



ONC HIT Certification Program Test Results Summary for 2014 Edition EHR Certification

Part 1: Product and Developer Information

1.1 Certified Product Information

Product Name: [digiChart](#)
Product Version: [8.1](#)
Domain: [Ambulatory](#)
Test Type: [Complete EHR](#)

1.2 Developer/Vendor Information

Developer/Vendor Name: [Artemis Health Group](#)
Address: [100 Winners Circle Suite 450 Brentwood TN 37027](#)
Website: <http://www.artemisobgyn.com/>
Email: baddison@artemisobgyn.com
Phone: [615-312-1633](#)
Developer/Vendor Contact: [Bobby Addison](#)



Part 2: ONC-Authorized Certification Body Information


2.1 ONC-Authorized Certification Body Information

ONC-ACB Name: Drummond Group
Address: 13359 North Hwy 183, Ste B-406-238, Austin, TX 78750
Website: www.drummondgroup.com
Email: ehr@drummondgroup.com
Phone: 817-294-7339
ONC-ACB Contact: Bill Smith

This test results summary is approved for public release by the following ONC-Authorized Certification Body Representative:

Bill Smith
 ONC-ACB Authorized Representative

Certification Committee Chair
 Function/Title


6/2/2014
 Signature and Date

2.2 Gap Certification

The following identifies criterion or criteria certified via gap certification

| §170.314 | | | |
|--|--|--|--|
| <input checked="" type="checkbox"/> (a)(1) | <input type="checkbox"/> (a)(17) | <input checked="" type="checkbox"/> (d)(5) | <input type="checkbox"/> (d)(9) |
| <input checked="" type="checkbox"/> (a)(6) | <input type="checkbox"/> (b)(5)* | <input type="checkbox"/> (d)(6) | <input checked="" type="checkbox"/> (f)(1) |
| <input checked="" type="checkbox"/> (a)(7) | <input checked="" type="checkbox"/> (d)(1) | <input type="checkbox"/> (d)(8) | |

*Gap certification allowed for Inpatient setting only

No gap certification



2.3 Inherited Certification

The following identifies criterion or criteria certified via inherited certification

| §170.314 | | | |
|----------------------------------|--|--|---|
| <input type="checkbox"/> (a)(1) | <input type="checkbox"/> (a)(14) | <input type="checkbox"/> (c)(3) | <input type="checkbox"/> (f)(1) |
| <input type="checkbox"/> (a)(2) | <input type="checkbox"/> (a)(15) | <input type="checkbox"/> (d)(1) | <input type="checkbox"/> (f)(2) |
| <input type="checkbox"/> (a)(3) | <input type="checkbox"/> (a)(16) <i>Inpt. only</i> | <input type="checkbox"/> (d)(2) | <input type="checkbox"/> (f)(3) |
| <input type="checkbox"/> (a)(4) | <input type="checkbox"/> (a)(17) <i>Inpt. only</i> | <input type="checkbox"/> (d)(3) | <input type="checkbox"/> (f)(4) <i>Inpt. only</i> |
| <input type="checkbox"/> (a)(5) | <input type="checkbox"/> (b)(1) | <input type="checkbox"/> (d)(4) | <input type="checkbox"/> (f)(5) <i>Optional & Amb. only</i> |
| <input type="checkbox"/> (a)(6) | <input type="checkbox"/> (b)(2) | <input type="checkbox"/> (d)(5) | |
| <input type="checkbox"/> (a)(7) | <input type="checkbox"/> (b)(3) | <input type="checkbox"/> (d)(6) | <input type="checkbox"/> (f)(6) <i>Optional & Amb. only</i> |
| <input type="checkbox"/> (a)(8) | <input type="checkbox"/> (b)(4) | <input type="checkbox"/> (d)(7) | |
| <input type="checkbox"/> (a)(9) | <input type="checkbox"/> (b)(5) | <input type="checkbox"/> (d)(8) | <input type="checkbox"/> (g)(1) |
| <input type="checkbox"/> (a)(10) | <input type="checkbox"/> (b)(6) <i>Inpt. only</i> | <input type="checkbox"/> (d)(9) <i>Optional</i> | <input type="checkbox"/> (g)(2) |
| <input type="checkbox"/> (a)(11) | <input type="checkbox"/> (b)(7) | <input type="checkbox"/> (e)(1) | <input type="checkbox"/> (g)(3) |
| <input type="checkbox"/> (a)(12) | <input type="checkbox"/> (c)(1) | <input type="checkbox"/> (e)(2) <i>Amb. only</i> | <input type="checkbox"/> (g)(4) |
| <input type="checkbox"/> (a)(13) | <input type="checkbox"/> (c)(2) | <input type="checkbox"/> (e)(3) <i>Amb. only</i> | |

No inherited certification



Part 3: NVLAP-Accredited Testing Laboratory Information

Report Number: [KAM-060214-2614](#)

Test Date(s): [03/03/14](#), [04/23/14](#), [05/08/14](#), [06/02/14](#)

3.1 NVLAP-Accredited Testing Laboratory Information

ATL Name: Drummond Group EHR Test Lab
Accreditation Number: [NVLAP Lab Code 200979-0](#)
Address: 13359 North Hwy 183, Ste B-406-238, Austin, TX 78750
Website: www.drummondgroup.com
Email: ehr@drummondgroup.com
Phone: 512-335-5606
ATL Contact: Beth Morrow

For more information on scope of accreditation, please reference [NVLAP Lab Code 200979-0](#).

Part 3 of this test results summary is approved for public release by the following Accredited Testing Laboratory Representative:

[Kyle Meadors](#)

ATL Authorized Representative

6/2/2014

Signature and Date

Test Proctor

Function/Title

[Nashville, TN](#)

Location Where Test Conducted

3.2 Test Information

3.2.1 Additional Software Relied Upon for Certification

| Additional Software | Applicable Criteria | Functionality provided by Additional Software |
|-------------------------------------|------------------------------|---|
| Engage Patient | b.1, b.2, e.1, e.2, e.3, g.2 | HISP, Portal, MU reporting |
| Dynamic Health IT for CQM solutions | c.1-c.3 | CQM |
| | | |
| | | |
| | | |
| | | |

| Additional Software | Applicable Criteria | Functionality provided by Additional Software |
|---------------------|---------------------|---|
| | | |

