

Nationwide Adapter Version 5.0.1



Test Evaluation Summary Version 3.0

Created December 2011 (Updated for November 2012)

**Department of Veterans Affairs
Office of Information & Technology
Product Development**

Revision History

Date	Version	Description	Author
May 2012	2.0	Initial document	
May 31, 2012	2.1	Review document	
June 1, 2012	2.2	Updated the Test Summary section	
July 3, 2012	2.3	Updated the defects (UAT defects and Partner Testing defects)	
July 10, 2012	2.4	Final UAT details added.	
July 11, 2012	2.5	TWR: Applied style sheet throughout. Corrected title page and footer. Modified VAP-UAT tables for 508-compliance. This version is FINAL.	
November 20, 2012	2.6	Updated for v5.0.1.	
November 27, 2012	2.7	Incorporate review comments for Adapter 5.0.1 (Correct “Kaiser Permanente from “SD Beacon”;CHANGE DEFECT SEVERITY LEVELS TO High,Critical,Medium)	
November 27, 2012	3.0	Ran a 508-compliance check. This version has been base-lined and is FINAL.	

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1. INTRODUCTION

The Department of Veterans Affairs (VA) Nationwide Health Information Network (NwHIN) Adapter version 5.0.1 project is responsible for exchanging patient information utilizing Health Information Technology Standards Panel (HITSP) standards. The following testing was conducted for Adapter 5.0.1:

- SQA testing
- Partner testing (SSA, DoD and Indiana Health)
- UAT testing

1.1. Purpose

The purpose of this Test Evaluation Summary for the Integration Test cycle of the software is to:

- Present a summary analysis of the key test results and key measures of test for review and assessment by designated stakeholders
- Provide a general statement of the relative quality of the system under test

This Test Evaluation Summary also supports the following objectives specified in the Adapter/Partner Integration (PI) Master Test Plan:

- Provides test coverage for 100 percent of the documented requirements (as listed in the Business Requirements Document); furthermore Ad-hoc and automated testing will be
- conducted to exercise the code to the highest extent.
- Executes 100 percent of the test cases during the various testing phases, as required.
- Creates, maintains, and controls the test environment

Provides test coverage of these Epic Stories:

- ES042 Initiate NwHIN Patient Discovery Request
- ES043 Respond to VA Patient Discovery Request
- ES046 Initiate Query for NwHIN Documents
- ES047 Respond to Query for VA Documents Request
- ES048 Initiate NwHIN Document Retrieve Request

- ES049 Respond to VA Document Retrieve Request (is this the same as respond to a request from a Nationwide Health Information Exchange (NHIE) for a VA document, when the Purpose of Use is Coverage, by sending the requested document)

1.2. Scope

Manual and automated testing was used to verify that the software requirements have been met and the software is functioning appropriately. VistAWeb was used to verify and display the demographics and clinical data as well as the ability to retrieve and display the C32 document. Veterans Authorizations and Preferences (VAP) was used to verify reports, opt in/out status, and perform the Patient Announce. Rational ClearQuest was used to log all issues found during testing. The following list covers the System Integration methodologies.

- NwHIN SQA will verify that C32 Extensible Mark-up Language (XML) files are created correctly and are sent to the appropriate subsystem and then to the Connect Gateway.
- The Document Query is used for servicing document query requests from the gateway. This interface is used both for pass-through as well as normal processing, and the Adapter must implement this interface if the existing health system will provide patient health information based on a query from the NwHIN.
- The Document Retrieve will be used for servicing document retrieve requests from the gateway. This interface is used both for pass-through as well as normal processing, and the Adapter must implement this interface if the existing health system will provide patient health information based on a query from the NwHIN.

