| **RTM** |  | | | |
| **Related Options** | N/A | | | |

| Related Routines | Routines “Called By” | Routines “Called” |
| --- | --- | --- |
|  | PSORLLL1 | ^GMRADPT, MAIL^PSOLLL7, STRT^PSOLLU1, ADD^VADPT, PID^VADPT6 |

| Routines | Activities | | | | |
| --- | --- | --- | --- | --- | --- |
| **Data Dictionary (DD) References** | ^DIC(5,  ^DPT( | | | | |
| **Related Protocols** | N/A | | | | |
| **Related Integration Control Registrations (ICRs)** |  | | | | |
| **Data Passing** | Input | Output Reference | Both | Global Reference | Local |
| **Input Attribute Name and Definition** | Name: N/A  Definition: | | | | |
| **Output Attribute Name and Definition** | Name: N/A  Definition: | | | | |

| Current Logic |
| --- |
| N/A |

| Modified Logic (Changes are in bold) |
| --- |
| Modified copy of PSOLLL5. |

###### PSORLLLH

The routine PSORLLLH is a cloned and modified copy of PSOLLLH and is used to create the OneVA Pharmacy label.

| Routines | Activities | | | |
| --- | --- | --- | --- | --- |
| **Routine Name** | PSORLLLH | | | |
| **Enhancement Category** | New | Modify | Delete | No Change |
| **RTM** |  | | | |
| **Related Options** | N/A | | | |

| Related Routines | Routines “Called By” | Routines “Called” |
| --- | --- | --- |
|  | PSORLLL1 | NOW^%DTC (Not used)  ^%ZIS (Not used)  ^%ZISC (Not used)  ^%ZTLOAD (Not used)  DUR1^BPSNCPD3 (Not used)  ^DIC (Not used)  EN^DIQ1 (Not used)  $$LSTRFL^PSOBPSU1 (Not used)  ^PSOLSET (Not used)  $$ZZ^PSOSUTL  6^VADPT (Not used)  DEM^VADPT  PID^VADPT6 (not used)  $$SITE^VASITE (not used) |

| Routines | Activities | | | | |
| --- | --- | --- | --- | --- | --- |
| **Data Dictionary (DD) References** | ^%ZIS(2,  ^DD(“DD”,  ^DIC(5  ^PS(59,  ^PSRX( | | | | |
| **Related Protocols** | N/A | | | | |
| **Related Integration Control Registrations (ICRs)** | Reference to DUR1^BPSNCPD3 supported by DBIA 4560 | | | | |
| **Data Passing** | Input | Output Reference | Both | Global Reference | Local |
| **Input Attribute Name and Definition** | Name: N/A  Definition: | | | | |
| **Output Attribute Name and Definition** | Name: N/A  Definition: | | | | |

| Current Logic |
| --- |
| N/A |

| Modified Logic (Changes are in bold) |
| --- |
| Modified copy of PSOLLLH. |

###### PSORLLLI

The routine PSORLLLI is a cloned and modified copy of PSOLLLI and is used to create the OneVA Pharmacy label.

| Routines | Activities | | | |
| --- | --- | --- | --- | --- |
| **Routine Name** | PSORLLLI | | | |
| **Enhancement Category** | New | Modify | Delete | No Change |
| **RTM** |  | | | |
| **Related Options** | N/A | | | |

| Related Routines | Routines “Called By” | Routines “Called” |
| --- | --- | --- |
|  | PSORWRAP | ^%DT, C^%DTC, NOW^%DTC, EN^DIQ, ^PSNAPIS, $$PROD2^PSNAPIS, DEVBAR^PSOBMST, PSORLLL1, EN^PSOSPSIG, $$DRUG^PSSWRNA, 6^VADPT, PID^VADPT, PID^VADPT6, $$SITE^VASITE |

| Routines | Activities | | | | |
| --- | --- | --- | --- | --- | --- |
| **Data Dictionary (DD) References** | ^%ZIS(2,  ^DD(“DD”,  ^DPT(  ^PS(51,  ^PS(53,  ^PS(55,  ^PS(59,  ^PSDRUG(  ^PSDRUG(“AQ”,  ^PSNDF(  ^PSRX( | | | | |
| **Related Protocols** | N/A | | | | |
| **Related Integration Control Registrations (ICRs)** | External reference to DRUG^PSSWRNA supported by DBIA 4449 External reference to $$DS^PSSDSAPI supported by DBIA 5425 External reference to ^DIC(5 supported by DBIA 4293 External reference to ^SC( supported by DBIA 2675 External reference to $$DS^PSSDSAPI supported by DBIA 5425 | | | | |
| **Data Passing** | Input | Output Reference | Both | Global Reference | Local |
| **Input Attribute Name and Definition** | Name: N/A  Definition: | | | | |
| **Output Attribute Name and Definition** | Name: N/A  Definition: | | | | |

| Current Logic |
| --- |
| N/A |

| Modified Logic (Changes are in bold) |
| --- |
| Modified copy of PSOLLLI. |

###### PSORRX1

The routine PSORRX1 is a new routine for processing remote prescription activity used to create the OneVA Pharmacy label.

