

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

OneVA Pharmacy Project

**Master Test Plan
(CLIN #0004AA)**

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1. Introduction

Leadership at the Department of Veterans Affairs (VA) initiated the OneVA Pharmacy Implementation project to enhance and integrate the OneVA Pharmacy prototype into Veterans Health Information Systems and Technology Architecture (VistA). The OneVA Pharmacy module will provide the Department of Veterans Health Administration (VHA) the capability to allow Veterans travelling across the United States to refill their active VA prescription at any VA Pharmacy 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 Healthcare System. 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 provides a foundation to build and extend new capabilities to the Veteran and builds upon the history of the VHA with its advances in modern technology to allow Veterans to take a more active role in their own health care.

1.1. Purpose

The OneVA Pharmacy Master Test Plan is the project plan for the testing work to be done for the OneVA Pharmacy software and middleware components. At a high level, testing will be conducted on the following:

- VistA Patch PSO*7*454
 - PSO LM BACKDOOR ORDERS
 - Validation of updates to remote VistA sites
- VA Enterprise Messaging Infrastructure (VAeMI)-Middleware
- Connectivity to the Health Data Repository/ Clinical Data Services (HDR/CDS) via the Enterprise Service Bus (ESB)
- Validation of Health Level 7 (HL7) messages

The testing activities will be performed initially by the OneVA Pharmacy project team and then will roll out to specific VA test sites to perform the Initial Operating Capability (IOC) evaluation. The IOC sites selected for the OneVA Pharmacy evaluation are:

- Veterans Affairs (VA) Eastern Colorado Health Care System (Denver, CO)
- George E. Wahlen Department of Veterans Affairs Medical Center (Salt Lake City, UT)
- Grand Junction Health Care System (Grand Junction, CO)

1.2. Acronyms and Abbreviations

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

Table 1: Acronym & Abbreviation Table

Acronym/Abbreviation	Description
[PSO LM BACKDOOR ORDERS]	Patient Prescription Processing
BITS	Business Information Technology Solutions, Inc.
CDS	Clinical Data Services
CLIN	Contract Line Item Number
CMM	Rational Change and Configuration Management
COR	Contracting Officer's Representative
DLO	Dispense Local Order
DRO	Dispense Remote Order
E&IT	Electronic and Information Technology
eMI	Enterprise Messaging Infrastructure
ESB	Enterprise Service Bus
ESE	Enterprise System Engineering
ETS	Enterprise Testing Service
FORUM	A system developed and maintained to provide a national communications system for use within the VA.
HDR	Health Data Repository
HL7	Health Level 7
HTML	Hypertext Markup Language
IBM	International Business Machine
IDE	Integrated Development Environment
IOC	Initial Operating Capability
IPT	Integrated Project Team
IT	Information Technology

Acronym/Abbreviation	Description
OI&T	Office of Information and Technology
OR	Operational Readiness
PD	Product Development
PMAS	Project Management Accountability System
PSI	Patient Safety Issue
PSO	Outpatient Prescription Pharmacy
PWS	Performance Work Statement
QA	Quality Assurance
QM	Rational Quality Management
RFT	Rational Functional Tester
RPT	Reports
RSD	Requirements Specification Document
RTC	Rational Team Concert
RTM	Requirements Traceability Matrix
SDD	System Design Document
SQA	Software Quality Assurance
SSN	Social Security Number
TAP	Testing Automation Project
UAT	User Acceptance Testing
UFT	Unit Functionality Testing
UI	User Interface
VA	Department of Veterans Affairs
VAeMI-Middleware	The middleware components being implemented within the OneVA Pharmacy software development.

Acronym/Abbreviation	Description
VHA	Department of Veterans Health Administration
VIP	Veteran-focused Integration Process
VistA	Veterans Health Information Systems and Technology Architecture
VO	View Order
WBS	Work Breakdown Structure
WPR	Work Product Review

1.3. Test Objectives

The OneVA Pharmacy Master Test Plan supports the following objectives:

- To test 100% of the business rules, functional requirements, and design constraints documented in the OneVA Pharmacy Requirements Specifications Document (RSD)
- To test all components documented in the OneVA Pharmacy System Design Document (SDD)
- To execute 100% of the test cases during user functionality testing
- To execute the performance testing requirements documented in the OneVA Pharmacy RSD Section 2.9
- To create, maintain, and control the test environment

The objective of the OneVA Pharmacy Implementation Master Test Plan is to document the following:

- Tests to be performed and the expected results for the business rules, functional requirements, and design constraints documented in the OneVA Pharmacy RSD
- Tests to be performed and the expected results for the components documented in the OneVA Pharmacy SDD
- The process of how the tests are being developed
- The process of how the tests will be performed
- The environment in which tests will be executed
- The schedule for running tests
- Roles and responsibilities for testing
- Risks

1.4. Roles and Responsibilities

Table 2 lists the key roles and responsibilities for executing the OneVA Pharmacy Master Test Plan.

Table 2: Roles and Responsibilities

Role	Responsibility
QA Tester	Performs quality assurance to all aspects of testing including test cases, scripts, and results.
Project Coordinator/Trainer/Technical Editor	Responsible for ensuring all documentation meet VA and Section 508 standards and are maintained and delivered to OneVA Pharmacy Contracting Officer's Representative (COR).
Stakeholders	Persons that hold a stake in a situation in which they may affect or be affected by the outcome.
Subject Matter Expert	Person responsible for ensuring full execution of the test process to include the verification of technical requirements and the validation of business requirements.
System Architect	Develop and implement the VAeMI-Middleware components.
Test Lead	Leads and coordinates activities related to all aspects of testing based on an approved Master Test Plan and schedule. Participates in the development and execution of test scripts.
Technical Lead/Project Manager	Responsible for obtaining approval and implementing the OneVA Pharmacy Master Test Plan.
VA Business Sponsor	Person that has overall responsibility for the successful planning and execution of a project.
VA Project Manager	Overall responsibility for the successful implementation of the OneVA Pharmacy project.
VistA Developer	Modify the VistA software and coordinate the Patch release.

1.5. Processes and References

The processes that guide the implementation of the OneVA Pharmacy Master Test Plan are:

- Test Preparation
- Product Build
- Independent Test and Evaluation

The references that support the implementation of the OneVA Pharmacy Implementation Master Test Plan are:

- [ProPath](#)
- [Section 508 Office Web Page](#)
- [Privacy Impact Assessment - Privacy Service](#)
- Rational Functional Testing Automated Framework

The references that support the implementation of the OneVA Pharmacy Implementation Master Test Plan are:

- [Requirements Specification Document \(RSD\) Version 2.1, December 2015](#)
- [System Design Document \(SDD\) Version 1.1, January 2016](#)
- [Requirements Traceability Matrix \(RTM\) V1.5, February 2016](#)
- [OneVA Pharmacy Implementation Risk Log Version 2.0, February 2016](#)

2. Items to Be Tested

The OneVA Pharmacy Master Test Plan covers the functional requirements as included in section 2.6 of the OneVA Pharmacy. In general, the requirements describe the ability to access the patients' remote site prescription information in order to refill active prescriptions and create the prescription labels. Also covered is the following:

- Exclusion of prescriptions for controlled substances
- Other current restrictions on refills, such as "too early" and when prescription are suspended or held
- Required refill reports
- Design constraints listed in the OneVA Pharmacy RSD section 2.3
- Business rules listed in the OneVA Pharmacy RSD section 2.2

2.1. Test Cases

The 'Test Cases' section identifies all tests and expected results. Some items to be tested are covered by one or more test cases. The tests performed must demonstrate the new capabilities developed in the prototype and provide the required functionality while not adversely impacting existing functionality.

Test cases are derived from the three use cases defined in the OneVA Pharmacy SDD and include testing the current VistA functionality to ensure it is not adversely affected.

The following lists show the test case identifier and a description of each test case. The identifier (e.g., DAYTSHR_VO-3.1-1) includes the system designated as the local system in the test (DAYTSHR), the use case on which the test is based (VO-3.1), followed by a number (-1) to give each test case a unique id. A test case identifier can be used to search the test case workbook and test run session logs for specific expected and actual results.

