

**Department of Veterans Affairs
Veterans Health Administration (VHA)
Office of Informatics and Analytics
Innovation Program**

OneVA Pharmacy Implementation Project

System Design Document (SSD)



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

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1. Introduction

Leadership at the Department of Veterans Affairs (VA) initiated the OneVA Pharmacy project to enhance and integrate the OneVA Pharmacy prototype into VistA. The OneVA Pharmacy module will provide the Department of Veterans Health Administration (VHA) the capability to allow Veterans traveling across the United States to refill their active VA prescription at any VA pharmacy location regardless of where the prescription originated. The module expands available pharmacy information in VistA to pharmacists providing direct access to any active and refillable prescription from any VA Pharmacy location. The OneVA Pharmacy project modifies the existing prototype software to expand its current capability and includes the development of documentation to support a national rollout in 2016.

The OneVA Pharmacy module and this implementation provides a foundation to build and extend new capabilities to the Veteran. A well-designed OneVA Pharmacy builds upon the history of the VHA, and advances in modern technology to allow Veterans to take a more active role in their own health care.

1.1. Scope

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

1.2. User Profiles

The user profile of the OneVA Pharmacy module are those users, specifically pharmacists, that use the Pharmacy [PSO LM BACKDOOR ORDERS] menu to dispense prescriptions.

1.3. 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
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

Acronym/Abbreviation	Description
DFN	Data File Number
DHCP	Dynamic Host Configuration Protocol
eMI	Enterprise Messaging Infrastructure
ESB	Enterprise Service Bus
HDR	Health Data Repository
HL7	Health Level 7
ICN	Integration Control Number
IOC	Initial Operating Capability
IT	Information Technology
MLLP	Minimal Lower Layer Protocol
MUMPS	Massachusetts General Hospital Utility Multi Programming System
MVI	Master Veteran Index
NPI	National Patient Index
OIA	Office of Informatics and Analytics
OPAI	Outpatient Pharmacy Automation Interface
PSO	Outpatient Prescription Pharmacy
[PSO LM BACKDOOR ORDERS]	Patient Prescription Processing
RDNG	IBM Rational DOORS Next Generation
RSD	Requirements Specification Document
RTM	Requirements Traceability Matrix
SDD	System Design Document
SME	Subject Matter Expert

Acronym/Abbreviation	Description
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

1.4. Processes and References

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

- [REDACTED]
- HL7 Messaging Standard v2.5.1
http://www.hl7.org/implement/standards/product_brief.cfm?product_id=144
- Medical Domain Web Services (MDWS) documentation
[REDACTED]
- HL7 (VistA Messaging) documentation [REDACTED]
- My HealtheVet documentation [REDACTED]

2. Background

2.1. Overview of the System

The overall OneVA Pharmacy system design is partitioned into three main components. They are:

1. VistA Server
2. Enterprise Messaging Infrastructure (eMI) Enterprise Service Bus (ESB) (eMI)
3. Health Data Repository/Clinical Data Service (HDR/CDS)

The VistA Server is the user interface where a pharmacist uses the “Patient Prescription Processing” [PSO LM BACKDOOR ORDERS] menu option to query for and refill, patient’s active and refillable prescriptions; local and from other VA Pharmacy locations. The eMI receives requests from VistA to query the Health Data Repository/Clinical Data Service (HDR/CDS) for a patient’s active and refillable prescriptions located at other VA Pharmacy’s. The VistA server and the eMI communicate with each other using Health Level 7 (HL7) v2.5.1 over Minimal Layer Protocol (MLLP). Communication to the HDR/CDS Repository will be done via Simple Object Access Protocol (SOAP) web services. For label printing, the VistA server will develop and trigger the HL7 message stream that executes during the full or partial refill prescription processes. The event trigger handles the printing of the host label information at the dispensing printing device.

The following figure displays the OneVA Pharmacy system design approach.

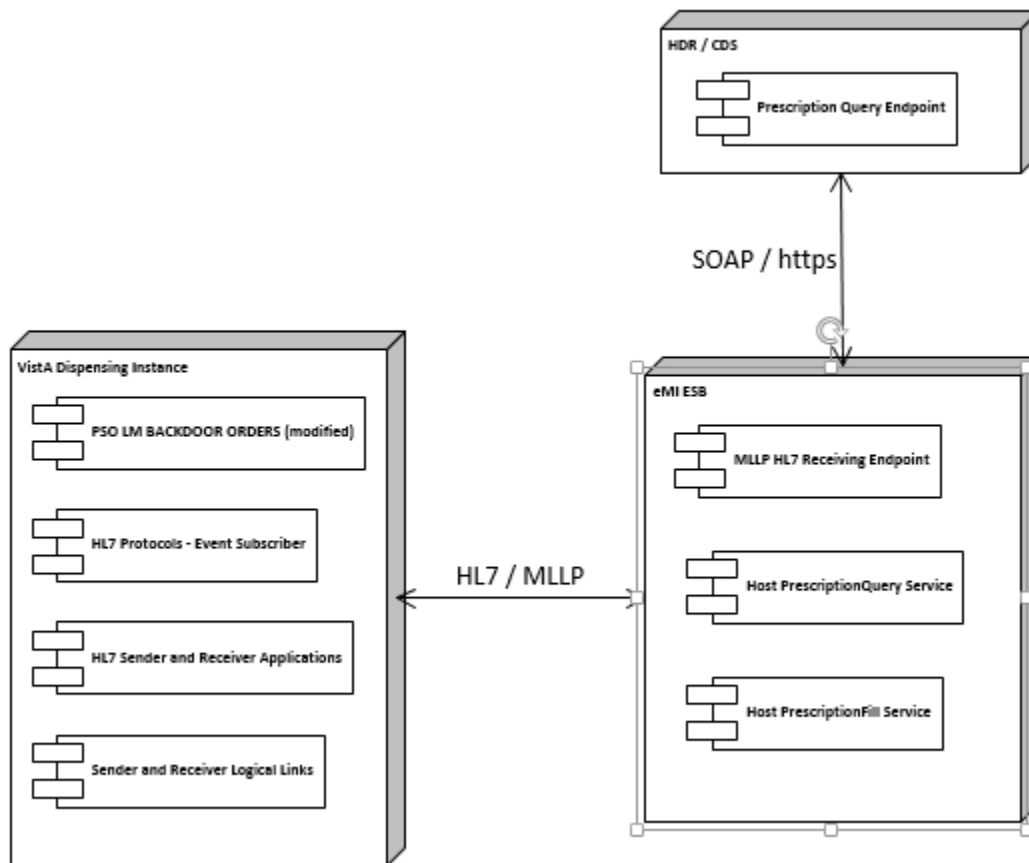


Figure 1: OneVA Pharmacy Design Overview

2.2. Overview of the Business Process

OneVA Pharmacy provides VistA the functionality to allow pharmacists to refill 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.

2.3. Overview of the Significant Requirements

2.3.1. 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 project 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 the OneVA Pharmacy project can be found in the OneVA Pharmacy Requirements Specification Document (RSD), located on the VA SharePoint. The OneVA Pharmacy RSD can be accessed by following this [\[redacted\]](#)

2.3.2. 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 the OneVA Pharmacy project includes using the VistA routine ‘Patient Prescription Processing’ [PSO LM BACKDOOR ORDERS] to access local patient information; HDR/CDS will be accessed via the eMI to retrieve data for the medication profile screen; and the eMI and the HL7 interface will be integrated for information exchange between VistA systems.

The details for the design constraints for the OneVA Pharmacy project can be found in the OneVA Pharmacy RSD, located on the VA SharePoint. The OneVA Pharmacy RSD can be accessed by following this [\[redacted\]](#)

2.3.3. Documentation Specifications

The goal of the ‘Documentation Specifications’ is to ensure necessary documentation is developed according to standard. The product and project documentation for the OneVA Pharmacy project can be found in the OneVA Pharmacy RSD, located on the VA SharePoint. The OneVA Pharmacy RSD can be accessed by following this [\[redacted\]](#)

2.3.4. 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 the OneVA Pharmacy project 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 can be accessed by following this [\[redacted\]](#)

3. Conceptual Design

3.1. Conceptual Application Design

The software architecture for the OneVA Pharmacy project 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 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.

3.1.1. Application Context

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

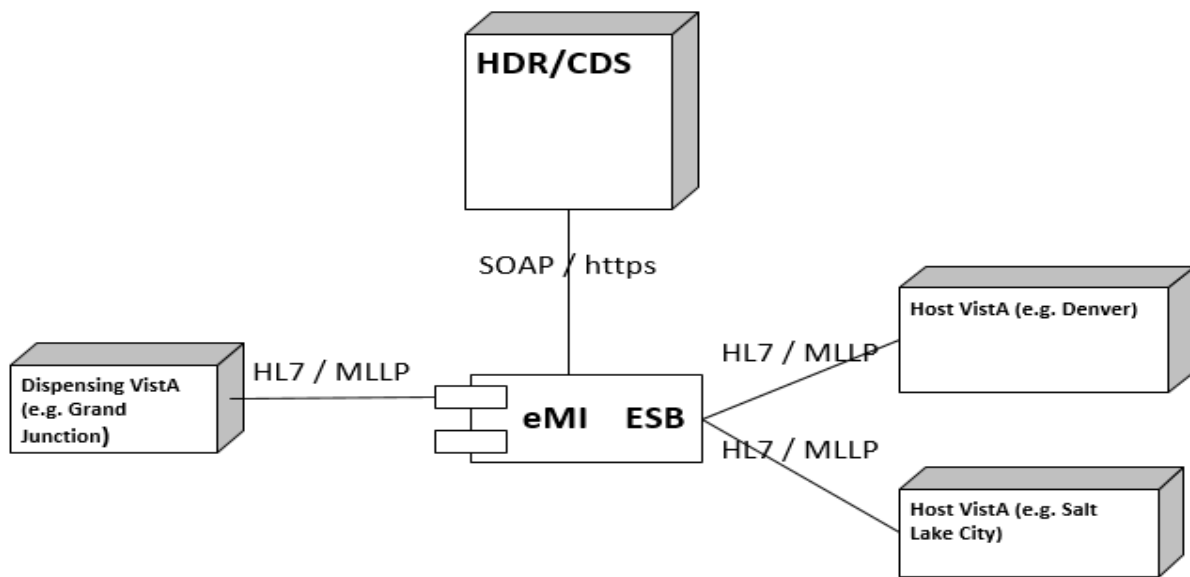


Figure 2: Application Architectural Diagram

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.
- HDR/CDS is the VAs authoritative data service repository for HealtheVet-VistA application and services containing nationalized, patient-centric, and clinical data.

3.1.2. 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 being used in this SDD to document the logical application design for the OneVA Pharmacy project.

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

Note: 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.

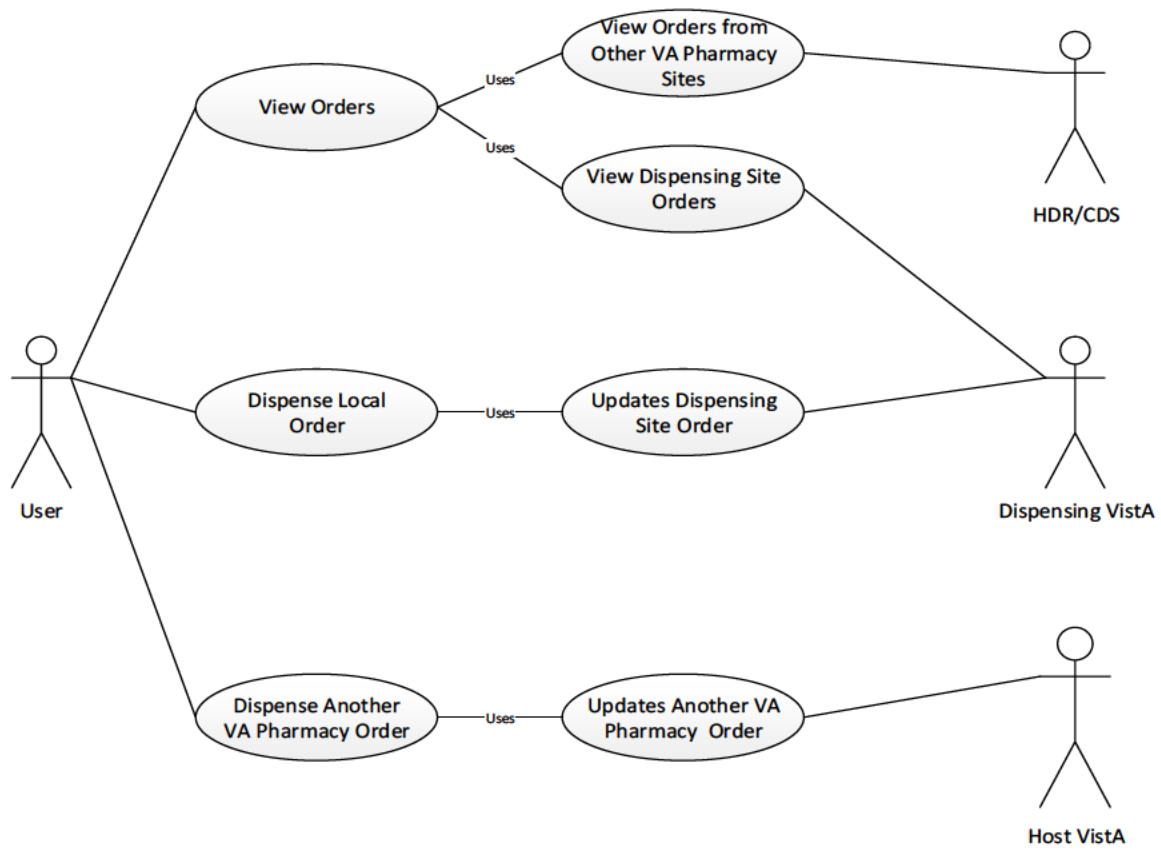


Figure 3: High-level Context Diagram

The following figure provides the business capability the components are processing specifically for the OneVA Pharmacy Patch.

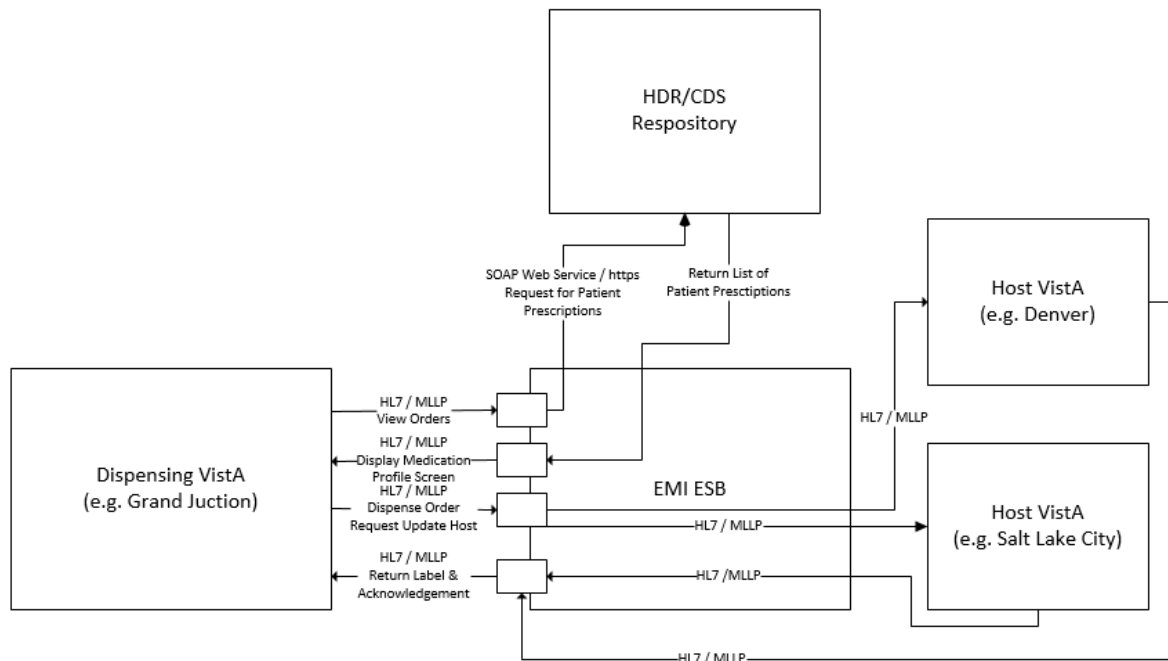


Figure 4: Component Diagram with Business Capabilities

3.1.2.1. 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.

Actors

- User (Provider, Pharmacist, etc.)
- Dispensing VistA Instance
- HDR/CDS Repository
- eMI ESB (proxy to host VistAs)

Pre-Conditions

- Patient must have an ICN
- Patient must have information populated in the system
- User has accessed the Patient Prescription Processing Menu [PSO LM BACKDOOR ORDERS]. (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.

3. The dispensing VistA instance will send a request via the eMI ESB to the HDR/CDS 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. [RSD 2.6.1.1]

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. [RSD 2.3.6]

Exceptions

- 2a. Patient Not Found
- 2b. Patient Found, No Prescription Records
- 2c. eMI ESB is not accessible.
- 2d. HDR/CDS 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...” [RSD 2.6.1.2]
- 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.” [RSD 2.6.1.6]
- 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”
- 3a. “Patient Found with no Prescription Records Matching Search Criteria”

3.1.2.2. Use Case Name: Dispense Local Order

The “Dispense Local Order” Use Case describes the process for users to dispense local order. Note: Documented in the RSD there 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 has accessed the Patient Prescription Processing Menu [PS0 LM BACKDOOR ORDERS. (No separate Security Key required)]

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.

3.1.2.3. 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 locally and print a prescription label.

Actors

- User (Provider, Pharmacist, etc.)
- 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 has accessed the Patient Prescription Processing Menu [PSO LM BACKDOOR ORDERS]. (No separate Security Key required.)

Flow of Events

1. User selects a prescription which 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.
 - a. The host VistA will update the prescription order and decrement refills.

- b. The host VistA will create a prescription label which will be added to the response.
6. The dispensing VistA instance will dispense medication.
7. The dispensing VistA instance will print the label to the dispensing location printer.

Alternate Flow

1. User selects a prescription which 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.
 - a. The host VistA will update the prescription order and update partial fill date.
 - b. The host VistA will create a prescription label which will be added to the response.
6. The dispensing VistA instance will dispense medication.
7. 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# xxxxxxxx. This is a controlled substance."
- 5a. The following are the various standard system messages that could display
 - "**** Drug is inactive for Rx # "_\$P(PSOREF("RX0"),"^")_" cannot be refilled ****" (refill prescription allowed on inactive drugs)
 - "Can't refill Rx # "_\$P(PSOREF("RX0"),"^")_" , 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.”

3.1.2.4. 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 have been 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.
 - a. User selects ‘Prescriptions we have filled for other facilities’ report.
 - b. User selects ‘Our prescriptions, filled by other facilities’ report.
 - c. User selects ‘All activity for Other VA Pharmacy locations’ report
2. User selects ‘D’ - “Date Range” or go to step 3 or step 4
 - a. User enters start date.
 - b. User enters end date.
3. User selects “Patient” or go to step 4.
 - a. User enters Patient Name
4. User selects “Site”.
 - a. User enters Institution Name.

Alternate Flow

- N/A

Exceptions

- N/A

System Message

- N/A

3.1.3. Application Locations

The OneVA Pharmacy module extends the existing VistA to provide pharmacists direct access to any active, refillable prescription from any VA Pharmacy location. However, integration with the eMI-middleware 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.

3.2. Conceptual Data Design

3.2.1. Project Conceptual Data Model

Not applicable.

3.2.2. 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).

3.2.2.1. 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 fill 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	NEW PERSON (#200)	N/A	This is the pharmacist who initiated the refill or partial fill request to the host facility

Field Number	Field Name	Pointers	Cross References and Record Indices	Description
	PHARMACIST			
.061	REMOTE FILLING PHARMACIST	N/A	N/A	This is 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 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 is 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.