No additional software required

3.2.2 Test Tools

| Test Tool | Version |
|--|------------------------------------|
| <input checked="" type="checkbox"/> Cypress | <input type="text" value="2.4.1"/> |
| <input checked="" type="checkbox"/> ePrescribing Validation Tool | <input type="text" value="1.0.3"/> |
| <input type="checkbox"/> HL7 CDA Cancer Registry Reporting Validation Tool | <input type="text" value="1.0.3"/> |
| <input type="checkbox"/> HL7 v2 Electronic Laboratory Reporting (ELR) Validation Tool | <input type="text" value="1.7"/> |
| <input checked="" type="checkbox"/> HL7 v2 Immunization Information System (IIS) Reporting Validation Tool | <input type="text" value="1.7.1"/> |
| <input checked="" type="checkbox"/> HL7 v2 Laboratory Results Interface (LRI) Validation Tool | <input type="text" value="1.7"/> |
| <input checked="" type="checkbox"/> HL7 v2 Syndromic Surveillance Reporting Validation Tool | <input type="text" value="1.7"/> |
| <input checked="" type="checkbox"/> Transport Testing Tool | <input type="text" value="174"/> |
| <input checked="" type="checkbox"/> Direct Certificate Discovery Tool | <input type="text" value="2.1"/> |

No test tools required

3.2.3 Test Data

- Alteration (customization) to the test data was necessary and is described in Appendix [*insert appendix letter*]
- No alteration (customization) to the test data was necessary

3.2.4 Standards

3.2.4.1 Multiple Standards Permitted

The following identifies the standard(s) that has been successfully tested where more than one standard is permitted

| Criterion # | Standard Successfully Tested | |
|------------------|---|--|
| (a)(8)(ii)(A)(2) | <input type="checkbox"/> §170.204(b)(1) HL7 Version 3 Implementation Guide: URL-Based Implementations of the Context-Aware Information Retrieval (Infobutton) Domain | <input type="checkbox"/> §170.204(b)(2) HL7 Version 3 Implementation Guide: Context-Aware Knowledge Retrieval (Infobutton) Service-Oriented Architecture Implementation Guide |

| Criterion # | Standard Successfully Tested | |
|-------------------------|---|---|
| (a)(13) | <input checked="" type="checkbox"/> §170.207(a)(3) IHTSDO SNOMED CT® International Release July 2012 and US Extension to SNOMED CT® March 2012 Release | <input type="checkbox"/> §170.207(j) HL7 Version 3 Standard: Clinical Genomics; Pedigree |
| (a)(15)(i) | <input type="checkbox"/> §170.204(b)(1) HL7 Version 3 Implementation Guide: URL-Based Implementations of the Context-Aware Information Retrieval (Infobutton) Domain | <input checked="" type="checkbox"/> §170.204(b)(2) HL7 Version 3 Implementation Guide: Context-Aware Knowledge Retrieval (Infobutton) Service-Oriented Architecture Implementation Guide |
| (a)(16)(ii) | <input type="checkbox"/> §170.210(g) Network Time Protocol Version 3 (RFC 1305) | <input type="checkbox"/> §170.210(g) Network Time Protocol Version 4 (RFC 5905) |
| (b)(2)(i)(A) | <input type="checkbox"/> §170.207(i) The code set specified at 45 CFR 162.1002(c)(2) (ICD-10-CM) for the indicated conditions | <input checked="" type="checkbox"/> §170.207(a)(3) IHTSDO SNOMED CT® International Release July 2012 and US Extension to SNOMED CT® March 2012 Release |
| (b)(7)(i) | <input type="checkbox"/> §170.207(i) The code set specified at 45 CFR 162.1002(c)(2) (ICD-10-CM) for the indicated conditions | <input checked="" type="checkbox"/> §170.207(a)(3) IHTSDO SNOMED CT® International Release July 2012 and US Extension to SNOMED CT® March 2012 Release |
| (e)(1)(i) | Annex A of the FIPS Publication 140-2 <i>[list encryption and hashing algorithms]</i> AES SHA-1 | |
| (e)(1)(ii)(A)(2) | <input type="checkbox"/> §170.210(g) Network Time Protocol Version 3 (RFC 1305) | <input checked="" type="checkbox"/> §170.210(g) Network Time Protocol Version 4 (RFC 5905) |
| (e)(3)(ii) | Annex A of the FIPS Publication 140-2 <i>[list encryption and hashing algorithms]</i> AES SHA-1 | |
| Common MU Data Set (15) | <input type="checkbox"/> §170.207(a)(3) IHTSDO SNOMED CT® International Release July 2012 and US Extension to SNOMED CT® March 2012 Release | <input checked="" type="checkbox"/> §170.207(b)(2) The code set specified at 45 CFR 162.1002(a)(5) (HCPCS and CPT-4) |

| Criterion # | Standard Successfully Tested |
|-------------|------------------------------|
|-------------|------------------------------|

None of the criteria and corresponding standards listed above are applicable

3.2.4.2 Newer Versions of Standards

The following identifies the newer version of a minimum standard(s) that has been successfully tested

| Newer Version | Applicable Criteria |
|---------------|---------------------|
| | |

No newer version of a minimum standard was tested

3.2.5 Optional Functionality

| Criterion # | Optional Functionality Successfully Tested |
|--|---|
| <input checked="" type="checkbox"/> (a)(4)(iii) | Plot and display growth charts |
| <input type="checkbox"/> (b)(1)(i)(B) | Receive summary care record using the standards specified at §170.202(a) and (b) (Direct and XDM Validation) |
| <input type="checkbox"/> (b)(1)(i)(C) | Receive summary care record using the standards specified at §170.202(b) and (c) (SOAP Protocols) |
| <input type="checkbox"/> (b)(2)(ii)(B) | Transmit health information to a Third Party using the standards specified at §170.202(a) and (b) (Direct and XDM Validation) |
| <input type="checkbox"/> (b)(2)(ii)(C) | Transmit health information to a Third Party using the standards specified at §170.202(b) and (c) (SOAP Protocols) |
| <input checked="" type="checkbox"/> (f)(3) | Ambulatory setting only – Create syndrome-based public health surveillance information for transmission using the standard specified at §170.205(d)(3) (urgent care visit scenario) |
| <input type="checkbox"/> Common MU Data Set (15) | Express Procedures according to the standard specified at §170.207(b)(3) (45 CFR162.1002(a)(4): Code on Dental Procedures and Nomenclature) |
| <input type="checkbox"/> Common MU Data Set (15) | Express Procedures according to the standard specified at §170.207(b)(4) (45 CFR162.1002(c)(3): ICD-10-PCS) |