- **View Orders (VO)** test cases show all local orders and any active, suspended, or held orders on remote systems.
 - DAYTSHR_VO-3.2-1 View Orders - Local prescriptions only. Patient has prescriptions on the Local system.
 - DAYTSHR_VO-3.2-2 View Orders - Local prescriptions only. Patient has prescriptions on the Local system and is registered on CHYSHR.
 - DAYTSHR_VO-3.2-3 View Orders - Local prescriptions only. Patient has prescriptions on the Local system and is registered on NCHG03.

- DAYTSHR_VO-3.2-4 View Orders - Local prescriptions only. Patient has prescriptions on the Local system and is registered on CHYSHR and NCHG03.
- DAYTSHR_VO-3.2-5 View Orders - Remote prescriptions only. Patient has prescriptions on CHYSHR.
- DAYTSHR_VO-3.2-6 View Orders - Remote prescriptions only. Patient has prescriptions on NCHG03.
- DAYTSHR_VO-3.2-7 View Orders - Remote prescriptions only. Patient has prescriptions on CHYSHR and is registered on NCHG03.
- DAYTSHR_VO-3.2-8 View Orders - Remote prescriptions only. Patient has prescriptions on CHYSHR and is registered on NCHG03.
- DAYTSHR_VO-3.2-9 View Orders - Remote prescriptions only. Patient has prescriptions on CHYSHR and NCHG03.
- DAYTSHR_VO-3.2-10 View Orders - Local and remote prescriptions. Patient has prescriptions on the Local system and CHYSHR.
- DAYTSHR_VO-3.2-11 View Orders - Local and remote prescriptions. Patient has prescriptions on the Local system and NCHG03.
- DAYTSHR_VO-3.2-12 View Orders - Local and remote prescriptions. Patient has prescriptions on the Local system and CHYSHR and is registered on NCHG03.
- DAYTSHR_VO-3.2-13 View Orders - Local and remote prescriptions. Patient has prescriptions on the Local system and NCHG03 and is registered on CHYSHR.
- DAYTSHR_VO-3.2-14 View Orders - Local and remote prescriptions. Patient has prescriptions on all systems.
- DAYTSHR_VO-3.2-15 View Orders - No prescriptions. Patient has no Local prescriptions and is not registered on CHYSHR or NCHG03.
- DAYTSHR_VO-3.2-16 View Orders - No prescriptions. Patient has no Local prescriptions and is registered on CHYSHR but not on NCHG03.
- DAYTSHR_VO-3.2-17 View Orders - No prescriptions. Patient has no Local prescriptions and is registered on NCHG03 but not on CHYSHR.
- DAYTSHR_VO-3.2-18 View Orders - No prescriptions. Patient has no prescriptions and is registered on both remote systems.

For each of the 'View Order' test cases the patient's Medication Profile screen displays a list of prescriptions as described in the expected results section of the Test Case-Baseline file.

- **Exceptions**

- DAYTSHR_VO-3.2-11-3a View Orders - eMI ESB is not accessible. Patient has prescriptions on all systems but system component can't be accessed. Error message is displayed.
- DAYTSHR_VO-3.2-11-4a View Orders - HDR/CDS is not able. Patient has prescriptions on all systems but the database can't be accessed. Error message is displayed.

For each 'View Order Exception' test case the system displays an error message or warning to describe the exception condition. These or similar test are also run to designate CHYSHR and

NCHG03 VistA systems as the local system. These additional tests are not listed here but can be found in the Test Results document.

- **Dispense Local Order (DLO)**

- DAYTSHR_DLO-3.3-1 Dispense Local Order - Prescription is refilled. A prescription originating on the local site is dispensed. Patient has local prescriptions only.
- DAYTSHR_DLO-3.3-1-R Dispense Local Order - Prescription is refilled. A prescription originating on the local site is dispensed. Patient has local and remote prescriptions.
- DAYTSHR_DLO-3.3-1-ALT Dispense Local Order - Partial prescription is filled. A prescription originating on the local site is partially dispensed. Patient has local prescriptions only.
- DAYTSHR_DLO-3.3-1-ALTR Dispense Local Order - Partial prescription is filled. A prescription originating on the local site is partially dispensed. Patient has local and remote prescriptions.
- DAYTSHR_DLO-3.3-1-PSU Dispense Local Order - Suspended prescription is partially filled.
- DAYTSHR_DLO-3.3-1-ERF Dispense Local Order - Prescription is refilled early. A prescription selected for refill before the next refill date is dispensed and is suspended until a future date.

As a result of the execution of the 'Dispense Local Order' test case the patient's Medication Profile screen displays an updated late refill date and the number of refills remaining is decremented for the prescription selected.

- **Exceptions**

- DAYTSHR_DLO-3.3-1-LCK Dispense Local Order - Unable to lock patient prescription order. A pharmacist cannot select a prescription when open by another pharmacist at the same site. An error message displays.
- DAYTSHR_DLO-3.3-1-SUS Dispense Local Order - Suspended prescription is not refilled. A prescription with a status of Suspended is not dispensed. Error message displays.
- DAYTSHR_DLO-3.3-1-HLD Dispense Local Order - Held prescription is not refilled. A prescription with a status of Hold is not dispensed. Error message displays.
- DAYTSHR_DLO-3.3-1-PHO Dispense Local Order - Held prescription is not partial filled. A prescription with a status of Hold is not dispensed. Error message displays.

For each 'Dispense Local Order' exception, the system displays an error message or warning to describe the condition.

- **Dispense Remote Order (DRO)**

- DAYTSHR_DRO-3.4-1 Dispense Remote Order - Prescription is refilled. A prescription originating at another site is dispensed. Patient has remote prescriptions only.

- DAYTSHR_DRO-3.4-2 Dispense Remote Order - Prescription is refilled. A prescription originating at another site is dispensed. Patient has local and remote prescriptions.
- DAYTSHR_DRO-3.4-1-ALT Dispense Remote Order - Partial prescription is filled. A prescription originating at another site is partially dispensed. Patient has remote prescriptions only.
- DAYTSHR_DRO-3.4-2-ALT Dispense Remote Order - Partial prescription is filled. A prescription originating at another site is partially dispensed. Patient has local and remote prescriptions.
- DAYTSHR_DRO-3.4-1-PSUS Dispense Remote Order - Suspended prescription is partial filled.

When the 'Dispense Remote Order' test case is being executed, the system displays a message to confirm the action. For refills, the patient's Medication Profile screen displays the updated last refill date and the number of refills remaining is decremented for the prescription refilled. For partial refills, confirming data is found in the Remote Prescription Reports.

- **Exceptions**

- DAYTSHR_DRO-3.4-1-1a Dispense Remote Order - Controlled substance not refilled. A prescription originating on a remote site is not dispensed when the drug is classified as a controlled substance. An error message displays.
- DAYTSHR_DRO-3.4-1-2a Dispense Remote Order - eMI ESB is not accessible.
- DAYTSHR_DRO-3.4-1-3a Dispense Remote Order - Remote VistA is not accessible.
- DAYTSHR_DRO-3.4-1-4a Dispense Remote Order - Remote VistA instance fails the order.
- DAYTSHR_DRO-3.4-1-LCK Dispense Remote Order - Prescription is locked by another user. A user has the patient's prescription open on the remote system. An error message displays.
- DAYTSHR_DRO-3.4-1-ERF Dispense Remote Order - Prescription is not refilled early; prescription is not suspended. Patient's remote prescription cannot be refilled.
- DAYTSHR_DRO-3.4-1-3a2 Dispense Remote Order - Prescription Manager System does not receive a response from remote VistA systems.
- DAYTSHR_DRO-3.4-1-SUS Dispense Remote Order - Suspended prescription is not refilled.
- DAYTSHR_DRO-3.4-1-HLD Dispense Remote Order - Held prescription is not refilled.
- DAYTSHR_DRO-3.4-1-PHLD Dispense Remote Order - Held prescription is not partial filled.
- DAYTSHR_DRO-3.4-1-QCTO Dispense Remote Order - Query connection time out. Unable to connect to HDR/CDS within five (5) seconds.

