Testing For Success

Going Live with 9.5

Presented by: Sharon Bildstein, Heather Crabb and Brian Willey
Fall CHUG 2011
Getting to Know Us

• Presenters
  – Sharon
  – Brian
  – Heather

• Johns Hopkins Community Physicians
  – Information Systems Department
  – Practices and affiliations
  – Primary care and specialties
Objectives

• Understand overview of our environment, technical challenges and technical planning
• Gain strategies for discerning the differences between existing version and upgrade version of Centricity EMR
• Distill workflow changes affecting users
• Utilize documentation tools for future upgrades, updates
Overview of Environment

• Users
  – Total Employees: 1026
  – Clinical and Non Clinical Staff
  – EMR and Citrix licensing

• Workstations
  – Thin clients and desktops
  – Multiple operating systems
Overview of Environment

• Platforms
  – 64 bit Windows, Oracle
  – DEV, TRAIN, TEST, PRODUCTION

• Technologies
  – Physical and virtual servers
  – Citrix used to deliver EMR
  – High Availability
  – Disaster Recovery
Overview of Environment

• Third Party Applications
  – Biscom
  – Kryptiq
    • Document Management, Patient/Provider Portal, and ePrescribing
  – Meridios
  – Interfaces
    • Lab, IDX Web
Technical Challenges

• Users
  – Within and outside of Johns Hopkins Community Physicians

• Clients
  – Citrix client upgrade
Technical Challenges

• Platforms
  – Rebuild servers for DEV, TEST, TRAIN
  – New servers for production
  – Environments not identical

• Third Party applications
  – Coordinated required upgrades to prepare for 9.5
Technical Challenges

• Technologies
  – Database server sizing using GE estimates
  – Citrix upgrade
  – Operating system change
PHASE 1: Technical Planning

• Scheduling Considerations
  – GE availability
  – IS department initiatives
  – Project plan
  – Third Party vendor upgrades
  – Resources
PHASE 1: Project Strategy

• Application Meetings
  – Review new 9.5 features, gauge user/workflow impact
  – Weekly, Interactive
  – SMEs, Application team, Training team, Clinical Compliance Team
  – Decision tracking, action Items
New Feature Impact Document

9.5 4 Able to document Override Reason for Drug-Drug and Drug-Allergy warnings Provider, RN Job Aid Jenny #4 WN pg 11-13 Customize To Preference Provider

5/13 Preference Key made Override reason available for selection of reason. Second key needed to set bottom section of Organize area? Preferences need to be reviewed by Physician and Martin/Jenny

5/19 Martin and Jenny will review next week for Meaningful Use requirements. Dr. Lee asked if the Override reason will have to be selected each time, or does it default from last time, or default to a preference?

6/2 SB spoke with Dr. Richards on. Per What’s New document, this can be done patient by patient. Organize will allow for selecting “Always apply prior override reason”.

FINAL 9.5 TEST noted, as per Dr. R and Recommendations: Certainty=established, Severity=Major, Contraindication=Absolute, Criticality=Severe. Should have ignore interactions withophalmic agent checked, impreda interactions checked, always apply override override on unchecked. HC made those changes 6/15 via.

Summary

- At least moderate severity and probable certainty, use with caution contraindication, or severe allergy, ignore food, ignore ethanol
- Allergy checking information is not available for unceded Critical allergy: LAMICTAL

Organize Drug Interactions

- Critical Reaction
- Moderate Reaction
- Severe Reaction
- Typical Reaction
- Rare Reaction
- Typical Reaction
- Severe Reaction
- Very Severe Reaction

Minimum Thresholds

- CERTAINTY of drug-drug interaction: Probable
- SEVERITY of drug-drug interaction: Moderate
- Degree of CONTRAINdication for drug-drug, drug-plant, or drug-genus
- Criticality: Moderate
- Criticality: Severe
PHASE 1: Project Strategy

• **Testing**
  – Environment freeze on EMR changes
  – Phased approach
  – Tester resources

• **Roll Out**
  – Approval for downtime
  – Practice preparation for downtime
  – Go Live support
PHASE 1: Testing

• Environment Differences
  – Expected and unexpected

• Data Integrity
  – Pre and Post upgrade data comparison
    • Patient Data, User Roles and Privileges

• Clinical Content
  – Encounters, Forms
  – Validation in each environment
PHASE 1: Testing

- Reports/Handouts
  - View/Print Pre and Post upgrade

- Third Party products
  - Send/View data Pre and Post upgrade

- New Features
  - Use DEV to understand workflow/impact
  - Fully test using final workflow TEST, TRAIN, LIVE
## Test Plan (Encounter, Workflow)

