



**STATE OF RHODE ISLAND
UNIFIED HEALTH
INFRASTRUCTURE
PROJECT**

**UAT SUMMARY REPORT
PHASE 1 RELEASE 6.6
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1. INTRODUCTION

The Rhode Island Unified Health Infrastructure Project (RI UHIP) provided an online marketplace named HealthSource RI (HSRI) for individuals, families, and small businesses to compare and enroll in health insurance coverage and gain access to tax credits, reduced cost sharing, and public programs.

Throughout 2015 and early 2016, releases were planned for targeted system updates to support the continued build out of HSRI. Release 6.6 included enhancements to include the implementation of an additional Federal Post Eligibility Verification (PEV) with the Federal Data Service Hub (FDSH) Periodic Verification Medicare/Death Confirmation Service (PVC Post Verification Composite).

This enhancement also allowed Carriers to comply with notification requirements to employees. Special Enrollment Period (SEP) modifications were made to reduce the need for backend data fixes due to gaps in coverage and allow Admins to take actions that closely match the requirements defined by State policies and Federal regulations on special enrollment. Modifications were also made to the Medicaid Termination Notice to only allow notices to be generated based on an individual's final eligibility status at the end of a given day.

The successful implementation of Release 6.6 officially closed out Phase 1 of the RI UHIP.

1.1 Purpose of the Report

The purpose of this document is to provide the project and executive management team with a summary of the User Acceptance Test (UAT) results for Release 6.6. This report provides detailed information related to the progress, issues, and risks encountered during the UAT cycles. In addition, Lessons Learned are derived from the observations in Section 6.

1.2 Scope of the Report

This report includes summary and detailed information on the results of UAT testing activities for Release 6.6 and each of the functional tracks below.

- PEV
- Pregnancy CX
- MA Termination
- SHOP
- SEP

1.3 Testing Tools

JAMA Contour is the requirements management tool used to execute, record, and store test cases. It also serves as the requirements traceability management (RTM) software tool to document requirements and associated elements such as defects and bi-directional traceability.

JIRA is the defect management tool where all defects are triaged and managed to closure.

1.4 Internet Browsers

To ensure functionality works across the various internet browsers, testing was performed in the following browsers:

- Google Chrome
- Internet Explorer 8
- Internet Explorer 9
- Internet Explorer 10
- Internet Explorer 11
- Mozilla Firefox

Due to testers' lack of experience with Macintosh, testing was unable to be executed using the Safari browser.

2. EXECUTIVE SUMMARY

User Acceptance Testing (UAT) for the Release 6.6 was scheduled January 4, 2016 thru January 22, 2016 with an implementation date of February 1, 2016.

In total, 261 test cases were executed to test the functionality, user experience, and allow stakeholders to gain confidence in the quality of the system. Overall, 95% of the test cases were successfully executed and passed; included in this percentage are defects that were fixed and deployed into the UAT environment, which allowed failed test cases to be re-executed and passed.

A total of 47 defects were logged. Fifteen (15) defects were moved out of UAT based on the State's approval: 5 defects were moved to Maintenance and Operations (M&O), 6 will be addressed in Problem Management/AMPM, and 4 will be addressed in Phase 2. A recurring theme across all deferred defects indicates a deficiency in coding: 34% of defects logged were due to coding not done, coding incorrect, or coding inefficiencies.

The decision to move forward with the implementation of Release 6.6 was made during the UAT Exit Meeting held on January 27, 2016.

3. OVERVIEW

3.1 Description of UAT

UAT for Release 6.6 covered the following:

- Functional Testing – This testing ensured that all business functions performed as defined within the business requirements and design documentation. It comprised the majority of the UAT effort and was based on use cases using two levels of business definition: test scenarios and test scripts.
- End-to-End Testing – This included testing the end-to-end business flow with real world scenarios that test interactions with various interfaces too (i.e. DOH, DLT, SWICA, NFP, FDSH etc.).
- Regression Testing – This included the re-execution of a select set of functional test cases to ensure that additional changes made to the application, after initial functional testing was executed, did not introduce any new issues.
- Ad hoc Testing – This testing helped ensure the thoroughness of all the testing efforts. It was useful in determining the effectiveness of the test cases and required knowledge, skills, and familiarity with the system.

3.2 Summary of Results

This section contains summaries of UAT execution results for Release 6.6 as of January 25, 2016.