- DAYTSHR_DRO-3.4-1-QRTO Dispense Remote Order - Query response time out. No response from HDR/CDS within ten (10) seconds.
- DAYTSHR_DRO-3.4-1-RCTO Dispense Remote Order - Refill connection time out. Unable to connect to the remote VistA system within five (5) seconds.
- DAYTSHR_DRO-3.4-1-RRTO Dispense Remote Order - Refill response time out. No response from the remote Vista system within sixty (60) seconds.
- DAYTSHR_DRO-3.4-1-QCTOx Dispense Remote Order - Query connection time out. Unable to connect to HDR/CDS within sixty (60) seconds.
- DAYTSHR_DRO-3.4-1-QRTOx Dispense Remote Order - Query response time out. No response from HDR/CDS within sixty (60) seconds.
- DAYTSHR_DRO-3.4-1-RCTOx Dispense Remote Order - Refill connection time out. Unable to connect to the remote VistA system within sixty (60) seconds.
- DAYTSHR_DRO-3.4-1-RRTOx Dispense Remote Order - Refill response time out. No response from the remote Vista system within sixty (60) seconds.

When the 'Dispense Remote Order' test case exception logic is executed, the system shows an error message or warning for each exception that describes the condition.

- **Remote Prescription Report (RPT)** test cases show all combinations of the three reports types and three selection options.
 - DAYTSHR_RPT-1-D Reports - Prescriptions filled for other facilities by date range.
 - DAYTSHR_RPT-1-P Reports - Prescriptions filled for other facilities by patient.
 - DAYTSHR_RPT-1-S Reports - Prescriptions filled for other facilities by site.
 - DAYTSHR_RPT-2-D Reports - Our prescriptions, filled by other facilities by date range.
 - DAYTSHR_RPT-2-P Reports - Our prescriptions, filled by other facilities by patient.
 - DAYTSHR_RPT-2-S Reports - Our prescriptions, filled by other facilities by site.
 - DAYTSHR_RPT-3-D Reports - All Remote activity by date range.
 - DAYTSHR_RPT-3-P Reports - All Remote activity by patient.
 - DAYTSHR_RPT-3-S Reports - All Remote activity by site.
 - CHYSHR_RPT-2-D Reports - Our prescriptions, filled by other facilities by date range.
 - CHYSHR_RPT-2-P Reports - Our prescriptions, filled by other facilities by patient.
 - CHYSHR_RPT-2-S Reports - Our prescriptions, filled by other facilities by site.

The 'Remote Prescription Report' test case results included in the Test Results document will contain annotations that describe how report test results confirm specific dispense orders test cases.

2.2. Overview of Test Inclusions

The following components and features and combinations of components and features will be tested as part of the OneVA Pharmacy project:

- Changes to VistA software to:
 - Allow patient prescriptions previously filled at the originating VA Pharmacy to be refilled at another VA Pharmacy in another location.
 - Print prescription labels for remote prescription refills.
 - Generate and print reports for remote activities.
- The new VAeMI-Middleware components will be tested not only via successful completion of refills but also by specific tests to show when communication among components is unsuccessful.

2.3. Overview of Test Exclusions

The testing exclusion for the OneVA Pharmacy project includes 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 refill or partial fill from occurring at another site for this same patient's prescription.

3. Test Approach

The 'Test Approach' section describes the testing strategies used by the OneVA Pharmacy Team to develop and execute test cases and test scripts.

3.1. How Tests Are Developed

A single test is specified as a **test case**. A test case describes the interactions between a user and the system and identifies the expected result. A test case typically represents a use case scenario, that is, a single path or sequence of steps through a use case. The most frequent or normal scenario is often referred to as the "happy case". Other scenarios represent infrequent interactions and results and include error conditions and exceptions.

The test cases for the OneVA Pharmacy Master Test Plan are derived primarily from the three use cases defined in the SDD and cover all use case scenarios. Additional test cases are included for scenarios to show that current system functions are not adversely impacted and to show variations in the starting conditions.

Test cases are described in detail in the Test Case workbook (TestCases-Baseline.xlsx). Each test case includes the following:

- A test case identifier, name, and description
- Starting conditions and ending conditions
- The name of the person who created the test and the date the test was created
- The name of the person who executed the test and the date the test was executed

- Pass/Fail indication for each step in the test
- User response to the starting conditions or to the result of the previous step
- Expected results of this step
- Explanatory notes, if necessary
- Test Case comments

An example of a test case definition is shown in the [Appendix B](#).

Test case execution is automated by following the Test Automation Project Rational Functional Tester (RFT) Framework developed by the Office of Information and Technology's Product Development, Product Assessment Competency Division.

A single test case is defined in the RFT Framework by one or more modules. The scope of a module is limited to a single function such as "Connect to VistA" or "Dispense Remote Order". This allows modules to be combined and reused to create a single test case. A module consists of a script, command file, and data file. The command file specifies the sequence of system prompts and user responses required to complete the function. It also contains commands to verify specific data displayed by the system and confirm successful execution of a step. While the command file can contain a single "hard coded" response value for each prompt, it can also contain a reference to the response value as stored in the data file. This allows a command sequence to be used for multiple test cases that differ in response values.

The modular script is a Java program file. It identifies the command file and the specific data row in the data file work sheet that contains the user responses for a specific test case. The modular script calls the RTF Framework infrastructure to execute the test. The Java program can also handle differences in a test sequence caused when different data is used for a response. This allows the module to be used for more test cases.

The execution script is another Java program which specifies the sequence of modules that make up a complete test from start to end. It can be used to launch a single test script or multiple test scripts when starting conditions are the same.

For example, a module – View Orders – is developed to display the Medication Profile screen for a patient. The module's scope is limited to responding with the patient's Social Security Number (SSN) as the starting condition. Then the "Select PATIENT NAME" prompt is advanced until the Medication Profile screen displays and specific content is verified. The module returns the system to the starting condition.

Other modules establish the terminal session to a specific VistA instance, opens the Patient Prescription Processing menu, and disconnects the terminal session.

An Execution Script runs the modules in the required order and repeatedly runs the View Orders module with different patient SSNs to perform 18 specific test cases.

An Excel Script Execution worksheet specifies all the Execution Scripts that make up the full set of test scripts needed for regression testing. The work sheet includes parameters passed to the Execution Scripts and identifies any Script dependencies.

Test cases and test case results will be documented in the Test Results deliverable. Some content maybe be referenced to or copied from, content managed in the Rational Team Concert (RTC) Quality Management (QM) and Change and Configuration Management (CCM) tools.

Test patients and prescription are created using current VistA functionality to provide initial conditions for test cases. Multiple patients reflect the combinations of a patient being registered on one or more VistA systems, with and without prescriptions, to ensure the software covers the required functionality. [Appendix D](#) lists patients along with test prescriptions that were used in the Innovations proof-of-concept project. Similar test data will be created for this effort.

3.2. How Tests Are Performed

Unit testing is performed manually by software developers using VistA terminal sessions as needed to ensure the code modules developed produce the expected results.

Integration testing is performed manually by developers along with some automated testing as the test analysts' implement test scripts and suites. This testing is performed when code modules are combined to ensure the change produced the expected results and no other system components were not affected.

Regression testing is performed by running test scripts using the automation provided within RFT and developed by Testing Automation Project (TAP). Once all components of the system are assembled into a packaged version of the software product deliverable, regression testing is performed to ensure the changes implemented for that version work as expected and to ensure other functionally wasn't adversely affected. Regression testing is performed when the enhanced system is built and installed in the testing environment, which is referred to as Software Quality Assurance (SQA) Testing.

Software developers and test analysts initiate VistA terminal sessions using the Attachmate Reflection Terminal Emulator or Intersystem's Cache Terminal, from a Remote Desktop to any VistA development server.

Test analysts use RFT as installed and configured for the One VA Pharmacy project, using the TAP RFT Framework guidelines, to run test scripts as grouped by Execution scripts. All test scripts are run by launching a Script Execution script.