| Routines | Activities | | | |
| --- | --- | --- | --- | --- |
| **Routine Name** | PSORRX1 | | | |
| **Enhancement Category** | New | Modify | Delete | No Change |
| **RTM** |  | | | |
| **Related Options** | N/A | | | |

| Related Routines | Routines “Called By” | Routines “Called” |
| --- | --- | --- |
|  | PSORWRAP | ^%DT, C^%DTC, NOW^%DTC, EN^DIQ, ^PSNAPIS, $$PROD2^PSNAPIS, DEVBAR^PSOBMST, PSORLLL1, EN^PSOSPSIG, $$DRUG^PSSWRNA, 6^VADPT, PID^VADPT, PID^VADPT6, $$SITE^VASITE |

| Routines | Activities | | | | |
| --- | --- | --- | --- | --- | --- |
| **Data Dictionary (DD) References** |  | | | | |
| **Related Protocols** | N/A | | | | |
| **Related Integration Control Registrations (ICRs)** | External reference to DRUG^PSSWRNA supported by DBIA 4449 External reference to $$DS^PSSDSAPI supported by DBIA 5425 External reference to ^DIC(5 supported by DBIA 4293 External reference to ^SC( supported by DBIA 2675 External reference to $$DS^PSSDSAPI supported by DBIA 5425 | | | | |
| **Data Passing** | Input | Output Reference | Both | Global Reference | Local |
| **Input Attribute Name and Definition** | Name: N/A  Definition: | | | | |
| **Output Attribute Name and Definition** | Name: N/A  Definition: | | | | |

| Current Logic |
| --- |
| N/A |

| Modified Logic (Changes are in bold) |
| --- |
| This is a new routine for processing remote prescription activity. |

###### PSORRX2

The routine PSORRX2 is a new routine for HL7 processing and used to create the OneVA Pharmacy label.

| Routines | Activities | | | |
| --- | --- | --- | --- | --- |
| **Routine Name** | PSORRX2 | | | |
| **Enhancement Category** | New | Modify | Delete | No Change |
| **RTM** |  | | | |
| **Related Options** | N/A | | | |

| Related Routines | Routines “Called By” | Routines “Called” |
| --- | --- | --- |
|  | PSORWRAP | ^DIR, LOGDATA^PSORWRAP,  FMADD^XLFDT, NOW^XLFDT |

| Routines | Activities | | | | |
| --- | --- | --- | --- | --- | --- |
| **Data Dictionary (DD) References** | N/A | | | | |
| **Related Protocols** | N/A | | | | |
| **Related Integration Control Registrations (ICRs)** |  | | | | |
| **Data Passing** | Input | Output Reference | Both | Global Reference | Local |
| **Input Attribute Name and Definition** | Name: N/A  Definition: | | | | |
| **Output Attribute Name and Definition** | Name: N/A  Definition: | | | | |

| Current Logic |
| --- |
| N/A |

| Modified Logic (Changes are in bold) |
| --- |
| New routine for HL7 processing. |

##### Templates

###### PSO LM REMOTE ORDER SELECTION

The ‘PSO LM REMOTE ORDER SELECTION’ provides the logic needed to display a remote prescription within PSO LM BACKDOOR ORDERS.

| Templates | Description | | | |
| --- | --- | --- | --- | --- |
| **Template Name** | PSO LM REMOTE ORDER SELECTION | | | |
| **Enhancement Category** | New | Modify | Delete | No Change |
| **RSD** |  | | | |
| **Template Type** | Sort | Input | Print | Other |
| **Related Options** |  | | | |

| Related Routines | Routines “Called by” | Routines “Called” |
| --- | --- | --- |
|  | ^VALM |  |

| Routines | Description |
| --- | --- |
| **Data Dictionary (DD) References** | N/A |
| **Global References** |  |

PSO LM REMOTE REPORT DETAILS

The ‘PSO LM REMOTE REPORT DETAILS’ provides the logic that will display details about the remote report item.

| Templates | Description | | | |
| --- | --- | --- | --- | --- |
| **Template Name** | PSO LM REMOTE REPORT DETAILS | | | |
| **Enhancement Category** | New | Modify | Delete | No Change |
| **RSD** |  | | | |
| **Template Type** | Sort | Input | Print | Other |
| **Related Options** |  | | | |

| Related Routines | Routines “Called by” | Routines “Called” |
| --- | --- | --- |
|  |  |  |

| Routines | Description |
| --- | --- |
| **Data Dictionary (DD) References** | N/A |
| **Global References** |  |

PSO LM REMOTE RX REPORT

The ‘PSO LM REMOTE RS REPORT’ is the menu system for the selected items of the remote prescription report.

| Templates | Description | | | |
| --- | --- | --- | --- | --- |
| **Template Name** | PSO LM REMOTE RX REPORT | | | |
| **Enhancement Category** | New | Modify | Delete | No Change |
| **RSD** |  | | | |
| **Template Type** | Sort | Input | Print | Other |
| **Related Options** |  | | | |

| Related Routines | Routines “Called by” | Routines “Called” |
| --- | --- | --- |
|  |  |  |

| Routines | Description |
| --- | --- |
| **Data Dictionary (DD) References** | N/A |
| **Global References** |  |

##### Bulletins

Not applicable.

##### Data Entries Affected by the Design

Not applicable.

##### Unique Record(s)

Not applicable.

##### File or Global Size Changes

###### Global

The Pharmacy Remote Prescription Manager uses the following globals:

* ^PSRX
* ^PSRXR

The ^PSRX global holds the prescription data. The ^PSRXR global holds a comprehensive list of information regarding remote refill and partial fill activity.

Table 7: Global Placement and Protection

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Global | Type | Placement | Journal | Protection |
| ^PSRX | Dynamic | No changes should be made to the current placement or settings related to this global | No change | No change |
| ^PSRXR | Static | Place this global in a volume set that can accommodate the following yearly growth rate: 2,000 bytes \* visits per year | Yes | RWP or D |

###### Files

Table 8: Files

| File # | File Name | Root Global | Global Protection |
| --- | --- | --- | --- |
| 52 | PRESCRIPTION | ^PSRX | No change |
| 52.09 | REMOTE PRESCRIPTION LOG | ^PSRXR (52.09 | @ |
| 59 | OUTPATIENT SITE | ^PS (59, | No change |

Prescription (#52) File

The overall prescription file definition remains unchanged; however, there are a few modifications that track information related to a remote refill or partial fill. Those changes are listed in the following tables and are isolated to the sub-files for refill and partial fill.