No optional functionality tested



3.2.6 2014 Edition Certification Criteria* Successfully Tested

| Criteria # | Version | | Criteria # | Version | |
|--|---------|-------|---|---------|-------|
| | TP** | TD*** | | TP | TD |
| <input type="checkbox"/> (a)(1) | 1.2 | 1.5 | <input checked="" type="checkbox"/> (c)(3) | 1.6 | 1.6 |
| <input checked="" type="checkbox"/> (a)(2) | 1.2 | | <input type="checkbox"/> (d)(1) | 1.2 | |
| <input checked="" type="checkbox"/> (a)(3) | 1.2 | 1.4 | <input checked="" type="checkbox"/> (d)(2) | 1.4 | |
| <input checked="" type="checkbox"/> (a)(4) | 1.4 | 1.3 | <input checked="" type="checkbox"/> (d)(3) | 1.3 | |
| <input checked="" type="checkbox"/> (a)(5) | 1.4 | 1.3 | <input checked="" type="checkbox"/> (d)(4) | 1.2 | |
| <input type="checkbox"/> (a)(6) | 1.3 | 1.4 | <input type="checkbox"/> (d)(5) | 1.2 | |
| <input type="checkbox"/> (a)(7) | 1.3 | 1.3 | <input checked="" type="checkbox"/> (d)(6) | 1.2 | |
| <input checked="" type="checkbox"/> (a)(8) | 1.2 | | <input checked="" type="checkbox"/> (d)(7) | 1.2 | |
| <input checked="" type="checkbox"/> (a)(9) | 1.3 | 1.3 | <input checked="" type="checkbox"/> (d)(8) | 1.2 | |
| <input checked="" type="checkbox"/> (a)(10) | 1.2 | 1.4 | <input type="checkbox"/> (d)(9) <i>Optional</i> | 1.2 | |
| <input checked="" type="checkbox"/> (a)(11) | 1.3 | | <input checked="" type="checkbox"/> (e)(1) | 1.7 | 1.4 |
| <input checked="" type="checkbox"/> (a)(12) | 1.3 | | <input checked="" type="checkbox"/> (e)(2) <i>Amb. only</i> | 1.2 | 1.5 |
| <input checked="" type="checkbox"/> (a)(13) | 1.2 | | <input checked="" type="checkbox"/> (e)(3) <i>Amb. only</i> | 1.3 | |
| <input checked="" type="checkbox"/> (a)(14) | 1.2 | | <input type="checkbox"/> (f)(1) | 1.2 | 1.2 |
| <input checked="" type="checkbox"/> (a)(15) | 1.5 | | <input checked="" type="checkbox"/> (f)(2) | 1.3 | 1.7.1 |
| <input type="checkbox"/> (a)(16) <i>Inpt. only</i> | 1.3 | 1.2 | <input checked="" type="checkbox"/> (f)(3) | 1.3 | 1.7 |
| <input type="checkbox"/> (a)(17) <i>Inpt. only</i> | 1.2 | | <input type="checkbox"/> (f)(4) <i>Inpt. only</i> | 1.3 | 1.7 |
| <input checked="" type="checkbox"/> (b)(1) | 1.6 | 1.3 | <input type="checkbox"/> (f)(5) <i>Optional & Amb. only</i> | 1.2 | 1.2 |
| <input checked="" type="checkbox"/> (b)(2) | 1.4 | 1.5 | <input type="checkbox"/> (f)(6) <i>Optional & Amb. only</i> | 1.3 | 1.0.3 |
| <input checked="" type="checkbox"/> (b)(3) | 1.4 | 1.2 | <input type="checkbox"/> (g)(1) | 1.6 | 1.8 |
| <input checked="" type="checkbox"/> (b)(4) | 1.3 | 1.4 | <input checked="" type="checkbox"/> (g)(2) | 1.6 | 1.8 |
| <input checked="" type="checkbox"/> (b)(5) | 1.4 | 1.7 | <input checked="" type="checkbox"/> (g)(3) | 1.3 | |
| <input type="checkbox"/> (b)(6) <i>Inpt. only</i> | 1.3 | 1.7 | <input checked="" type="checkbox"/> (g)(4) | 1.2 | |
| <input checked="" type="checkbox"/> (b)(7) | 1.4 | 1.5 | | | |
| <input checked="" type="checkbox"/> (c)(1) | 1.6 | 1.6 | | | |
| <input checked="" type="checkbox"/> (c)(2) | 1.6 | 1.6 | | | |

No criteria tested

*For a list of the 2014 Edition Certification Criteria, please reference <http://www.healthit.gov/certification> (navigation: 2014 Edition Test Method)

**Indicates the version number for the Test Procedure (TP)

***Indicates the version number for the Test Data (TD)



3.2.7 2014 Clinical Quality Measures*

Type of Clinical Quality Measures Successfully Tested:

- Ambulatory
- Inpatient
- No CQMs tested

*For a list of the 2014 Clinical Quality Measures, please reference <http://www.cms.gov> (navigation: 2014 Clinical Quality Measures)

| Ambulatory CQMs | | | | | | | |
|--|---------|---|---------|---|---------|---|---------|
| CMS ID | Version | CMS ID | Version | CMS ID | Version | CMS ID | Version |
| <input checked="" type="checkbox"/> 2 | | <input type="checkbox"/> 90 | | <input type="checkbox"/> 136 | | <input checked="" type="checkbox"/> 155 | v2 |
| <input type="checkbox"/> 22 | | <input checked="" type="checkbox"/> 117 | v2 | <input type="checkbox"/> 137 | | <input type="checkbox"/> 156 | |
| <input type="checkbox"/> 50 | | <input type="checkbox"/> 122 | | <input checked="" type="checkbox"/> 138 | v2 | <input type="checkbox"/> 157 | |
| <input type="checkbox"/> 52 | | <input type="checkbox"/> 123 | | <input type="checkbox"/> 139 | | <input type="checkbox"/> 158 | |
| <input type="checkbox"/> 56 | | <input checked="" type="checkbox"/> 124 | v2 | <input type="checkbox"/> 140 | | <input type="checkbox"/> 159 | |
| <input type="checkbox"/> 61 | | <input checked="" type="checkbox"/> 125 | v2 | <input type="checkbox"/> 141 | | <input type="checkbox"/> 160 | |
| <input type="checkbox"/> 62 | | <input type="checkbox"/> 126 | | <input type="checkbox"/> 142 | | <input type="checkbox"/> 161 | |
| <input type="checkbox"/> 64 | | <input type="checkbox"/> 127 | | <input type="checkbox"/> 143 | | <input type="checkbox"/> 163 | |
| <input type="checkbox"/> 65 | | <input type="checkbox"/> 128 | | <input type="checkbox"/> 144 | | <input type="checkbox"/> 164 | |
| <input type="checkbox"/> 66 | | <input type="checkbox"/> 129 | | <input type="checkbox"/> 145 | | <input checked="" type="checkbox"/> 165 | v2 |
| <input checked="" type="checkbox"/> 68 | v3 | <input type="checkbox"/> 130 | | <input type="checkbox"/> 146 | | <input type="checkbox"/> 166 | |
| <input checked="" type="checkbox"/> 69 | v2 | <input type="checkbox"/> 131 | | <input checked="" type="checkbox"/> 147 | v2 | <input type="checkbox"/> 167 | |
| <input type="checkbox"/> 74 | | <input type="checkbox"/> 132 | | <input type="checkbox"/> 148 | | <input type="checkbox"/> 169 | |
| <input type="checkbox"/> 75 | | <input type="checkbox"/> 133 | | <input type="checkbox"/> 149 | | <input type="checkbox"/> 177 | |
| <input type="checkbox"/> 77 | | <input type="checkbox"/> 134 | | <input checked="" type="checkbox"/> 153 | v2 | <input type="checkbox"/> 179 | |
| <input type="checkbox"/> 82 | | <input type="checkbox"/> 135 | | <input type="checkbox"/> 154 | | <input type="checkbox"/> 182 | |