To perform a test from RFT a test analyst opens an Execution Script in the Integration Development Environment (IDE) window and clicks the 'Run (Play)' icon. Test results are captured in Hypertext Markup Language (HTML) test log files and in Excel workbooks.

4. Testing Methodologies

The 'Test Methodologies' section describes the testing strategies used by the OneVA Pharmacy Team to validate the software and comply with the VAs Veteran-focused Integration Process (VIP) framework (formerly Project Management Accountability System (PMAS)), ProPath, and Section 508 standards. The section explains how various testing methodologies will be used throughout the project lifecycle. These methodologies include the testing of component builds and continuous development integration testing, Software Quality Assurance (SQA), Unit Functionality Testing (UFT), Enterprise System Engineering (ESE) Enterprise Testing Service (ESE) (Security, Privacy, and Section 508), Performance Testing, Operational Readiness (OR), and Initial Capability (IOC).

4.1. Component & Integration Test

The software developers perform the ‘Component’ testing as part of the continuous cycle of development. The component testing, also known as unit testing, includes the internal technical and functional testing of a module of code. The OneVA Pharmacy software developer will be responsible to verify that requirements defined in the SDD have been applied to the module while testing. The Developers will perform unit testing and initial integration testing in the development environment while creating and modifying code to ensure the system modules produce the expected results. The Developers will conduct unit testing using the International Business Machine’s (IBMs) IDE. The IDE is a software application that provides comprehensive facilities including build automation tools and debugger.

The Test Analysts will work with the Developers to perform the final ‘Integration’ testing. They will execute automated test scripts in the development environment before SQA testing begins.

4.1.1. Component & Integration Test Environment

In order to execute the ‘Component & Integration’ tests, a development environment containing three instances of the VistA systems will be made available. For an example, in some test cases and scripts, “Cheyenne (CHYSHR)”, “Dayton (DAYTSHR)”, and “North Chicago (NCHG03)” are used to represent multiple VistA sites. “Cheyenne” is designated the local site for testing purposes and “Dayton” and “North Chicago” are considered remote sites.

The development environment is also equipped with the enterprise messaging capabilities that are provided through the VAs Enterprise Messaging Infrastructure (eMI) enterprise message transport middleware. The use of the middleware allows the connection of the HDR/CDS and remote VistA applications and provides abstracted message endpoints.

Each Developer and Tester’s local computers are configured to allow a Telnet terminal connection to each VistA test instance in the development environment. In addition, each Developer will have access to IBM IDE.

4.2. Software Quality Assurance Testing

The ‘Software Quality Assurance’ (SQA) testing will occur in an environment simulating a construct of the production environment, with all integrated components available. This shall include the following:

- Designated Local VistA site
- Designation of two remote VistA sites
- VAeMI-Middleware Components
- HDR/CDS Connectivity, Availability, & Access

The Quality Assurance (QA) Tester will be responsible for the SQA testing and will execute a suite of approved functional tests to cover regression, access control, usability, Section 508 compliance, interfacing to remote VistA sites, integration with the HDR/CDS, and perform the exercise of executing automated test scripts. The QA Tester will document all defects and report back to the development team for resolution. The Developers will resolve the software defects

within the development environment. Once corrected the component integration testing will occur then the SQA process will be repeated until all scripts received a “pass” status.

The OneVA Pharmacy Test Lead shall be responsible to assure the following steps are executed as part of the SQA testing process:

- Ensure SQA test cases and scripts along with test results are captured and correlated to the appropriate functional requirements in the RTM.
- Ensure for each product build, a test evaluation is created.
- Ensure for each product build tested that SQA testers complete the Vista SQA Checklist.
- Ensure testers update all related RTC tasks they are assigned for Unit Functional Testing.
- Delivery of the following:
 - Updated test cases, test scripts, and results
 - Updated RTM
 - Product build test evaluations
 - Product build VistA SQL checklist

4.3. User Functionality Test

The OneVA Pharmacy Testing Team will ensure the User Functionality Test (UFT) is conducted. As stated earlier in this document in [‘Section 2 Items to Be Tested’](#) all functional requirements defined in the RSD will be tested. The Team will coordinate and facilitate all aspects of the UFT by establishing user with test accounts and access to the software.

To prepare for UFT, the OneVA Pharmacy Team will perform the following:

- Install software in test environment
- Create test patients and prescriptions
- Create user ids for VA testers
- Provide test case scripts workbook to identify all test steps along with setup instructions

During the testing the Team will ensure the following:

- VA testers perform all tests manually and record the result of each test step in the test case scripts workbook.
- VA testers tests the code using approved test cases and test scripts and records that each test has passed or failed according to the documented pass/fail criteria.
- VA testers perform ad-hoc testing, using the test patient data created for the test case scripts and by creating any additional data needed.
- Support for trouble shooting installation and access issues along with any other issues found during testing.
- Correction of Severity 1 or 2 defects discovered during UFT.

Once the testing completes the following will occur:

- Test Lead will collect and analyze UFT test results and ensure any Severity 1 or 2 defects have related CMM tasks opened, correlated and assigned.
- Developers will ensure any Severity 1 or 2 Defects have related CMM tasks opened, correlated and corrected.
- Delivery of test case and test script results document.
- Delivery of signed 'Customer Acceptance Form'.

4.4. Enterprise System Engineering

The OneVA Pharmacy project will support the Enterprise System Engineering (ESE) testing requirements by including in their testing process the Enterprise Testing Service (ETS). The OneVA Pharmacy Team's VA Stakeholders determined the following would be acceptable and included in testing:

- Enterprise Testing Service Components:
 - Security
 - Privacy
 - Section 508 Compliance
- Performance Testing
- Operational Readiness (OR)
- Initial Operating Capability (IOC) Evaluation & Testing

4.4.1. Enterprise Testing Service

Enterprise Testing Service (ETS), an organization within ESE, works hand-in-hand with Product Development (PD) to provide an independent evaluation of development artifacts and product software. This evaluation helps Office of Information and Technology (OI&T) management minimize risk of schedule delays, cost overrun, poor quality, and software failure. ETS services includes Security, Privacy, and Section 508 compliance and provides:

- Test environments on which software products can be tested
- Independent evaluations of project artifacts and project software

4.4.1.1. Security Testing

The 'Security Testing' component for the OneVA Pharmacy project relies on security compliance in place currently for VistA and the HDR/CDS. Communication between VistA and the HDR/CDS and between multiple VistA sites is provided via the VAeMI-Middleware components, which are VA required and compliant.

4.4.1.2. Privacy Testing

The 'Privacy Testing' component for the OneVA Pharmacy project relies on privacy compliance in place currently for VistA and the HDR/CDS. Communication between VistA and the HDR/CDS and between multiple VistA sites is provided via the VAeMI-Middleware components, which are VA required and compliant.

4.4.1.3. Section 508 Compliance Testing

Section 508 is a **Federal law** that is part of the Rehabilitation Act of 1973, which established guidelines for technology accessibility. Section 508 requires that any Electronic and Information Technology (E&IT) developed, procured, maintained, or used by Federal departments and agencies must allow Federal employees and members of the public with disabilities access to and use of information and data.

Section 508 provides technical criteria requirements for the following:

- Software applications and operating systems
- Web-based information or applications
- Telecommunications
- Video or multimedia products
- Self-contained closed products
- Desktop and portable computers
- All government agencies are required to comply with Section 508
- All content purchased or used by the Federal government for the creation, conversion, or duplication of information must meet the Section 508 standards

The VA requires all applicable products to comply with Section 508 by submitting the appropriate Section 508 conformance documents for each product. The OneVA Pharmacy project has incorporated the following in compliance of Section 508:

- The OneVA Pharmacy project is limited to the VistA PSO LM BACKDOOR ORDERS which is a text based, 80-column terminal interface. No fundamental interface changes are being made within VistA. Requirements are met through content changes to the current data screens (e.g., Medication Profile and OP Medication) and to prompts and responses to support remote refills.
- As the OneVA Pharmacy module was designed to run on a system that has a keyboard, product functions are executable from a keyboard where the function itself or the result of performing a function can be discerned textually.
- The OneVA Pharmacy was designed to not disrupt or disable activated features of other products that are identified as accessibility features, where those features are developed and documented according to industry standards. Applications also shall not disrupt or disable activated features of any operating system that are identified as accessibility features where the application programming interface for those accessibility features has been documented by the manufacturer of the operating system and is available to the product developer.
- The OneVA Pharmacy incorporates a well-defined on-screen indication of the current focus as it moves among interactive interface elements, as the input focus changes. The focus programmatically exposes so that assistive technology can track focus and focus changes.