- UAT Execution Results by Execution Status
- UAT Execution Results by Function

Table 1 - Execution Results by Status

Test Cases	Count	Percentage
Cases Executed	261	100%
Cases Passed	248	95%
Cases Failed	13	5%
Cases Blocked	0	0%
Cases In Progress	0	0%
Cases Not Run	0	0%
Total Cases	261	N/A

Table 2 - Execution Results by Function

Test Cases	Total Cases	Passed	Failed	In Progress	Blocked	Not Run	Total Executed
PEV Segment 1	42	42	0	0	0	0	42
Pregnancy CX Segment 1	8	8	0	0	0	0	8
MA Termination Segment 1	29	27	2	0	0	0	29
SHOP Segment 1	9	9	0	0	0	0	9
SEP Segment 1	23	22	1	0	0	0	23
SEP Initial App Segment 1	19	18	1	0	0	0	19
PEV Segments 2-5	67	63	4	0	0	0	67
Pregnancy CX Segment 2-5	21	21	0	0	0	0	21
MA Termination Segment 2-5	13	12	1	0	0	0	13
SHOP Segment 2	9	6	3	0	0	0	9

SEP Segment 2	21	20	1	0	0	0	21
Total	261	248	13	0	0	0	261

4. DETAILED RESULTS

4.1 UAT Defect Reporting

Defects were reviewed and triaged throughout the testing day, and daily triage calls allowed for defects to be addressed in a timely fashion. Defects that could not be addressed within the timeframe allocated for Release 6.6 UAT were deferred out to a future M&O release or Phase 2. Further detail is included in the Excel spreadsheet below.

4.1.1 UAT Deferred Dashboard as of January 25, 2016

This section contains summaries of deferred defects sorted by severity. The severity of the defect determines its weight and impact on the application/organization.

Table 3 - Deferred Defects by Severity

Defect Status	Severity 1- Critical	Severity 2- High	Severity 3- Medium	Severity 4- Low	Total
Deferred	0	13	2	0	15
Total	0	13	2	0	15

The embedded file below contains the list of deferred UAT defects as of January 25, 2016.



Release 6.6 Deferred
Defects.xlsx

4.1.2 UAT Closed Defects as of January 25, 2016

This section contains summaries of closed defects sorted by severity. The table below lists the root causes identified for all defects logged and the overall percentage for each.

Table 4 - Closed Defects by Reason by Severity

Root Cause	Severity 1- Critical	Severity 2- High	Severity 3- Medium	Severity 4- Low	Total	Percentage
Code Inefficient/Incorrect/Not Done	0	13	3	0	16	34%
Functional Specification	0	5	1	0	6	13%
Requirement Not Defined	0	4	1	0	5	11%
Test Error	0	3	1	0	4	9%
Environment Issue	0	4	0	0	4	9%
Code Merge	0	3	0	0	3	6%

Root Cause	Severity 1- Critical	Severity 2- High	Severity 3- Medium	Severity 4- Low	Total	Percentage
Not Reproducible	0	2	0	0	2	4%
Duplicate	0	2	0	0	2	4%
Data Migration	0	2	0	0	2	4%
Requirement Incorrect	0	1	0	0	1	2%
Limitation of Tool/Technology	0	1	0	0	1	2%
Configuration Issue	0	1	0	0	1	2%
Total	30	41	6	0	47	100%

5. LESSONS LEARNED – AREAS OF IMPROVEMENT

Over the course of the various UAT sessions, lessons learned were documented and areas of improvement were identified. Significant improvement was noted within Release 6.6 in the areas of communication and quality. The following items were observed and noted as areas of improvement that had a significant impact on the success of UAT.

- List of known Production issues was shared with the UAT Lead; this prevented the logging of defects that the State and/or Deloitte were already monitoring and addressing.
- Test scenarios were shared with the State prior to the start of UAT; this enabled the State to provide feedback.
- A weekly “deep dive” meeting was held to keep all of the Stakeholders abreast of issues and the progress of UAT.
- Use Cases were documented within the Functional Design Documents (FDDs) where applicable.
- Communication was ongoing and a significant improvement was noted in the number of times a defect fix was rejected.