3.2.2.1.1. 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, 2016

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, 2016

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, 2016

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.

3.2.2.2. 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 is the site that performed the refill action for on behalf of the host site.

Field Number	Field Name	Pointers	Cross References and Record Indices	Description
92	Remote Pharmacist	N/A	N/A	This is 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.

3.2.2.3. 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 is the site that performed the partial fill action on behalf of the host site.
92	Remote Pharmacist	N/A	N/A	This is the name of 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.

3.2.3. 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 PSOR OneVA Pharmacy Prescription Report [PSO REMOTE RX REPORT] to access the new OneVA Pharmacy reports.

3.2.3.1. 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.

3.2.3.2. 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 the OneVA Pharmacy project and found within the new menu called: PSOR OneVA Pharmacy Prescription Report [PSO REMOTE RX REPORT]. They are:

1. Prescriptions we have filled for other facilities
2. Our prescriptions, filled by other facilities
3. All OneVA Pharmacy Prescription Activity

3.2.3.2.1. Prescriptions we have filled for other facilities

There are three search options available for the ‘Prescriptions we have filled for other facilities’ report. 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 name, status, station number, official VA name, current location, coding system/id pair, National Patient Index (NPI), name (changed from), or coding system.

The following table lists the values displayed on the report.

Table 2: Prescriptions we have filled for other facilities

Report Column	Data Source
DATE FILLED	REMOTE PRESCRIPTION LOG FILE (#52.09) – REFILL/PARTIAL DATE (.09)
PATEINT	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)

The following image displays the 'Prescriptions we have filled for other facilities' report example.

OneVA PHARMACY RX REPORT		MAY 16, 2016@15:18:07		PAGE 1 of 1	
Prescriptions we have filled for other facilities					
-O-	DATE-----	PATIENT-----	DRUG NAME-----	TYPE--	QTY--DSUP-
1.	MAR 06, 2015	VARANDA, ELI R	IBUPROFEN 150MG TAB	OR	03 30
Total Cost for items in this report: \$4.27					
ENTER ?? FOR MORE ACTIONS					
SI	Select Item				
Select Action: Quit//					

Figure 5: Prescriptions we have filled for other facilities Content Example

The following image displays the detailed view of the 'Prescriptions we have filled for other facilities' report example.

OneVA PHARMACY RX REPORT		MAY 16, 2016@15:18:07		PAGE 1 of 1	
Detailed Report of Prescriptions we have filled for other facilities					
<hr/>					
Request Date/Time:	MAR 06, 2016@12:00				
Patient:	[REDACTED]				
RX #:	4000002				
Rx Hosted at Site:	SOUTHERN ARIZONA VA HCS				
Request Type:	OUTSIDE REFILL				
Requesting Pharmacist:	FISHER, BRADLEY				
Dispensed Date:	MAR 06, 2016@12:01				
Remote Drug Name:	IBUPROFEN 250MG TAB				
Local (matched) drug:	IBUPROFEN 250MG TAB				
Cost of Local Refill/Partial:					
ENTER ?? FOR MORE ACTIONS					
Select Action: Quit//					

Figure 6: Detailed Report of Prescriptions we have filled for other facilities Example

3.2.3.2.2. Our prescriptions, filled by other facilities

There are three search options available for the ‘Our prescriptions, filled by other facilities’ report. They are:

4. D: Date Range
5. P: Patient
6. 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 securing 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 a site name, status, station number, official VA name, current location, coding system/id pair, NPI, name (changed from), or coding system.

The following table lists the values displayed on the report.

Table 3: Our prescriptions, filled by other facilities

Report Column	Data Source
DATE FILLED	REMOTE PRESCRIPTION LOG FILE (#52.09) – REFILL/PARTIAL DATE (.09)
PATEINT	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)

The following image displays the 'Our prescriptions, filled by other facilities' report example.

OneVA PHARMACY RX REPORT		MAY 16, 2016@15:18:07		PAGE 1 of 1	
Our prescriptions, filled by other facilities					
-O--	DATE-----	PATIENT-----	DRUG NAME-----	TYPE--	QTY--DSUP--
1.	MAR 06, 2015	[REDACTED]	IBUPROFEN 150MG TAB	OR	03 30
Total Cost for items in this report: \$4.27					
ENTER ?? FOR MORE ACTIONS					
SI	Select Item				
Select Action: Quit//					

Figure 7: Our prescriptions, filled by other facilities Content Example

The following image displays the detailed view of the 'Our prescriptions, filled by other facilities' report example.

OneVA PHARMACY RX REPORT		MAY 16, 2016@15:18:07		PAGE 1 of 1	
Detailed Report of Our prescriptions, filled by other facilities					
<hr/>					
Request Date/Time:	MAR 06, 2016@12:00				
Patient:	[REDACTED]				
RX #:	4000002				
Rx Hosted at Site:	SOUTHERN ARIZONA VA HCS				
Request Type:	OUTSIDE REFILL				
Requesting Pharmacist:	FISHER, BRADLEY				
Dispensed Date:	MAR 06, 2016@12:01				
Remote Drug Name:	IBUPROFEN 250MG TAB				
Local (matched) drug:	IBUPROFEN 250MG TAB				
Cost of Local Refill/Partial:					
ENTER ?? FOR MORE ACTIONS					
Select Action: Quit//					

Figure 8: Detailed Report of Our prescriptions, filled by other facilities Example

3.2.3.2.3. All OneVA Pharmacy Prescription Activity

There are three search options available for the 'All OneVA Pharmacy Prescription Activity' report. They are:

7. D: Date Range
8. P: Patient
9. 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 securing 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 a site name, status, station number, official VA name, current location, coding system/id pair, NPI, name (changed from), or coding system.

The following table lists the values displayed on the report.

Table 4: All OneVA Pharmacy Prescription Activity

Report Column	Data Source
DATE FILLED	REMOTE PRESCRIPTION LOG FILE (#52.09) – REFILL/PARTIAL DATE (.09)
PATEINT	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)

The following image displays the 'All OneVA Pharmacy Prescription Activity' report example.

OneVA PHARMACY RX REPORT		MAY 16, 2016@15:18:07		PAGE 1 of 1	
All OneVA Pharmacy Prescription Activity					
-O-	DATE	PATIENT	DRUG NAME	TYPE	QTY—DSUP-
1.	MAR 06, 2015	[REDACTED]	IBUPROFEN 150MG TAB	OR	03 30
Total Cost for items in this report: \$4.27					
ENTER ?? FOR MORE ACTIONS					
SI	Select Item				
Select Action: Quit//					

Figure 9: All OneVA Pharmacy Prescription Activity Report Content Example

The following image displays the detailed view of the 'All OneVA Pharmacy Prescription Activity' report example.

OneVA PHARMACY RX REPORT		MAY 16, 2016@15:18:07		PAGE 1 of 1	
Detailed Report of All OneVA Pharmacy Prescription Activity					
Request Date/Time: MAR 06, 2016@12:00					
Patient: [REDACTED]					
RX #: 4000002					
Rx Hosted at Site: SOUTHERN ARIZONA VA HCS					
Request Type: OUTSIDE REFILL					
Requesting Pharmacist: FISHER, BRADLEY					
Dispensed Date: MAR 06, 2016@12:01					
Remote Drug Name: IBUPROFEN 250MG TAB					
Local (matched) drug: IBUPROFEN 250MG TAB					
Cost of Local Refill/Partial:					
ENTER ?? FOR MORE ACTIONS					
Select Action: Quit//					

Figure 10: Detailed Report of All OneVA Pharmacy Prescription Activity Example

3.2.3.3. Unmapped Data Element

Not applicable.

3.3. 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.

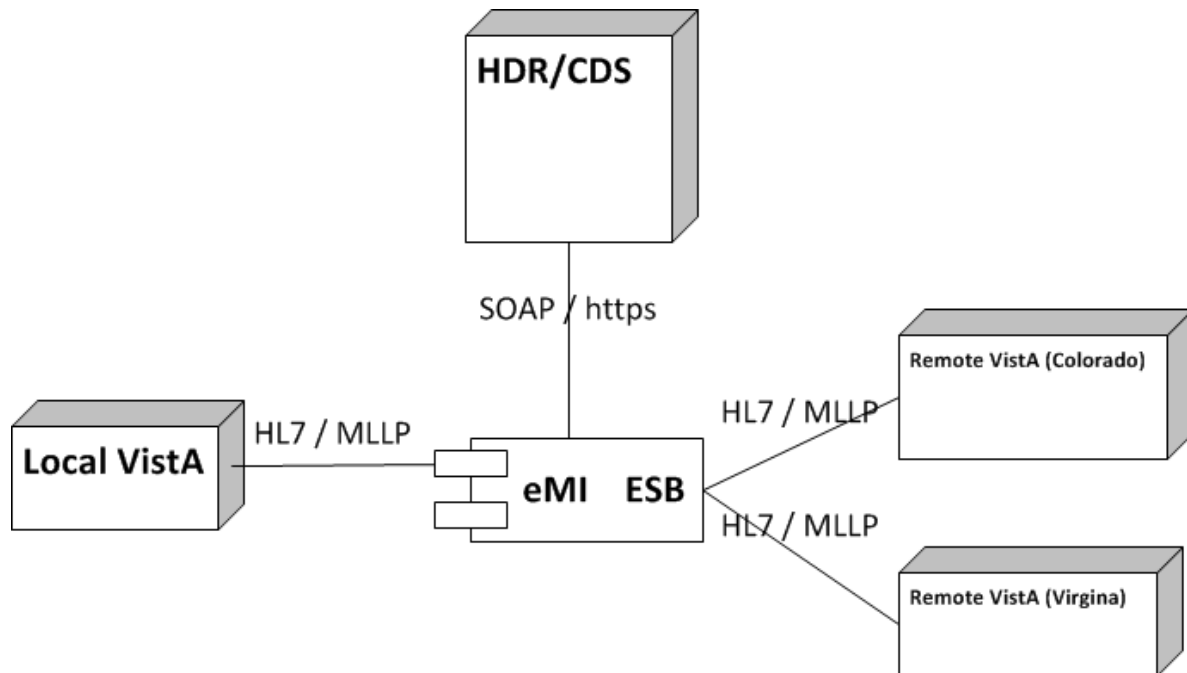


Figure 11: OneVA Pharmacy Components

3.3.1. System Criticality and High Availability

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

3.3.2. Special Technology

The OneVA Pharmacy engages the eMI-Middleware components and the HDR/CDS repository. They are:

- Integration Bus (IB) v9 – the ESB supplied by the VA
- HCP: Healthcare Connectivity Pack (HCP) – contains the HL7 API and other health-related software to run in the ESB, also supplied by VA
- Message Broker (MQ) – A message queue that will handle messages passed into the ESB, also supplied by VA

Table 5: Special Technology Requirements

Special Technology	Description	Notional Location	TRM Status
Integration Bus (IB) v9	IBM's ESB supplied by the VA	Application Server	Yes
HCP: Healthcare Connectivity Pack (HCP)	Supports HL7 data flows	Integrated into the ESB	Yes
Message Broker (MQ)	IBM's message queue that will handle messages passed into the ESB for reliable messaging	Application Server	Yes

3.3.3. 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 6: Technology Components Used

Technology Component	Location	Usage
Production 1		
Workstations	VA VistA Pharmacy	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		

3.3.4. Conceptual Infrastructure Diagram

3.3.4.1. Location of Environments and External Interfaces

The system shall use existing locations and existing VistA technology as noted in [Technology Components Used Table](#).

3.3.4.2. Conceptual Production String Diagram

The conceptual production string diagram showing 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 to retrieve the complete list of prescriptions active 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 and shown in the following figure.

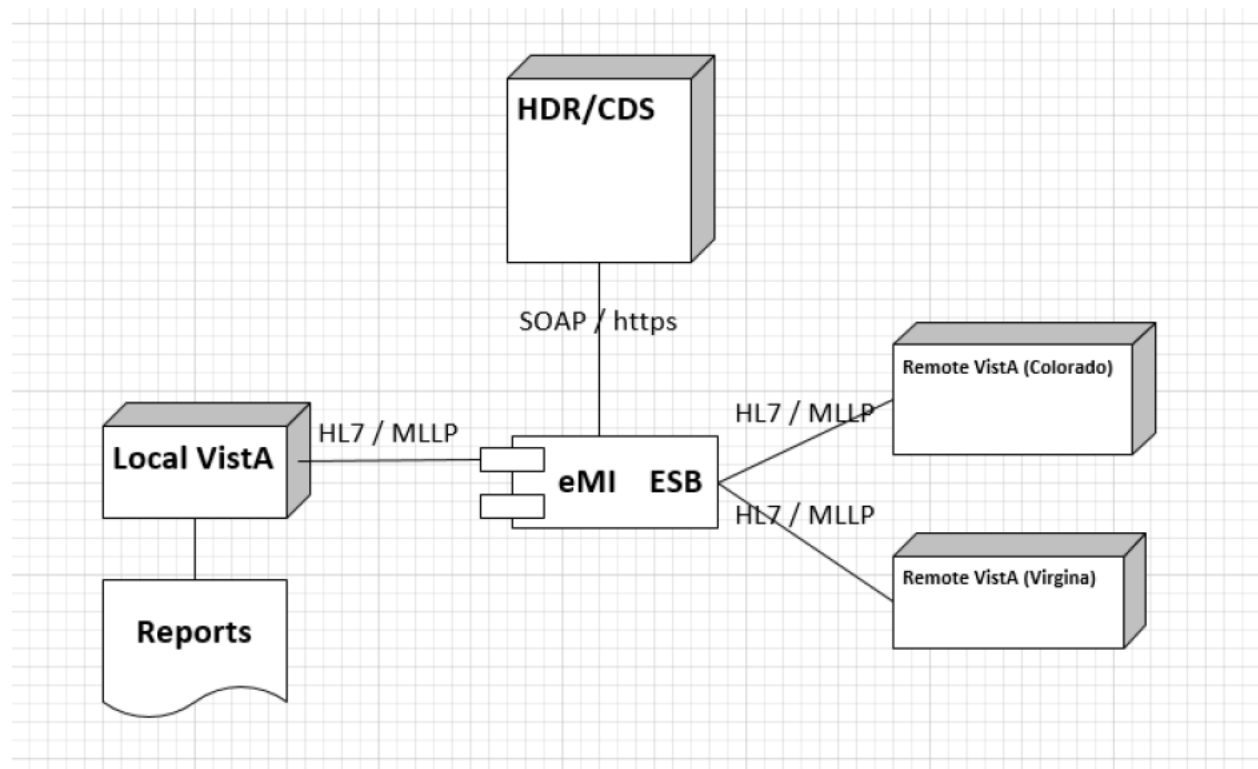


Figure 12: Conceptual Production String Diagram

4. System Architecture

4.1. Hardware Architecture

Not applicable.

4.2. Software Architecture

4.2.1. eMI ESB

The eMI ESB is responsible for message passing, routing and transformation. By utilizing several communication protocols and handling various message format, the eMI ESB is the backbone of the system. This system 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:

Table 7: MLLP HL7 Endpoint Messages

Message	Response	Description
QBP^Q13	RTB^K13	Query by parameter

Message	Response	Description
RDS^O13	RRD^O14	Pharmacy/Treatment Dispense Message

4.2.2. HDR/CDS Endpoint

The following image displays the HDR/CDS endpoint, the method, and parameters. The method being incorporate within the OneVA Pharmacy projects it the 'readClinicalDate1' method.

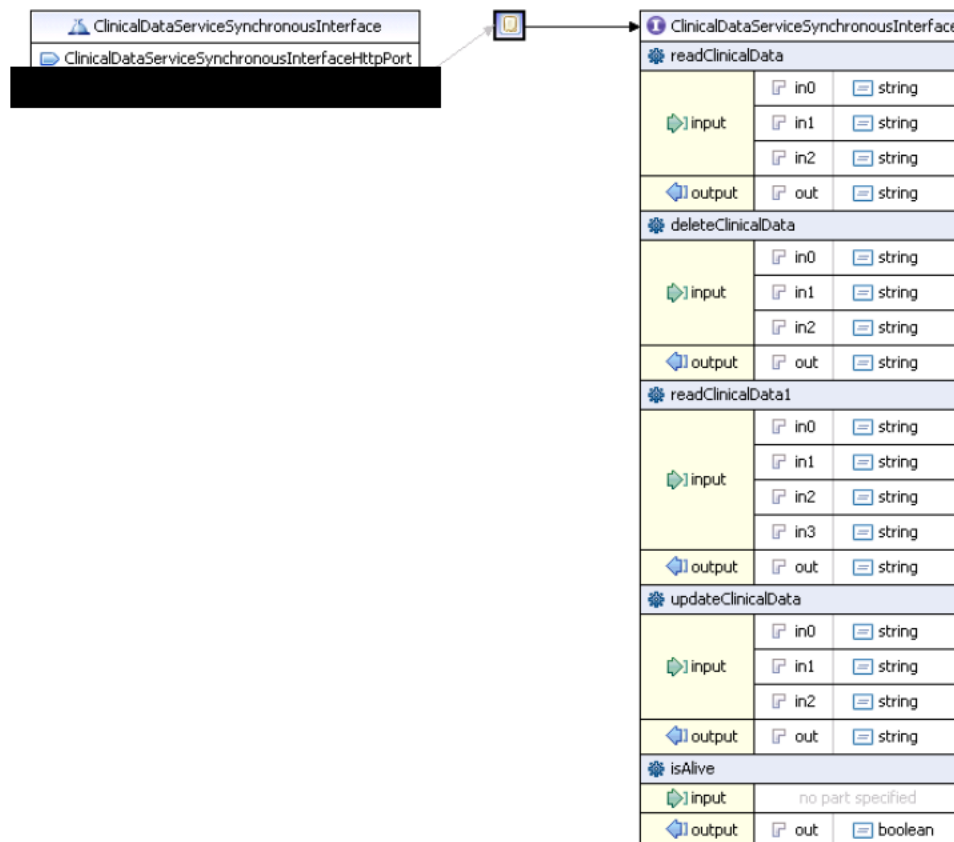


Figure 13: HDR/CDS Endpoint Diagram with Method Call and Parameters

The following image displays a template of the SOAP request and parameters.

```
<?xml version="1.0" encoding="UTF-8"?>
<soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/" xmlns:cli="http://schemas.xmlsoap.org/soap/envelope/">
  <soapenv:Header/>
  <soapenv:Body>
    <cli:readClinicalData1>
      <in0>PharmacyRead40010</in0>
      <in1>
        <![CDATA[
          <filter:filter xmlns:filter="Filter"
            xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
            vhimVersion="Vhim_4_00">
            <filterId>RX_SINGLE_PATIENT_ALL_DATA_FILTER</filterId>
            <patients>
              <NationalId>${patientIdcn}</NationalId>
            </patients>
            <entryPointFilter queryName="OutpatientMedicationPromiseQuery">
              <domainEntryPoint>OutpatientMedicationPromise</domainEntryPoint>
              <startDate>${startDate}</startDate>
              <endDate>${endDate}</endDate>
            </entryPointFilter>
          </filter:filter>
        ]]>
      </in1>
      <in2>RX_SINGLE_PATIENT_ALL_DATA_FILTER</in2>
      <in3>${requestId}</in3>
    </cli:readClinicalData1>
  </soapenv:Body>
</soapenv:Envelope>
```

Figure 14: Template of the SOAP Request

The following is a list of parameters and their meaning:

- in0 – Static parameter
- in1 – “Filter” request to the HDR/CDS in order to process the request
- in2 – Static parameter
- in3 – Client-supplied request id in order to correlate requests and response for potentially asynchronous calls

The ‘in1’ parameter is fairly complex. The HDR/CDS has many clients with changing needs for querying patient information. In order to supply a single interface, the HDR/CDS employs a “filter” mechanism for some parameters. OneVA pharmacy will access one patient’s medical record profile. The HDR/CDS responds with an array of OutpatientMedicationPromises.