REFILL Sub File (#52.1)

Table 9: REFILL Sub file (#52.1)

| Field Number | Field Name | Pointers | Cross References and Record Indices | Description |
| --- | --- | --- | --- | --- |
| 91 | REMOTE FILL SITE | Pointer to the Institution file (#4) | 52^RFIL | Pointer field: Points to the Institution from which the refill or partial fill request was generated. |
| 92 | REMOTE PHARMACIST | N/A | N/A | Free-text field: This free text field holds the name of the remote requesting pharmacist. This is the pharmacist that made the remote refill or partial fill request. |
| 93 | REMOTE PHARMACIST PHONE | N/A | N/A | Free-text field: This is the contact number for the remote (requesting) pharmacist. This is the pharmacist that initiated the remote refill or partial fill request. |

PARTIAL FILL Sub file (#52.2)

Table 10: PARTIAL FILL sub file (#52.2)

| Field Number | Field Name | Pointers | Cross References and Record Indices | Description |
| --- | --- | --- | --- | --- |
| 91 | REMOTE FILL SITE | Pointer to the Institution file (#4) | 52^PFIL | Pointer field: Points to the Institution from which the refill or partial fill request was generated. |
| 92 | REMOTE PHARMACIST | N/A | N/A | Free-text field: This free text field holds the name of the remote requesting pharmacist. This is the pharmacist that made the remote refill or partial fill request. |
| 93 | REMOTE PHARMACIST PHONE | N/A | N/A | Free-text field: This is the contact number for the remote (requesting) pharmacist. This is the pharmacist that initiated the remote refill or partial fill request. |

#### OneVA Pharmacy Flag (#3001) of the Outpatient Site file (#59)

| Field Number | Field Name | Pointers | Cross References and Record Indices | Description |
| --- | --- | --- | --- | --- |
| 3001 | OneVA Pharmacy Flag | N/A | N/A | This is the OneVA pharmacy flag, which controls the remote prescription logic. The flag can be set to ‘On’ or ‘Off’. When in the On state, remote prescriptions can be queried, and actions can be taken on the active prescriptions. When in the ‘Off’ state, prescriptions will not be queried, and incoming refill/partial fill requests will not be processed. |

Outpatient Site (#59) File

| Field Number | Field Name | Pointers | Cross References and Record Indices | Description |
| --- | --- | --- | --- | --- |
| 3001 | OneVA Pharmacy Flag | N/A | N/A | This is the OneVA pharmacy flag, which controls the remote prescription logic. The flag can be set to ‘On’ or ‘Off’. When in the On state, remote prescriptions can be queried, and actions can be taken on the active prescriptions. When in the ‘Off’ state, prescriptions will not be queried, and incoming refill/partial fill requests will not be processed. |

Remote Prescription Log (#52.09) File

Table 11: Remote Prescription Log (#52.09

| Field Number | Field Name | Pointers | Cross References and Record Indices | Description |
| --- | --- | --- | --- | --- |
| .01 | LOG DATE/TIME | N/A | 52.09^B | Date/Time of refill/partial fill transaction. |
| .02 | PATIENT | PATIENT (#2) | 52.09^C | This is the patient for which a refill or partial was executed by another VA Pharmacy other than the host site. |
| .03 | RX NUMBER | N/A | 52.9^D | This is the RX Number from the prescription file (#52). |
| .04 | SITE NUMBER | INSTITUTION (#4) | 5209^E |  |
| .05 | REQUEST TYPE | N/A |  | RF – REFILL  PR – PARTIAL FILL  OR – OUTSIDE REFILL  OP – OUTSIDE PARTIAL FILL |
| .06 | OUTGOING REQUEST PHARMACIST | NEW PERSON (#200) | N/A | This is the pharmacist who initiated the refill or partial fill request to the host facility |
| .061 | REMOTE FILLING PHARMACIST | N/A | N/A | The pharmacist that requested a refill or partial from a host facility. |
| .07 | QUANTITY | N/A | N/A | This is the quantity dispensed. |
| .08 | DAYS SUPPLY | N/A | N/A | This is the day’s supply for the medication. |
| .09 | REFILL/PARTIAL DATE | N/A | N/A | This is the date of the refill or partial fill request. This represents the date as it is logged in the .01 field of either the refill or partial sub files within the prescription file. |
| .1 | DISPENSED DATE | N/A | N/A | This is the dispense date as it is held in the DISPENSED DATE within the REFILL or PARTIAL sub files of the PRESCRIPTION file. |
| 1 | REMOTE DRUG NAME | N/A | N/A | This is the name of the drug being dispensed for this request. |
| 1.1 | LOCAL (MATCHED) DRUG | DRUG (#50) | N/A | The drug that was used locally for the ‘host’ refill or partial fill. |
| 1.2 | TOTAL REFILL/PARTIAL FILL COST | N/A | N/A | This is the total cost for the ‘host’/filling facility. The cost is derived by using the cost of the drug at the time of the refill or partial fill. The cost is being retrieved from file 50, field 13. |
| 2 | MESSAGE DETAILS | N/A | N/A | Any message details related to the transaction. |
| 3 | LABEL DATA | N/A | N/A | Label data word processing field. |
| 1.3 | VA PRODUCT ID | N/A | N/A | This is the VA product ID that will be passed in by the ‘host’ VistA system. |

##### Mail Groups

Not applicable.

##### Security Keys

Not applicable.