### 9.5 Upgrade Test Script - TEST

<table>
<thead>
<tr>
<th>Step</th>
<th>Role</th>
<th>Action to test</th>
<th>Expected Outcome</th>
<th>Pass/Fail</th>
<th>If Fail, Comment</th>
<th>Tester</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>MA</td>
<td>log into EMR and bring up patient above</td>
<td>Expected Outcome</td>
<td>PASS</td>
<td></td>
<td>Sharon B</td>
<td>6/23/2011</td>
</tr>
<tr>
<td>2</td>
<td>MA</td>
<td>open a new encounter for Adult preventive health</td>
<td>Expected Outcome</td>
<td>PASS</td>
<td></td>
<td>Sharon B</td>
<td>6/23/2011</td>
</tr>
<tr>
<td>3</td>
<td>MA</td>
<td>complete vital signs- (weight, height, BMI, Temp, Respiration, Oxygen level, BP, comments area, pt in pain?, click &quot;me&quot;)</td>
<td>Expected Outcome</td>
<td>PASS</td>
<td></td>
<td>Sharon B</td>
<td>6/23/2011</td>
</tr>
<tr>
<td>4</td>
<td>MA</td>
<td>Complete preventive care tool- Do not do anything with Tetanus, do not decline anything. Added HX, Ordered a test, view HM Recommendation button</td>
<td>Expected Outcome</td>
<td>FAIL</td>
<td>MEL on form</td>
<td>Sharon B</td>
<td>6/23/2011</td>
</tr>
<tr>
<td>5</td>
<td>MA</td>
<td>complete OV Risk- 1 pk per day, also pipe, Click Counsel to quit, add date, check off Cessation methods, Indicate Readiness to change, Print Healthy Plan form)</td>
<td>Expected Outcome</td>
<td>PASS</td>
<td></td>
<td>Sharon B</td>
<td>6/23/2011</td>
</tr>
<tr>
<td>6</td>
<td>MA</td>
<td>end update</td>
<td>Expected Outcome</td>
<td>PASS</td>
<td></td>
<td>Sharon B</td>
<td>6/23/2011</td>
</tr>
<tr>
<td>7</td>
<td>MA</td>
<td>hold document</td>
<td>Expected Outcome</td>
<td>PASS</td>
<td></td>
<td>Sharon B</td>
<td>6/23/2011</td>
</tr>
<tr>
<td>8</td>
<td>MA</td>
<td>soft exit out of EMR</td>
<td>Expected Outcome</td>
<td>PASS</td>
<td></td>
<td>Sharon B</td>
<td>6/23/2011</td>
</tr>
<tr>
<td>9</td>
<td>Provider</td>
<td>log into EMR and bring up patient above</td>
<td>Expected Outcome</td>
<td>PASS</td>
<td></td>
<td>Sharon B</td>
<td>6/23/2011</td>
</tr>
<tr>
<td>10</td>
<td>Provider</td>
<td>join the encounter started earlier</td>
<td>Expected Outcome</td>
<td>PASS</td>
<td></td>
<td>Sharon B</td>
<td>6/23/2011</td>
</tr>
<tr>
<td>11</td>
<td>Provider</td>
<td>review the text that the MA entered in</td>
<td>Expected Outcome</td>
<td>PASS</td>
<td></td>
<td>Sharon B</td>
<td>6/23/2011</td>
</tr>
<tr>
<td>12</td>
<td>Provider</td>
<td>update the preventive care adding that the patient decline a tetanus shot (DID PNEUMOVAX)</td>
<td>Expected Outcome</td>
<td>PASS</td>
<td></td>
<td>Sharon B</td>
<td>6/23/2011</td>
</tr>
<tr>
<td>13</td>
<td>Provider</td>
<td>go to HPI-CCC</td>
<td>Expected Outcome</td>
<td>Pass</td>
<td></td>
<td>Sharon B</td>
<td>6/23/2011</td>
</tr>
<tr>
<td>14</td>
<td>Provider</td>
<td>document the chief complaint</td>
<td>Expected Outcome</td>
<td>PASS</td>
<td></td>
<td>Sharon B</td>
<td>6/23/2011</td>
</tr>
</tbody>
</table>
## Tester Assignments/Coverage Tracking
**Master**

<table>
<thead>
<tr>
<th>Server</th>
<th>Chergl</th>
<th>Arnetra</th>
<th>Dr. Richardson</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Test Patients (Data Validation)</strong></td>
<td>[Details]</td>
<td>[Details]</td>
<td>[Details]</td>
</tr>
<tr>
<td><strong>Workflow (go thru workflow testing, following Workflow Tab)</strong></td>
<td>[Details]</td>
<td>Clinical workflow</td>
<td>Sign Labs &lt;br&gt; Lab Letter</td>
</tr>
<tr>
<td><strong>Encounters (validate all forms, regardless of normal workflow)</strong></td>
<td>PEDS Well Child &lt;br&gt; GYN Preventive &lt;br&gt; Adult Problem Focused/Follow Up &lt;br&gt; Howard DB - 2 &lt;br&gt; GYN Problem Focused &lt;br&gt; Anticoagulation Management</td>
<td>PEDS Acute &lt;br&gt; PEDS Pre Op &lt;br&gt; Adult Problem Focused/Follow Up &lt;br&gt; GYN Preventive &lt;br&gt; Provider Support</td>
<td>Adult Preventive &lt;br&gt; Adult Problem Focused/Follow Up &lt;br&gt; Anticoagulation Management &lt;br&gt; Howard DB - 2 &lt;br&gt; GYN Preventive</td>
</tr>
<tr>
<td><strong>Third Party Testing</strong></td>
<td>Docutrack</td>
<td>Meridios</td>
<td>Meridios</td>
</tr>
<tr>
<td><strong>Document Printing</strong></td>
<td>176-209</td>
<td>210-241</td>
<td></td>
</tr>
</tbody>
</table>
PHASE 2: Go Live
Day 1