Table 8: Variables and Description

Variable	Description
patientIdcn	National Patient ID that exists across all VistA systems
startDate	Beginning date in which to retrieve a patient’s records. All records are required, therefore the startDate is hard-coded to January 1 st , 1900
endDate	End date will always be the current date

Variable	Description
requestId	Client-supplied request id in order to correlate requests and responses for potentially asynchronous calls

The following diagram provides the response structure from the HDR/CDS.

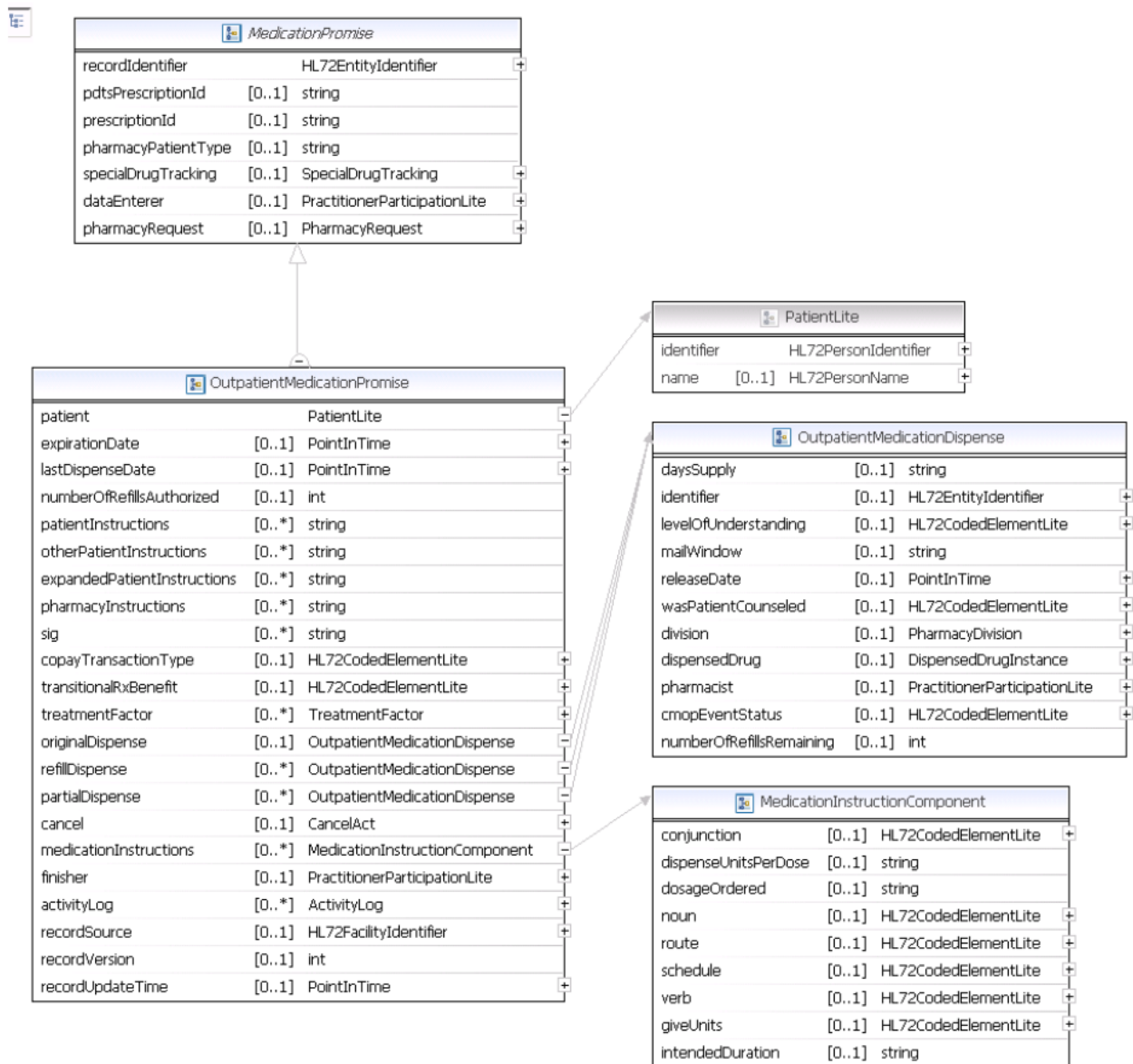


Figure 15: Diagram of the HDR/CDS Pharmacy.xsd's OutpatientMedicationPromise

The diagram of the HDR/CDS xsd is only portion of the entire structure, relevant to OneVA Pharmacy. The xsd utilizes the concepts of inheritance and data types. The array of objects returned from the HDR/CDS will be transformed into the RTB^K13 HL7 message that is returned to the calling VistA.

4.2.3. Sequence Diagrams – Use Cases

The next sections show the sequence of events among key entities when the Use Cases are being executed.

4.2.3.1. 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, the QBP^Q13 HL7 query message is sent to eMI. The 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 a RTB^K13 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 the VistA software.

The following image displays the sequent of events and message types for the View Orders Use Case.

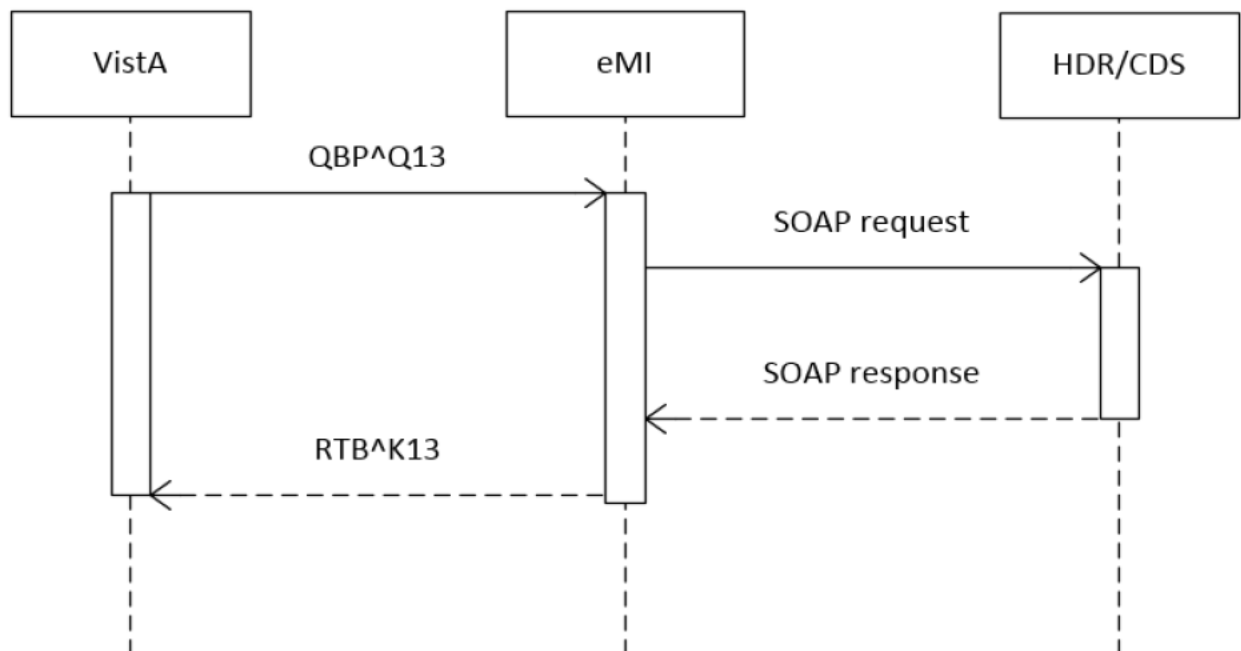


Figure 16: Sequence of Events and Message Types for View Orders Use Case

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

Table 9: View Order Use Case HL7 Messages

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

4.2.3.1.1. View Order Business Rules

The OneVA Pharmacy integration with the eMI will include the following business rules when processing the HDR/CDS response:

4.2.3.1.1.1. Filter Out Dispensing Site Prescriptions

Filter out any prescriptions where the site number is the same site number as the originating QBP^Q13 message (i.e. the calling Vista instance). The specific site number tags are as follows:

- Vista Site number: QBP^Q13 MSH segment 'Sending Facility' data element
- HDR/CDS Site number: OutpatientMedicationPromises.recordsource.namespaceID

4.2.3.1.1.2. Grouping and Sorting Medications

No grouping or sorting is needed in eMI; the calling Vista will change the order of the prescriptions as needed.

4.2.3.1.1.3. Filter Out Multiple Patients

Filter out multiple patient matches using the Integration Control Number (ICN) found in the PID segment of the HL7 QBP^Q13 message and compare with the 'patientID' variable on the National ID HDR/CDS data element.

The following image displays a SOAP template and highlights the code that harvests the patient Integration Control Number ICN from the QBP^Q13 HL7 v2.5 message and will be used in the OneVA Pharmacy process.



```
<soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/" xmlns:cli="http://www.w3.org/2001/XMLSchema-instance" >
  <soapenv:Header/>
  <soapenv:Body>
    <cli:readClinicalData1>
      <in0>PharmacyRead40010</in0>
      <in1>
        <![CDATA[
          <?xml version="1.0" encoding="UTF-8"?>
          <filter xmlns:filter="Filter"
            xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
            xsiVersion="Vhim_4_00">
            <filterId>RX_SINGLE_PATIENT_ALL_DATA_FILTER</filterId>
            <patients>
              <NationalId>${patientId}</NationalId>
            </patients>
            <entryPointFilter queryName="OutpatientMedicationPromiseQuery">
              <domainEntryPoint>OutpatientMedicationPromise</domainEntryPoint>
              <startDate>${startDate}</startDate>
              <endDate>${endDate}</endDate>
            </entryPointFilter>
          </filter>
        ]]>
      </in1>
      <in2>RX_SINGLE_PATIENT_ALL_DATA_FILTER</in2>
      <in3>${requestId}</in3>
    </cli:readClinicalData1>
  </soapenv:Body>
</soapenv:Envelope>
```

Figure 17: SOAP Template to make an HDR/CDR Request

The following table lists the SOAP variables and descriptions.

Table 10: PID ICN Variables and Descriptions

Variable	Variable Description
patientIcn	This is the national patient ID that exists across all VistA systems
startDate	The beginning date in which to retrieve a patient's records. Since all records are required, the startDate is hard-coded to January 1 st , 1900
endDate	The end date to use. It will always be the current date.
requestId	A client-supplied request id in order to correlate requests and responses for potentially asynchronous calls

If there are multiple patients found, error out the process and return the following response:

Multiple Patients Found

Response Type: RTB^K13

MSA-01: CA

MSA-03: [NOT PRESENT]

ERR-03: 204

ERR-04: I

ERR-05-1: [NOT PRESENT]

ERR-05-2: [NOT PRESENT]

ERR-08: MULTIPLE PATIENT MATCHES FOUND - CORRECT MVI

QAK-02: NF

4.2.3.1.1.4. Filter Based on Status

Include only prescriptions with the status of '**Suspended**', '**Active**', '**Hold**', '**Discontinued (within the past 120 days)**' or '**Expired (within the past 120 days)**'.

Table 3 contains the prescription status and the values in VistA and the HDR/CDS that should be used to filter.

Table 11: Status Code Cross-Reference Table VistA & HDR/CDS

VistA Status Description	VistA Status Description	HDR/CDS Status Code
Active	0	4500659
Hold	3	4500752
Suspended	5	4500913
Expired	11	4500725
Discontinued	12	4500704

VistA Status Description	VistA Status Description	HDR/CDS Status Code
Discontinued by Provider	14	4500706
Discontinued (EDIT)	15	4500705

4.2.3.1.1.4.1. Filter Expired Status on Expired Date

Include only 'Expired' status prescriptions only when the "OutpatientMedicationPromises.expirationDate.literal" is less than or equal to 120 days before the current system date.

4.2.3.1.1.4.2. Filter Discontinued Status on Cancel Date

Include only "Discontinued", "Discontinued by", or "Discontinued (EDIT)" status prescriptions only when the "OutpatientMedicationPromises.cancel.cancelDate.literal" is less than or equal to 120 days before the current system date.

4.2.3.1.1.5. Filter Out CHDR/DoD Prescriptions

The system shall filter out Clinical Data Health Care Repository/Department of Defense (CHDR/DoD) prescriptions that are available in the HDR/CDS repository for active dual patients. To do this, filter out any prescriptions where the excludeIdentifier.assigningAuthority is 'USDOD' *Figure 5* and *Figure 6* displays the exclude identifier below the National ID in the Patient Element.

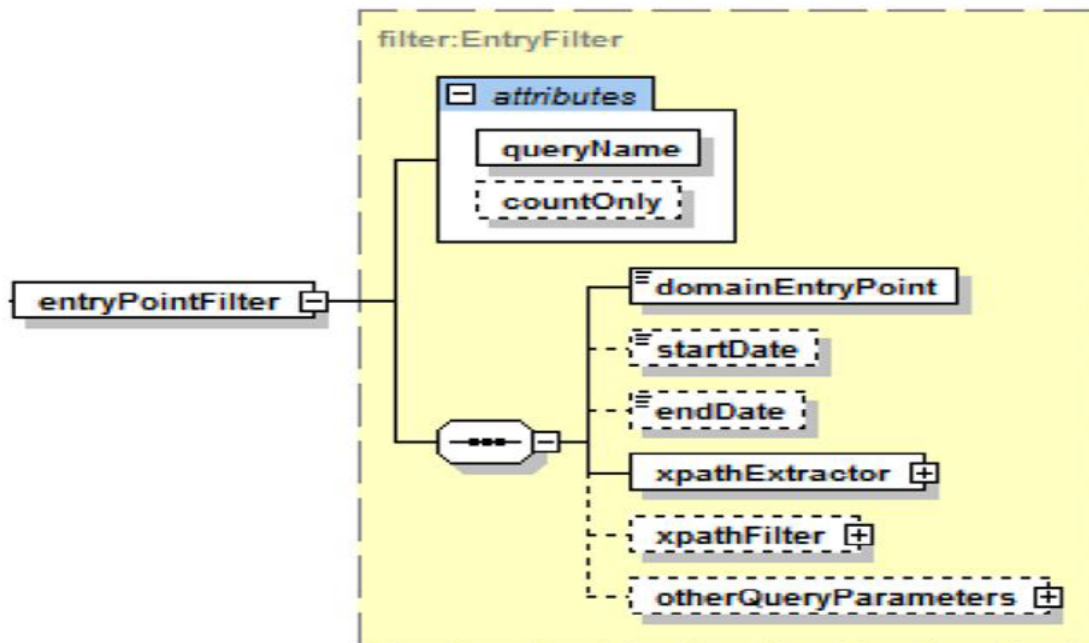


Figure 18: Exclude Identifier Entry Point

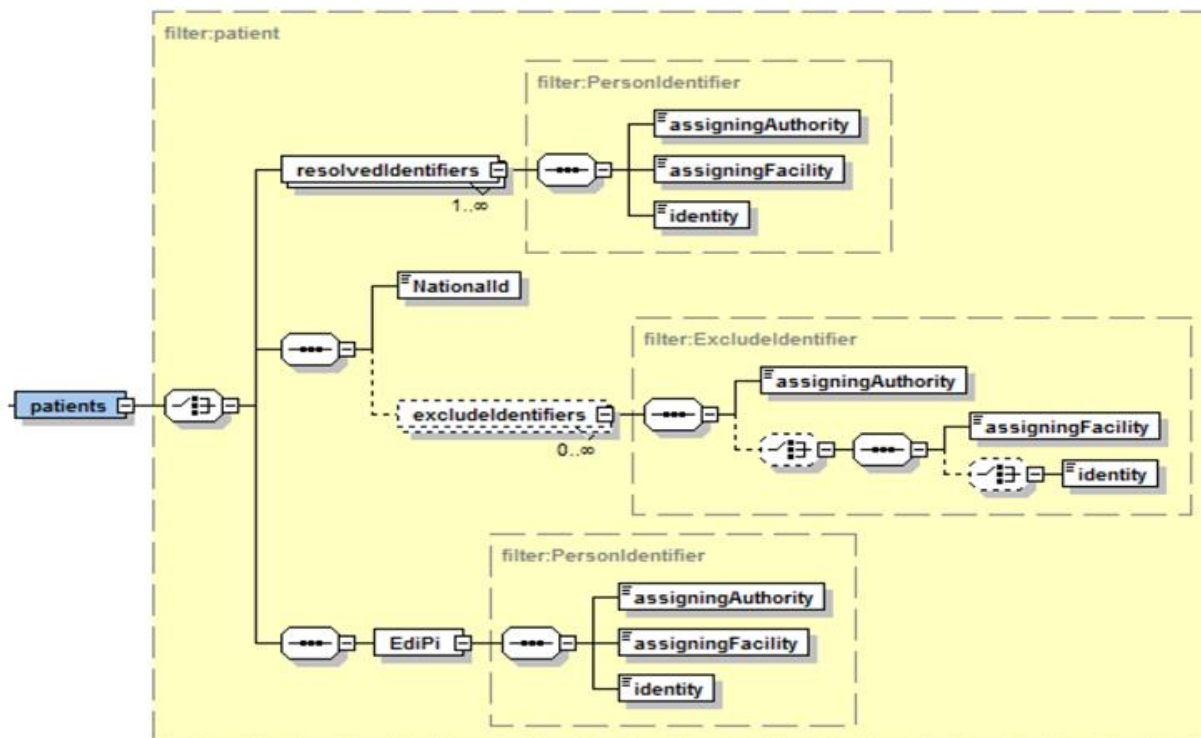


Figure 19: Exclude Identifier below the National ID in the Patient Element

4.2.3.1.2. QBP^Q13 Query by Parameter Request

The following is a sample of the QBP^Q13 request. The OneVA Pharmacy implementation ignores the 'RDF' and 'DSC' segment. Additionally, any segment not shown below is ignored.

SAMPLE QBP^Q13 REQUEST

MSH|^~\&|PSO VISTA PHARM|2101|PSO MIRTH PHARM|36500|20140102125951-0500||QBP^Q13|301|T|2.5.1|||NE|AL|USA

QPD|Q13^Active Prescriptions^HL70471|UniqueOrRandomNumber

PID^^^1234567890V403573V965518~~~USVHA&&HL70363~NI~VA FACILITY
ID&554&L|1XXXXXXXXXX~~~USSSA&&HL70363~SS~VA FACILITY
ID&554&L|7180529~~~USVHA&&HL70363~PI~VA FACILITY
ID&554&L|26870702~~~USVBA&&HL70363~PN~VA FACILITY
ID&554&L^LASTNAME~FIRSTNAME~J~L^MPIMMN~~~~~M^197500731^M^^^29
0 HAPPY RD~""~ESTES PARK~CO~80517-
8416~~P~""|991.04~~HAPPYCITY~MI~~~N^069^(000)000-
0000^""^M^29^XXXXXXXXX7^HAPPYCITY MI^""^

RCP|I

4.2.3.1.2.1. MSH Message Header Segment

The structure of the Message Header (MSH) Segment is found in the Appendix and can be accessed by following this [link](#)

4.2.3.1.2.2. QPD Query Parameter Definition Segment

The following is a sample segment:

QPD|Q13^Active Prescriptions^HL70471|UniqueOrRandomNumber"

Table 12: QPD Segment Query Parameter Definition

Field Seq	Field Name	HL7 Data Type	Description
1	Message Query Name	CE	Must be Q13^Active Prescriptions^HL70471
2	Query Tag	ST	Unique to each query message instance

4.2.3.1.2.3. PID Patient Identification Segment

The following is the sample of the Patient Identification (PID) segment:

PID^^^1234567890V403573V965518~~~USVHA&&HL70363~NI~VA FACILITY
ID&554&L|1XXXXXXXXX~~~USSSA&&HL70363~SS~VA FACILITY
ID&554&L|7180529~~~USVHA&&HL70363~PI~VA FACILITY
ID&554&L|26870702~~~USVBA&&HL70363~PN~VA FACILITY
ID&554&L^LASTNAME~FIRSTNAME~J~~~L^MPIMMN~~~~~M^197500731^M^^29
0 HAPPY RD~"~~~~~ESTES PARK~CO~80517-
8416~~~P~"~~~~~991.04~~~HAPPYCITY~MI~~~N^069^(000)000-
0000^"~~~~~M^29^^XXXXXXXXX7^HAPPYCITY MI^"~~~~~

Table 13 PID Segment Data Elements and Descriptions

Field Seq	Field Name	HL7 Data Type	Description
3	ICN	S1	Integration Control Number
5	LAST NAME	XPN	Last name of the patient
6	Site Number	CX	Site number of the originating VistA instance

4.2.3.1.2.4. RCP Response Control Parameter Segment

The following is a sample segment:

RCP|I

Table 14: RCP Response Control Parameter Segment

Field Seq	Field Name	HL7 Data Type	Description
1	Query Priority	ST	Must be “T” for Immediate
N			Ignored

4.2.3.1.3. RTB^K13 Prescription Query Service Response

The HL7 v2.x RBT^K13 message contains aggregated prescription information from the HDR/CDS repository. In the event of an exception, a negative response (NAK) is sent back with an acknowledgement code of AE or AR.