##### Options

###### Pharmacy Remote Prescription Manager Options

| Name | Type | Description |
| --- | --- | --- |
| PSO LM BACKDOOR ORDERS | Menu |  |
| PSO RX | Menu | The overarching menu in which PSO REMOTE RX REPORT is contained. |
| PSO REMOTE RX REPORT | Run Routine | This option provides details about remote refill and partial fill request, as well as incoming refill and partial fill requests. |

PSO LM BACKDOOR ORDERS Option

| Options | Activities | | | | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Option Name** | PSO LM BACKDOOR ORDERS | | | | | | | | | | |
| **Enhancement Category** | New | Modify | | | | Delete | | | No Change | | |
| **Associated Menu Options that will invoke this reference** |  | | | | | | | | | | |
| **Data Passing** | Input | | Output | | Both | | | Global Reference | | | Local Reference |
| **Menu Text Description** |  | | | | | | | | | | |
| **Option Type** | Edit | | | Print | | | Menu | | | Inquire | |
| Action | | | Run Routine | | | Other | | |  | |
| **Associated Routine** |  | | | | | | | | | | |
| **Option Definition** |  | | | | | | | | | | |

| Current Entry Action Logic |
| --- |

| Modified Entry Action Logic (Changes are in bold) |
| --- |

| Current Exit Action Logic |
| --- |

| Modified Exit Action Logic (Changes are in bold) | | | | | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| PSO RX Options | | | | | | | | | | | |
| Options | Activities | | | | | | | | | | |
| **Option Name** | PSO RX | | | | | | | | | | |
| **Enhancement Category** | New | Modify | | | | Delete | | | No Change | | |
| **Associated Menu Options that will invoke this reference** |  | | | | | | | | | | |
| **Data Passing** | Input | | Output | | Both | | | Global Reference | | | Local Reference |
| **Menu Text Description** | Rx (Prescriptions) | | | | | | | | | | |
| **Option Type** | Edit | | | Print | | | Menu | | | Inquire | |
| Action | | | Run Routine | | | Other | | |  | |
| **Associated Routine** | PSOLSET, PSOORFIN | | | | | | | | | | |
| **Option Definition** |  | | | | | | | | | | |

| Current Entry Action Logic |
| --- |
| D ^PSOLSET:'$D(PSOPAR) D CHK^PSOORFIN |

| Modified Entry Action Logic (Changes are in bold) |
| --- |
| N/A |

| Current Exit Action Logic |
| --- |
| N/A |

| Modified Exit Action Logic (Changes are in bold) |
| --- |
| N/A |

PSO REMOTE RX REPORT Option

| Options | Activities | | | | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Option Name** | PSO REMOTE RX REPORT | | | | | | | | | | |
| **Enhancement Category** | New | Modify | | | | Delete | | | No Change | | |
| **Associated Menu Options that will invoke this reference** | PSO RX | | | | | | | | | | |
| **Data Passing** | Input | | Output | | Both | | | Global Reference | | | Local Reference |
| **Menu Text Description** | Remote Prescription Report | | | | | | | | | | |
| **Option Type** | Edit | | | Print | | | Menu | | | Inquire | |
| Action | | | Run Routine | | | Other | | |  | |
| **Associated Routine** | PSOLSET, PSOORFIN | | | | | | | | | | |
| **Option Definition** | Remote RX Prescription report display. | | | | | | | | | | |

| Current Entry Action Logic |
| --- |
| N/A |

| Modified Entry Action Logic (Changes are in bold) |
| --- |
| D ^PSORRP |

| Current Exit Action Logic |
| --- |
| N/A |

| Modified Exit Action Logic (Changes are in bold) |
| --- |
| N/A |

##### Protocols

###### PSO LM REFILL REMOTE ORDER Protocol

| Protocols | Activities |
| --- | --- |
| **Protocol Name** | PSO LM REFILL REMOTE ORDER |
| **Enhancement Category** | New  Modify  Delete  No Change |
| **Associated Protocols** | PSO LM REMOTE ORDER MENU |
| **Data Passing** | Input  Output  Both  Global Reference  Local Reference |
| **Item Text Description** |  |
| **Protocol Type** | Action  Menu  Protocol  Protocol Menu  Limited Protocol  Extended Action  Dialog  Other |
| **Associated Routine** | PSORRX1 |

| Current Entry Action Logic |
| --- |
| N/A |

| Modified Entry Action Logic (Changes are in bold) |
| --- |
| D REFREQ^PSORRX1 |

| Current Exit Action Logic |
| --- |
| N/A |

| Modified Exit Action Logic (Changes are in bold) |
| --- |
| N/A |

PSO LM REMOTE ORDER MENU Protocol

| Protocols | Activities |
| --- | --- |
| **Protocol Name** | PSO LM REMOTE ORDER MENU |
| **Enhancement Category** | New  Modify  Delete  No Change |
| **Associated Protocols** | PSO LM REFILL REMOTE ORDER  PSO LM REMOTE PARTIAL |
| **Data Passing** | Input  Output  Both  Global Reference  Local Reference |
| **Item Text Description** | Remote Order Menu |
| **Protocol Type** | Action  Menu  Protocol  Protocol Menu  Limited Protocol  Extended Action  Dialog  Other |
| **Associated Routine** | N/A |

| Current Entry Action Logic |
| --- |
| N/A |

| Modified Entry Action Logic (Changes are in bold) |
| --- |
| N/A |

| Current Exit Action Logic |
| --- |
| N/A |

| Modified Exit Action Logic (Changes are in bold) |
| --- |
| N/A |

PSO LM REMOTE PARTIAL Protocol

| Protocols | Activities |
| --- | --- |
| **Protocol Name** | PSO LM REMOTE PARTIAL |
| **Enhancement Category** | New  Modify  Delete  No Change |
| **Associated Protocols** | PSO LM REMOTE ORDER MENU |
| **Data Passing** | Input  Output  Both  Global Reference  Local Reference |
| **Item Text Description** | Partial |
| **Protocol Type** | Action  Menu  Protocol  Protocol Menu  Limited Protocol  Extended Action  Dialog  Other |
| **Associated Routine** | PSORRX1 |

| Current Entry Action Logic |
| --- |
| N/A |

| Modified Entry Action Logic (Changes are in bold) |
| --- |
| D PARTIAL^PSORRX1 |