1.3. Definitions, Acronyms and Abbreviations

Table 1: Definitions, Acronyms, and Abbreviations

Acronym	Term
BN	Business Need
CASE	Computer Assisted Software Engineering
DoD	Department of Defense
HITSP	Health Information Technology Standards Panel
IEEE	Institute of Electrical & Electronics Engineers
NHIE	Nationwide Health Information Network Exchange
NwHIN	Nationwide Health Information Network
PHI	Personally-Identifiable Health Information

Acronym	Term
PI	Partner Integration
SDD	System Design Document
TSPR	Technical Services Project Repository
VA	Department of Veterans Affairs
VAP	Veterans Authorizations and Preferences
XML	Extensible Mark-up Language

1.4. References

The following documents are referenced to facilitate a greater understanding of the changes developed for the NwHIN Adapter 5.0.1 release. Unless otherwise noted, documents in the table below can be accessed from the Technical Service Project Repository (TSPR) – Adapter Team Notebook.

Table 2: Adapter 5.0.1 Documentation References (on TSPR)

Document Title	Notebook Section	Post Date
NwHIN Adapter 5.0 Requirements Specification Document	Project Planning – Requirements Specification Document	May 2012
NwHIN Adapter 5.0.1 Epic Stories	Requirements Elaboration – Use Case Specifications	May 2012
NwHIN Adapter 5.0 Master Test Plan	Test Preparation- Master Test Plan	May 2012
NwHIN Adapter 5.0 Interface Control Document	Product Architecture – Interface Control Document	May 2012

2. TEST RESULTS SUMMARY

The following table captures the test script information for Adapter 5.0.1 Software Quality Assurance (SQA). Testing partners and their respective test dates were:

- Kaiser Permanente: 11/14/2012
- Multicare: 11/16/2012
- MedVirginia: 11/13/2012
- SCHIEx: 11/15/2012
- Conemaugh: 11/13/2012

Table 3: Adapter 5.0.1 SQA Test Execution Log

VA Test Script Number/Name	Patient Name	Pass/Fail
CCR585_Create a fully populated VA C32	NWHINZZZTESTPATIENT, NWHINONE; NWHINZZZTESTPATIENT, NWHINELVEN	Pass
CCR682_C32 update to Medication Status section	NWHINZZZTESTPATIENT, NWHINONE; NWHINZZZTESTPATIENT, NWHINELVEN	Pass
CCR683_C32 update to Immunization module	NWHINZZZTESTPATIENT, NWHINONE; NWHINZZZTESTPATIENT, NWHINELVEN	Pass
CCR700_Update Business rules for the C32 modules	NWHINZZZTESTPATIENT, NWHINONE	Pass
CCR710_C32 update to Medication fulfillment history information section	NWHINZZZTESTPATIENT, NWHINONE; NWHINZZZTESTPATIENT, NWHINELVEN	Pass
CCR711_C32 update to Procedures narrative section for provider element	NWHINZZZTESTPATIENT, NWHINONE; NWHINZZZTESTPATIENT, NWHINELVEN	Pass
CCR732_Include 201306 response for errors in AdapterGatewayPatientDiscovery Component response	n/a – removal of blank screen	Pass
CCR750_Patient Discovery Request - Add the Patient's Middle Name to Patient Discovery Audit Report		Pass

Table 4: Adapter 5.0.1 Test Execution Log Defects

ID	Test Cycle	Description	Date Reported	Severity	Status

No defects were found.

2.1. Defect Severity and Priority Levels

A defect is defined as a flaw in a component or system that can cause the component or system to fail to perform its required function, e.g. an incorrect statement or data definition. A defect, if encountered during execution, may cause a failure of the component or system.

Defects are categorized according to severity and priority levels: The Test Analyst assigns the severity, while the Development Manager assigns the priority for repair. For more information, see Appendix A – Defect Severity and Priority Definition in this Test Evaluation Summary.

2.2. Total Defects by Severity Level

No defects were identified during the testing of NwHIN Adapter 5.0.1.

2.3. Defects by Severity Level and Iteration

No defects were identified during the testing of NwHIN Adapter 5.0.1.

2.4. Defects by Source and Resolution

No defects were identified during the testing of NwHIN Adapter 5.0.1.