The following is a sample of the RTB^K13 response message.

SAMPLE RTB^K13 REQUEST

MSH|^~\&|ZJTH MIRTH PHARM|36500|ZJTH VISTA PHARM|2101|20140109155138.281-0500||RTB^K13^ACK|19|T|2.5.1

MSA|AA|50022643

QAK|512123456|OK|Q13^Active Prescriptions^HL70471|2

QPD|Q13^Active Prescriptions^HL70471|512123456


RDT|2302|501109|NAPROXEN 250MG

TAB|60|11|30|20150517.000000|20140516.000000|20150517.000000|20140516.000000|TAKE ONE TABLET BY MOUTH TWICE A DAY|NAPROXEN 250MG TAB Qty: 60 for 30 days|Active|399279439


RDT|2302|501110|RANITIDINE HCL 25MG EFFER

TAB|60|6|30|20150517.000000|20140516.000000|20150517.000000|20140516.000000|DISSOLVE 1 MOUTH TWICE A DAY|RANITIDINE HCL 25MG EFFER TAB Qty: 60 for 30 days|Active|499220379

4.2.3.1.3.1. MSH Message Header Segment

The structure of the Message Header (MSH) Segment is found in the Appendix and can be accessed by following this 

4.2.3.1.3.2. MSA Message Acknowledgement Segment

The structure of the Message Acknowledgement (MSH) Segment is found in the Appendix and can be accessed by following this 

4.2.3.1.3.3. QAK Query Acknowledgement Segment

The following is a sample segment:

QAK|512123456|OK|Q13^Active Prescriptions^HL70471|2

Table 15 QAK Query Acknowledgement Segment

Field Seq	Field Name	HL7 Data Type	Description
1	IQPD-02 of Input Message		
2	Query Status Code		OK – Data Found, No Errors NF – No Data Found, No Errors AE – Application Error AR – Application Reject
3	QPD-01 of Input Message		
4	Count of RDT segments in output		If no data found, provide NULL

4.2.3.1.3.4. QPD Segment Query Parameter Definition**Table 16: QPD Query Parameter Definition Segment**

Field Seq	Field Name	HL7 Data Type	Description
1	Message Query Name	CE	Must be Q13^Active Prescriptions^HL70471
2	Query Tag	ST	Unique to each query message instance

4.2.3.1.3.5. RDT Table Row Definition Segment

The OneVA Pharmacy integration with the eMI will include a transformation process. The HDR/CDS response is an array of OutpatientMedicationPromises objects. The following image shows a simulated SOAP response with two prescriptions. One OutpatientMedicationPromises is equal to one prescription.

```

<?xml version="1.0" encoding="UTF-8"?>
<!--Sample XML file generated by XMLSpy v2015 rel. 4 sp1 (x64) (http://www.altova.com)-->
<clinicaldata:ClinicalData xmlns:clinicaldata="Clinicaldata" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:schemaLocation="Clinicaldata PharmacyRead40010.xsd">
  <templateId>PharmacyRead40010</templateId>
  <requestId>String</requestId>
  <patient>
    <requestedNationalId>String</requestedNationalId>
    <requestedResolvedIdentifiers>
    <requestedResolvedIdentifiers>
    <requestedExcludedIdentifiers>
    <requestedExcludedIdentifiers>
    <resultantIdentifiers>
    <resultantIdentifiers>
    <outpatientMedicationPromises>
    <outpatientMedicationPromises>
  </patient>
</clinicaldata:ClinicalData>

```

Figure 20: Simulated HDR/CDS Response Displaying 2 RXs for one Patient

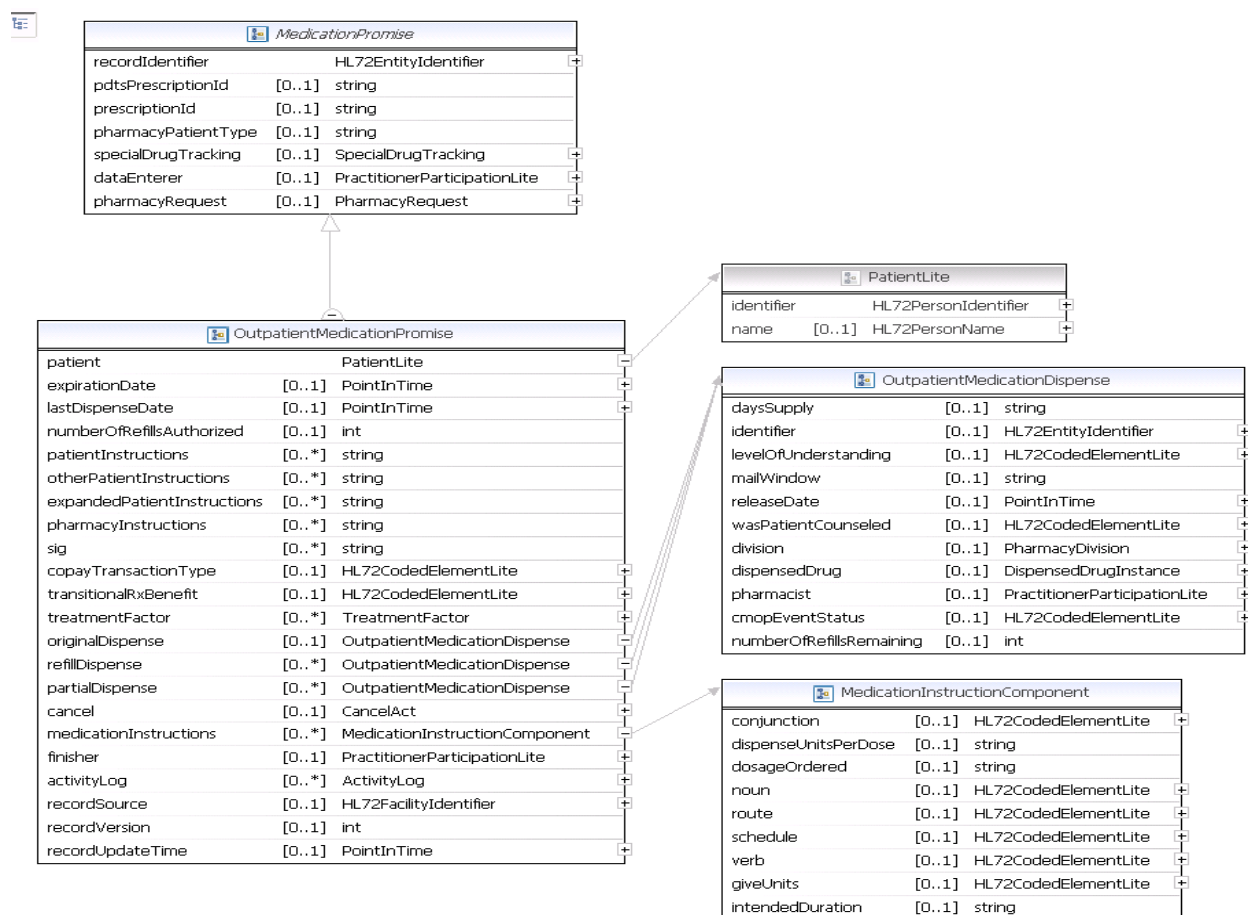


Figure 21: HDR/CDS Pharmacy.xsd for a Single OutpatientMedicationPromises

The following is a sample RTB^K13 HL7 message that is transformed from the HDR/CDS SOAP response:

RDT|2302|501109|NAPROXEN 250MG
TAB|60|11|30|20150517.000000|20140516.000000|20150517.000000|20140516.000000|TAKE
ONE TABLET BY MOUTH TWICE A DAY|NAPROXEN 250MG TAB Qty: 60 for 30
days|Active|399279439

The following table lists the HL7 data element number, element name, description, and the sample taken from the data listed above.

Table 17: HDR/CDS Data Elements and Description

Element	Name	Description	Sample
1	Site Number	Site Number of the facility where the veteran has or had a prescription	2302
2	Rx Number	The prescription number	501109
3	Drug Name (from the host site)	The name of the drug	NAPROXEN 250MG TAB
4	Quantity	The quantify of the prescription	60
5	Refills	The number of refills remaining	11
6	Days Supply	The number of days the prescription should be used	30
7	Expiration Date	The expiration date of the prescription	20150517.000000
8	Issue Date	The issue date of the prescription	20140516.000000
9	Stop Date	The end date for the prescription (same as expiration date)	20150517.000000
10	Last Fill Date	The last date the prescription was refilled	20140516.000000
11	Sig		TAKE ONE TABLET BY MOUTH TWICE A DAY
12	Detail		NAPROXEN 250MG TAB Qty: 60 for 30 days
13	Status	The status of the prescription	Active
14	VA Product ID	The VA ID of the drug	399279439
15	FQDN/Port	The fully qualified domain name of the host where the prescription originated and its port.	this.is.the.domain.gov:5000

The following table displays the OutpatientMedicationPromises.xsd and the data elements mapping to the RDT segment.

Table 18: OutpatientMedicationPromises Data Elements Mapping to the RDT Segment

Pharmacy.xsd	RDT Segment
OutpatientMedicationPromises.recordSource.namespaceID	Site Number
OutpatientMedicationPromises.prescriptionId	Rx Number
OutpatientMedicationPromises.pharmacyRequest.orderedMedication.medicationCode.displayText	Drug Name (from the host site)
OutpatientMedicationPromises.originalDispense.quantityDispensed.value	Quantity
OutpatientMedicationPromises.originalDispense.numberOfRefillsRemaining	Refills
OutpatientMedicationPromises.originalDispense.daysSupply	Days Supply
OutpatientMedicationPromises.expirationDate.literal	Expiration Date
OutpatientMedicationPromises. originalDispense.dispenseDate.literal	Issue Date
OutpatientMedicationPromises. expirationDate.literal	Stop Date
OutpatientMedicationPromises.lastDispenseDate.literal	Last Fill Date
OutpatientMedicationPromises.sig	Sig
OutpatientMedicationPromises.medicationInstructions (first instance only)	Detail
OutpatientMedicationPromises.pharmacyRequest.statusModifier.displayText	Status
OutpatientMedicationPromises.pharmacyRequest.orderedMedication.cmopDrugCode.code	VA Product ID
OutpatientMedicationPromises.recordSource.universalID	FQDN/5000 (where 5000 is the hard coded value for VistA production ports)

4.2.3.1.3.5.1. RDT: Site Number

The following image displays the path to obtain the OutpatientMedicationPromises.recordSource.namespaceID element which translates to the RDT segment data element: Site Number.

```
<recordSource>
  <namespaceId>552</namespaceId>
  <universalId>TEST.DAYTON.MED.VA.GOV</universalId>
  <universalIdType>DNS</universalIdType>
</recordSource>
```

Figure 22: OutpatientMedicationPromises.recordSource.namespaceID – RDT Segment: Site Number

4.2.3.1.3.5.2. RDT: Rx Number

The following image displays the path to obtain the OutpatientMedicationPromises.prescriptionId element which translates to the RDT segment data element: Rx Number.

```
<outpatientMedicationPromises>
  <recordIdentifier>
    <identity>4715155</identity>
    <namespaceId>552_52_.001</namespaceId>
  </recordIdentifier>
  <prescriptionId>2718340</prescriptionId>
  <pharmacyPatientType>ONSC</pharmacyPatientType>
```

Figure 23: OutpatientMedicationPromises.prescriptionsId – RDT Segment: Rx Number

4.2.3.1.3.5.3. RDT: Drug Name (from the Host site)

The following image displays the path to obtain the OutpatientMedicationPromises.pharmacyRequest.orderedMedication.medicationCode.displayText element which translates to the RDT segment data element: Drug Name (from the host site).

```
- <pharmacyRequest>
  - <orderedMedication>
    + <cmopDrugCode>
    - <medicationCode>
      <code>4006386</code>
      <displayText>NIACIN 250MG TAB</displayText>
```

Figure 24:
OutpatientMedicationPromises.pharmacyRequest.orderedMedication.medicationCode.displayText
– RDT Segment: Host Drug Name

4.2.3.1.3.5.4. RDT: Issue Date, Quantity, Days Supply, Refills

The following image displays the path to obtain the following mapping:

- OutpatientMedicationPromises.pharmacy.originalDispense.dispenseDate.literal element which translates to the RDT segment data element: Issue Date

- OutpatientMedicationPromises.originalDispense.dispenseDate.value which translates to the RDT segment data element: Quantity
- OutpatientMedicationPromises.originalDispense.daysSupply which translates to the RDT segment data element: Days Supply
- OutpatientMedicationPromises.originalDispense.numberOfRefillsRemaining which translates to the RDT segment data element: Refills

```

<originalDispense>
  <dispenseDate>
    <literal>20160315</literal>
  </dispenseDate>
  <fillDate>
    <literal>20160315</literal>
  </fillDate>
  <quantityDispensed>
    <value>30</value>
  </quantityDispensed>
  <currentProvider>
  <loginDate>
  <daysSupply>D30</daysSupply>
  <identifier>
    <identity>4715155</identity>
    <namespaceId>552_52_.001</namespaceId>
  </identifier>
  <mailWindow>WINDOW</mailWindow>
  <wasPatientCounseled>
  <division>
  <dispensedDrug>
  <numberOfRefillsRemaining>11</numberOfRefillsRemaining>
</originalDispense>

```

Figure 25: RDT Segment Data Elements: Issue Date, Quantity, Days Supply, and Refills

4.2.3.1.3.5.5. RDT: Sig

The following image displays the path to obtain the OutpatientMedicationPromises.sig element which translates to the RDT segment data element: Sig

```

<numberOfRefillsAuthorized>4</numberOfRefillsAuthorized>
<patientInstructions>xxx Patient Instructions xxx</patientInstructions>
<expandedPatientInstructions>XXX PATIENT INSTRUCTIONS XXX</expandedPatientInstructions>
<sig>TAKE ONE CAPSULE BY MOUTH TEST FOR 222 DAYS XXX PATIENT INSTRUCTIONS XXX</sig>

```

Figure 26: OutpatientMedicationPromises.sig – RDT Segment: Sig

4.2.3.1.3.5.6. RDT: Expiration Date, Stop Date, and Last Fill Date

The following image displays the path to obtain the following mapping:

- OutpatientMedicationPromises.expirationDate.literal element which translates to the RDT segment data element: Expiration Date

- OutpatientMedicationPromises.expirationDate.literal element which translates to the RDT segment data element: Stop Date
- OutpatientMedicationPromose.lastDispenseDate.literal which translates to the RDT segment data element: Last Fill Date

```

<expirationDate>
  <literal>20170304</literal>
</expirationDate>
<lastDispenseDate>
  <literal>20160304</literal>
</lastDispenseDate>
<numberOfRefillsAuthorized>4</numberOfRefillsAuthorized>

```

Figure 27: RDT Segment Data Elements: Expiration Date, Stop Date, and Last Fill Date

4.2.3.1.3.5.7. RDT: Status

The following image displays the path to obtain the OutpatientMedicationPromises.pharmacyRequest.statusModifier.displayText element which translates to the RDT segment data element: Status.

```

<pharmacyRequest>
  <orderedMedication>
    <genericRequestIdentifier>
    <orderLocationIdentifier>
    <orderedItem>
    <orderingInstitutionIdentifier>
    <orderDate>
      <literal>20160303</literal>
    </orderDate>
    <status>CM</status>
    <statusModifier>
      <code>4500659</code>
      <displayText>ACTIVE</displayText>
      <codingSystem>99VA_52_100</codingSystem>
    </statusModifier>
  </pharmacyRequest>
</patient>

```

Figure 28: OutpatientMedicationPromises.pharmacyRequest.statusModifier.displayText – RDT Segment: Status

4.2.3.1.3.5.8. RDT: Detail

The notation in the sample mapping is the normal Java notation for traversing complex objects in order to get to the specific data the object carries. The ‘DETAIL’ section of the message will consist of several parts of the ‘medicationInstructions’ object. The ‘medicationInstructions’ is a repeating element. Use the first instance only in building the ‘Detail’ field and ignore other instances.

The following image displays the structure of the ‘medicationInstructions’ component.

MedicationInstructionComponent			
conjunction	[0..1]	HL72CodedElementLite	+
dispenseUnitsPerDose	[0..1]	string	
dosageOrdered	[0..1]	string	
noun	[0..1]	HL72CodedElementLite	+
route	[0..1]	HL72CodedElementLite	+
schedule	[0..1]	HL72CodedElementLite	+
verb	[0..1]	HL72CodedElementLite	+
giveUnits	[0..1]	HL72CodedElementLite	+
intendedDuration	[0..1]	string	

Figure 29: MedicationInstructions Component

The following is an example of a ‘Detail’ data element in the RDT segment:

- TAKE 1 5MG CAPSULE BYMOUTH ONCE DAILY QTY: 20 for 222D

The following is an example of mapping the object into a single Java String:

- {drugName} {verb} {dispenseUnitsPerDose} {dosageOrdered} {noun} {route} {schedule} Qty: {giveUnits} for {intendedDuration}

The variables in the brackets show how the ‘MedicationInstructions’ component’s properties can be used to construct the Java String.

```

<medicationInstructions>
    <dispenseUnitsPerDose>1</dispenseUnitsPerDose>
    <dosageOrdered>5MG</dosageOrdered>
    <noun>
        <displayText>CAPSULE</displayText>
        <codingSystem>552_52.0113_3</codingSystem>
    </noun>
    <route>
        <code>161</code>
        <displayText>BY MOUTH</displayText>
        <codingSystem>552_52.0113_6</codingSystem>
    </route>
    <schedule>
        <displayText>ONCE DAILY</displayText>
        <codingSystem>552_52.0113_7</codingSystem>
    </schedule>
    <verb>
        <displayText>TAKE</displayText>
        <codingSystem>552_52.0113_8</codingSystem>
    </verb>
    <giveUnits>
        <code>20</code>
        <displayText>MG</displayText>
        <codingSystem>552_52_6</codingSystem>
    </giveUnits>
    <intendedDuration>222D</intendedDuration>
</medicationInstructions>

```

Figure 30: Sample of ‘medicationInstructions’ Format

4.2.3.1.3.5.9. RDT: VA Product ID

The RDT data element: VA Product ID is mapped using the ClinicalData/patient/outpatientMedicationPromises/pharmacyRequest/orderedMedication/cmop DrugCode/code.

4.2.3.1.3.5.10.

RDT: FQDN/Port

The RDT data element 'FQDN/Port' is the Fully Qualified Domain Name (FQDN) and port that is associated with the host where the prescription originated. The data element is mapped using the OutpatientMedicationPromises.recordSource.universalID/5000. The port for all VistA production sites will be 5000. The following figure is an example of XML output of a test performed on the Dayton Test VistA.

```
<recordSource>
  <namespaceId>552</namespaceId>
  <universalId>TEST.DAYTON.MED.VA.GOV</universalId>
  <universalIdType>DNS</universalIdType>
</recordSource>
```

Figure 31: HDR/CDS SOAP Response which contains the FQDN in the <universalId> tag

4.2.3.2. Dispense Order from Another VA Pharmacy Location Message Flow

When a Pharmacist selects a prescription from the Medication Profile screen from a dispensing VistA instance, the RDS^O13 HL7 'Pharmacy/Treatment Dispense' message is sent to the eMI. The eMI will receive the request, determine the destination facility, then forward the message to the host VistA instance. The host VistA instance will process the message and return a response message containing the prescription label. eMI will route the message back to the dispensing VistA, displaying the completion of the transaction to the Pharmacist on the screen.

