MMIS Testing Without Getting Testy

MESC August, 18, 2016

MMIS Testing …
… Without Getting Testy

The New Hampshire Experience

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MMIS Testing … Without Getting Testy
- The New Hampshire Experience

Today's Topics…

1. MMIS Testing…

2. …Without Getting Testy

MMIS Testing ... Without Getting Testy - The New Hampshire Experience

MMIS Testing

Diane Delisle

The State's Responsibility

- The MMIS is the State's system

- The contractors hand off a tested solution

- The State must execute its own tests to confirm that the system operates and performs according to specs

A Dedicated State Team

- Fully immersed in the DDI effort
- Knows requirements and how solution addresses them
- Builds understanding of system functions, processes, and data
- Develops standard methods and executes logically
- Coordinates and collaborates with Dev and QA contractors

Governance / Procedures / Communication

- Structured Change Management
- Systematized Defect Tracking
- Planned and Coordinated Release Strategy
- Collaborative Issue Resolution
- Contingency Planning
- Effective Communication – Between Teams, Trading Partners, and Business Users

Test Environments

- State controls its test environment(s)
- User acceptance environment is a mirror of production
  - Clustered vs. un-clustered
  - All capabilities supported
- Routine execution of daily processes, weekly financials, capitation cycles, and reporting
- Different environments for different purposes
  - Member eligibility or EDI testing

Test Data

- Has production-like quality
- Expansive to cover everyday conditions
- Refreshed according to plan
- Integrity is protected
- Can be aligned with trading partner data needs
- The State needs access to view data in the database

Internal Testing
Test New Changes or Defect Fixes

- Positive and negative
    - Make sure fix happens when it should
- Generate and verify inputs and outputs
- Execute updates
    - Online, database, interface updates
    - Adds, changes, voids, deletes
- Confirm user security privileges

External Testing
With Interface and Trading Partners

- Plan approach and data needs
- Coordinate delivery and testing
- Execute testing and validation
- Process inbound and outbound transactions
- Reconcile and share results and identified defects

- Insider tip: Run 1st inbound production files in UAT

Regression Testing

- Execute routine system processes
  - Daily eligibility files
  - All reimbursement methods
  - Weekly financial cycles
  - Monthly capitation cycles
  - Letter & report outputs
  - Periodic special jobs
- Validate critical processes
  - Even if not directly impacted by the fix or code release

Follow-Through

- Document new defects (if any)
  - Use detailed descriptive information and evidence
  - Screen shots
  - Report output
  - Data file details, etc.
- Close-out defects and change requests
- Educate users
  - New / changed functionality

Prep for Next Release

- Update Regression Testing scenarios
  - Account for the new system functionality
- Update system documentation
  - Include all implemented CRs and Defect fixes
- Apply Lessons Learned
  - Modify any affected procedures and documentation
- Update Operational Procedures
  - New / changed functions

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Part 2

... Without Getting Testy

Laura Hall

Testy?

(is not Tasty)

Why Do We Care?

- Accomplishing anything significant requires working with human beings.

- Humans are <u>less</u> effective when they are irritated.

Avoiding it – What She Said

- Establish procedures
- Establish supportive environment
- Define roles
- Build collaboration theme and collaborative team

Avoiding it, Fixing it – More Ideas

- Maintain your composure/balance
  - Eat your Wheaties
  - Take 10 deep breaths
  - Life or Death situation?
- Step into the other person's shoes
  - Listen
  - Observe
  - Imagine

Avoiding it, Fixing it

- Communicate
  - Mind your tone (team player)
  - Listen (and others are more open to listen to you)
- Email
  - Looks like it is coming from a machine, but the email is usually between people.
  - If emails get contentious, confusing, call on the phone and listen.
- Secret Weapon

Golden Rule

An Idea Worth Sharing

"I've learned that
people will forget what you said,
people will forget what you did, but
people will never forget
how you made them feel."

- Maya Angelou

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Contacts

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Missouri - Joint Testing Strategy for Eligibility and Enrollment

Paula Peters, MEDES Project Director
Kimberly Brandt, IV&V Project Manager

MEDES History

October 1, 2013 - Implementation of the Citizen Portal

January 6, 2014 – Implementation of the Worker Portal

June 2015 –
- Appointed a State Project Director
- Contract with IBM to provide analysis of remaining MEDES work

August 2015 - Aggressive MEDES Roadmap was created

Missouri MEDES

"Insanity: *doing the same thing* over and over again and expecting different *results*." - Albert Einstein