| Inpatient CQMs | | | | | | | |
|-----------------------------|---------|------------------------------|---------|------------------------------|---------|------------------------------|---------|
| CMS ID | Version | CMS ID | Version | CMS ID | Version | CMS ID | Version |
| <input type="checkbox"/> 9 | | <input type="checkbox"/> 71 | | <input type="checkbox"/> 107 | | <input type="checkbox"/> 172 | |
| <input type="checkbox"/> 26 | | <input type="checkbox"/> 72 | | <input type="checkbox"/> 108 | | <input type="checkbox"/> 178 | |
| <input type="checkbox"/> 30 | | <input type="checkbox"/> 73 | | <input type="checkbox"/> 109 | | <input type="checkbox"/> 185 | |
| <input type="checkbox"/> 31 | | <input type="checkbox"/> 91 | | <input type="checkbox"/> 110 | | <input type="checkbox"/> 188 | |
| <input type="checkbox"/> 32 | | <input type="checkbox"/> 100 | | <input type="checkbox"/> 111 | | <input type="checkbox"/> 190 | |
| <input type="checkbox"/> 53 | | <input type="checkbox"/> 102 | | <input type="checkbox"/> 113 | | | |
| <input type="checkbox"/> 55 | | <input type="checkbox"/> 104 | | <input type="checkbox"/> 114 | | | |
| <input type="checkbox"/> 60 | | <input type="checkbox"/> 105 | | <input type="checkbox"/> 171 | | | |



3.2.8 Automated Numerator Recording and Measure Calculation

3.2.8.1 Automated Numerator Recording

| Automated Numerator Recording Successfully Tested | | | |
|---|----------------------------------|----------------------------------|---------------------------------|
| <input type="checkbox"/> (a)(1) | <input type="checkbox"/> (a)(9) | <input type="checkbox"/> (a)(16) | <input type="checkbox"/> (b)(6) |
| <input type="checkbox"/> (a)(3) | <input type="checkbox"/> (a)(11) | <input type="checkbox"/> (a)(17) | <input type="checkbox"/> (e)(1) |
| <input type="checkbox"/> (a)(4) | <input type="checkbox"/> (a)(12) | <input type="checkbox"/> (b)(2) | <input type="checkbox"/> (e)(2) |
| <input type="checkbox"/> (a)(5) | <input type="checkbox"/> (a)(13) | <input type="checkbox"/> (b)(3) | <input type="checkbox"/> (e)(3) |
| <input type="checkbox"/> (a)(6) | <input type="checkbox"/> (a)(14) | <input type="checkbox"/> (b)(4) | |
| <input type="checkbox"/> (a)(7) | <input type="checkbox"/> (a)(15) | <input type="checkbox"/> (b)(5) | |

Automated Numerator Recording was not tested

3.2.8.2 Automated Measure Calculation

| Automated Measure Calculation Successfully Tested | | | |
|---|---|--|--|
| <input checked="" type="checkbox"/> (a)(1) | <input checked="" type="checkbox"/> (a)(9) | <input type="checkbox"/> (a)(16) | <input type="checkbox"/> (b)(6) |
| <input checked="" type="checkbox"/> (a)(3) | <input checked="" type="checkbox"/> (a)(11) | <input type="checkbox"/> (a)(17) | <input checked="" type="checkbox"/> (e)(1) |
| <input checked="" type="checkbox"/> (a)(4) | <input checked="" type="checkbox"/> (a)(12) | <input checked="" type="checkbox"/> (b)(2) | <input checked="" type="checkbox"/> (e)(2) |
| <input checked="" type="checkbox"/> (a)(5) | <input checked="" type="checkbox"/> (a)(13) | <input checked="" type="checkbox"/> (b)(3) | <input checked="" type="checkbox"/> (e)(3) |
| <input checked="" type="checkbox"/> (a)(6) | <input checked="" type="checkbox"/> (a)(14) | <input checked="" type="checkbox"/> (b)(4) | |
| <input checked="" type="checkbox"/> (a)(7) | <input checked="" type="checkbox"/> (a)(15) | <input checked="" type="checkbox"/> (b)(5) | |

Automated Measure Calculation was not tested

3.2.9 Attestation

| Attestation Forms (as applicable) | Appendix |
|---|----------|
| <input checked="" type="checkbox"/> Safety-Enhanced Design* | A |
| <input checked="" type="checkbox"/> Quality Management System** | B |
| <input checked="" type="checkbox"/> Privacy and Security | C |

*Required if any of the following were tested: (a)(1), (a)(2), (a)(6), (a)(7), (a)(8), (a)(16), (b)(3), (b)(4)

**Required for every EHR product

3.3 Appendices

Attached below.