The following image displays the sequence of events and message types for the Dispense Order from Another VA Pharmacy Location Use Case.

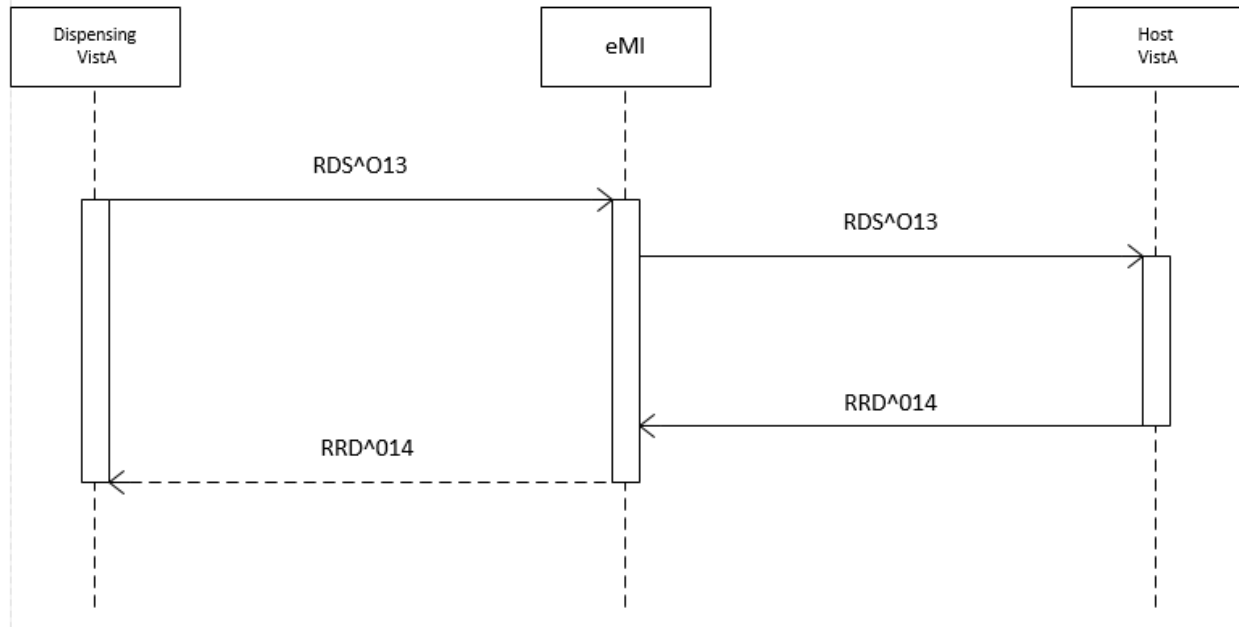


Figure 32: Sequence Diagram of Dispensing Medications & Updating the Host VistA Instance

4.2.3.2.1. RDS^O13 Pharmacy/Treatment Dispense Message Request

The 'RDS^O13' is a pass through message that requires no transformation by eMI. The following are sample refill and partial refill 'RDS^O13' messages. The message can either be for a 'Refill'

or 'Partial Fill' request. For a 'Partial Fill' request, the NTE segment will exist; it will not be there for a 'Refill' request.

SAMPLE RDS^O13 REFILL REQUEST

MSH|^~\&|PSO VISTA PHARM|2201|PSO ESB PHARM|36500|20140415110833-0500||RDS^O13|50024242|T|2.5.1||NE|AL|USA

PID^^^^1234567890V403573V965518~~~USVHA&&HL70363~NI~VA FACILITY
ID&554&L|1XXXXXXXX~USSSA&&HL70363~SS~VA FACILITY
ID&554&L|7180529~~~USVHA&&HL70363~PI~VA FACILITY
ID&554&L|26870702~~~USVBA&&HL70363~PN~VA FACILITY
ID&554&L^LASTNAME~FIRSTNAME~J~~~~L^MPIMMN~~~~~M^197500731^M^^^29
0 HAPPY RD~""~ESTES PARK~CO~80517-
8416~P~""|991.04~HAPPYCITY~MI~N^069^(000)000-
0000^""~M^29^XXXXXXXX7^^^HAPPYCITY MI^^^^^^^^^^

ORC^RF^2297777~575[REDACTED]~~~~~20160505^520736435~LASTNAME~FIRSTNAME~554^

RXO|||||W^^^2201

SAMPLE RDS^O13 PARTIAL FILL REQUEST

MSH|^~\&|PSO VISTA PHARM|2201|PSO ESB PHARM|36500|20140716081903-0500||RDS^O13|50030627|T|2.5.1||NE|AL|USA

PID^^^^1234567890V403573V965518~~~USVHA&&HL70363~NI~VA FACILITY
ID&554&L|1XXXXXXXX~USSSA&&HL70363~SS~VA FACILITY
ID&554&L|7180529~~~USVHA&&HL70363~PI~VA FACILITY
ID&554&L|26870702~~~USVBA&&HL70363~PN~VA FACILITY
ID&554&L^LASTNAME~FIRSTNAME~J~~~~L^MPIMMN~~~~~M^197500731^M^^^29
0 HAPPY RD~""~ESTES PARK~CO~80517-
8416~P~""|991.04~HAPPYCITY~MI~N^069^(000)000-
0000^""~M^29^XXXXXXXX7^^^HAPPYCITY MI^^^^^^^^^^

ORC^RF^2297777~575[REDACTED]~~~~~20160505^520736435~LASTNAME~FIRSTNAME~554^

RXO|1|10|||||W^^^500|||10

NTE|1|L|test

The following table displays the HL7 messages that flow in and out of the eMI.

Table 19: Dispense Order from Another VA Pharmacy Location HL7 Messages

Message	Response	Description
RDS^O13	RRD^O14	Pharmacy/Treatment Dispense Message/Label Data

4.2.3.2.1.1. MSH Message Header Segment

The structure of the Message Header (MSH) Segment is found in the Appendix and can be accessed by following this [REDACTED]

4.2.3.2.1.2. PID Patient Identification Segment

The following is the sample of the Patient Identification (PID) segment:

```
PID^^^1234567890V403573V965518~~~USVHA&&HL70363~NI~VA FACILITY
ID&554&L|1XXXXXXXXX~~~USSSA&&HL70363~SS~VA FACILITY
ID&554&L|7180529~~~USVHA&&HL70363~PI~VA FACILITY
ID&554&L|26870702~~~USVBA&&HL70363~PN~VA FACILITY
ID&554&L^^LASTNAME~FIRSTNAME~J~~~~L^MPIMMN~~~~~M^197500731^M^^^29
0 HAPPY RD~"~~~~~ESTES PARK~CO~80517-
8416~~P~"~~~~|991.04~~HAPPYCITY~MI~~~N^069^(000)000-
0000^"~~~~~M^29^XXXXXXXXX7^^^^HAPPYCITY MI^^^^^^^^^^^^^^^^^^
```

Table 20: PID Segment Data Elements and Descriptions

Field Seq	Field Name	HL7 Data Type	Description
3	ICN	S1	Integration Control Number
5	LAST NAME	XPN	Last name of the patient
6	Site Number	CX	Site number of the originating VistA instance

4.2.3.2.1.3. ORC Common Order Segment

The following is a sample segment:

```
ORC^RF^2297777~575~[REDACTED]^^^^^^20160505^520736435~LASTNAME~FIRSTNAME~"~~~~~554^
```

The 'Placer Order Number' field is a combination of the following: HOST RX NUM~HOST FACILITY NUMBER~HOST FACILITY FQDN and should be used to determine the VistA destination to which this HL7 message is being directed. The OneVA Pharmacy process is such that a Pharmacist can select a prescription originating from any of the other VA Pharmacy locations. The prescription's FQDN is being harvested from the original HL7 RTB^K13 message and stored internally. When the Pharmacist selects the specific prescription, the MUMPS routines cannot dynamically pull the FQDN and update the MSH segment therefore the destination routing information is being made available within the 'Placer Order Number' field. Port 5000 should be assumed for all VistA production instances for routing purposes.

Represents an HL7 ORC message segment (Common Order). This segment has the following fields:

Table 21: ORC Query Parameter Definition Segment

Field Seq	Field Name	HL7 Data Type	Description
1	Order Control	ID	RF – Refill order request PF – Partial fill order request (Note: This is not an HL7 standard code) 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
2	Placer Order Number	EI	The originating order prescription number; the Host Site number; Host FQDN
3			Ignored
4			Ignored
5			Ignored
6			Ignored
7			Ignored
8			Ignored
9	Date/Time Trans	TS	Date/Time of request
10			Ignored
11			Ignored
12			Ignored
13	Enterer’s Location	PL	Provides Pharmacist’s Site Number
14	Call Back Phone Nbr	XTN	Provides Pharmacist’s Call Back Phone Number

4.2.3.2.1.4. RXO Pharmacy/Treatment Prescription Order Segment

The following is a sample segment:

RXO|1|10|||||W^^^500|||10

Represents an HL7 RXO message segment (Pharmacy/Treatment Order). This segment has the following fields:

Table 22: RXO Pharmacy/Treatment Prescription Order Segment

Field Seq	Field Name	HL7 Data Type	Description
1			Ignored
2			Ignored
3			Ignored
4			Ignored
5			Ignored
6			Ignored
7			Ignored
8	Deliver-to Location	LA1	Provides (W)indow, (M)ail , and requesting site number

4.2.3.2.1.5. NTE Notes and Comments Segment

The Notes and Comments (NTE) segment will be present if the request is for a ‘Partial Fill’ request. The following is a sample segment:

NTE|1|L|test

Table 23: NTE Notes and Comments Segment

Field Seq	Field Name	HL7 Data Type	Description
1	Set ID – NTE	SI	Optional
2	Source of Comment	ID	Optional
3	Comment	FT	Optional Repeating
4	Comment Type	CE	Optional

4.2.3.2.1.6. ERR Error Segment

An Error (ERR) segment will be sent out when MSA.1 acknowledgement code is AR or AE

4.2.3.2.2. RRD^O14 Prescription Refill/Partial Services Response

The ‘RRD^O14’ message is the response to the ‘RDS^O13’ message. The NTE segment is expected to filled with the necessary information for the dispensing facility to print out the label.

The following are sample refill and partial refill 'RDS^O14' messages.

SAMPLE RRD^O14 REFILL RESPONSE

MSH|^~\&|PSO ESB PHARM|36500|PSO VISTA PHARM|2302|20140723091250.151-0400||RRD^O14^ACK|12173|T|2.5.1

MSA|AR|50024459

NTE|1||ONE TAKE MOUTH TAKE|Medication Instructions

NTE|3||May cause drowsiness. Alcohol may intensify this effect. Use care when operating a car or dangerous machines.\.sp\May cause dizziness\.\sp\It is very important that you take or use this exactly as directed. Do not skip doses or discontinue unless directed by your doctor.|Drug Warning Narrative

PID^^^1234567890V403573V965518~~~USVHA&&HL70363~NI~VA FACILITY
ID&554&L|1XXXXXXXXXX~~~USSSA&&HL70363~SS~VA FACILITY
ID&554&L|7180529~~~USVHA&&HL70363~PI~VA FACILITY
ID&554&L|26870702~~~USVBA&&HL70363~PN~VA FACILITY
ID&554&L^^LASTNAME~FIRSTNAME~J~~~~L^MPIMMN~~~~~M^197500731^M^^^29
0 HAPPY RD~""""~ESTES PARK~CO~80517-
8416~~P~""""|991.04~~HAPPCITY~MI~~~N^069^(000)000-
0000^""""^M^29^XXXXXXXXX7^^^HAPPCITY MI^^^^^^""""^

ORC^RF^2297777~575~[REDACTED]^^^^^^20160505^520736435~LASTNAME~FIRSTNAME~^^^~~~554^

SAMPLE RRD^O14 PARTIAL FILL RESPONSE

MSH|^~\&|PSO ESB PHARM|36500|PSO VISTA PHARM|2201|20140716081939.298-0400||ACK^O13^ACK|10412|T|2.5.1

MSA|AA|50030627

NTE|1||Partial complete for RX #501145.

NTE|1||ONE TAKE MOUTH TAKE|Medication Instructions

NTE|3||May cause drowsiness. Alcohol may intensify this effect. Use care when operating a car or dangerous machines.\.sp\May cause dizziness\.\sp\It is very important that you take or use this exactly as directed. Do not skip doses or discontinue unless directed by your doctor.|Drug Warning Narrative

PID^^^1234567890V403573V965518~~~USVHA&&HL70363~NI~VA FACILITY
ID&554&L|1XXXXXXXXXX~~~USSSA&&HL70363~SS~VA FACILITY
ID&554&L|7180529~~~USVHA&&HL70363~PI~VA FACILITY
ID&554&L|26870702~~~USVBA&&HL70363~PN~VA FACILITY
ID&554&L^^LASTNAME~FIRSTNAME~J~~~~L^MPIMMN~~~~~M^197500731^M^^^29
0 HAPPY RD~""""~ESTES PARK~CO~80517-
8416~~P~""""|991.04~~HAPPCITY~MI~~~N^069^(000)000-
0000^""""^M^29^XXXXXXXXX7^^^HAPPCITY MI^^^^^^""""^

ORC^RF^2297777~575~[REDACTED]^^^^^^20160505^520736435~LASTNAME~FIRSTNAME~^^^~~~554^

RXD|1|^NAPROXEN 125MG/5ML SUSP^NDC|20140710000000-0400|10||404366::1||^RADIOLOGIST^ONE^^^^^^^^^^^^^^2&VEHU
SITE^^^20140717162300-0400||10

4.2.3.2.2.1. MSH Message Header Segment

The structure of the Message Header (MSH) Segment is found in the Appendix and can be accessed by following this [link](#)

4.2.3.2.2.2. MSA Message Acknowledgement Segment

The structure of the Message Acknowledgement (MSH) Segment is found in the Appendix and can be accessed by following this [link](#)

4.2.3.2.2.3. ORC Common Order Segment

Table 24: ORC Query Parameter Definition Segment

Field Seq	Field Name	HL7 Data Type	Description
1	Order Control	ID	RF – Refill order request PF – Partial fill order request (Note: This is not an HL7 standard code) 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
2	Placer Order Number	EI	The originating order prescription number
3			Ignored
4			Ignored
5			Ignored
6			Ignored
7			Ignored
8			Ignored
9	Date/Time Trans	TS	Date/Time of request
10			Ignored
11			Ignored

Field Seq	Field Name	HL7 Data Type	Description
12			Ignored
13	Enterer's Location	PL	Provides Pharmacist's Site Number
14	Call Back Phone Nbr	XTN	Provides Pharmacist's Call Back Phone Number

4.2.3.2.2.4. NTE Notes and Comments Segment

The Notes and Comments (NTE) segment will be present if the request is for a 'Partial Fill' request.

Table 25: NTE Notes and Comments Segment

Field Seq	Field Name	HL7 Data Type	Description
1	Set ID – NTE	SI	Optional
2	Source of Comment	ID	Optional
3	Comment	FT	Optional Repeating
4	Comment Type	CE	Optional

4.2.3.2.2.5. RXD Pharmacy/Treatment Dispense Segment

Table 26: ORC Query Parameter Definition Segment

Field Seq	Field Name	HL7 Data Type	Description
1			Ignored
2	Dispense/Give Control	CE	National Drug Code (NDC)
3	Date/Time Dispensed	TS	
4	Actual Dispense Units	CE	
5			Ignored
6			Ignored

Field Seq	Field Name	HL7 Data Type	Description
7	Prescription Number	ST	Format: PSOIEN::REFIEN
8	Number of Refills Remaining	NM	
9			Ignored
10	Dispensing Provider	XCN	
11			Ignored
12	Total Daily Dose	CQ	Days Supply

4.2.3.2.2.6. ERR Error Segment

An Error (ERR) segment will be sent out when MSA.1 acknowledgement code is AR or AE.

4.2.4. Design Rationale

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

4.2.5. HL7 Protocol

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

4.3. Network Architecture

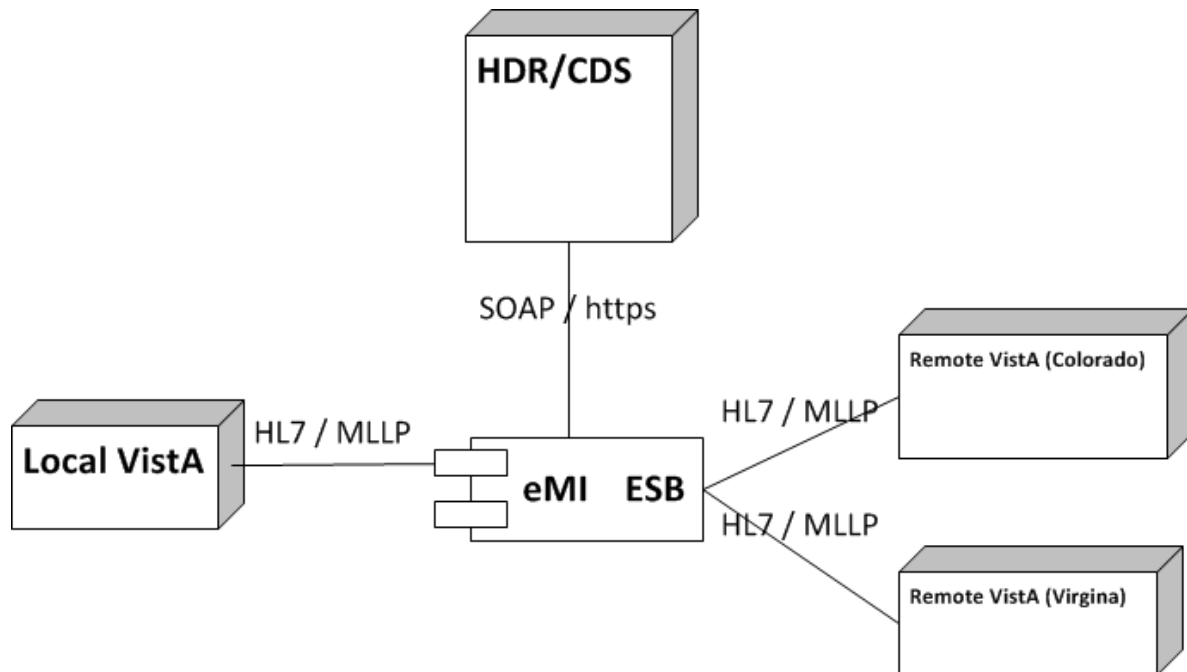


Figure 33: Network Architecture

4.4. Service Oriented Architecture / ESS

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

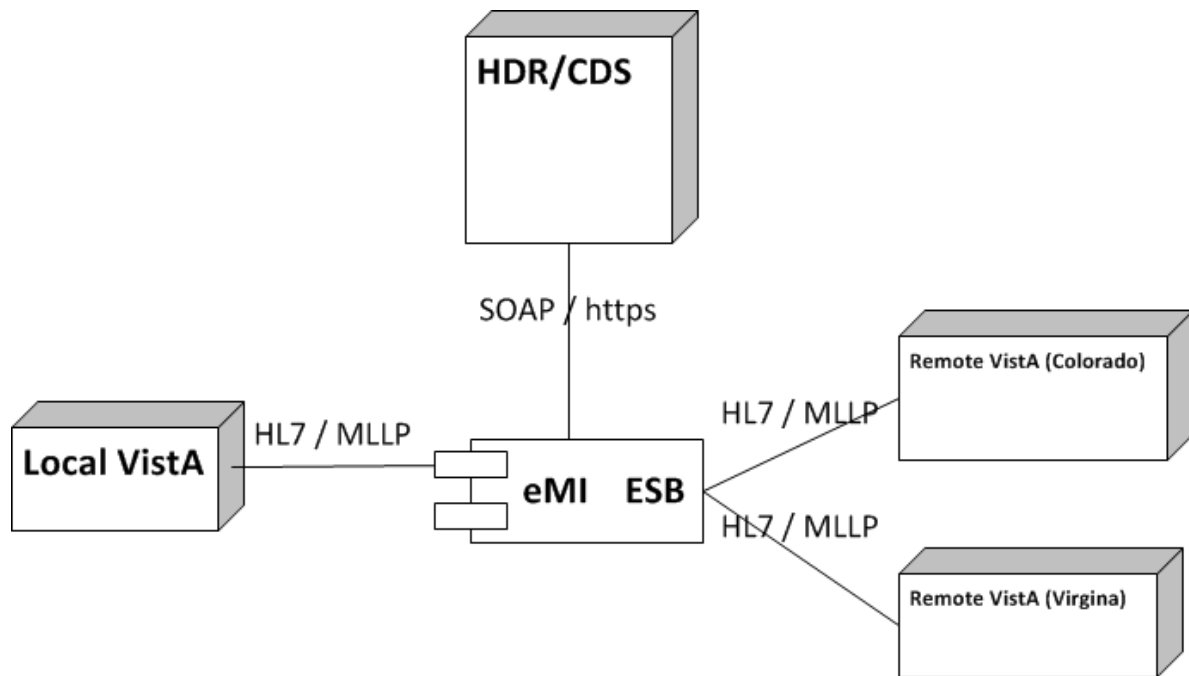


Figure 34: VistA and eMI ESB Integration

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 remote VistAs.
- eMI ESB is the messaging component to handle MLLP HL7 endpoints and the HDR/CDS.