- There is sufficient information about the user interface element including the identity, operation, and state of the element, available to assistive technology. When an image represents a program element, the information conveyed by the image is also be available in text.
- Bitmap images are used to identify controls, status indicators, or other programmatic elements, and the meaning assigned to those images are consistent throughout the application's performance.
- Textual information has been provided through the system functions for displaying text. The minimum information that has been made available includes text content, text input caret location, and text attributes.
- The OneVA Pharmacy software does not override user selected contrast and color selections and other individual display attributes.
- Color-coding has not been used as the only means of conveying information, indicating an action, prompting a response, or distinguishing a visual element.
- OneVA Pharmacy does not use flashing or blinking text, objects, or other elements having a flash or blink frequency greater than 2 Hz and lower than 55 Hz.

The OneVA Pharmacy Project Team used the Section 508 standard checklists to ensure conformance with Section 508 standards.

4.5. Performance Testing

The 'Performance Testing' path taken by the OneVA Pharmacy project will test specific test cases and the results will be documented as compliant in the performance requirements. The specific performance testing, documented in the OneVA Pharmacy RSD include the following:

- Time out a query connection in five (5) seconds.
- Time out the query response in ten (10) seconds.
- Time out a 'refill/partial fill' connection in five (5) seconds.
- Time out a 'refill/partial fill' response in sixty (60) seconds.

4.6. Operational Readiness (OR)

The ESE ETS may require any of the following tests to be performed by their testing group:

- Requirements Validation Testing
- Integration/Interoperability Testing
- Work Product Review (WPR)
- Test Observation and Validation
- Capacity Planning
- Patient Safety Issue (PSI) Testing

The OneVA Pharmacy Team will be ready to engage when alerted to any of these planned tests. The Team will be ready for the following tasks:

- Provide ESE ETS any documentation and software builds required for ESE ETS to complete testing
- Incorporate and track ESE ETS test schedules into the OneVA Pharmacy Project Schedule as a dependency
- Identify and track risks associated with testing related dependencies
- Report as “Yellow” or “Red” any testing dependencies that impact product delivery

4.7. Initial Operating Capability (IOC) Evaluation

The OneVA Pharmacy Team will coordinate and facilitate all aspects of the Initial Operating Capability (IOC) evaluation. Prior to starting IOC evaluation, the Team ensures all required documentation is complete and available for review. Once ready, the Team will complete and submit the IOC Entry Request to obtain approval.

The OneVA Pharmacy Team will respond to all questions and queries from the VHA Release Management in support of the IOC Entry Process. Once all prerequisites have been met, the IOC evaluation sites install and use the developed solution in their production account for the established timeframe, determined during the planning phase. During the evaluation phase, the Development Team will provide the following:

- VistA code to IOC sites via FORUM
- Installation and setup instructions
- Troubleshooting support for installation
- Setup procedures
- User guides and training manuals

The IOC users perform tests and identify and report problems to the Development Team. The Development Team documents defects discovered during testing in the defect log. The Team will immediately correct Severity level 1 and 2 defects, perform appropriate tests, then rerelease the software.

The IOC Site Results Evaluator and the IOC Site Representative complete and sign the Initial Operating Capability Site Concurrence Statement.

The Development Team completes and submits the IOC Exit Summary, IOC Site Evaluation Defect Log, and Concurrence Statement to the VHA Release Management Board for approval to exit IOC Testing.

5. Testing Techniques

5.1. Test Types

A ‘Test Type’ is a focused test objective and may take place on one or more test levels or phases of testing. The list of ‘Test Types’ and definitions are found in [Appendix A](#). The following table

contains the test types being deployed for the OneVA Pharmacy project and the person responsible for the specific test.

Table 3: Test Types

Test Types	Party Responsible
Build verification testing	System Architect
Business cycle testing	VA Stakeholders
Component integration testing	VistA Developer & System Architect
Configuration testing	VistA Developer & System Architect
Documentation testing	QA Tester
Error analysis testing	Test Lead & QA Tester
Installation testing	Test Lead & QA Tester
Integration testing	Test Lead & QA Tester
Performance testing	VistA Developer
Product component testing	VistA Developer & System Architect
Section 508 compliance testing	IOC
System testing	Test Lead & QA Tester
User Functionality Testing	VA Stakeholders
User interface testing	Test Lead & QA Tester

5.2. Productivity and Support Tools

Table 4 describes the tools that will be employed to support OneVA Pharmacy test plan.

Table 4: Tool Category or Types

Tool Category or Type	Tool Brand Name	Vendor or In-house	Version
Test Management	Rational Functional Tester	In-house	
Defect Tracking	Rational Team Concert	In-house	
Test Coverage Monitor	Rational Functional Tester / Rational Quality Manager	In-house	
Performance Testing			
Configuration Management	FORUM	In-house	7
Functional Test Automation	Rational Functional Tester	In-house	

6. Test Criteria

6.1. Process Reviews

The OneVA Pharmacy Master Test Plan will undergo two separate reviews. They are:

- Peer Review (upon completion of the Master Test Plan)
- Formal Review (after Development Manager approval of the Master Test Plan)

For more information on the reviews associated with testing, see the Product Build, Test Preparation, and Independent Test and Evaluation processes.

6.2. Pass/Fail Criteria

Each test case and test script developed will be designed to “pass” or “fail” a test. All failed test scripts will be logged and tracked and resolution will be made by the Development Team.

6.3. Suspension and Resumption Criteria

Not applicable.

7. Test Deliverables

Table 5 lists the test deliverables for the OneVA Pharmacy project.

Table 5: Test Deliverables

Test Deliverables	Responsible Party
Signed Master Test Plan (0004AA)	TJ Cope, Test Lead
Peer and User Reviewed and Approved Test Cases/Test Scripts (0004AB)	TJ Cope, Test Lead
Testing Related Tasks Entered into RTC (0004AC)	TJ Cope, Test Lead
Signed IOC Site Memorandum of Understanding (0004AD)	TJ Cope, Test Lead
Risk Analysis and Testing Scope Report (0004AE)	TJ Cope, Test Lead
Primary Developer Checklists (0004AF)	Brad Fisher, VistA Developer
Secondary Developer Checklists (0004AG)	Ron Ruzbacki
HP Fortify Static Code Analyzer Scan Results (0004AJ)	Tony Burleson, Developer
Product Build for SQA Testing (0004AK)	Brad Fisher, VistA Developer Tony Burleson, Developer
Updated Test Cases and Test Scripts and Results (0004AH)	TJ Cope, Test Lead

Test Deliverables	Responsible Party
Test Case and Test Script Results (0004AL)	TJ Cope, Test Lead
Updated Requirements Traceability Matrix (0004AM)	TJ Cope, Test Lead
Product Build Test Evaluations (0004AN)	TJ Cope, Test Lead
Product Build VistA SQA Checklists (0004AP)	TJ Cope, Test Lead
UFT Test Cases and Test Scripts and Results (0004AQ)	TJ Cope, Test Lead
Signed Customer Acceptance Form (0004AR)	Cecelia Wray, Project Manager
IOC Exit Summary (0004AS)	Cecelia Wray, Project Manager
IOC Site Evaluation Defect Log and Concurrence Statement (0004AT)	TJ Cope, Test Lead

8. Test Schedule

The testing schedule is documented in the OneVA Pharmacy Work Breakdown Structure (WBS) Project Plan. Each OneVA Pharmacy project milestone and milestone due date is available in the WBS. The following table lists the testing milestones and the responsible party.