Test Results Summary Document History

| Version | Description of Change | Date |
|-------------|--|-------------|
| 17-Feb-2014 | Edited: section header page 3; contact info page 4 | 17-Feb-2014 |
| 10-Feb-2014 | Modified layout | 10-Feb-2014 |
| 20-Nov-2013 | Updated test tool sections | 20-Nov-2013 |
| 25-Oct-2013 | Corrected numbering of 3.2.8 section | 25-Oct-2013 |
| 15-Oct-2013 | Modified layout slightly | 15-Oct-2013 |
| 01-Oct-2013 | Initial Version | 01-Oct-2013 |

2014 Edition Test Report Summary

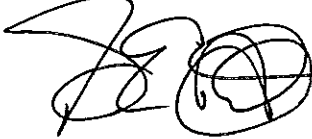
April 16, 2014

Drummond Group Inc
Attn: Bill Smith, Chief Financial Officer
13359 North Hwy 183, Suite B-406-238
Austin, TX. 78750
817.294.7339

Dear Bill,

I, Bobby Addison, representing Artemis Health Group located at 100 Winners Circle Suite 450 Brentwood, TN. 37027 have reviewed the UCD report and documents submitted as part of criteria 170.314(g)(3) and hereby attest they are true and accurate.

Sincerely,

A handwritten signature in black ink, appearing to read 'Bobby Addison', is written over a horizontal line. The signature is stylized and somewhat cursive.

Bobby Addison,
Chief Technology Officer



Bridging Your Practice to Your Patients

SAFETY ENHANCED DESIGN

170.314(a)(1) Computerized Provider Order Entry

Objective

CPOE decreases delay in order completion, reduces errors related to handwriting, and allows order entry at the point of care. The CPOE system allows real-time patient identification, drug dose recommendations, adverse drug reaction reviews, and checks on allergies and test or treatment conflicts. Physicians and nurses can review orders immediately for confirmation.

Design Approach

1. Create a Medication Formulary/Master to setup custom default information to streamline the ordering process (Admin Feature)
2. Allow users to create Treatment plans / Order Sets for common medications ordered.
3. Alert user before CPOE recording of medication of any patient contraindications to prevent treatment conflicts.
4. Offer user ways to query the medication orders to enhance efficiency of time.
5. Control Medication Orders by user and medication type with Medication Permissions by category.

SAFETY ENHANCED DESIGN

170.314(a)(2) Drug-Drug, Drug-Allergy Interactions Checks

Objective

Drug-drug and drug-allergy interaction checks improves patient safety when prescribing medications. Alerts within the application allow for immediate reconciliation of conflicts. Providers can review interactions immediately for adjustment of medication prescribing.

Design Approach

To support the process of drug-drug & drug-allergy interaction check:

1. Incorporate FDA approved medications from First Databank for drug-drug interaction validation.
2. Create drug-allergy contraindications severity level in Sys Admin Functions setting that changes all drug-allergy contraindications throughout application to either moderate (yellow) or severe (red) based on user preference.
3. Create option on contraindications for drug-drug that can be set for password entry for both moderate (yellow) and severe (red) or just severe contraindications based on user preference.
4. Create allergies entry on medical check in page that will verify against medications prescribed from Medical Decision Making page.
5. Create ability to enter drug and non-drug allergies.
6. Create ability to set allergy as alert (figure 1).
7. Create ability for user to review reported allergies (figure 2).
8. Create interaction check that is ran after medications are ordered and saved against patient reported allergies, patient reported medications, and prescribed medications (figure 3).

Figure 1

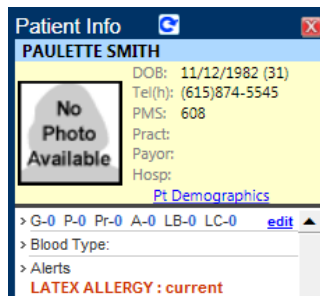


Figure 2

▼ Allergies

Allergies / Adverse Reactions All Active Reviewed [Save](#)

| Name | Symptoms | Date Reported | Deactivate Reason | Deactivate |
|-------------|----------------------------------|---------------|-------------------|------------|
| Amoxicillin | None Reported | 4/10/2014 | | X |
| Latex | Throat tightness | 4/17/2014 | | X |

SAFETY ENHANCED DESIGN

170.314(a)(6) Medication List

Objective

The ability to create and maintain an active patient medication listing improves patient continuity of care. It improved accuracy in ordering medications and prevents ordering medications that have a contraindication to what a patient is currently taking.

Design Approach

1. Create ability to enter patient reported medications when completing medical check in process for patient.
2. Create ability to select patient reported medications from FDA approved medications, maintained by First Databank.
3. Create active medications listing on Patient Info Bar for ease of review (figure 1).
4. Create ability to review active medication listing within patient's encounter note.
5. Create ability to edit patient's active medication listing to stop medications not used currently or add new medications (figure 2).
6. Create ability to see current medications patient reports, historical medications patient has reported, and Rx Claims History of medications patient has had filled from within each encounter (figure 2).
7. For OB patients, create ability to see current medications on Form C of Antepartum Record.



Figure 1

Figure 2

| Visit Note | | Current Medications | History Medications | Rx Claims History | | | | |
|------------|--|-----------------------------|---------------------|-------------------|----------------------|---------|------------|--|
| | | Name | SIG | Quantity | Frequency | Refills | Start Date | |
| | | AZITHROMYCIN 500 MG TABLET | 500 mg tab 1.00 | 10.00 | every day | 0 | 04/10/2014 | |
| | | WARFARIN SODIUM 5 MG TABLET | 5 mg tab 1.00 | 60.00 | Four times each week | 0 | 04/10/2014 | |

SAFETY ENHANCED DESIGN

170.314(a)(7) Medication Allergy List

Objective

Maintaining a patient medication allergy list improves quality of patient care and reduces risk in both treatment and managing patient medication contraindications.

Design Approach

1. Create ability to enter patient allergies when completing medical check in process for patient.
2. Create ability to document medication and non-medication allergies.
3. Create Common Allergens and Symptoms lists for ease of documenting allergies for both medications and non-medications.
4. Create a “No Known Drug Allergies” option.
5. Create option for making an allergy an alert which calls out allergy to user on the patient info bar.
6. Create ability for clinical staff to review allergies by notating user and date/time allergies are reviewed.
7. Create allergy list on Patient Info Bar that can be accessed regardless of where you are within patient’s chart (figure 1).
8. Create allergy alert highlighted in red on Patient Info Bar (figure 2).
9. For OB patients, create drug allergy list on Form C of Antepartum Record.