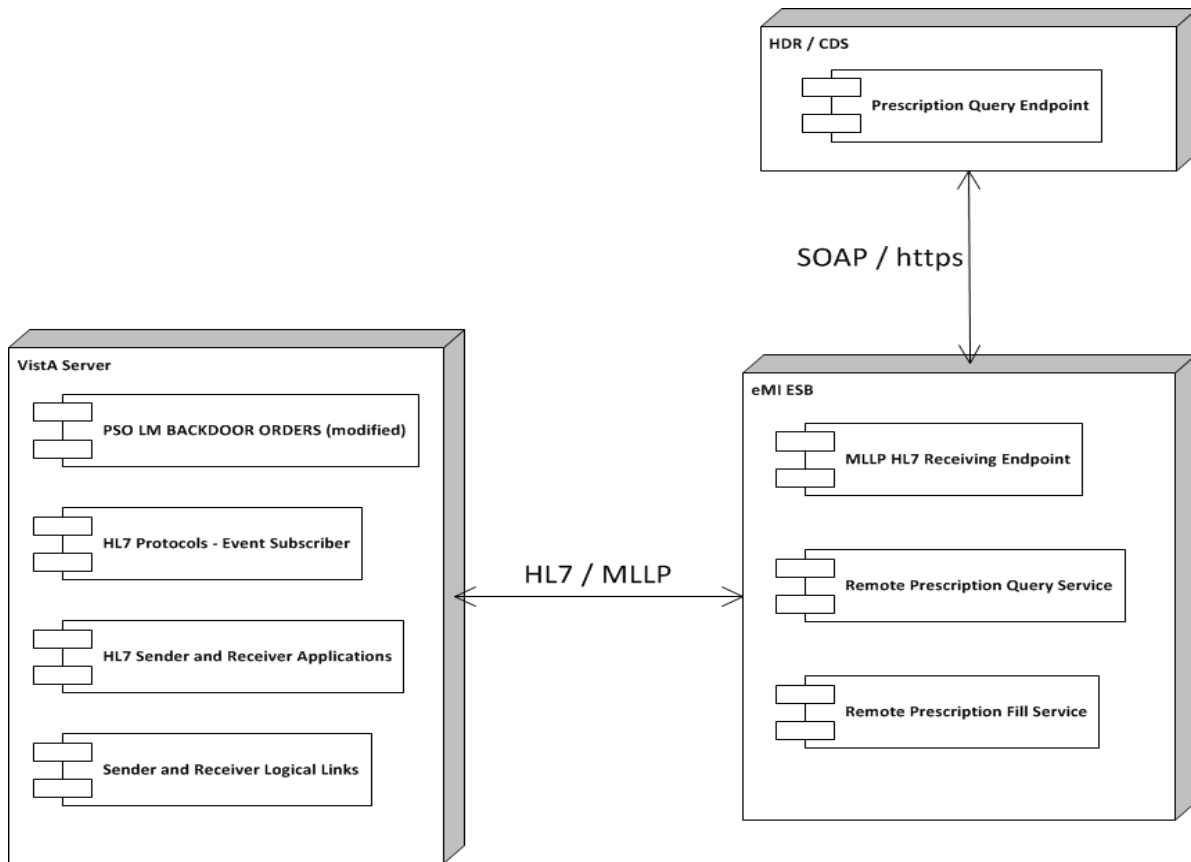


Figure 35: HL7/MLLP and SOAP/https Integration

4.5. Enterprise Architecture

The Enterprise Architecture of OneVA Pharmacy consists of three main components. They are:

1. VistA
2. eMI ESB (for communication)
3. HDR/CDS Repository

To use an example to explain the architecture, a Pharmacist at one VA facility will use VistA to display all the prescriptions for a Veteran that originated at another VA facility. In order to display all of the active prescriptions the HDR/CDS will be used to accumulate all prescriptions. The local 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 service endpoint. The SOAP response from the HDR/CDS is transformed into an RTB^K13 HL7 message and sent as a response to the calling VistA instance. The VistA instance will display the entire prescription record for the user. Once the Pharmacist selects a prescription from a remote VistA to refill a prescription, another message is generated and sent to the eMI ESB. The eMI ESB will detect that the message is a prescription fill request and then route the message to the destination VistA. The remote VistA instance receives the message on its logical link and performs the necessary decrement to the patient's prescription refill allotment without affecting the remote facilities inventory.

5. Data Design

5.1. DBMS Files

5.1.1. 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 is the site that performed the remote refill action.
92	Remote Pharmacist	N/A	N/A	This is the name of the remote pharmacist that performed the refill action.
93	Remote Pharmacist Phone	N/A	N/A	This is the phone number for the pharmacist that performed the refill action.

5.1.2. 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 is the site that performed the remote partial fill action.
92	Remote Pharmacist	N/A	N/A	This is 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.

5.1.3. 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 fill was executed by another VA Pharmacy other than the host site.

Field Number	Field Name	Pointers	Cross References and Record Indices	Description
.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 is 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 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 is the drug that was used locally for the 'host' refill or partial fill.
1.2	TOTAL REFILL/PAR	N/A	N/A	This is the total cost for the 'host'/filling facility. The cost

Field Number	Field Name	Pointers	Cross References and Record Indices	Description
	TIAL FILL 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.

5.2. Non-DBMS Files

Not applicable.

5.3. Data View

Not applicable.

6. Detailed Design

6.1. Hardware Detailed Design

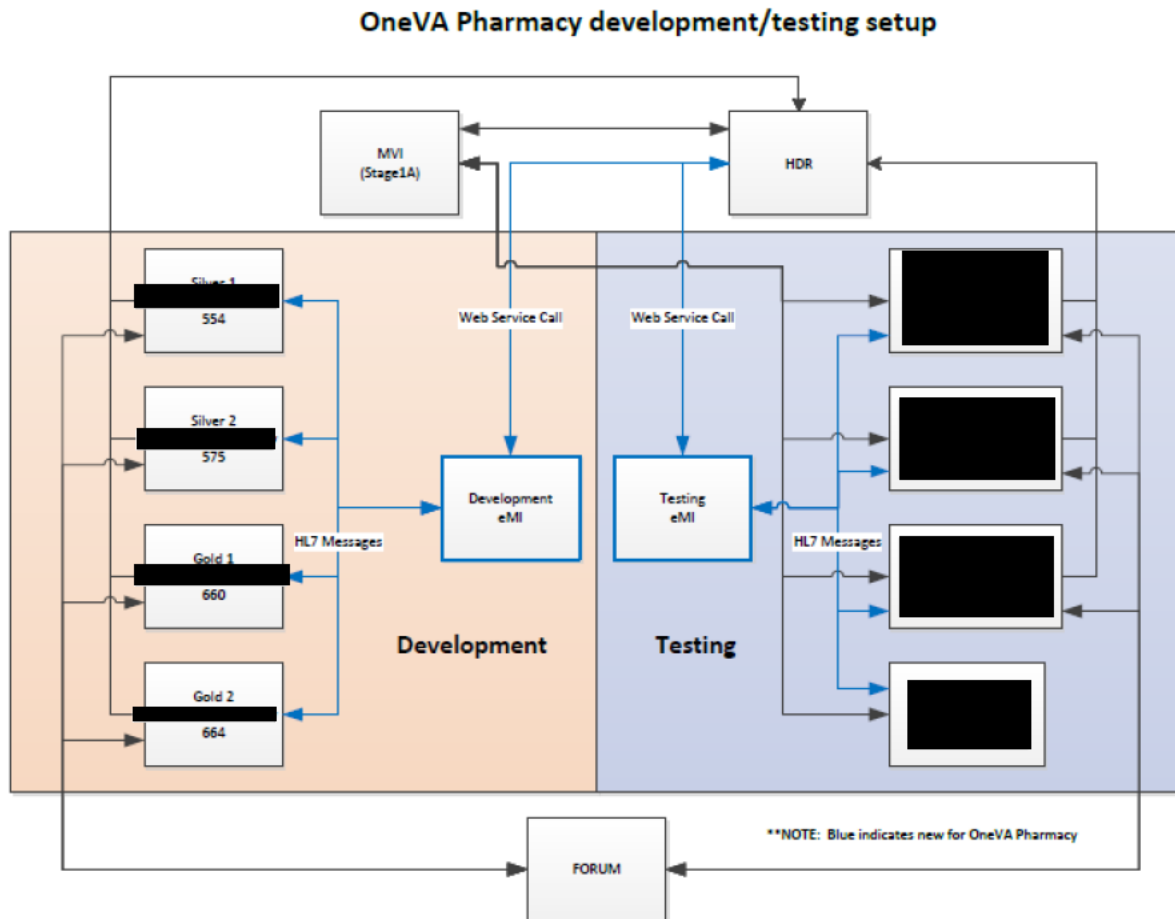


Figure 36: Hardware Detailed Design

6.2. Software Detailed Design

6.2.1. Conceptual Design

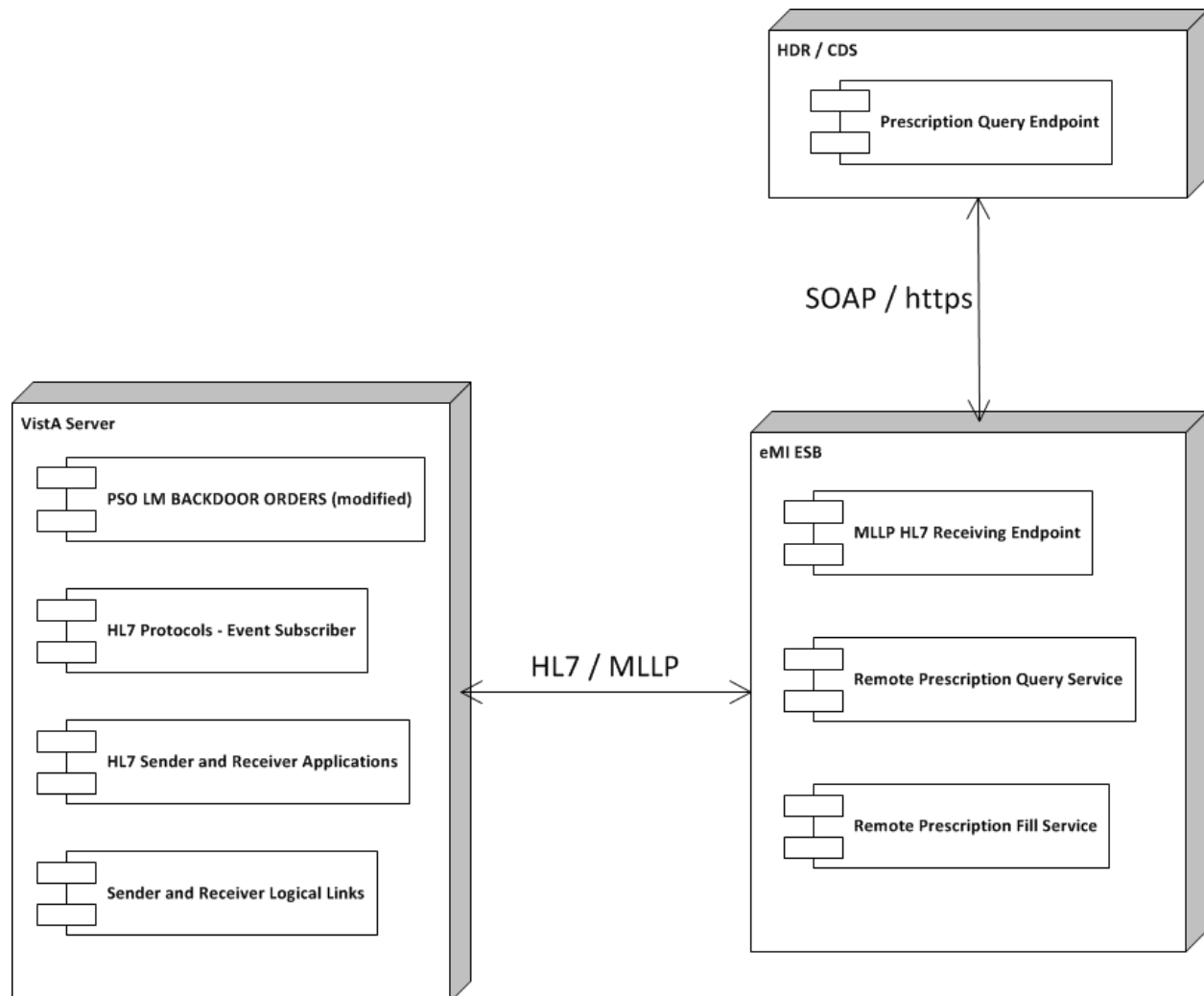


Figure 37: Conceptual Design

6.2.1.1. 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 PSOR OneVA Pharmacy Prescription Report [PSO REMOTE RX REPORT] to access the new OneVA Pharmacy reports.

6.2.1.1.1. 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 PSOR OneVA Pharmacy Prescription Report [PSO REMOTE RX REPORT] to access the new OneVA Pharmacy reports.

6.2.1.1.2. Hardware Interfaces

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

6.2.1.1.3. Software Interfaces

The OneVA Pharmacy software will use new communication with the eMI ESB to access the HDR/CDS repository to allow the Pharmacist to pull and display all of the prescriptions related to the patient. In addition, the software will incorporate HL7 messages using the eMI ESB communication for VistA to VistA in order to decrement the remaining balance and update the last fill date on the host VistA instance.

6.2.1.1.4. Communications Interfaces

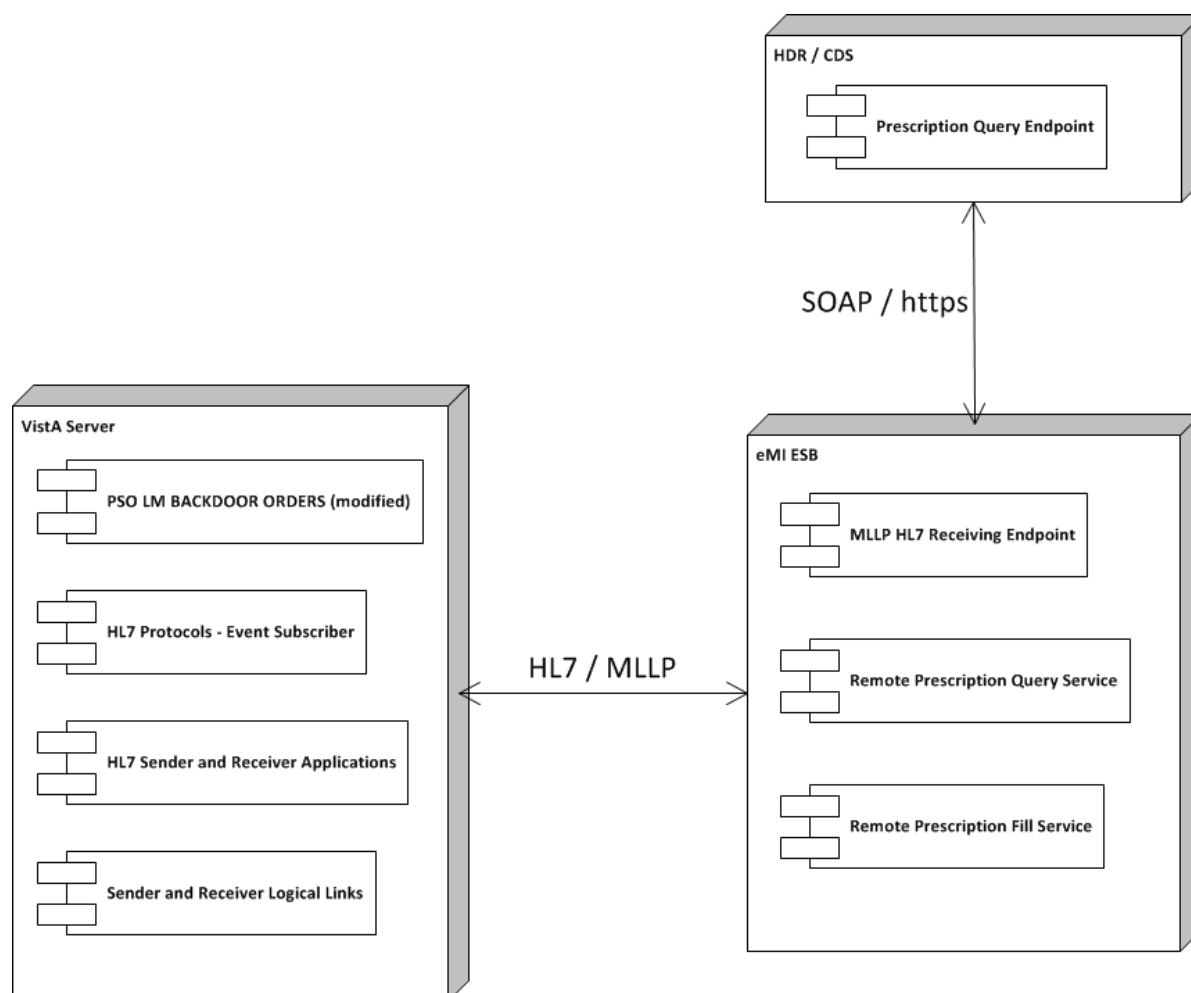


Figure 38: Communications Interface

The services within the eMI ESB are logical capabilities the ESB is expected to perform. The actual service names may be different due to the eMI team's implementation.

6.2.1.1.5. Memory Constraints


Not applicable.

6.2.1.1.6. Special Operations

Not applicable.

6.2.1.2. Product Features

The OneVA Pharmacy Implementation at a high level includes:

- VistA Patch PSO*7*454
 - PSO LM BACKDOOR ORDERS
- eMI-Middleware
- Connectivity to the Health Data Repository/ Clinical Data Services (HDR/CDS) via the Enterprise Service Bus (eMI)
- Validation of Health Level 7 (HL7) messages
- Additional product requirements are detailed in the OneVA Pharmacy RSD, located on the VA SharePoint. The OneVA Pharmacy RSD can be accessed by following this 

6.2.1.3. User Characteristics

The user profile of the OneVA Pharmacy module are those users, specifically pharmacists, that use the Pharmacy [PSO LM BACKDOOR ORDERS] menu to dispense prescriptions.

6.2.1.4. 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 all 130 VistA instances where Pharmacy locations are included.