Table 6: Testing Milestones

Testing Milestones	Responsible Party
Project moves into SQA Testing	Brad Fisher, VistA Developer Tony Burleson, Developer
SQA Testing complete	TJ Cope, Test Lead
Project moves into User Functional Testing	TJ Cope, Test Lead
User Functional Testing complete	TJ Cope, Test Lead
Project moves into ETS Testing and Operational Readiness Review	Cecelia Wray, Project Manager
ETS Testing and ORR complete	Cecelia Wray, Project Manager
Project moves into IOC Testing	Cecelia Wray, Project Manager
IOC Testing complete	Cecelia Wray, Project Manager

9. Test Environments

A test environment is an environment containing hardware, instrumentation, simulators, software tools, and other support elements needed to conduct a test.

9.1. Test Environment Configurations

The test environment will be a controlled environment in order to avoid the introduction of defects that would alter the expected test results and invalidate the test cases. The goal is to replicate the test environment as-closely-as-possible to production. In order to ensure such an environment, the OneVA Pharmacy Test Lead will be responsible for maintaining the following test environments:

- CHYSHR
- DAYTSHR
- NCHG03

9.2. Base System Hardware

Table 7 sets forth the system resources for the test effort presented in the OneVA Pharmacy Master Test Plan. The specific elements of the test system have not been fully understood yet for the early iterations so this section will be updated over time. The test system shall simulate the production environment as closely as possible.

Table 7: System Hardware Resources

Resource	Quantity	Name and Type
Network or Subnet		TBD
Server Name		TBD
Include special configuration requirements		TBD

9.3. Base Software Elements in the Test Environments

The following table describes the base software elements that are required in the test environment for the OneVA Pharmacy Master Test Plan.

Table 8: Software Elements

Software Element Name	Version	Type and Other Notes
<i>NT Workstation</i>		<i>Operating System</i>
<i>Windows 2000</i>		<i>Operating System</i>
<i>Network Associates McAfee Virus Checker</i>		<i>Virus Detection and Recovery Software</i>

10. Staffing and Training Needs

Table 9 describes the personnel resources needed to plan, prepare, and execute the OneVA Pharmacy Master Test Plan and the test environments.

Table 9: Staffing Resources

Testing Task	Quantity of Personnel Needed	Test Process	Duration/ Days
Create the Master Test Plan	Test Lead and Technical Editor	Test Preparation	4 weeks
Establish the Test Environment	Systems Analyst and VistA Developer	Test Preparation	8 weeks
Perform System Tests		Product Build	4 weeks

11. Risks and Constraints

The OneVA Pharmacy Risk Log was taken into consideration in the development of the Master Test Plan. The risks identified in the OneVA Pharmacy Master Test Plan can be found in the risk log.

12. Test Metrics

Metrics are a system of parameters or methods for quantitative and periodic assessment of a process that is to be measured. Test metrics may include, but are not limited to:

- Number of test cases (pass/fail)
- Percentage of test cases executed
- Number of requirements and percentage tested
- Percentage of test cases resulting in defect detection
- Number of defects attributed to test case/test script creation
- Percentage of defects identified; listed by cause and severity
- Time to re-test

Attachment A – Approval Signatures

The OneVA Pharmacy Master Test Plan documents the project’s overall approach to testing and includes:

- Items to be tested, testing strategy & criteria
- Test deliverables & schedule
- Test environments
- Staffing and training needs
- Risks and constraints & Test Metrics

This section is used to document the approval of the OneVA Pharmacy Master Test Plan 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.

REVIEW DATE:

SCRIBE:

Signed:

Joshua Patterson	Date
Integrated Project Team (IPT) Chair	

Michael Valentino	Date
Business Sponsor	

Cecelia Wray	Date
Project Manager	

Appendix A - Test Type Definitions

Test Type	Definition
Build Verification Testing (Prerequisite: Smoke Test)	A type of testing performed for each new build, comparing the baseline with the actual object properties in the current build. The output from this test indicates what object properties have changed or don't meet the requirements. Together with the Smoke test, the Build Verification test may be utilized by projects to determine if additional functional testing is appropriate for a given build or if a build is ready for production.
Component Integration Testing	Testing performed to expose defects in the interfaces and interaction between integrated components as well as verifying installation instructions.
Configuration Testing	A type of testing concerned with checking the programs compatibility with as many possible configurations of hardware and system software. In most production environments, the particular hardware specifications for the client workstations, network connections, and database servers vary. Client workstations may have different software loaded, for example, applications, drivers, and so on hand, at any one time; many different combinations may be active using different resources. The goal of the configuration test is finding a hardware combination that should be, but is not, compatible with the program.
Documentation Testing	Documentation testing is a type of testing that should validate the information contained within the software documentation set for the following qualities: compliance to accepted standards and conventions, accuracy, completeness, and usability. The documentation testing should verify that all of the required information is provided in order for the appropriate user to be able to properly install, implement, operate, and maintain the software application. The current VistA documentation set can consist of any of the following manual types: Release Notes, Installation Guide, User Manuals, Technical Manual, and Security Guide.
Error Analysis Testing	This type of testing verifies that the application checks for input, detects invalid data, and prevents invalid data from being entered into the application. This type of testing also includes the verification of error logs and error messages that are displayed to the user.
Installation Testing	A type of testing that verifies that the application or system installs as intended on different hardware and software configurations, and under different conditions (e.g., a new installation, an upgrade, and a complete or custom installation). Installation testing may also measure the ease with which an application or system can be successfully installed, typically measured in terms of the average amount of person-hours required for a trained operator or hardware

Test Type	Definition
	engineer to perform the installation. Part of this installation test is to perform an uninstall. As a result of this uninstall, the system, application and database should return to the state prior to the install.
Integration Testing	An incremental series of tests of combinations or sub-assemblies of selected components in an overall system. Integration testing is incremental in a successively larger and more complex combinations of components tested in sequence, proceeding from the unit level (0% integration) to eventually the full system test (100% integration).
Migration Testing	<p>A type of testing that follows standard VistA and H_eV-VistA operating procedures and loads the latest .jar version onto a live copy of VistA and H_eV-VistA. The following are examples of the types of tests that can be performed as part of migration testing:</p> <ul style="list-style-type: none"> • Data conversion has been completed • Data tables are successfully created • Parallel test for confirmation of data integrity • Review output report, before and after migration, to confirm data integrity • Run equivalent process, before and after migration
Performance Monitoring Testing	Performance profiling assesses how a system is spending its time and consuming resources. This type of performance testing optimizes the performance of a system by measuring how much time and resources the system is spending in each function. These tests identify performance limitations in the code and specify which sections of the code would benefit most from optimization work. The goal of performance profiling is to optimize the feature and application performance.
Performance Testing	Performance Testing assesses how a system is spending its time and consuming resources. Performance testing optimizes a system by measuring how much time and resources the system is spending in each function. These tests identify performance limitations in the code and specify which sections of the code would benefit most from optimization work. Performance testing may be further refined by the use of specific types of performance tests, such as, benchmark test, load test, stress test, performance monitoring test, and contention test.
Product Component Testing	Product Component Testing (aka Unit Testing) is the internal technical and functional testing of a module/component of code. Product Component Testing verifies that the requirements defined in the detail design specification have been successfully applied to the module/component under test.
Section 508 Compliance Testing	A type of test that (1) ensures that persons with disabilities have access to and are able to interact with graphical user interfaces and

Test Type	Definition
	(2) verifies that the application or system meets the specified Section 508 Compliance standards.
Security Testing	A type of test that validates the security requirements and to ensure readiness for the independent testing performed by the Security Assessment Team as used by the Assessment and Authorization Process.
Smoke Test	A type of testing that ensures that an application or system is stable enough to enter testing in the currently active test phase. It is usually a subset of the overall set of tests, preferably automated, that touches parts of the system in at least a cursory way.
System Testing	System testing is the testing of all parts of an integrated system, including interfaces to external systems. Both functional and structural types of testing are performed to verify that the system performance, operation and functionality are sound. End to end testing with all interfacing systems is the ultimate version.
Usability Testing	Usability testing identifies problems in the ease-of-use and ease-of-learning of a product. Usability tests may focus upon, and are not limited to: human factors, aesthetics, consistency in the user interface, online and context-sensitive help, wizards and agents, user documentation.
User Functionality Test	User Functionality Test (UAT) is a type of Acceptance Test that involves end-users testing the functionality of the application using test data in a controlled test environment.
User Interface Testing	User-interface (UI) testing exercises the user interfaces to ensure that the interfaces follow accepted standards and meet requirements. User-interface testing is often referred to as GUI testing. UI testing provides tools and services for driving the user interface of an application from a test.