Figure 1

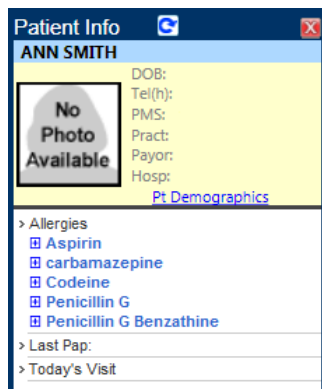
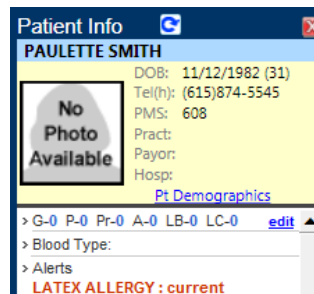


Figure 2



SAFETY ENHANCED DESIGN

170.314(a)(8) Clinical Decision Support

Objective

To provide clinical providers with the ability to access diagnostic and therapeutic information at the point of care various medical conditions and health risks to improve the quality of overall patient care.

Design Approach

To support the process of clinical decision support:

1. Allow users to add medical conditions via MDM documentation by various diagnosis codes, medications, or procedures ordered that will trigger a clinical decision support which will show on the Pt Info Bar (figure 1).
2. Allow users to update patient demographics to trigger clinical decision support which will show on the Pt Info Bar.
3. Incorporate diagnostic and therapeutic information via a link within application, on the Pt Info Bar, to Medline Plus Connect (figure 2).

Figure 1

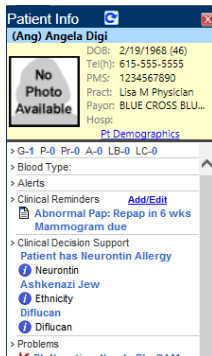


Figure 2



SAFETY ENHANCED DESIGN

170.314(b)(3) Electronic Prescribing

Objective

Electronic prescribing reduces medication errors present with handwritten prescriptions. It improved the quality of patient care by allowing secure messages to be sent directly from the provider's office to the pharmacy.

Design Approach

1. Create user settings to capture provider's NPI number, DEA number, and provider signature.
2. Create link with First Databank for FDA approved medication accuracy.
3. Create link with SureScripts for provider validation.
4. Create Meds Formulary Editor to set practice and/or provider defaults from eligible FDA approved full drug formulary.
5. Create search ability within medical decision making page to allow ease of finding medication provider wishes to prescribe.
6. Create ability to fill prescription order from orders page and transmit electronically to patient's preferred pharmacy.

SAFETY ENHANCED DESIGN

170.314(b)(4) Clinical Information Reconciliation

Objective

Allows clinical integration of external documentation into the patient's record electronically.

Design Approach

To support the process of clinical information reconciliation:

1. Give practice a way to receive outside patient clinical documentation, specifically the problem list, medication list, and medication allergy list to store for reconciliation.
2. Provide a link within digiChart where outside clinical documentation will be stored and reconciled.
3. Allow clinical staff to upload current encounter documentation for problem list, medication list, and medication allergy list and view that side by side with the incoming documents for reconciliation (figure 1)
4. Allow for easy viewing of reconciled documentation once reconciliation is complete (figure 2).
5. Once reconciliation is complete, the updated list for problems, medications and medication allergies are integrated into digiChart either as a new encounter or an updated encounter.

Figure 1

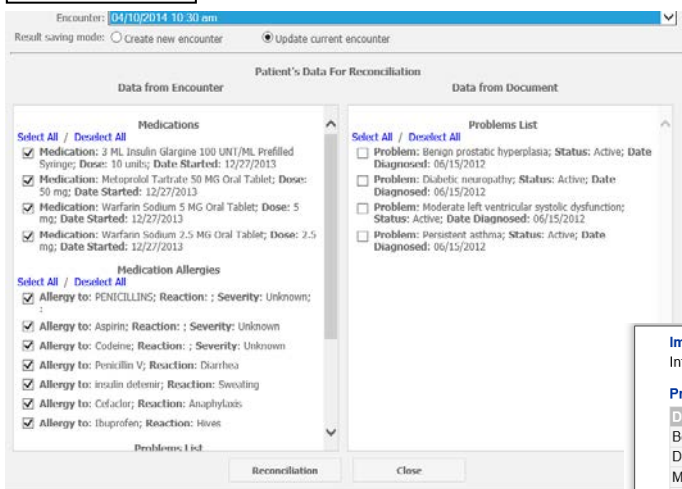
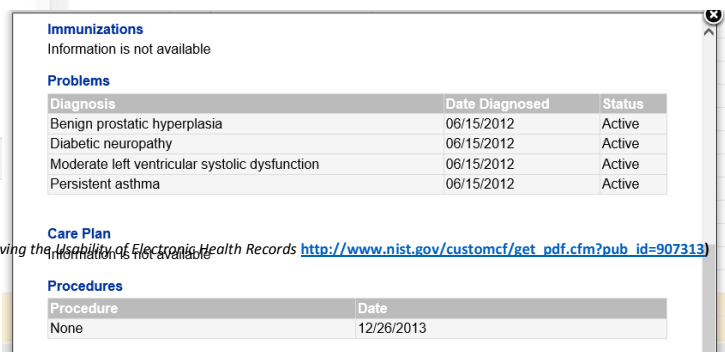


Figure 2



(Usability Standard referenced: NISTIR 7741: NIST Guide to the Processes Approach for Improving the Usability of Electronic Health Records http://www.nist.gov/customcf/get_pdf.cfm?pub_id=907313)

EHR Usability Test Report of digiChart 8.1

Report based on ISO/IEC 25062:2006 Common Industry Format for Usability Test Reports

digiChart 8.1

Date of Usability Test: April 10, 2014

Date of Report: April 22, 2014

Report Prepared By: Justin Gowdy, Product Designer, digiChart

Phone Number: (877) 634-2727

Email Address: awideman@artemisobgyn.com

Address: 100 Winners Circle, Suite 450
Brentwood, TN 37027

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EXECUTIVE SUMMARY

A usability test of digiChart 8.1 OBGYN was conducted on April 10, 2014 in Brentwood, Tennessee by digiChart. The purpose of this test was to validate the usability of the current user interface, and provide evidence of usability in the EHR Under Test (EHRUT).

During the usability test, 5 healthcare professionals matching the target demographic criteria served as participants and used the EHRUT in simulated, but representative tasks.

This study collected performance data on 7 tasks typically conducted on an EHR:

- Medication List
- Medication Allergy List
- Computerized Provider Order Entry
- Drug-drug, drug-allergy interaction checks
- Clinical Decision Support
- Electronic Prescribing
- Clinical Information Reconciliation

During the 40-75 minute one-on-one usability test, each participant was greeted by the administrator and asked to review and sign an informed consent/release form (included in Appendix 3); they were instructed that they could withdraw at any time. Participants had prior experience with the EHR, but had never used certain parts of the system, due to new development.