6.2.2. Specific Requirements

6.2.2.1. Database Repository

Not applicable.

6.2.2.2. System Features

The system features include functional requirements, sub-requirements, business rules, design constraints, etc. and are organized in a Requirements Specification Document (RSD). The OneVA Pharmacy RSD, located on the VA SharePoint. The OneVA Pharmacy RSD can be access by following this 

6.2.2.3. Design Element Tables

Not applicable.

6.2.2.3.1. Routines (Entry Points)

6.2.2.3.1.1. 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	<input type="checkbox"/> New <input checked="" type="checkbox"/> Modify <input type="checkbox"/> Delete <input type="checkbox"/> No Change
RTM	
Related Options	PSO LM BACKDOOR ORDERS

Related Routines	Routines "Called By"	Routines "Called"
	PSODISPS, PSOLMUTL, PSOMPHRC, PSOORCPY, PSOOREDIT, 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 type="checkbox"/> Input <input type="checkbox"/> Output Reference <input type="checkbox"/> Both <input checked="" type="checkbox"/> Global Reference <input checked="" type="checkbox"/> 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)

6.2.2.3.1.2. 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	<input type="checkbox"/> New <input checked="" type="checkbox"/> Modify <input type="checkbox"/> Delete <input type="checkbox"/> 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, PSOHLN1, 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

Routines	Activities
Data Passing	<input type="checkbox"/> Input <input type="checkbox"/> Output Reference <input type="checkbox"/> Both <input checked="" type="checkbox"/> Global Reference <input checked="" type="checkbox"/> 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)

6.2.2.3.1.3. 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	<input checked="" type="checkbox"/> New <input type="checkbox"/> Modify <input type="checkbox"/> Delete <input type="checkbox"/> 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

Routines	Activities				
Data Passing	<input type="checkbox"/> Input	<input type="checkbox"/> Output Reference	<input type="checkbox"/> Both	<input type="checkbox"/> Global Reference	<input checked="" type="checkbox"/> 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)	
6.2.2.3.1.4. 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	<input checked="" type="checkbox"/> New <input type="checkbox"/> Modify <input type="checkbox"/> Delete <input type="checkbox"/> 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

Routines	Activities
Data Passing	<input type="checkbox"/> Input <input type="checkbox"/> Output Reference <input type="checkbox"/> Both <input type="checkbox"/> Global Reference <input checked="" type="checkbox"/> 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)	
6.2.2.3.1.5. 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	<input checked="" type="checkbox"/> New <input type="checkbox"/> Modify <input type="checkbox"/> Delete <input type="checkbox"/> 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

Routines	Activities
Data Passing	<input checked="" type="checkbox"/> Input <input type="checkbox"/> Output Reference <input type="checkbox"/> Both <input type="checkbox"/> Global Reference <input type="checkbox"/> 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)	
6.2.2.3.1.6. PSORREF0 The 'PSORREF0' is a supporting routine to 'PSORREF'.	
Routines	Activities
Routine Name	PSORREF0
Enhancement Category	<input checked="" type="checkbox"/> New <input type="checkbox"/> Modify <input type="checkbox"/> Delete <input type="checkbox"/> 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 type="checkbox"/> Input <input type="checkbox"/> Output Reference <input type="checkbox"/> Both <input type="checkbox"/> Global Reference <input type="checkbox"/> 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)	
6.2.2.3.1.7. PSORREF1 The ‘PSORREF1’ is a supporting routine for ‘PSORREF’.	
Routines	Activities
Routine Name	PSORREF1
Enhancement Category	<input checked="" type="checkbox"/> New <input type="checkbox"/> Modify <input type="checkbox"/> Delete <input type="checkbox"/> 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

Routines	Activities
Related Protocols	N/A
Related Integration Control Registrations (ICRs)	N/A
Data Passing	<input type="checkbox"/> Input <input type="checkbox"/> Output Reference <input type="checkbox"/> Both <input type="checkbox"/> Global Reference <input type="checkbox"/> 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)	
6.2.2.3.1.8. PSORRP The 'PSORRP' routine assists in prompting for search criteria and display of the Remote Prescription Report.	
Routines	Activities
Routine Name	PSORRP
Enhancement Category	<input checked="" type="checkbox"/> New <input type="checkbox"/> Modify <input type="checkbox"/> Delete <input type="checkbox"/> 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	^PSR XR (52.09,
Related Protocols	

Routines	Activities
Related Integration Control Registrations (ICRs)	N/A
Data Passing	<input type="checkbox"/> Input <input type="checkbox"/> Output Reference <input type="checkbox"/> Both <input type="checkbox"/> Global Reference <input checked="" type="checkbox"/> 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)	
6.2.2.3.1.9. PSORRPA1 The ‘PSORRPA1’ is the main routine for processing an incoming partial fill request.	
Routines	Activities
Routine Name	PSORRPA1
Enhancement Category	<input checked="" type="checkbox"/> New <input type="checkbox"/> Modify <input type="checkbox"/> Delete <input type="checkbox"/> 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,

Routines	Activities
Related Protocols	
Related Integration Control Registrations (ICRs)	IA 221? IA 999??
Data Passing	<input type="checkbox"/> Input <input type="checkbox"/> Output Reference <input type="checkbox"/> Both <input type="checkbox"/> Global Reference <input type="checkbox"/> 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)
<p>6.2.2.3.1.10. PSORRX1</p> <p>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).</p>

Routines	Activities
Routine Name	PSORRX1
Enhancement Category	<input checked="" type="checkbox"/> New <input type="checkbox"/> Modify <input type="checkbox"/> Delete <input type="checkbox"/> 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 type="checkbox"/> Input <input type="checkbox"/> Output Reference <input checked="" type="checkbox"/> Both <input type="checkbox"/> Global Reference <input type="checkbox"/> 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)	
6.2.2.3.1.11. PSORWRAP The 'PSORWRAP' routine is the wrapper utility for the calls into VistA.	
Routines	Activities
Routine Name	PSORWRAP

Enhancement Category	<input checked="" type="checkbox"/> New <input type="checkbox"/> Modify <input type="checkbox"/> Delete <input type="checkbox"/> 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 type="checkbox"/> Input <input type="checkbox"/> Output Reference <input checked="" type="checkbox"/> Both <input type="checkbox"/> Global Reference <input type="checkbox"/> 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)	
6.2.2.3.1.12. PSORX1 The ‘PSORX1’ routine has been modified to call ‘PSORRX1’ for retrieval of remote prescription data.	
Routines	Activities
Routine Name	PSORX1
Enhancement Category	<input type="checkbox"/> New <input checked="" type="checkbox"/> Modify <input type="checkbox"/> Delete <input type="checkbox"/> No Change

RTM	
Related Options	

Related Routines	Routines “Called By”	Routines “Called”
		DTC, \$ZISS, DGPFAP1, DIC, DICN, DIE, DIK, DIQ1, DIR, ORRDI1, PSOBAL, 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^DGPFAP1 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 type="checkbox"/> Input <input type="checkbox"/> Output Reference <input type="checkbox"/> Both <input type="checkbox"/> Global Reference <input checked="" type="checkbox"/> 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)

6.2.2.3.2. Templates

6.2.2.3.2.1. 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	<input checked="" type="checkbox"/> New <input type="checkbox"/> Modify <input type="checkbox"/> Delete <input type="checkbox"/> No Change
RSD	
Template Type	<input type="checkbox"/> Sort <input checked="" type="checkbox"/> Input <input type="checkbox"/> Print <input type="checkbox"/> Other
Related Options	

Related Routines	Routines “Called By”	Routines “Called”
	^VALM	

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

6.2.2.3.2.1.1. 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	<input checked="" type="checkbox"/> New <input type="checkbox"/> Modify <input type="checkbox"/> Delete <input type="checkbox"/> No Change
RSD	
Template Type	<input type="checkbox"/> Sort <input checked="" type="checkbox"/> Input <input type="checkbox"/> Print <input type="checkbox"/> Other
Related Options	

Related Routines	Routines “Called By”	Routines “Called”

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

6.2.2.3.2.1.2. 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	<input checked="" type="checkbox"/> New <input type="checkbox"/> Modify <input type="checkbox"/> Delete <input type="checkbox"/> No Change
RSD	
Template Type	<input type="checkbox"/> Sort <input checked="" type="checkbox"/> Input <input type="checkbox"/> Print <input type="checkbox"/> Other
Related Options	

Related Routines	Routines “Called By”	Routines “Called”

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

6.2.2.3.3. Bulletins

Not applicable.

6.2.2.3.4. Data Entries Affected by the Design

Not applicable.

6.2.2.3.5. Unique Record(s)

Not applicable.

6.2.2.3.6. File or Global Size Changes

6.2.2.3.6.1. Global

The Pharmacy Remote Prescription Manager uses the following globals:

^PSRX

^PSRXXR

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

Table 27: 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
^PSRXXR	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

6.2.2.3.6.2. Files

Table 28: Files

File #	File Name	Root Global	Global Protection
52	PRESCRIPTION	^PSRX	No change
52.09	REMOTE PRESCRIPTION LOG	^PSRXXR (52.09	@

6.2.2.3.6.2.1. 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.

6.2.2.3.6.2.2.

REFILL Sub File (#52.1)

Table 29: 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.

6.2.2.3.6.2.3.

PARTIAL FILL Sub file (#52.2)

Table 30: 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.

6.2.2.3.6.2.4.

Remote Prescription Log (#52.09) File

Table 31: 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.

Field Number	Field Name	Pointers	Cross References and Record Indices	Description
.02	PATIENT	PATIENT (#2)	52.09^C	This is the patient for which a refill or partial fill 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 is 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 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.

Field Number	Field Name	Pointers	Cross References and Record Indices	Description
1.1	LOCAL (MATCHED) DRUG	DRUG (#50)	N/A	This is 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.

6.2.2.3.7. Mail Groups

Not applicable.

6.2.2.3.8. Security Keys

Not applicable.

6.2.2.3.9. Options

6.2.2.3.9.1. 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.

6.2.2.3.9.1.1. PSO LM BACKDOOR ORDERS Option

Options	Activities
Option Name	PSO LM BACKDOOR ORDERS

Options	Activities
Enhancement Category	<input type="checkbox"/> New <input checked="" type="checkbox"/> Modify <input type="checkbox"/> Delete <input type="checkbox"/> No Change
Associated Menu Options that will invoke this reference	
Data Passing	<input type="checkbox"/> Input <input type="checkbox"/> Output <input type="checkbox"/> Both <input type="checkbox"/> Global Reference <input type="checkbox"/> Local Reference
Menu Text Description	
Option Type	<input type="checkbox"/> Edit <input type="checkbox"/> Print <input type="checkbox"/> Menu <input type="checkbox"/> Inquire <input type="checkbox"/> Action <input type="checkbox"/> Run Routine <input type="checkbox"/> 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)
--

6.2.2.3.9.1.2. PSO RX Options	
Options	Activities
Option Name	PSO RX
Enhancement Category	<input type="checkbox"/> New <input checked="" type="checkbox"/> Modify <input type="checkbox"/> Delete <input type="checkbox"/> No Change
Associated Menu Options that will invoke this reference	
Data Passing	<input type="checkbox"/> Input <input type="checkbox"/> Output <input type="checkbox"/> Both <input type="checkbox"/> Global Reference <input type="checkbox"/> Local Reference
Menu Text Description	Rx (Prescriptions)
Option Type	<input type="checkbox"/> Edit <input type="checkbox"/> Print <input checked="" type="checkbox"/> Menu <input type="checkbox"/> Inquire <input type="checkbox"/> Action <input type="checkbox"/> Run Routine <input type="checkbox"/> Other
Associated Routine	PSOLSET, PSOORFIN

Modified Exit Action Logic (Changes are in bold)	
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	

6.2.2.3.9.1.3. PSO REMOTE RX REPORT Option

Options	Activities
Option Name	PSO REMOTE RX REPORT
Enhancement Category	<input checked="" type="checkbox"/> New <input type="checkbox"/> Modify <input type="checkbox"/> Delete <input type="checkbox"/> No Change
Associated Menu Options that will invoke this reference	PSO RX
Data Passing	<input type="checkbox"/> Input <input type="checkbox"/> Output <input type="checkbox"/> Both <input type="checkbox"/> Global Reference <input checked="" type="checkbox"/> Local Reference
Menu Text Description	Remote Prescription Report
Option Type	<input type="checkbox"/> Edit <input type="checkbox"/> Print <input type="checkbox"/> Menu <input type="checkbox"/> Inquire <input checked="" type="checkbox"/> Action <input type="checkbox"/> Run Routine <input type="checkbox"/> 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

6.2.2.3.10. Protocols

6.2.2.3.10.1. PSO LM REFILL REMOTE ORDER Protocol

Protocols	Activities
Protocol Name	PSO LM REFILL REMOTE ORDER
Enhancement Category	<input checked="" type="checkbox"/> New <input type="checkbox"/> Modify <input type="checkbox"/> Delete <input type="checkbox"/> No Change
Associated Protocols	PSO LM REMOTE ORDER MENU
Data Passing	<input type="checkbox"/> Input <input type="checkbox"/> Output <input type="checkbox"/> Both <input type="checkbox"/> Global Reference <input type="checkbox"/> Local Reference
Item Text Description	
Protocol Type	<input checked="" type="checkbox"/> Action <input type="checkbox"/> Menu <input type="checkbox"/> Protocol <input type="checkbox"/> Protocol Menu <input type="checkbox"/> Limited Protocol <input type="checkbox"/> Extended Action <input type="checkbox"/> Dialog <input type="checkbox"/> 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

6.2.2.3.10.1.1.

PSO LM REMOTE ORDER MENU Protocol

Protocols	Activities
Protocol Name	PSO LM REMOTE ORDER MENU
Enhancement Category	<input checked="" type="checkbox"/> New <input type="checkbox"/> Modify <input type="checkbox"/> Delete <input type="checkbox"/> No Change
Associated Protocols	PSO LM REFILL REMOTE ORDER PSO LM REMOTE PARTIAL
Data Passing	<input type="checkbox"/> Input <input type="checkbox"/> Output <input type="checkbox"/> Both <input type="checkbox"/> Global Reference <input checked="" type="checkbox"/> Local Reference
Item Text Description	Remote Order Menu
Protocol Type	<input type="checkbox"/> Action <input type="checkbox"/> Menu <input type="checkbox"/> Protocol <input checked="" type="checkbox"/> Protocol Menu <input type="checkbox"/> Limited Protocol <input type="checkbox"/> Extended Action <input type="checkbox"/> Dialog <input type="checkbox"/> 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

6.2.2.3.10.1.2.

PSO LM REMOTE PARTIAL Protocol

Protocols	Activities
Protocol Name	PSO LM REMOTE PARTIAL
Enhancement Category	<input checked="" type="checkbox"/> New <input type="checkbox"/> Modify <input type="checkbox"/> Delete <input type="checkbox"/> No Change
Associated Protocols	PSO LM REMOTE ORDER MENU
Data Passing	<input type="checkbox"/> Input <input type="checkbox"/> Output <input type="checkbox"/> Both <input type="checkbox"/> Global Reference <input checked="" type="checkbox"/> Local Reference
Item Text Description	Partial

Protocols	Activities
Protocol Type	<input checked="" type="checkbox"/> Action <input type="checkbox"/> Menu <input type="checkbox"/> Protocol <input type="checkbox"/> Protocol Menu <input type="checkbox"/> Limited Protocol <input type="checkbox"/> Extended Action <input type="checkbox"/> Dialog <input type="checkbox"/> 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

6.2.2.3.10.1.3.

PSO LM REMOTE RX REPORT MENU Protocol

Protocols	Activities
Protocol Name	PSO LM REMOTE RX REPORT MENU
Enhancement Category	<input checked="" type="checkbox"/> New <input type="checkbox"/> Modify <input type="checkbox"/> Delete <input type="checkbox"/> No Change
Associated Protocols	PSO LM SELECT REPORT ITEM
Data Passing	<input type="checkbox"/> Input <input type="checkbox"/> Output <input type="checkbox"/> Both <input type="checkbox"/> Global Reference <input checked="" type="checkbox"/> Local Reference
Item Text Description	Remote Rx Selection**
Protocol Type	<input type="checkbox"/> Action <input type="checkbox"/> Menu <input type="checkbox"/> Protocol <input checked="" type="checkbox"/> Protocol Menu <input type="checkbox"/> Limited Protocol <input type="checkbox"/> Extended Action <input type="checkbox"/> Dialog <input type="checkbox"/> 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

6.2.2.3.10.1.4. PSO LM SELECT REPORT ITEM Protocol

Protocols	Activities
Protocol Name	PSO LM SELECT REPORT ITEM
Enhancement Category	<input checked="" type="checkbox"/> New <input type="checkbox"/> Modify <input type="checkbox"/> Delete <input type="checkbox"/> No Change
Associated Protocols	PSO LM REMOTE RX REPORT MENU
Data Passing	<input type="checkbox"/> Input <input type="checkbox"/> Output <input type="checkbox"/> Both <input type="checkbox"/> Global Reference <input checked="" type="checkbox"/> Local Reference
Item Text Description	
Protocol Type	<input checked="" type="checkbox"/> Action <input type="checkbox"/> Menu <input type="checkbox"/> Protocol <input type="checkbox"/> Protocol Menu <input type="checkbox"/> Limited Protocol <input type="checkbox"/> Extended Action <input type="checkbox"/> Dialog <input type="checkbox"/> 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

6.2.2.3.10.1.5. PSO PHARM QBP Q13 ESUBS** Protocol

Protocols	Activities
Protocol Name	PSO PHARM QBP-Q13 ESUBS**

Protocols	Activities
Enhancement Category	<input checked="" type="checkbox"/> New <input type="checkbox"/> Modify <input type="checkbox"/> Delete <input type="checkbox"/> No Change
Associated Protocols	
Data Passing	<input type="checkbox"/> Input <input type="checkbox"/> Output <input type="checkbox"/> Both <input type="checkbox"/> Global Reference <input type="checkbox"/> Local Reference
Item Text Description	
Protocol Type	<input type="checkbox"/> Action <input type="checkbox"/> Menu <input type="checkbox"/> Protocol <input type="checkbox"/> Protocol Menu <input type="checkbox"/> Limited Protocol <input type="checkbox"/> Extended Action <input type="checkbox"/> Dialog <input type="checkbox"/> 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)

6.2.2.3.10.1.6.

PSO PHARM QBP Q13 EVENT** Protocol

Protocols	Activities
Protocol Name	PSO PHARM QBP-Q13 EVENT**
Enhancement Category	<input checked="" type="checkbox"/> New <input type="checkbox"/> Modify <input type="checkbox"/> Delete <input type="checkbox"/> No Change
Associated Protocols	
Data Passing	<input type="checkbox"/> Input <input type="checkbox"/> Output <input type="checkbox"/> Both <input type="checkbox"/> Global Reference <input type="checkbox"/> Local Reference
Item Text Description	
Protocol Type	<input type="checkbox"/> Action <input type="checkbox"/> Menu <input type="checkbox"/> Protocol <input type="checkbox"/> Protocol Menu <input type="checkbox"/> Limited Protocol <input type="checkbox"/> Extended Action <input type="checkbox"/> Dialog <input type="checkbox"/> 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)

6.2.2.3.10.1.7.

PSO PHARM RDS-013 ESUBS Protocol

Protocols	Activities
Protocol Name	PSO PHARM RDS-O13 ESUBS
Enhancement Category	<input checked="" type="checkbox"/> New <input type="checkbox"/> Modify <input type="checkbox"/> Delete <input type="checkbox"/> No Change
Associated Protocols	
Data Passing	<input type="checkbox"/> Input <input type="checkbox"/> Output <input type="checkbox"/> Both <input type="checkbox"/> Global Reference <input type="checkbox"/> Local Reference
Item Text Description	
Protocol Type	<input type="checkbox"/> Action <input type="checkbox"/> Menu <input type="checkbox"/> Protocol <input type="checkbox"/> Protocol Menu <input type="checkbox"/> Limited Protocol <input type="checkbox"/> Extended Action <input type="checkbox"/> Dialog <input type="checkbox"/> 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)

6.2.2.3.10.1.8.