Appendix B - Test Case Defined

The following image is an example of a test case as specified in the Test Cases worksheet in the "TestCases-Baseline.xlsx" workbook.

Test Case Example						
	B	D	E	F	G	H
1	TC-ID	Name	Description	Conditions	Number Steps	Expected Result
	Dev1_VO-3.1-1_1	View Orders - Patient has local prescriptions only	Patient is registered and has prescriptions on Dev1 only	Patient 111-99-0201 has RX #s Dev1 - Active -----ACTIVE----- 1 501276\$ TRIAMCINOLONE 75MCG 240D Dev2 - not registered Dev3 - not registered "Select PATIENT NAME:" prompt is displayed	1 1. Enter patient SSN: 111990201	Patient Name, DOB, SSN, etc. displays Checking remote systems message displays "Press Return to continue:" prompt displays
15						
16	Dev1_VO-3.1-1_2				2 Type: [Enter]	"RX PATIENT STATUS: OPT NSC/" prompt displays
17	Dev1_VO-3.1-1_3				3 Type: [Enter]	page 1 Patient Information screen displays
18	Dev1_VO-3.1-1_4				4 Type: [Enter]	"Select Action: Next Screen/" prompt displays page 2 Patient Information screen displays "Select Action: Quit/" prompt displays
19	Dev1_VO-3.1-1_End				End Type: [Enter]	Medication Profile screen displays -----ACTIVE----- 1 501276\$ TRIAMCINOLONE 75MCG 240D ORAL
	Dev1_VO-3.1-1_1	View Orders - Patient has	Patient is registered on	Patient 111-99-0201 has RX #s	1 1. Enter patient SSN:	Patient Name, DOB, SSN, etc. displays

The following image displays additional information for the same test case but includes the test results.

Test Case Example												
	B	D	J	K	L	M	N	O	P	Q	R	S
1	TC-ID	Name	Pass	Fail	Tester	TestScript	TestDate	Test Result	Comments	CreatedBy	CreateDat	Actor
	Dev1_VO-3.1-1_1	View Orders - Patient has local prescriptions only						Pass		TJ Cope	4/2/2014	Pharmacist
15												
16	Dev1_VO-3.1-1_2											
17	Dev1_VO-3.1-1_3											
18	Dev1_VO-3.1-1_4											
19	Dev1_VO-3.1-1_End											
	Dev1_VO-3.1-1_1	View Orders - Patient has						Pass		TJ Cope	4/2/2014	Pharmacist

When the last step (row 19) of a test script is executed the “CHK” value is manually changed to “Yes” and the Test Result value (row 15) will change to “Pass” as displayed in the following image.

Test Case Example

	B	D	J	K	L	M	N	O	P	Q	R	S	T
1	TC-ID	Name	Pass	Fail	Tester	TestScript	TestDate	Test Result	Comments	CreatedBy	CreateDate	Actor	OverallComment
	Dev1_VO-3.1-1_1	View Orders - Patient has local prescriptions only	Yes		TJ Cope	ViewOrders-TS-GOLDDDEV1	7/21/2014 2:46:14 PM	Fail		TJ Cope	4/2/2014	Pharmacist	
15													
16	Dev1_VO-3.1-1_2		Yes		TJ Cope	ViewOrders-TS-	7/21/201						
17	Dev1_VO-3.1-1_3		Yes		TJ Cope	ViewOrders-TS-GOLDDDEV1	7/21/2014 2:46:14						
18	Dev1_VO-3.1-1_4		Yes		TJ Cope	ViewOrders-TS-GOLDDDEV1	7/21/2014 2:46:14						
19	Dev1_VO-3.1-1_End		CHK		TJ Cope	ViewOrders-TS-GOLDDDEV1	7/21/2014 2:46:15 PM						
19	Dev1_VO-3.1-1_1	View Orders - Patient has local prescriptions only	Yes		TJ Cope	ViewOrders-TS-GOLDDDEV1	7/21/2014 2:46:14 PM	Fail		TJ Cope	4/2/2014	Pharmacist	

Appendix C - Test Patients and Prescriptions

Vista System	#	RX #	DRUG	QTY	ST	ISSUE DATE	LAST FILL	REF REM	DAY SUP
Patient Name: INTREGVOT, OXX SSN: 111880201									
DAYTSHR	1	501113\$	TRIAMCINOLONE 75MCG 240D ORAL INHL	2	A	06-11	06-11	11	30
Patient Name: INTREGVOT, ROX SSN: 111880202									
DAYTSHR	<No local prescriptions found.>								
CHYSHR	1	501111\$	AMOXICILLIN 250/CLAV K 125MG TAB	21	A>	06-11	06-11	1	7
CHYSHR	2	501112\$	IBUPROFEN 200MG TAB	240	A>	06-11	06-11	11	30
Patient Name: INTREGVOT, RXO SSN: 111880203									
DAYTSHR	<No local prescriptions found.>								
NCHG03	1	501111\$	PREDNISONE 1MG TAB	60	A>	05-01	05-01	9	30
Patient Name: INTREGVOT, ROR SSN: 111880204									
DAYTSHR	<No local prescriptions found.>								
CHYSHR	1	501113\$	ACETAMINOPHEN 325MG TAB	240	A>	07-23	07-23	5	30
NCHG03	<No local prescriptions found.>								
Patient Name: INTREGVOT, RRO SSN: 111880205									
DAYTSHR	<No local prescriptions found.>								
CHYSHR	<No local prescriptions found.>								
NCHG03	1	501113\$	NAPROXEN 250MG TAB	120	A>	06-03	06-04	11	30
NCHG03	2	501112\$	TRIAMCINOLONE 75MCG 240D ORAL INHL	2	A	06-03	06-04	3	30
Patient Name: INTREGVOT, ROO SSN: 111880206									
DAYTSHR	<No local prescriptions found.>								
CHYSHR	1	501114\$	PSEUDOEPHEDRINE HCL 30MG TAB	120	A>	05-27	05-27	5	60
CHYSHR	2	501124\$	ASPIRIN 325MG BUFFERED TAB	360	H>	07-25	-	5	60

VistA System -----	#	RX #	DRUG	QTY	ST	ISSUE DATE	LAST FILL	REF REM	DAY SUP
NCHG03	1	501114\$	RAMIPRIL 5MG CAP	60	A>	07-23	07-23	11	30

Patient Name: INTREGVOT,OOX SSN: 111880207

DAYTSHR	1	501114\$	HYDROCHLOROTHIAZIDE 25MG TAB	60	A>	06-11	06-11	5	60
DAYTSHR	2	501115\$	OMEPRazole 20MG EC CAP	30	A>	06-11	06-11	3	30
DAYTSHR	3	501116\$	RAMIPRIL 5MG CAP	30	A>	06-23	06-24	7	30
CHYSHR	1	501115\$	AMOXICILLIN 250/CLAV K 62.5MG/5ML SUSP	E>	06-23	06-23	0	7	
				Qty: 200					
CHYSHR	2	501116\$	IBUPROFEN 200MG TAB	360	A>	06-25	06-25	3	90

Patient Name: INTREGVOT,OXO SSN: 111880208

DAYTSHR	1	501125\$	ASPIRIN 325MG BUFFERED TAB	120	A>	06-23	07-25	0	30
DAYTSHR	2	501117\$	ATORVASTATIN CALCIUM 10MG TAB	60	A>	06-23	06-23	5	60
NCHG03	1	501115\$	VERAPAMIL HCL 120MG SA CAP	30	A>	06-02	06-02	11	30