| Current Exit Action Logic |
| --- |
| N/A |

| Modified Exit Action Logic (Changes are in bold) |
| --- |
| N/A |

PSO LM REMOTE RX REPORT MENU Protocol

| Protocols | Activities |
| --- | --- |
| **Protocol Name** | PSO LM REMOTE RX REPORT MENU |
| **Enhancement Category** | New  Modify  Delete  No Change |
| **Associated Protocols** | PSO LM SELECT REPORT ITEM |
| **Data Passing** | Input  Output  Both  Global Reference  Local Reference |
| **Item Text Description** | Remote Rx Selection\*\* |
| **Protocol Type** | Action  Menu  Protocol  Protocol Menu  Limited Protocol  Extended Action  Dialog  Other |
| **Associated Routine** | N/A |

| Current Entry Action Logic |
| --- |
| N/A |

| Modified Entry Action Logic (Changes are in bold) |
| --- |
| N/A |

| Current Exit Action Logic |
| --- |
| N/A |

| Modified Exit Action Logic (Changes are in bold) |
| --- |
| N/A |

PSO LM SELECT REPORT ITEM Protocol

| Protocols | Activities |
| --- | --- |
| **Protocol Name** | PSO LM SELECT REPORT ITEM |
| **Enhancement Category** | New  Modify  Delete  No Change |
| **Associated Protocols** | PSO LM REMOTE RX REPORT MENU |
| **Data Passing** | Input  Output  Both  Global Reference  Local Reference |
| **Item Text Description** |  |
| **Protocol Type** | Action  Menu  Protocol  Protocol Menu  Limited Protocol  Extended Action  Dialog  Other |
| **Associated Routine** | PSORRP |

| Current Entry Action Logic |
| --- |
| N/A |

| Modified Entry Action Logic (Changes are in bold) |
| --- |
| D SEL^PSORRP |

| Current Exit Action Logic |
| --- |
| N/A |

| Modified Exit Action Logic (Changes are in bold) |
| --- |
| N/A |

PSO REMOTE RX QBP Q13 ESUBS Protocol

| Protocols | Activities |
| --- | --- |
| **Protocol Name** | PSO REMOTE RX QBP-Q13 ESUBS |
| **Enhancement Category** | New  Modify  Delete  No Change |
| **Associated Protocols** |  |
| **Data Passing** | Input  Output  Both  Global Reference  Local Reference |
| **Item Text Description** |  |
| **Protocol Type** | Action  Menu  Protocol  Protocol Menu  Limited Protocol  Extended Action  Dialog  Other |
| **Associated Routine** |  |

| Current Entry Action Logic |
| --- |

| Modified Entry Action Logic (Changes are in bold) |
| --- |

| Current Exit Action Logic |
| --- |

| Modified Exit Action Logic (Changes are in bold) |
| --- |

PSO REMOTE RX QBP Q13 EVENT Protocol

| Protocols | Activities |
| --- | --- |
| **Protocol Name** | PSO REMOTE RX QBP-Q13 EVENT |
| **Enhancement Category** | New  Modify  Delete  No Change |
| **Associated Protocols** |  |
| **Data Passing** | Input  Output  Both  Global Reference  Local Reference |
| **Item Text Description** |  |
| **Protocol Type** | Action  Menu  Protocol  Protocol Menu  Limited Protocol  Extended Action  Dialog  Other |
| **Associated Routine** |  |

| Current Entry Action Logic |
| --- |

| Modified Entry Action Logic (Changes are in bold) |
| --- |

| Current Exit Action Logic |
| --- |

| Modified Exit Action Logic (Changes are in bold) |
| --- |

PSO REMOTE RX RDS-013 ESUBS Protocol

| Protocols | Activities |
| --- | --- |
| **Protocol Name** | PSO REMOTE RX RDS-O13 ESUBS |
| **Enhancement Category** | New  Modify  Delete  No Change |
| **Associated Protocols** |  |
| **Data Passing** | Input  Output  Both  Global Reference  Local Reference |
| **Item Text Description** |  |
| **Protocol Type** | Action  Menu  Protocol  Protocol Menu  Limited Protocol  Extended Action  Dialog  Other |
| **Associated Routine** |  |

| Current Entry Action Logic |
| --- |

| Modified Entry Action Logic (Changes are in bold) |
| --- |

| Current Exit Action Logic |
| --- |

| Modified Exit Action Logic (Changes are in bold) |
| --- |

PSO REMOTE RX RDS-013 EVENT Protocol

| Protocols | Activities |
| --- | --- |
| **Protocol Name** | PSO REMOTE RX RDS-O13 EVENT |
| **Enhancement Category** | New  Modify  Delete  No Change |
| **Associated Protocols** |  |
| **Data Passing** | Input  Output  Both  Global Reference  Local Reference |
| **Item Text Description** |  |
| **Protocol Type** | Action  Menu  Protocol  Protocol Menu  Limited Protocol  Extended Action  Dialog  Other |
| **Associated Routine** |  |

| Current Entry Action Logic |
| --- |

| Modified Entry Action Logic (Changes are in bold) |
| --- |

| Current Exit Action Logic |
| --- |

##### Remote Procedure Call (RPC)

Not Applicable.

##### Constants Defined in Interface

Not Applicable.

##### Variables Defined in Interface

Not Applicable.

##### Types Defined in Interface

Not Applicable.

##### GUI

Not Applicable.

##### GUI Classes

Not Applicable.

##### Current Form

Not Applicable.

##### Modified Form

Not Applicable.

##### Components on Form

Not Applicable.

##### Events

Not Applicable.

##### Methods

Not Applicable.

##### Special References

Not Applicable.

##### Class Events

Not Applicable.

##### Class Methods

Not Applicable.

##### Class Properties

Not Applicable.

##### Uses Clause

Not Applicable.