• Downtime
• Backup
• Revert High Availability and Disaster Recovery configurations
• EMR database upgrade
PHASE 2: Go Live

Day 2

- Install data transfer stations and clinical web services
- Configure High Availability and Disaster Recovery
- EMR client installations
- Configure Third Party applications
PHASE 2: Go Live
Day 2

• Testing and Validation
  – First 2 servers installed with 9.5 upgrade
  – Third Party applications
  – EMR set up
  – EMR user roles and privileges
  – Clinical web services
PHASE 2: Go Live
Day 3

• Testing
  – Pep talk, distribute Test Plan and Fact Sheet
  – Tracking issues encountered by testers
  – Issue resolution
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<tr>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ABCDE I, ALL 1 (DOB: 1/22/2003; MRN: 3330368)</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>ABCDE, YALAND (DOB: 5/24/1970; MRN: 08000021)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ABCDE, WHO (DOB: 5/24/1970; MRN: 0800002)</td>
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<td></td>
<td></td>
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<td>ABCDE, REG I (DOB: 3/04/1951; MRN: 2190623)</td>
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</tr>
<tr>
<td>ABCDE, LIZ (DOB: 2/5/1911; MRN: 19300013)</td>
<td></td>
<td></td>
<td>ABCDE, Arlene (DOB: 2/15/58; MRN: 3050051)</td>
</tr>
<tr>
<td>ABCDE, PEBBLES (DOB: 8/6/1938; MRN: 456321)</td>
<td></td>
<td></td>
<td>ABCDE, PATIENT (DOB: 2/2/1922; MRN: 2884079)</td>
</tr>
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<td></td>
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Tester Information Sheet

9.5 Production TEST DAY Sunday 7/7/11

Log onto Computer
1. Control/Alt/Delete
2. Click Log Off twice
3. As computer is logging off, hold down SHIFT key
4. Computer will bring up log on screen
5. Enter jned/password
6. DO NOT LOG ONTO PERSONAL WORKSTATION
7. Servers will be listed under Logistician, I S TEST folder.
   Your Assigned Server for TESTING:
   1. App50, App51

Change Font Size on Monitor
1. Right click on blank blue area of monitor
2. Choose Properties
3. Setting Tab
4. Move slide bar of Screen Resolution Area to XXXXX

Your personal TEST FILE is located: G:\MIS\9.5 upgrade\Test Plans\LIVE
• As you're working on test file, document column for PASS or FAIL. If FAIL, provide comments as to problem
• Look for MEL (computer coding within the document)
• Inform Heather/Sharon ASAP of any abnormalities
• Printer Name: DELL5310

EMR PASSWORDS
emrproviderX
emrromal11X
emrmoaX

Assigned Test Patients
ABCDE, Hillary
PHASE 2: Go Live
Day 3

• Validation
  – Servers
    • Log onto server, clinical content, data integrity
  – Third Party applications
    • Biscom, Document Management, Portal, Interfaces, Meridios
  – EMR
    • Old and new workflow, Printing, Roles and Privileges
PHASE 3: Post Go Live Support

• **Support**
  – Expanded hours on Monday for Command Center coverage
  – Dedicated Phone Lines

• **Communication**
  – Company wide communication about Command Center
  – Intradepartmental emails to resolve issues
Lessons Learned

• Project Manager
  – Dedicated resource

• Timeline
  – Freeze other major projects
  – Consider institutional technical initiatives
  – Consider new user training schedules
Lessons Learned

• Server Permissions
  – Remove elevated server-level permissions from testers

• Citrix Issues
  – Prevented user reconnection to EMR
  – Lengthy resolution time
Lessons Learned

• Superbill
  – Insufficient data in test environment
  – Rebuild of form
  – Batch printing

• Documentation
  – Inconsistency in feedback
  – Detailed workflows
Summary

✓ Overview of environment
✓ Technical challenges and planning
✓ Project strategy
✓ Testing
✓ Go Live and support
✓ Lessons learned
Contact Information

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• Brian Willey
  – bwilley1@jhmi.edu
Questions