The administrator introduced the test, and instructed participants to complete a series of tasks (given one at a time) using the EHRUT. During the testing, the administrator timed the test and recorded user performance data on paper and electronically. The administrator did not give the participant assistance in how to complete the task.

Participant screens, head shots and audio were recorded for subsequent analysis.

The following types of data were collected for each participant:

- Number of tasks successfully completed within the allotted time without assistance
- Time to complete the tasks
- Number and types of errors
- Path deviations
- Participant's verbalizations
- Participant's satisfaction ratings of the system

All participant data was de-identified – no correspondence could be made from the identity of the participant to the data collected. Following the conclusion of the testing, participants were asked to complete a post-test questionnaire. Various recommended metrics, in accordance with the examples set forth in the NIST Guide to the Processes Approach for Improving the Usability of Electronic Health Records, were used to evaluate the usability of the EHRUT.

The following is a summary of the performance and rating data collected on the EHRUT:

| Task | Measure | Task Success | Path Deviation | Task Time | | Errors | Task Ratings |
|------|--|-------------------|----------------|-----------|-------------------------------|--------|--------------|
| | | | | Mean | Deviations (Observed/Optimal) | | |
| | | Task Completion % | Deviation: % | | | | Mean |
| 1 | Medication List | 100% | (64.3%) | 47.2 sec | (54%) | 2.47 | 1.27 |
| 2 | Medication Allergy List | 100% | (26%) | 22.87 sec | (8%) | 0.87 | 1.13 |
| 3 | Computerized Provider Order Entry | 95.6% | (64%) | 26.43 sec | (193%) | 0.98 | 1.27 |
| 4 | Drug-drug, drug-allergy interaction checks | 86.7% | (111%) | 61 sec | (316%) | 3.67 | 1.06 |
| 5 | Clinical Decision Support | 55% | (40.75%) | 62.56 sec | (96.13%) | 3.78 | 1.3 |
| 6 | Electronic Prescribing | 20% | 22% | 37 sec | (10%) | 0 | 3 |
| 7 | Clinical Information Reconciliation | 40% | (79%) | 76.83 sec | (87.67%) | 6.33 | 1 |

The results from the System Usability Scale (SUS) scored the subjective satisfaction with the system based on performance with these tasks to be:

| Tester ID # | SUS score |
|---------------------------------------|-------------|
| 2014041001 | 58 |
| 2014041002 | 35 |
| 2014041004 | 25 |
| 2014041005 | 55 |
| 2014041006 | 70 |
| Overall System Usability Score | 48.6 |

In addition to the performance data, the following qualitative observations were made:

Major findings

- Testers expressed dissatisfaction to inefficient workflow by signing
- Testers advised tasks required too many clicks
- Testers expressed frustration navigating to the electronic prescription screen

Areas for improvement

- Minimize the number of clicks in workflow
- Build an interface that is easier for inexperienced users to navigate system
- Ensure better integration with 3rd party software

INTRODUCTION

The EHRUT tested for this study was digiChart 8.1 OB-GYN. The EHRUT, digiChart OB-GYN EHR, mimics the workflow in the OB-GYN practice, improves clinical decision-making and gives all providers the same level of documentation capabilities, rules, alerts and reminders to enhance patient care. The usability testing attempted to represent realistic exercises and conditions.

The intended users of the EHR include: Physicians, Nursing staff, and Administrative personnel.

The purpose of this study was to test and validate the usability of the current user interface, and provide evidence of usability in the EHR Under Test (EHRUT). To this end, measures of effectiveness, efficiency, and user satisfaction, such as time to complete given task, errors made, deviation from the tested task, comments, and satisfaction rating were captured during the usability testing.

METHOD

PARTICIPANTS

A total of 5 participants were tested on the EHRUT(s). Participants in the test were involved in OBGYN practices, and their roles included Physician, Billing, MA, and Nurse. Participants were recruited by digiChart. In addition, participants had no direct connection to the development of or organization producing the EHRUT(s). Participants were not from the testing or supplier organization. Participants were given the opportunity to have the same orientation and level of training as the actual end users would have received.

For the test purposes, end-user characteristics were identified and translated into a recruitment screener used to solicit potential participants from a list of current digiChart customers (Appendix 1).

Recruited participants had a mix of backgrounds and demographic characteristics conforming to the intended users of the EHR and recruitment screener. The following is a table of participants by characteristics, including demographics, professional experience, computing experience and user needs for assistive technology. Participant names were replaced with Participant IDs so that an individual’s data cannot be tied back to individual identities.

| | Part ID | Gender | Age | Education | Occupation/ role | Professional Experience | Computer Experience | Product Experience | Assistive Technology Needs |
|---|------------|--------|-----|--------------|------------------|-------------------------|---------------------|--------------------|----------------------------|
| 1 | 2014041001 | M | 57 | MD | Physician | 5 | 3 | 3 | None |
| 2 | 2014041002 | F | 31 | Ass. Degree | Collect/Billing | 4 | 4 | 3 | None |
| 3 | 2014041006 | F | 37 | Medical Ass. | Clinical/Admin | 4 | 2 | 4 | None |
| 4 | 2014041004 | F | 38 | CNS | Nurse | 4 | 3 | 4 | None |
| 5 | 2014041005 | F | 46 | Ass. Degree | MA/Superuser | 5 | 5 | 4 | None |

5 participants (matching the demographics in the section on Participants) were recruited and 5 participated in the usability test. 0 participants failed to show for the study. Participants were scheduled for 60 minute sessions with 15 minutes at the beginning of each session for training on new features

within the application. A spreadsheet was used to keep track of the participant schedule, and included each participant's demographic characteristics.

STUDY DESIGN

Overall, the objective of this test was to uncover areas where the application performed effectively, efficiently, and with satisfaction – and areas where the application failed to meet the needs of the participants. The data from this test may serve as a baseline for future tests with an updated version of the same EHR and/or comparison with other EHRs provided the same tasks are used. In short, this testing serves as both a means to record or benchmark current usability, but also to identify areas where improvements must be made.