Patient Name: INTREGVOT,ORR SSN: 111880209

DAYTSHR	1	501118\$	HYDROCHLOROTHIAZIDE 25MG TAB	90	A>	05-27	05-27	3	90
DAYTSHR	2	501119\$	OMEPRazole 20MG EC CAP	90	A>	05-27	05-27	3	90
DAYTSHR	3	501126\$	IBUPROFEN 200MG TAB	120	DC>	07-25	07-25	11	30
CHYSHR	1	501118\$	AMOXICILLIN 250/CLAV K 125MG TAB	28	A>	07-23	07-23	1	14
CHYSHR	2	501119\$	HYDROCORTISONE 1% CREAM	20	A	07-23	07-23	2	30
CHYSHR	3	501117\$	IBUPROFEN 200MG TAB	240	A>	07-23	07-23	11	30
NCHG03			<No local prescriptions found.>						

Patient Name: INTREGVOT,ORO SSN: 111880210

DAYTSHR	1	501120\$	ATORVASTATIN CALCIUM 10MG TAB	60	A>	06-20	06-20	5	60
CHYSHR			<No local prescriptions found.>						
NCHG03	1	501116\$	VERAPAMIL HCL 120MG SA CAP	60	A>	07-23	07-23	11	30

Patient Name: INTREGVOT,OOO SSN: 111880211

DAYTSHR	1	501112\$	TRIAMCINOLONE 75MCG 240D ORAL INHL	2	A	07-23	07-23	11	30
DAYTSHR	1	501123\$	ACETAMINOPHEN 325MG TAB	240	S>	07-25	08-14	5	30

VistA System	#	RX #	DRUG	QTY	ST	ISSUE DATE	LAST FILL	REF REM	DAY SUP
CHYSHR	2	501109\$	NAPROXEN 250MG TAB	60	A>	05-16	05-16	11	30
CHYSHR	3	501110\$	RANITIDINE HCL 25MG EFFER TAB	60	A	05-16	05-16	6	30
CHYSHR	1	501122\$	IBUPROFEN 200MG TAB	120	S>	07-14	08-03	3	30
NCHG03	2	501110\$	PREDNISONE 1MG TAB	120	A>	06-23	06-23	10	30

Patient Name: INTREGVOT,ORX SSN: 111880212

DAYTSHR	1	501120\$	ATORVASTATIN CALCIUM 10MG TAB	60	A>	06-20	06-20	5	60
CHYSHR	<No local prescriptions found.>								

Patient Name: INTREGVOT,OXR SSN: 111880213

DAYTSHR	1	501122\$	VERAPAMIL HCL 120MG SA CAP	60	A>	07-23	07-23	7	30
NCHG03	<No local prescriptions found.>								

Patient Name: INTREGVOT,ORR SSN: 111880214

DAYTSHR	1	501123\$	IBUPROFEN 800MG TAB	60	A>	05-27	05-27	6	30
DAYTSHR	2	501124\$	PSEUDOEPHEDRINE HCL 30MG TAB	60	A>	05-27	05-27	5	30
CHYSHR	<No local prescriptions found.>								
NCHG03	<No local prescriptions found.>								

Patient Name: INTREGVOT,RXX SSN: 111880215

DAYTSHR This patient has no prescriptions

Patient Name: INTREGVOT,RRX SSN: 111880216

DAYTSHR	<No local prescriptions found.>								
CHYSHR	<No local prescriptions found.>								

Patient Name: INTREGVOT,RXR SSN: 111880217

DAYTSHR	<No local prescriptions found.>								
NCHG03	<No local prescriptions found.>								

Patient Name: INTREGVOT,RRR SSN: 111880218

DAYTSHR <No local prescriptions found.>

VistA System	#	RX #	DRUG	QTY	ST	ISSUE DATE	LAST FILL	REF REM	DAY SUP
CHYSHR			<No local prescriptions found.>						
NCHG03			<No local prescriptions found.>						
Patient Name: INTREGVOT,XXR SSN: 111880219									
CHYSHR			This patient has no prescriptions						
Patient Name: INTREGVOT,XXR SSN: 111880220									
NCHG03			This patient has no prescriptions						
Patient Name: INTREGVOT,XOX SSN: 111880221									
CHYSHR	1	501120\$	PSEUDOEPHEDRINE HCL 30MG TAB	120	A>	06-11	06-11	5	60
Patient Name: INTREGVOT,XXO SSN: 111880222									
NCHG03	1	501117\$	PREDNISONE 1MG TAB	120	A>	06-02	06-26	11	30
Patient Name: INTREGVOT,XRR SSN: 111880223									
CHYSHR			<No local prescriptions found.>						
NCHG03			<No local prescriptions found.>						
Patient Name: INTREGVOT,XOR SSN: 111880224									
CHYSHR	1	501121\$	AMOXICILLIN 250/CLAV K 125MG TAB	14	A>	07-23	07-23	0	7
NCHG03			<No local prescriptions found.>						
Patient Name: INTREGVOT,XRO SSN: 111880225									
CHYSHR			<No local prescriptions found.>						
NCHG03	1	501119\$	HYDROCHLOROTHIAZIDE 25MG TAB	90	A>	05-27	05-27	3	90
NCHG03	2	501118\$	OMEPRazole 20MG EC CAP	60	A>	05-27	05-27	5	60
Patient Name: INTREGVOT,XOO SSN: 111880226									
CHYSHR	1	501122\$	PSEUDOEPHEDRINE HCL 30MG TAB	120	A>	05-27	05-28	5	60
NCHG03	1	501120\$	NAPROXEN 250MG TAB	120	A>	06-03	06-03	11	30
NCHG03	2	501121\$	TRIAMCINOLONE 75MCG 240D ORAL INHL	2	A	06-03	06-03	11	30

VistA System	#	RX #	DRUG	QTY	ST	ISSUE DATE	LAST FILL	REF REM	DAY SUP
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Patient Name: CLARK,PETER SSN: 111000480

DAYTSHR	1	501146\$	ASPIRIN 25MG/DIPYRIDAMOLE 200MG SA CAP	A>	03-16	03-16	9	30
DAYTSHR				Qty: 90				
DAYTSHR	2	501150\$	IBUPROFEN 100MG/5ML SUSP	90 A>	03-16	03-16	11	30
CHYSHR	3	501218	NAPROXEN 125MG/5ML SUSP	90 A	03-16	03-16	11	30
CHYSHR	4	501219	ACETAMINOPHEN 100MG/ML (SF) ORAL SU	90 A	03-16	03-16	11	30
CHYSHR	5	501220	AMOXICILLIN 250/CLAV K 125MG TAB	90 A	03-16	08-25	10	30
NCHG03			<No active prescriptions found.>					

Patient Name: GRIFFEY,JOE SSN: 111000481

DAYTSHR	1	501147\$	ASPIRIN 25MG/DIPYRIDAMOLE 200MG SA CAP	A>	03-16	03-16	11	30
DAYTSHR				Qty: 90				
DAYTSHR	2	501151\$	IBUPROFEN 100MG/5ML SUSP	90 A>	03-16	03-16	11	30
CHYSHR	1	501222	ACETAMINOPHEN 100MG/ML (SF) ORAL SU	90 A	03-16	03-16	11	30
CHYSHR	2	501223	AMOXICILLIN 250/CLAV K 125MG TAB	90 A	03-16	03-16	11	30
CHYSHR	3	501221	NAPROXEN 125MG/5ML SUSP	90 A	03-16	03-16	11	30
NCHG03	1	501151	FENOFIBRATE 150MG CAP	240 S	03-17	09-14	9	30
NCHG03	2	501150	PSEUDOEPHEDRINE 60MG S.T.	240 A	03-17	03-17	11	30
NCHG03	3	501152	TETRACYCLINE HCL 250MG CAP	240 H	03-17	-	11	30