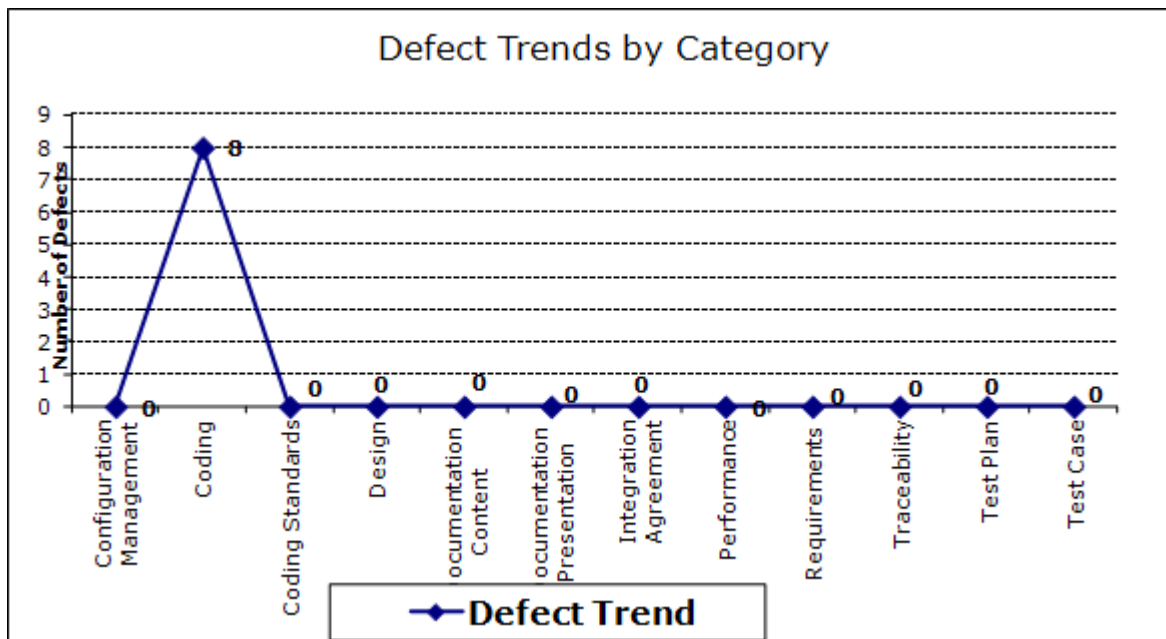
2.5. Defects by Resolution and Module

No defects were identified during the testing of NwHIN Adapter 5.0.1.

2.6. Defects by Defect Category

There are total of eight (8) defects for AdapterBundle-5.0.1.tar.gz. The defect categories are Configuration Management (CM), Coding (CO), Documentation Content (DC), Documentation Presentation (DP), Integration Agreement (IA), Performance (PE), Requirements (RE), Traceability (TR), Test Plan (TP), and Test Case (TC).

Figure 1: Defect Trends by Category



3. TEST COVERAGE

3.1. Requirements Covered

Table 5: Adapter 5.0.1 Requirements Covered

Total Requirements	Passed	Failed	Percent Pass
8	8	0	100%

3.2. Risks Covered

The following tables display the total number of requirements covered to this point by executed tests.

Table 6: Risks Covered in Adapter 5.0.1 Testing

Business Number	Business Requirement (OWNR)	Notes
7.2.4	BN 7.2.4 Produce VA C32 documents which comply with HITSP C32 V2.5 specification	

3.3. Code-based Coverage

Not applicable.

3.4. Security Coverage

The NwHIN Adapter SQA team developed tests to validate the security requirements and to ensure readiness for the independent testing performed by the Security Assessment Team as required by the Certification and Accreditation Process. For more information on security testing, contact the Lead Computer Assisted Software Engineering (CASE) Security Engineer via email at Services.

The NwHIN Adapter team focused on login protection, time out features, and encryption of data where required as well as tested the security features contained in the Functional Requirements document and/or those contained in the System Security Plan.

3.5. Privacy Coverage

Tests are created to ensure patient and employee information is adequately protected. No production data, specifically data that contains Personally-Identifiable Health Information (PHI) or Personal-Identifiable Information (PII) was used in development or system tests.