##### Forms

Not applicable.

##### Functions

Not applicable.

##### Dialog

Not applicable.

##### Help Frame

Not applicable.

##### HL7 Application Parameter

The MUMPS Patient Prescription Processing [PSO LM BACKDOOR ORDERS] menu option will be modified. The modifications include making a HL7 requests via the eMI ESB to the HDR/CDS Repository and via the eMI ESB to other VistA instances.

### HL7 Protocols

An HL7 protocol event and subscriber will be configured in VistA to handle sending HL7 requests to the eMI ESB. Protocols will be set up to handle all messages.

The following section lists configuration examples of the protocol to handle the various messages.

Example of Configuration of a Protocol to handle QBP-Q13 Events

NAME: PSO REMOTE RX QBP-Q13 EVENT TYPE: event driver

CREATOR: LASTNAME, FIRSTNAME SENDING APPLICATION: PSO VISTA PHARM

TRANSACTION MESSAGE TYPE: QBP EVENT TYPE: Q13

ACCEPT ACK CODE: NE APPLICATION ACK TYPE: AL

VERSION ID: 2.5.1

SUBSCRIBERS: PSO REMOTE RX QBP-Q13 ESUBS

Example of Configuration of a Subscriber Protocol to handle QBP-Q13 Events

NAME: PSO REMOTE RX QBP-Q13 ESUBS TYPE: subscriber

CREATOR: LASTNAME, FIRSTNAME RECEIVING APPLICATION: PSO EMI PHARM

EVENT TYPE: K13 LOGICAL LINK: PSORRXSEND

RESPONSE MESSAGE TYPE: ACK SENDING FACILITY REQUIRED?: YES

RECEIVING FACILITY REQUIRED?: YES

Example of Configuration of a Protocol to handle RDS-O13 Event

NAME: PSO REMOTE RX RDS-O13 EVENT

ITEM TEXT: Pharmacy/Treatment Dispense Message

TYPE: event driver CREATOR: LASTNAME, FIRSTNAME

TIMESTAMP: 64079,49731 SENDING APPLICATION: PSO VISTA PHARM

TRANSACTION MESSAGE TYPE: RDS EVENT TYPE: O13

VERSION ID: 2.5.1

SUBSCRIBERS: PSO REMOTE RX RDS-O13 ESUBS

Example of Configuration of a Subscriber Protocol to handle RDS-O13 Events

NAME: PSO REMOTE RX RDS-O13 ESUBS

ITEM TEXT: Pharmacy/Treatment Dispense Message

TYPE: subscriber CREATOR: LASTNAME, FIRSTNAME

TIMESTAMP: 64079,49731 RECEIVING APPLICATION: PSO EMI PHARM

EVENT TYPE: O14 LOGICAL LINK: PSORRXSEND

RESPONSE MESSAGE TYPE: RRD PROCESSING ROUTINE: D PROCESS^PSORWRAP

SENDING FACILITY REQUIRED?: YES RECEIVING FACILITY REQUIRED?: YES

### HL7 Sender and Receiver Applications

Sender and receiver HL7 applications will be configured in VistA to fill the HL7 MSH segment -piece 3, 4, 5 and 6 fields. The Sending Application Facility Name is used to convey the site number of the VistA.

The following section lists configuration examples of applications used in the protocols identified above.

Receiving HL7 Application Configuration

NAME: PSO VISTA PHARM ACTIVE/INACTIVE: ACTIVE

COUNTRY CODE: USA

Sending HL7 Application Configuration

NAME: PSO EMI PHARM ACTIVE/INACTIVE: ACTIVE

COUNTRY CODE: USA

### Sender and Receiver Logical Links

A client logical link will be configured in VistA with the IP and Port of the eMI ESB. Additionally, a server or listening logical link will be added. HL7 messaging will be used to exchange requests between the initiating VistA and the eMI ESB.

The following is an example configuration of logical links used in the applications above.

Example of Configuration of Logical Links

NODE: PSORRXSEND LLP TYPE: TCP

STATE: Idle DNS DOMAIN: DOMAIN.VA.GOV

TIME STARTED: JUN 16, 16@13:51:04 TIME STOPPED: JUN 16, 16@13:50:30

SHUTDOWN LLP?: NO QUEUE SIZE: 10

READ TIMEOUT: 60 ACK TIMEOUT: 60

EXCEED RE-TRANSMIT ACTION: restart

TCP/IP ADDRESS: example.va.gov

TCP/IP PORT: 2200 TCP/IP SERVICE TYPE: CLIENT (SENDER)

PERSISTENT: NO RETENTION: 15

TCP/IP OPENFAIL TIMEOUT: 60 OUT QUEUE BACK POINTER: 3319

OUT QUEUE FRONT POINTER: 3316

#### HL7 Logical Link

Table 56: HL7 Logical Link

| HL7 Logical Link | Description |
| --- | --- |
| **HL7 Logical Link Parameter Name** | **PSORRXSEND** |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Enhancement Category** | **New** | **Modify** | **Delete** | **No Change** |

| Enhancement Category | Current | Modified |
| --- | --- | --- |
| **Node** | **N/A** | **N/A** |
| **Institution** | **N/A** | **N/A** |
| **Domain** | **N/A** | **N/A** |
| **Autostart** | **N/A** | **Disabled** |
| **Queue Size** | **N/A** | **10** |
| **LLP Type** | **N/A** | **TCP** |

##### COTS Interface

Not applicable.

## Network Detailed Design

The OneVA Pharmacy patch is an enhancement to the existing VistA software therefore the patch is not introduction any design change to the network. The OneVA Pharmacy software integrates eMI for communication protocol for HL& messages.

For information about eMI’s Network Design, please follow this [LINK](http://URL/warboard/anotebk.asp?proj=1709&Type=Active) to access the eMI project and product documentation.