M E D E S
Missouri Eligibilty Determination Enrollment System

Moving MEDES Forward

- Since August 2015 – Over 60 Production Implementations

- Aggressive schedule required changes in testing methodology

MEDES
Missouri Eligibilty Determination Enrollment System

Test Planning

MEDES Testing Methodology – The Approach

- Functional Design Documents/Test Plans

- Time Travel vs Non-Time Travel

- Test Environments/Coordination with downstream systems

- Execution
  - Unit Testing
  - System Integration Testing (SIT)
  - Joint SIT /User Acceptance Testing
  - Final UAT

M E D E S
Missouri Eligibilty Determination Enrollment System

MEDES Testing Methodology – The Tools and Resources

- JIRA

- Organizational Change Management

- "Tiger Team"

- FSD Integration Team (FIT)

- Field staff participate in MEDES testing

MEDES Joint SIT/UAT

- Vendor onsite presence

- Creation/execution of Joint SIT/UAT test scripts

- Defect logging and triage

- State completes validation

- Regression testing

MEDES Final UAT

- Creation of Final UAT test scripts

- Focus on "failed" test scenarios from Joint SIT/UAT

- Volume of test scenarios is 1/3 of Joint SIT/UAT

- Selected end-to-end test scenarios

- State executes and validates

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MEDES Testing Lessons Learned

- Communication and coordination critical

- Daily tracking against plan thru dashboards

- Vendor onsite presence is key

- Triage room

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Missouri Eligibilty Determination Enrollment System

Questions and Contact Information

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MMIS Testing: Testing Without Being Testy

New MEDS Project

August 2016

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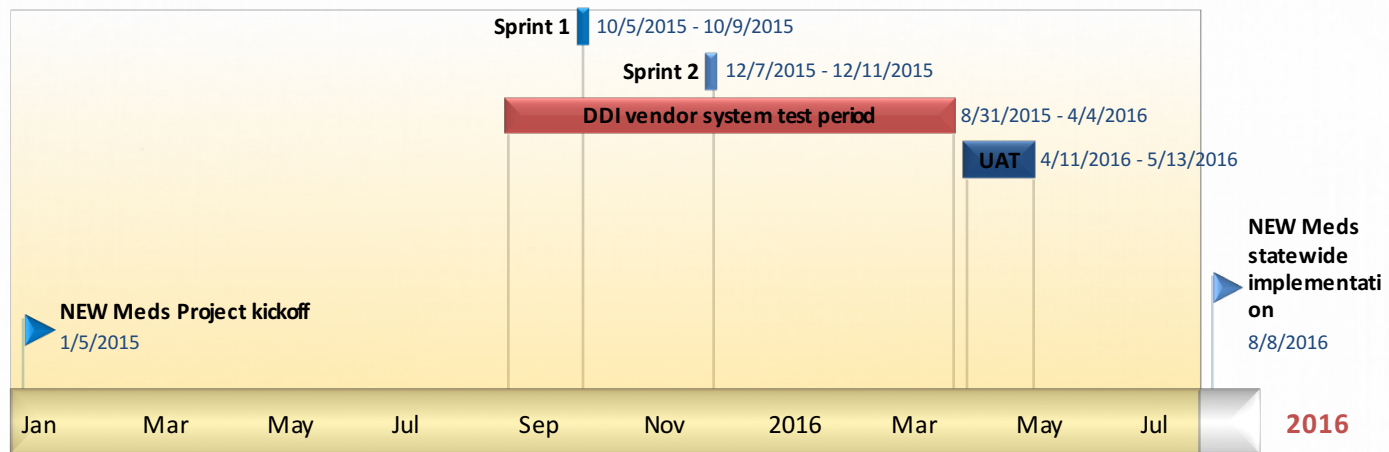**MEDICAID**

Problem Statement

Question: How can I avoid discovering too many defects and identifying new Change Requests during UAT?

Stephen M. Oshinsky, Managing Consultant, iTECH

Mark A. Joyce, PMP, CSM, Director – Business Development, State and Local Government

Strategy

- After discussions with the DDI vendor, DOM decided to requests two "sprints" prior to UAT to assist the vendor in discovering defects and required changes.

- The Sprints were released with increasing functionality and refined conversion data.

Sprint 1	10/5/2015 - 10/9/2015
Sprint 2	12/7/2015 - 12/11/2015
DDI vendor system test period	8/31/2015 - 4/4/2016
UAT	4/11/2016 - 5/13/2016

NEW Meds statewide implementation
8/8/2016

NEW Meds Project kickoff
1/5/2015

Jan | Mar | May | Jul | Sep | Nov | 2016 | Mar | May | Jul | **2016**

Sprint Test Results

As depicted in the following graph, each sprint detected a significant number of new defects (and CRs created). These defects were uncovered across all subsystems. Subsequent to each sprint, defect levels remained stable for several weeks.