3.6. Section 508 Compliance Coverage

All Adapter 508 responsibilities have been transferred to VAP.

Appendix A. DEFECT SEVERITY AND PRIORITY DEFINITIONS

The classification of defects within a system examines both the severity and priority of the defect. Severity is a measure of how great the impact is on the user's ability to complete the documented actions within the system. On the other hand, priority determines the speed with which a given defect must be repaired. Defect classification may be determined either because testing is delayed by a failure in the system or a cumbersome workaround prevents a user from completing their assigned tasks. Both severity and priority measures must be recorded when scheduling defect resolution tasks.

A.1. Defect Severity Level

There are four Adapter 5.0.1 Defect Severity Levels.

A.1.1. Severity Level 1 – Critical

[IEEE definition: The defect results in the failure of the complete software system, of a subsystem, or of a software unit (program or module) within the system.]

- Any defect that compromises patient safety or system security, (examples of system security defects include breach of confidentiality requirements of the Privacy Act, the Health Insurance Portability and Accountability Act (HIPAA), or Federal Tax Information guidelines)
- Loss of system functionality critical to user operations with no suitable workaround. (i.e., there is no way to achieve the expected results using the application.)
- System crash or hang that prevents further testing or operation of the complete application or a section of the application.
- Any defect that causes corruption of data from a result of the system (as opposed to user error).
- Any defect in which inappropriate transmissions are consistently generated or appropriate transmissions of HL7 messages fail to be generated.
- Loss of functionality resulting in erroneous eligibility/enrollment determinations or communications not being sent.

A.1.2. Severity Level 2 –High

[IEEE definition: The defect results in the failure of the complete software system, of a subsystem, or of a software unit (program or module) within the system.] There is no way to make the failed component(s) function. However, there are acceptable processing alternatives which will yield the desired result.]

- A major defect in the functionality which does not result in corruption of data.
- A major defect in the functionality resulting in a failure of all or part of the application, where
- The expected results can temporarily be achieved by alternate means. The customer indicates the work around is acceptable for the short term.
- Any defect that does not conform to Section 508 standards
- Any defect that results in inaccurate or missing requirements
- Any defect that results in invalid authentication or authentication of an invalid end user

A.1.3. Severity Level 3 – Medium

[IEEE definition: The defect does not result in a failure, but causes the system to produce incorrect, incomplete, or inconsistent results, or the defect impairs the systems usability.]

- Minor functionality is not working as intended and a workaround exists but is not suitable for long term use.
- The inability of a valid user to access the system consistent with granted privileges
- Typographical or grammatical errors in the application, including installation guides, user guides, training manuals, design documents, etc.
- Any defect producing cryptic, incorrect or inappropriate error messages
- Any defect that results from the use of non-standard data terminology in the application or documentation, as defined by the Department of Veterans Affairs
- Cosmetic issues that are important to the integrity of the product, but do not result in data entry and or data quality problems

A.1.4. Severity Level 4 – Low

[IEEE definition: The defect does not cause a failure, does not impair usability, and the desired processing results are easily obtained by working around the defect.]

- Minor loss of or defect in the functionality where a long term use exists.
- Low level cosmetic issues

A.2. Priority Classifications

Priority classifications for Adapter 5.0.1 consist of the following.

Table 7: Adapter 5.0.1 Priority Classifications

Priority – Title	Description
Priority 1 – Resolve Immediately	Further development and/or testing cannot occur until the defect has been repaired. The system cannot be used until the repair has been affected. [IEEE definition]
Priority 2 - Give High Attention	The defect must be resolved as soon as possible because it is impairing development and/or testing activities. System use will be severely affected until the defect is fixed. [IEEE definition]
Priority 3 - Normal Queue	The defect should be resolved in the normal course of development activities. It can wait until a new build or version is created. [IEEE definition]
Priority 4 - Low Priority	The defect is an irritant which should be repaired but which can be repaired after more serious defects have been fixed. [IEEE definition]