## Security and Privacy

### Security

No new functionality has been added that would require additional security measures to the existing VistA application.

#### Secure Sockets Layer (SSL)

The OneVA Pharmacy architecture does not use SSL to transport HL7 from VistA to/from the eMI ESB. The use of SSL is achieved from the eMI ESB to the HDR/CDS Repository. The scope and complexity of the changes required to VistA to support HL7 over SSL are unknown.

#### Authentication and Authorization

OneVA Pharmacy authentication and authorization occur fully within the context of existing VistA systems and as such rely on the pre-existing compliance of these applications with the security and privacy requirements and their resulting authentication and authorization.

#### Remote Prescription Locking

Existing pharmacy locking logic is not affected. No new locking will occur on remote prescriptions.

### Privacy

OneVA Pharmacy privacy standards occur fully within the context of existing VistA systems and as such rely on the pre-existing compliance of these applications with the security and privacy requirements. No new functionality has been added that would require additional privacy measures.

## Service Oriented Architecture / ESS Detailed Design

Services provided include:

1. Provides: Transport of HL7 messages to target VistA
2. Provides: Proxy call to the HDR/CDS Repository for a patient’s active prescriptions.
3. Consumes: HDR/CDS Repository query service

For information about the HDR/CDS Repository and the web service, please follow this [LINK](http://URL/warboard/anotebk.asp?proj=918&Type=Active) to access the HDR/CDS project and product documentation repository.

For information about eMI, please follow this [LINK](http://URL/warboard/anotebk.asp?proj=1709&Type=Active) to access the eMI project and product documentation.

Also available is the OneVA Pharmacy ICD document that is accessible by following this [LINK](http://URL/pm/iehr/vista_evolution/pharmacy/OneVAPharm/SitePages/Home.aspx).

### Service Description for Consumed Service Name

Not Applicable. No development of new service.

### Service Design for Provided Service Name

Not Applicable. No development of new service.

# External System Interface Design

## Interface Architecture

## Interface Detailed Design

The OneVA Pharmacy patch sends and received HL7 v2.5.1 messaging via the eMI ESB. The details for the HL7 messages are found in the OneVA Pharmacy Integration Interface Control (ICD) document that is accessible by following this [LINK](http://URL/pm/iehr/vista_evolution/pharmacy/OneVAPharm/SitePages/Home.aspx).

The following codes are provided for reference.

## Acknowledgement Codes

Table 12: Acknowledgement Codes

| Code | Status | Description |
| --- | --- | --- |
| AA | Application Accept | Requested action or operation was successfully performed |
| AR | Application Reject | Requested action or operation failed due to service errors |
| AE | Application Error | Requested action or operation failed due to HL7 message or semantic errors |

## Order Control Codes

The OneVA Pharmacy patch sends and received HL7 v2.5.1 messaging via the eMI ESB. The details for the HL7 messages are found in the OneVA Pharmacy Integration Interface Control (ICD) document that is accessible by following this [LINK](http://URL/pm/iehr/vista_evolution/pharmacy/OneVAPharm/SitePages/Home.aspx).

The follow codes are provided for reference.

Table 13: Order Control Codes

| Code | Status |
| --- | --- |
| RF | Refill order request |
| PF | Partial fill order request\* |
| AF | Order refill authorization request approved |
| DF | Order refill authorization request denied |
| FU | Order refilled unsolicited at patient’s request |
| OF | Order refilled as requested by placer system |

\*PF is not an HL7 standard code

## OneVA Pharmacy HL7 Messages

### Query by Parameter Request HL7 Message

The ‘Query by Parameter Request’ is a QBP^Q13 HL7 message type.

The details for the all OneVA Pharmacy HL7 messages are found in the OneVA Pharmacy Integration Interface Control (ICD) document that is accessible by following this [LINK](http://URL/pm/iehr/vista_evolution/pharmacy/OneVAPharm/SitePages/Home.aspx).

### Prescription Query Service Response HL7 Message

The ‘Prescription Query Service Response’ is a RTB^K13 HL7 message type.

The details for the all OneVA Pharmacy HL7 messages are found in the OneVA Pharmacy Integration Interface Control (ICD) document that is accessible by following this [LINK](http://URL/pm/iehr/vista_evolution/pharmacy/OneVAPharm/SitePages/Home.aspx).

### Pharmacy/Treatment Dispense Message Request HL7 Message

The ‘Pharmacy/Treatment Dispense Message Request’ is a RDS^O13’ HL7 message type.

The details for the all OneVA Pharmacy HL7 messages are found in the OneVA Pharmacy Integration Interface Control (ICD) document that is accessible by following this [LINK](http://URL/pm/iehr/vista_evolution/pharmacy/OneVAPharm/SitePages/Home.aspx).

### Prescription Refill/Partial Services Response HL7 Message

The ‘Prescription Refill/Partial Services Response’ is a RRD^O14’ HL7 message type.

The details for the all OneVA Pharmacy HL7 messages are found in the OneVA Pharmacy Integration Interface Control (ICD) document that is accessible by following this [LINK](http://URL/pm/iehr/vista_evolution/pharmacy/OneVAPharm/SitePages/Home.aspx).

# Human-Machine Interface

OneVA Pharmacy will utilize existing VistA functionality to the fullest extent possible. The patch uses Character-Based User Interface (CBUI) to display query information to the user. This technology will sometimes be commonly referred to as “roll and scroll” output. OneVA Pharmacy is a terminal based application and does not have a GUI.

## Interface Design Rules

Not Applicable.

## Inputs

Manual keyboard entry is used for OneVA Pharmacy application input.

## Outputs

Terminal output display is used for OneVA Pharmacy application output.