Total Weekly Open Critical, High and Major Defects
[Submitted - Closed]
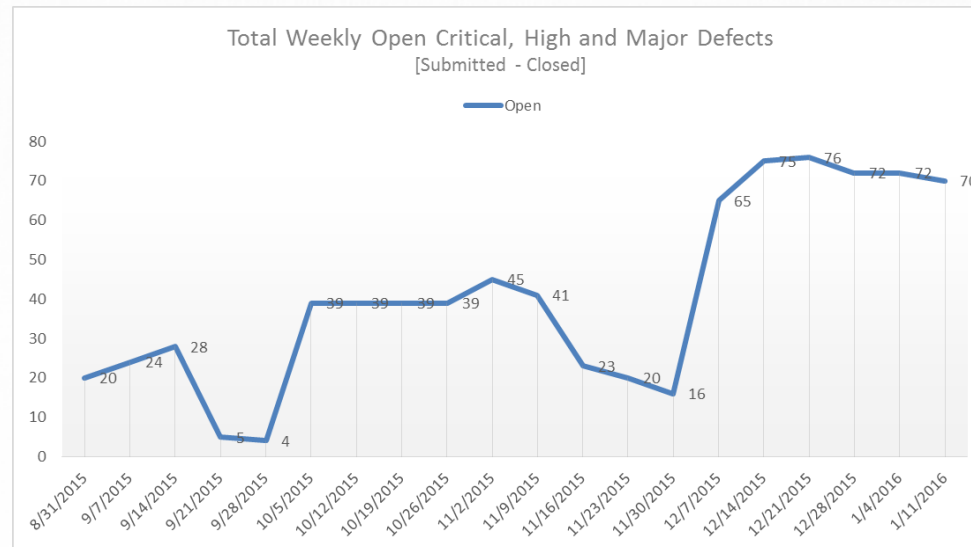
Estimate of UAT Defects

- The increasing trend line in defects found so close to UAT was a definite risk.

- Based on the previous data, the IV&V team developed a model to estimate the number of defects that would be open at the end of UAT.

- Inputs included:

  Number of tests to be run (635)

  Number of testers (20)

  Number of days of testing (10 for initial tests)

  Average defects / tester (97)

DOM UAT Analysis

- Based on the model, DOM realized UAT would not finish in the time allotted

	UAT Weeks					UAT DONE
	Week 1	Week 2	Week 3	Week 4	Week 5	
Found	71	71	3	3	3	
Total Def	71	143	146	149	152	
Closed Wk 1		4	26	16	8	3
Closed Wk 2			26	16	8	3
Closed Wk 3				1	1	0
Closed Wk 4					1	1
Closed Wk 5						1
Total Closed	0	4	51	32	17	8
Rejected	0	0	5	3	2	1
Net Closed	0	4	56	36	19	9
Open Def	71	139	96	70	57	50

50 open defects were predicted at the end of UAT
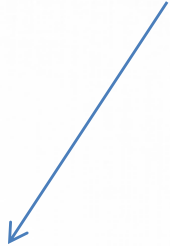
- DOM and the SLI IV&V team developed a strategy to mitigate the risk.

Mitigation Strategy

- DOM worked with the vendor for three extra releases, that were then tested.

- Releases added new functionality associated with CRs and as many defect fixes as possible

- After each release, test cases were refined and supplemented so the number of tests grew from 635 to 1400

- Due to larger number of test cases, additional testers were added to UAT

Results of All DOM Testing

- Defects found during extra releases : 176

- Defects found during UAT: 141

- Driven by the defect data collected during the sprints and the additional testing associated with the releases, UAT proved to be manageable and the exit criteria was met

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New MEDS is LIVE!

Lesson Learned

- Plan specific agile like Sprints during system test where UAT testers fully exercise a delivered feature set

- Having actual E&E case workers doing testing was instrumental

- Employ a data driven approach to decide on additional testing

- UAT testers test previous functionality and new functionality on each sprint using UAT style test cases

- Each Sprint builds on the previous Sprint with defect fixes, changes, and new functionality

- Releases allow for refining and supplementing test cases, where necessary

Breaking Down Organizational Barriers

- Collaboration between State and vendor test teams is critical for a successful product
- Diminish the walls that typically prevent UAT testers from testing during the System Test phase
- Test early in a collaborative way to ensure the vendor and State have a clear and unified software development vision

Contribution to Success

- SLI as our IV&V vendor contributed industry experience to help mold the process.

    - SLI Defect tracking provided clear visibility into progress during testing.

    - Defect trending analysis helped convince DOM and DDI Vendor to do additional sprints

    - SLI industry knowledge and subject matter experts contributed in test case development – Previous UAT testing at DOM used ~700 test cases but SLI identified and managed the development of ~1400 cases

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Questions?