PSO PHARM RDS-013 EVENT Protocol

Protocols	Activities
Protocol Name	PSO PHARM RDS-O13 EVENT
Enhancement Category	<input checked="" type="checkbox"/> New <input type="checkbox"/> Modify <input type="checkbox"/> Delete <input type="checkbox"/> No Change
Associated Protocols	
Data Passing	<input type="checkbox"/> Input <input type="checkbox"/> Output <input type="checkbox"/> Both <input type="checkbox"/> Global Reference <input type="checkbox"/> Local Reference
Item Text Description	

Protocols	Activities
Protocol Type	<input type="checkbox"/> Action <input type="checkbox"/> Menu <input type="checkbox"/> Protocol <input type="checkbox"/> Protocol Menu <input type="checkbox"/> Limited Protocol <input type="checkbox"/> Extended Action <input type="checkbox"/> Dialog <input type="checkbox"/> 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)

6.2.2.3.11. Remote Procedure Call (RPC)

Not Applicable

6.2.2.3.12. Constants Defined in Interface

Not Applicable

6.2.2.3.13. Variables Defined in Interface

Not Applicable.

6.2.2.3.14. Types Defined in Interface

Not Applicable.

6.2.2.3.15. GUI

Not Applicable

6.2.2.3.16. GUI Classes

Not Applicable.

6.2.2.3.17. Current Form

Nor Applicable.

6.2.2.3.18. Modified Form

Not Applicable.

6.2.2.3.19. Components on Form

Not Applicable.

6.2.2.3.20. Events

Not Applicable

6.2.2.3.21. Methods

Not Applicable

6.2.2.3.22. Special References

Not Applicable.

6.2.2.3.23. Class Events

Not Applicable.

6.2.2.3.24. Class Methods

Not Applicable.

6.2.2.3.25. Class Properties

Not Applicable.

6.2.2.3.26. Uses Clause

Not Applicable.

6.2.2.3.27. Forms

Not applicable.

6.2.2.3.28. Functions

Not applicable.

6.2.2.3.29. Dialog

Not applicable.

6.2.2.3.30. Help Frame

Not applicable.

6.2.2.3.31. 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.

6.2.3. 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 is an example configuration of a protocol to handle QBP^Q13 message:

The screenshot shows a terminal window titled 'Cache TRM:3800 (CACHE)' with a menu bar (File, Edit, Help) and a title bar. The main content area is titled 'HL7 INTERFACE SETUP' and 'PAGE 1 OF 2'. It displays the following configuration details:

- NAME: ZJTH PHARM QBP-Q13 EVENT
- DESCRIPTION (wp): (empty)
- ENTRY ACTION:
- EXIT ACTION:
- TYPE: event driver

At the bottom, there is a 'COMMAND:' field and a prompt 'Press <PF1>H for help' with an 'Insert' button.

Figure 39: Example of Configuration of a Protocol to handle QBP-Q13 Events

The screenshot shows a terminal window titled 'Cache TRM:3800 (CACHE)' with a menu bar (File, Edit, Help) and a title bar. The main content area is titled 'HL7 EVENT DRIVER' and 'PAGE 2 OF 2'. It displays the following configuration details:

- SENDING APPLICATION: ZJTH VISTA PHAR
- TRANSACTION MESSAGE TYPE: QBP
- MESSAGE STRUCTURE:
- PROCESSING ID:
- ACCEPT ACK CODE: NE
- EVENT TYPE: Q13
- VERSION ID: 2.5.1
- APPLICATION ACK TYPE: AL
- RESPONSE PROCESSING RTN: SUBSCRIBERS
- ZJTH PHARM QBP-Q13 ESUBS

At the bottom, there is a 'COMMAND:' field and a prompt 'Press <PF1>H for help' with an 'Insert' button.

Figure 40: Example of Configuration of a Protocol to handle QBP-Q13 Events

Cache TRM:3800 (CACHE)

File Edit Help

HL7 EVENT DRIVER

ZJTH PHARM QBP-Q13 EVENT

PAGE 2 OF 2

Sending Application Edit

NAME: ZJTH VISTA PHAR

ACTIVE/INACTIVE: ACTIVE

FACILITY NAME: 2201

COUNTRY CODE: USA

HL7 FIELD SEPARATOR: |

HL7 ENCODING CHARACTERS: ^~\&

MAIL GROUP:

COMMAND:

Press <PF1>H for help

Insert

Figure 41: Example of Configuration of a Protocol to handle QBP-Q13 Events

Cache TRM:3800 (CACHE)

File Edit Help

HL7 EVENT DRIVER

HL7 SUBSCRIBER

ZJTH PHARM QBP-Q13 ESUBS

PAGE 2 OF 2

RECEIVING APPLICATION: ZJTH ESB PHARM

RESPONSE MESSAGE TYPE: RTB

EVENT TYPE: K13

SENDING FACILITY REQUIRED?:

RECEIVING FACILITY REQUIRED?:

SECURITY REQUIRED?:

LOGICAL LINK: ZJTHS36500

PROCESSING RTN:

ROUTING LOGIC:

COMMAND:

Press <PF1>H for help

Insert

Figure 42: Example of Configuration of a Protocol to handle QBP-Q13 Events

6.2.4. HL7 Sender and Receiver Applications

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

The following is an example configuration of applications used in the protocols above:

The screenshot shows a terminal window titled 'Cache TRM:3800 (CACHE)' with a menu bar (File, Edit, Help) and a title bar 'HL7 APPLICATION EDIT'. The configuration fields are as follows:

Field	Value
NAME:	ZJTH ESB PHARM
ACTIVE/INACTIVE:	ACTIVE
FACILITY NAME:	36500
COUNTRY CODE:	USA
HL7 FIELD SEPARATOR:	
HL7 ENCODING CHARACTERS:	^~\&
MAIL GROUP:	

At the bottom, there is a 'COMMAND:' field, a prompt 'Press <PF1>H for help', and an 'Insert' button.

Figure 43: Receiving HL7 Application Configuration

The screenshot shows a terminal window titled 'Cache TRM:3800 (CACHE)' with a menu bar (File, Edit, Help) and a title bar 'HL7 APPLICATION EDIT'. The configuration fields are as follows:

Field	Value
NAME:	ZJTH VISTA PHAR
ACTIVE/INACTIVE:	ACTIVE
FACILITY NAME:	2201
COUNTRY CODE:	USA
HL7 FIELD SEPARATOR:	
HL7 ENCODING CHARACTERS:	^~\&
MAIL GROUP:	

At the bottom, there is a 'COMMAND:' field, a prompt 'Press <PF1>H for help', and an 'Insert' button.

Figure 44: Sending HL7 Application Configuration

6.2.5. 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:

Cache TRM:3800 (CACHE)

File Edit Help

HL7 LOGICAL LINK

NODE: **ZJTHR39550** DESCRIPTION:

INSTITUTION:

MAILMAN DOMAIN:

AUTOSTART: **Disabled**

QUEUE SIZE: **10**

LLP TYPE: **TCP**

DNS DOMAIN:

COMMAND: Press <PF1>H for help **Insert**

Figure 45: Example of Configuration of Logical Links

Cache TRM:3800 (CACHE)

File Edit Help

HL7 LOGICAL LINK

TCP LOWER LEVEL PARAMETERS

ZJTHR39550

TCP/IP SERVICE TYPE: **MULTI LISTENER**

TCP/IP ADDRESS:

TCP/IP PORT: **39500**

TCP/IP PORT (OPTIMIZED):

ACK TIMEOUT: RE-TRANSMISSION ATTEMPTS:

READ TIMEOUT: EXCEED RE-TRANSMIT ACTION:

BLOCK SIZE: SAY HELO:

STARTUP NODE: TCP/IP OPENFAIL TIMEOUT:

RETENTION: PERSISTENT:

UNI-DIRECTIONAL WAIT:

COMMAND: Press <PF1>H for help **Insert**

Figure 46: Example of Configuration of Logical Links

Cache TRM:3800 (CACHE)

File Edit Help

HL7 LOGICAL LINK

NODE: ZJTHS36500 DESCRIPTION:

INSTITUTION:

MAILMAN DOMAIN:

AUTOSTART: Enabled

QUEUE SIZE: 10

LLP TYPE: TCP

DNS DOMAIN:

COMMAND: Press <PF1>H for help Insert

Figure 47: Example of Configuration of Logical Links

Cache TRM:3800 (CACHE)

File Edit Help

HL7 LOGICAL LINK

TCP LOWER LEVEL PARAMETERS

ZJTHS36500

TCP/IP SERVICE TYPE: CLIENT (SENDER)

TCP/IP ADDRESS:

TCP/IP PORT: 36500

TCP/IP PORT (OPTIMIZED):

ACK TIMEOUT: RE-TRANSMISSION ATTEMPTS:

READ TIMEOUT: EXCEED RE-TRANSMIT ACTION: restart

BLOCK SIZE: SAY HELO:

STARTUP NODE: TCP/IP OPENFAIL TIMEOUT:

RETENTION: 15 PERSISTENT: NO

UNI-DIRECTIONAL WAIT:

COMMAND: Press <PF1>H for help Insert

Figure 48: Example of Configuration of Logical Links

6.2.5.1. HL7 Logical Link

Table 56: HL7 Logical Link

HL7 Logical Link	Description
HL7 Logical Link Parameter Name	PSOR39550** - NAME CHANGE REQUIRED
Enhancement Category	<input checked="" type="checkbox"/> New <input type="checkbox"/> Modify <input type="checkbox"/> Delete <input type="checkbox"/> No Change

Enhancement Category	Current	Modified
Node	N/A	ALL??
Institution	N/A	N/A
Domain	N/A	N/A
Autostart	N/A	Disabled
Queue Size	N/A	10
LLP Type	N/A	TCP

HL7 Logical Link	Description
HL7 Logical Link Parameter Name	PSOS36500** - NAME CHANGE REQUIRED

Enhancement Category	<input checked="" type="checkbox"/> New	<input type="checkbox"/> Modify	<input type="checkbox"/> Delete	<input type="checkbox"/> No Change
----------------------	---	---------------------------------	---------------------------------	------------------------------------

Enhancement Category	Current	Modified
Node	N/A	ALL??
Institution	N/A	N/A
Domain	N/A	N/A
Autostart	N/A	Enabled
Queue Size	N/A	10
LLP Type	N/A	TCP

6.2.5.1.1. COTS Interface

Not applicable.

6.3. Network Detailed Design

The Network Design is a VA implementation and not being changed by the software being implemented within OneVA Pharmacy.

6.4. Security and Privacy

6.4.1. Security

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

6.4.1.1. 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. The scope and complexity of the changes required to VistA to support HL7 over SSL are unknown.

6.4.1.2. 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.

6.4.1.3. Remote Prescription Locking

Before any action is taken on a remote prescription, the prescription is locked. The lock only remains long enough for the routines to file the data, which is generally only a few milliseconds. This prevents a 'remote' refill or partial fill from occurring in the event that a user at the originating site is taking action on the same patient's prescription.

6.4.2. 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.

6.5. Service Oriented Architecture / ESS Detailed Design

Services provided includes:

- Provides: Transport of HL7 messages to target VistA
- Provides: Proxy call to the HDR/CDS repository for a patient's active prescriptions.
- Consumes: HDR/CDS query service

6.5.1. Service Description for <Consumed Service Name>

Not Applicable. No development of new service.

6.5.2. Service Design for <Provided Service Name>

Not Applicable. No development of new service.

7. External System Interface Design

7.1. Interface Architecture

7.2. Interface Detailed Design

HL7 v2.5.1 messaging is used to communicate between VistA and the eMI ESB. The following codes are provided for reference.

7.3. Acknowledgement Codes

Table 32: 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

7.4. Order Control Codes

Table 33: 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

7.5. Remote Prescription Query Transaction

The remote prescription query request is a QBP^Q13 message type and the response is a RTB^K13 message type.

7.5.1. Remote Prescription Query Request

The QBP^Q13 request is defined in Table 4. The implementation will ignore RDF and DSC segments and additionally, any segment not shown below is ignored. Refer to this [section](#) for details related to the HL7 message.


7.5.2. Remote Prescription Query Response

The RTB^K13 HL7 response is detailed within this document and can be accessed by following this [link](#)


7.6. Remote Prescription Dispense Transaction

The remote prescription refill dispense request is a RDS^O13 message type and the response is a RRD^O14 message type.

7.6.1. Remote Description Dispense Request

The RDS^O13 request is detailed within this document and can be accessed by following this 

7.6.2. Remote Description Dispense Response

The RRD^O14 response is detailed within this document and can be accessed by following this 

8. Human-Machine Interface

The OneVA Pharmacy project will utilize existing Vista functionality to the fullest extent possible. The software patch uses Character-Based User Interface (CBUI) to display a query information from uses. 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.

8.1. Interface Design Rules

Not Applicable.

8.2. Inputs

Manual keyboard entry is used for OneVA Pharmacy application input.

8.3. Outputs

Terminal output display is used for OneVA Pharmacy application output.

8.4. Navigation Hierarchy

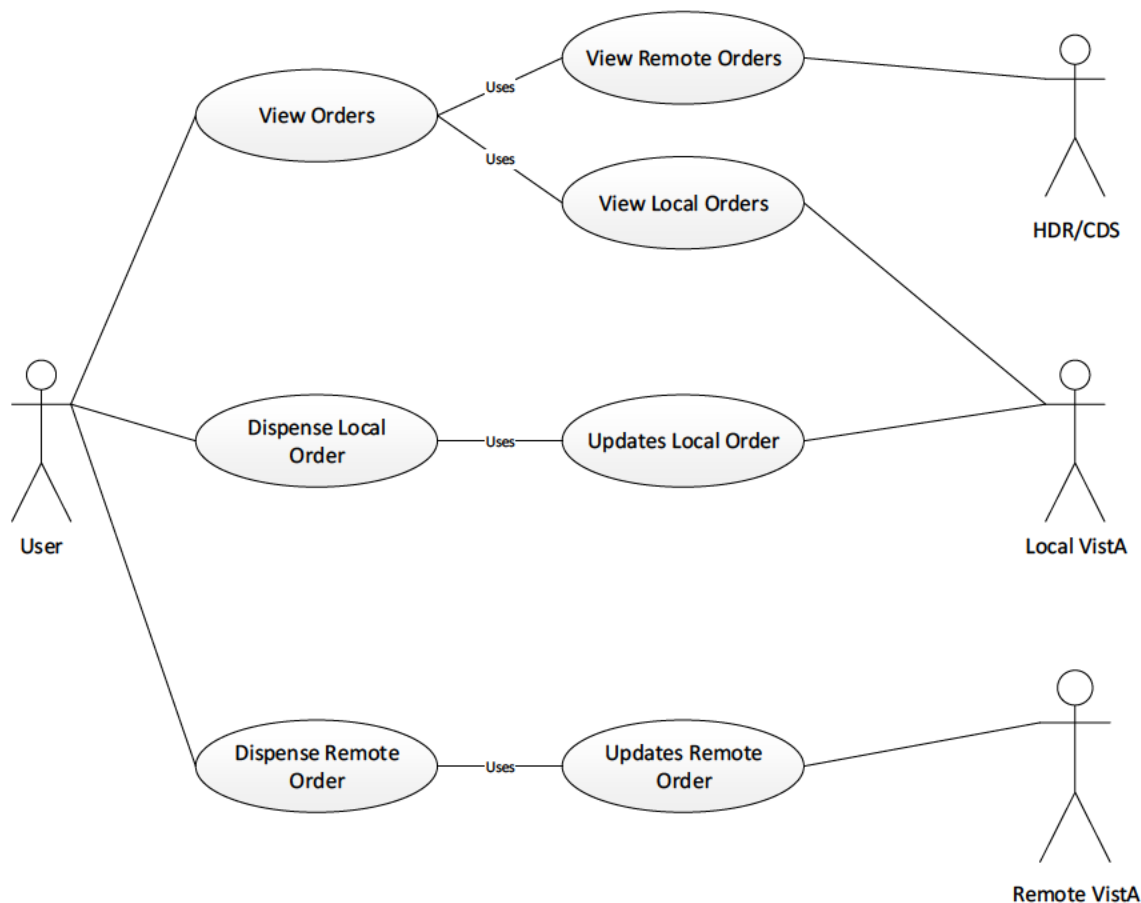


Figure 49: Navigational Hierarchy

8.4.1. Prescription Display

PSO LM BACKDOOR ORDERS will be modified to display remote Rx's in the same screen where the local Rx's are displayed for a patient. The remote prescriptions will occur after any local Rx's and will have a section header '-----SITE NAME (SITE NUMBER)-----' delineation. Leveraging existing functionality means less training, and more immediate familiarity with the process.

Once the user selects to 'Refill' or 'Partially Refill', 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 Rx data 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](#) 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 have 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. Additional options will be made available for reprinting of labels.

Cache TRM:4708 (CACHE)

File Edit Help

Medication Profile Mar 06, 2014@19:17:24 Page: 1 of 1

TWOHUNDREDEIGHTYSIX, PATIENT <NO ALLERGY ASSESSMENT>

PID: 666-00-0286 Ht (cm): 177.80 (04/05/2003)

DOB: APR 7, 1935 (78) Wt (kg): 79.09 (04/15/2003)

SEX: MALE

CrCL: <Not Found> BSA (m2): 1.97

#	RX #	DRUG	QTY	ST	DATE	ISSUE	LAST REF	FILL	DAY	REM	SUP
-----ACTIVE-----											
1	500971A\$	ACETAMINOPHEN 325MG TAB	360	S>	02-19	03-26	3	90			
-----DISCONTINUED-----											
2	500973\$	IBUPROFEN 200MG TAB	60	DC>	01-16	01-16	0	30			
-----ONEVA PHARMACY GOLDDEV2 (2202) ACTIVE REMOTE-----											
3	500973	PYRIDOXINE 25MG TABS	180	AR	12-30	01-05	3	90			
4	500974	IBUPROFEN 800MG TAB	60	AR	01-21	02-20	10	30			

Enter ?? for more actions

PU Patient Record Update NO New Order

PI Patient Information SO Select Order

Select Action: Quit// so Select Order

Select Orders by number: (1-4): 3

Figure 50: Medication Profile Screen Example – Remote Active Rx

Cache TRM:4708 (CACHE)

File Edit Help

REMOTE OP Medications (ACTIVE) Mar 06, 2014@19:18:50 Page: 1 of 1

TWOHUNDREDEIGHTYSIX, PATIENT <NO ALLERGY ASSESSMENT>

PID: 666-00-0286 Ht (cm): 177.80 (04/05/2003)

DOB: APR 7, 1935 (78) Wt (kg): 79.09 (04/15/2003)

SEX: MALE

CrCL: <Not Found> BSA (m2): 1.97

Site #: 2202 (PHARMACY TESTING)

Rx #: 500973

Drug Name: PYRIDOXINE 25MG TABS

Days Supply: 90

Quantity: 180

Refills: 3

Expiration Date: 12/31/14

Issue Date: 12/30/13

Stop Date: 12/31/14

Last Fill Date: 01/05/14

Detail: PYRIDOXINE 25MG TABS Qty: 180 for 90 days

Sig: TAKE ONE TABLET BY MOUTH EVERY 12 HOURS

Enter ?? for more actions

RF Refill Remote Order PR Partial

Select Action: Quit//

Figure 51: Remote OP Medication Screen

9. 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	

A. Additional Information

A.1. Identification of Technology and Standards

Reference materials includes the following:

- IEEE 2016-2009, 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 - [REDACTED]
- HL7 (VistA Messaging) documentation - [REDACTED]
- My HealtheVet documentation - [REDACTED]

A.2. Constraining Policies, Directives and Procedures

Not applicable.

A.3. Requirements Traceability Matrix

The Requirements Traceability Matrix (RTM) can be found on the VA SharePoint. The OneVA Pharmacy RTM can be access by following this [REDACTED]

A.4. 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.

A.5. Design Metrics

Not applicable.