6. OBSERVATIONS

Over the course of UAT, observations were tracked to facilitate process improvements and assist in creating repeatable processes to improve the delivery and overall outcome of our releases. The observations are categorized into the following groups:

- Productivity
- Completeness

6.1 Productivity Observations and Impact

Table 5 - Productivity Observations and Impact

Observation	Impact
Number of defects requiring code changes and/or changes in functional specification	Requirements not clearly defined; delay in functionality being implemented; functionality not as expected; delay in test execution
Accounts were not switched to Confirmed after time traveling	Delay in test execution
Issues with JAMA and JIRA	Users not able to access JAMA and/or JIRA; Defects could not be logged, test cases could not be executed; delay in defect migration
Use cases documented in FDDs are not sufficient	Increased number of defects being deferred to future releases and/or change requests
Experienced extreme slowness and failure to move from one page to another; Server had to be bounced	Delay in test execution
Server had to be bounced due to notices not generating	Delay in validation and test execution
PEV Batch ran not including all of the notice triggers	Failure to receive notices; delay in validation and test execution

6.2 Completeness Observations and Impact

Table 6 - Completeness Observations and Impact

Observation	Impact
Number of defects requiring code changes and/or changes in functional specification	Requirements not clearly defined; functionality not as expected; delay in test execution

7. UAT RESULTS MAPPED TO EXIT CRITERIA

The following table identifies the final status of the UAT exit criteria.

Table 7 - Results Mapped to Exit Criteria

#	Item/Objective	Status (Met or Not Met)	Comments	Criteria Met (Yes or No)
1	Test cases have been executed and passed (or deferred to a future release, if approved by State)	Met	All test cases were executed (13 cases failed)	Yes
2	Severity 1-Critical or Priority 1-Critical work requests have been resolved and tested	Met		Yes
3	Mutually-agreed Severity 2-High or Priority 2-High work requests which were not resolved during testing have been reviewed and deferred by the State (i.e., the State has agreed that it is acceptable to deploy with these work requests outstanding). In cases where the State does not agree to defer, these Severity 2-High or Priority 2-High work requests will be resolved prior to release. The State and Deloitte will collaborate to identify potential quality or schedule risks and implement appropriate mitigation strategies if necessary.	Met	15 test cases were deferred (5 in to M&O, 4 into Phase 2, and 6 into AM/PM)	Yes
4	The State has validated and signed off on UHIP functionality delivered during this release	Met	There is no formal sign off; however, verbal agreement was obtained during the UAT Exit and subsequent Touch Point meeting	Yes

8. RECOMMENDATIONS

In order to improve the results of future UAT efforts, CSG makes the recommendations below.

8.1 Test Scenario Development

The State should be an active partner in developing and documenting real-life scenarios that will enable the creation of test cases that fully support end-to-end testing of the functionality. This input is vital to successful test case execution and provides assurance from the business and technical side of test coverage.

8.2 Test Case Review

Deloitte should be required to implement policies and procedures for writing effective test cases to the extent that anyone is able to determine exactly what was executed within SIT. The State should require both Deloitte and KPMG to review and develop test scenarios and cases with the State in advance of SIT and UAT.

The State should require Deloitte to develop and implement risk mitigation strategies to improve the quality of SIT and provide thorough regression testing as well as automated regression. In addition, the State needs to be more involved in the UAT test case creation process. This will ensure UAT efforts are comprehensive and meet the State's expectations.

8.3 Triage Meeting

In addition to the daily triage calls, conduct a weekly deep dive meeting to ensure that all the stakeholders are on the same page with a complete understanding and full agreement of the defect descriptions, defect statuses, and defect resolutions.

8.4 Best Practices

CSG recommends the following best practices to ensure the success of UAT efforts.

- Allow SIT to exit before entering UAT (UAT and SIT should not run simultaneously)
- Adhere to SIT entrance and exit checklists
- Joint review of SIT exit criteria and UAT entrance criteria
- The SIT exit process is always followed to ensure decisions are visible and understood
- Thoroughly discuss UAT timelines and plans early in the release scheduling process
- Clearly define the scope of the functionality to be tested within UAT
- Test end-to-end business flows and avoid fragmented system integration tests
- Test the system with real world scenarios and data
- Think as an unknown user to the system
- Perform usability and Section 508 Compliance (Accessibility) testing
- Thoroughly discuss and review the total impact of moving a release into Production

- Known issues identified as ‘existing production behavior’ should be provided to the State and UAT Team prior to the start of UAT

8.5 Defect Resolution

CSG recommends the following to ensure all defects are properly addressed after UAT ends.

- Develop a plan of action to ensure all medium and low defects are properly addressed
- An impact analysis should be conducted prior to any agreement to defer a defect
- Develop a written and agreed upon plan to document how and when all deferred defects will be addressed
- Ensure that all defects identified as change request(s) are properly documented with a UHIP ID within JIRA