## Navigation Hierarchy

Figure 32: Navigational Hierarchy



### Prescription Display

PSO LM BACKDOOR ORDERS will be modified to display prescriptions from other VA Pharmacy locations in the same screen where the local prescription orders are displayed for a patient. The prescriptions from other VA Pharmacy locations will list after any local prescription order and will have a section header with the following format ‘-----SITE NAME (SITE NUMBER) ----‘delineating the items. Leveraging existing functionality means less training and immediate familiarity with the process.

Once the user selects to ‘Refill’ or ‘Partially Refill’ a prescription that originated from another VA Pharmacy location, a prompt will display to enter the required information for sending a request to the ‘originating’ system, so that the refill or partial fill may be completed and the prescription record updated.

The ‘Select Order’ function within PSO LM BACKDOOR ORDERS will be modified to differentiate between the dispensing and host orders and pull from the host order ^XTMP array when needed.

Once the user has selected the order, a new option is available to either ‘refill remote order’ or ‘partial refill remote order’. The updates to the data will occur on the system of origin. Additional fields will be added to the Prescription file (#52) (refer to this [section](#_Remote_Prescription_Log) for details). The fields will include remote pharmacist name, remote pharmacist phone number, and remote filling site.

A new local file will be added to hold the information about the host prescription that has been filled. This file will contain information about the site, Rx number, pharmacist who filled the Rx, and the date the prescription was filled in the ‘dispensing’ system. This file will be used for reporting and tracking purposes.

Figure 33: Medication Profile Screen Example – Remote Active Rx

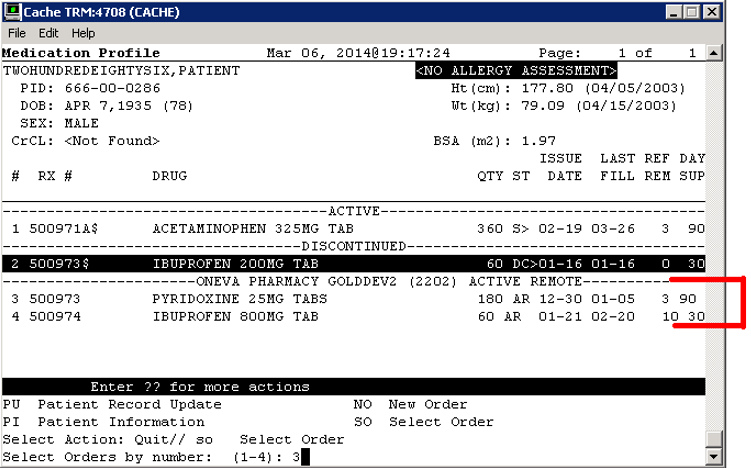
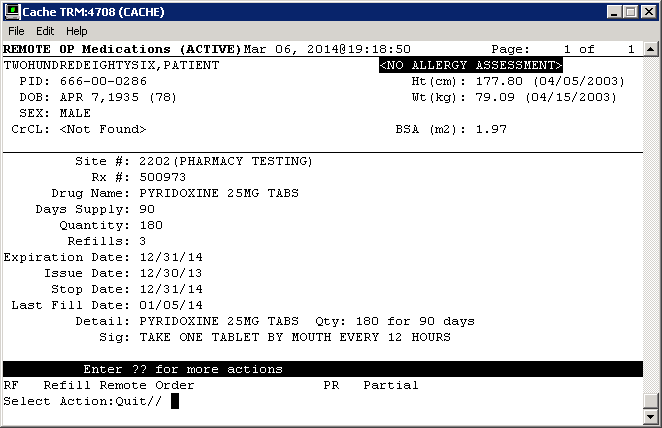


Figure 34: Remote OP Medication Screen



# Attachment A – Approval Signatures

This section is used to document the approval of the OneVA Pharmacy Implementation System Design Document during the Formal Review. The review should be ideally conducted face to face where signatures can be obtained ‘live’ during the review however the following forms of approval are acceptable:

1. Physical signatures obtained face to face or via fax

2. Digital signatures tied cryptographically to the signer

3. /es/ in the signature block provided that a separate digitally signed e-mail indicating the signer’s approval is provided and kept with the document

The following members of the governing Integrated Project Team (IPT) are required to sign. Please annotate signature blocks accordingly.

Signed:

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Joshua Patterson Date

Integrated Project Team (IPT) Chair

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Michael Valentino Date

Business Sponsor

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Cecelia Wray Date

Project Manager

1. Additional Information
   1. Identification of Technology and Standards

Reference materials include the following:

* IEEE 16-2009, Systems Design / Software Design Descriptions – <http://standards.ieee.org/findstds/standard/1016-2009.html>
* HL7 Messaging Standard v2.5.1 - <http://www.hl7.org/implement/standards/product_brief.cfm?product_id=144>
* VA118-13-R-0445, B.3 Performance Work Statement issued 2013-07-26
* Medical Domain Web Services (MDWS) documentation - <http://va.gov/vdl/application.asp?appid=192>
* HL7 (VistA Messaging) documentation - <http://va.gov/vdl/application.asp?appid=8>
* My HealtheVet documentation - <http://va.gov/vdl/application.asp?appid=153>
  1. Constraining Policies, Directives and Procedures

Not applicable.

* 1. Requirements Traceability Matrix

The Requirements Traceability Matrix (RTM) cis accessible on the VA SharePoint. The OneVA Pharmacy RTM can be access by following this [LINK](http://URL/pm/iehr/vista_evolution/pharmacy/OneVAPharm/Shared%20Documents/Forms/AllItems.aspx?RootFolder=%2Fpm%2Fiehr%2Fvista%5Fevolution%2Fpharmacy%2FOneVAPharm%2FShared%20Documents%2FOneVA%20Pharmacy%20Option%20Year%20%2D%20Implementation%2FRTM).

* 1. Packaging and Installation

There are no known special considerations for software packaging of this VistA patch and the installations instructions will be delivered with the OneVA Pharmacy Installation, Back out, and Roll Back Plan.

* 1. Design Metrics

Not applicable.