During the usability test, participants interacted with 1 EHR. Each participant used the system in the same location, and was provided with the same instructions. The system was evaluated for effectiveness, efficiency and satisfaction as defined by measures collected and analyzed for each participant:

- Number of tasks successfully completed within the allotted time without assistance
- Time to complete the tasks
- Number and types of errors
- Path deviations
- Participant's verbalizations (comments)
- Participant's satisfaction ratings of the system

TASKS

A number of tasks were constructed that would be realistic and representative of the kinds of activities a user might do with this EHR, including:

1. Record the patient's reported medications
2. Change the patient's reported medications
3. Access the patient's reported medications
4. Record Medication-Allergy List
5. Change Medication-Allergy List
6. Access Medication- Allergy List
7. Record Medication Order:
8. Change Medication Order
9. Access Medication Order
10. Record Laboratory Order
11. Change Laboratory Order
12. Access Laboratory Order
13. Record Radiology/imaging Order
14. Change Radiology/imaging Order
15. Access Radiology/imaging Order
16. Order contraindicating medication
17. Adjust severity level of drug-drug interventions
18. Diagnose a patient and allow interventions to trigger
19. Trigger interventions via medication prescription
20. Trigger interventions via medication allergy interventions
21. Trigger interventions via patient age
22. Trigger interventions via lab test/results
23. Trigger interventions via vital signs
24. Trigger diagnostic and therapeutic reference info
25. Configure CDS interventions
26. Create electronic prescription
27. Reconcile patient's active medication list with another source
28. Reconcile patient's active problem list with another source
29. Reconcile patient's active medication allergy list with another source

The above tasks and their optimal path were selected and prioritized based on their frequency of use, criticality of function, and those that may be at risk of causing error for users. The user tasks and optimal path for each criteria is identified in Appendix 4.

PROCEDURES

Upon arrival, participants were greeted; their identity was verified and matched with a name on the participant schedule. Participants were then assigned a participant ID. Each participant reviewed and signed an informed consent and release form (See Appendix 3).

The usability administrator also acted as the data logger during this usability testing. The administrator moderated the session including administering instructions and tasks. The administrator also monitored task times, obtained post-task rating data, and took notes on participant comments. The administrator also served as the data logger and took notes on task success, path deviations, number and type of errors, and comments.

Participants were instructed to perform the tasks (see specific instructions below):

- As quickly as possible making as few errors and deviations as possible
- Without assistance; administrators were allowed to give immaterial guidance and clarification on tasks, but not instructions on use
- Without using a think aloud technique

Task timing began once the administrator finished reading the question. The task time was stopped once the participant indicated they had successfully completed the task.

Following the session, the administrator gave the participant the post-test questionnaire (Appendix 5), and thanked each individual for their participation.

Participants' demographic information, task success rate, time on task, errors, deviations, verbal responses, and post-test questionnaire were recorded into a spreadsheet.

TEST LOCATION

The test facility included a waiting area and a quiet testing room with a table, computer for the participant, and recording computer for the administrator. Only the participant and administrator were in the test room.

To ensure that the environment was comfortable for users, noise levels were kept to a minimum with the ambient temperature within a normal range. All of the safety instruction and evacuation procedures were valid, in place, and visible to the participants.

TEST ENVIRONMENT

The EHRUT would typically be used in a healthcare office or facility. In this instance, the testing was conducted in a private office in a typical office setting. For testing, the computer used was a laptop running a Windows Operating System. The participants used a mouse and keyboard when interacting with the EHRUT.

The application was set up by the vendor according to the vendor's documentation describing the system set-up and preparation. The application itself was running on Windows, while using a test database on a LAN connection. Technically, the system performance (i.e., response time) was representative to what actual users would experience in a field implementation.

TEST FORMS AND TOOLS

During the usability test, various documents and instruments were used, including:

- Informed Consent
- Moderator's Guide
- Post-test Questionnaire

The Moderator's Guide was devised so as to be able to capture required data.

The participant's interaction with the EHRUT was captured and recorded digitally with screen capture software running on the test machine. A web camera recorded each participant's facial expressions synced with the screen capture, and verbal comments were recorded with a microphone. The test session was uploaded to an offsite location, and was available for review immediately upon conclusion of the test.

PARTICIPANT INSTRUCTIONS

The administrator reads the following instructions aloud to each participant (Appendix 4):

Thank you for participating in this study. Your input is very important. Our session today will last about 75 minutes. During that time you will use an instance of an electronic health record. I will ask you to complete a few tasks using this system and answer some questions. You should complete the tasks as quickly as possible making as few errors as possible. Please try to complete the tasks on your own following the instructions very closely. Please note that we are not testing you we are testing the system, therefore if you have difficulty all this means is that something needs to be improved in the system. I will be here in case you need specific help, but I am not able to instruct you or provide help in how to use the application. Overall, we are interested in how easy (or how difficult) this system is to use, what in it would be useful to you, and how we could improve it. Please be honest with your opinions. All of the information that you provide will be kept confidential and your name will not be associated with your comments at any time. Should you feel it necessary you are able to withdraw at any time during the testing.

Participants were then given 7 tasks to complete. (Tasks are listed in the moderator's guide in Appendix 4)

USABILITY METRICS

According to the NIST Guide to the Processes Approach for Improving the Usability of Electronic Health Records, EHRs should support a process that provides a high level of usability for all users. The goal is for users to interact with the system effectively, efficiently, and with an acceptable level of satisfaction. To this end, metrics for effectiveness, efficiency and user satisfaction were captured during the usability testing.

Metrics captured during testing included:

- Task Success
- Path Deviation
- Task Time
- Errors
- Task Ratings

The goals of the test were to assess:

- Effectiveness of digiChart by measuring participant success rates and errors
- Efficiency of digiChart by measuring the average task time and path deviations
- Satisfaction with digiChart by measuring ease of use ratings

DATA SCORING

The following table details how tasks were scored, errors evaluated, and the time data analyzed.

Below table provides details of how observed data were scored.

| Measures | Rationale and Scoring |
|--|--|
| <p>Effectiveness: Task Success</p> | <p>A task was counted as a “Success” if the participant was able to achieve the correct outcome, without assistance.</p> <p>The total number of successes were calculated for each task and then divided by the total number of times that task was attempted. The results are provided as a percentage.</p> <p>Task times were recorded for successes. Observed task times divided by the optimal time for each task is a measure of optimal efficiency.</p> <p>Optimal task performance time, as benchmarked by expert performance under realistic conditions, is recorded when constructing tasks. Target task times used for task times in the Moderator’s Guide must be operationally defined by taking multiple measures of optimal performance and multiplying by a factor of 35% that allowed some time buffer because the participants are presumably not trained to expert performance. Thus, if expert, optimal performance on a task was 25 seconds then allotted task time performance was $[25 * 1.35]$ seconds. This ratio should be aggregated across tasks and reported with mean and variance scores.</p> |
| <p>Effectiveness: Task Failures</p> | <p>If the participant abandoned the task, did not reach the correct answer or performed it incorrectly, or reached the end of the allotted time before successful completion, the task was counted as a “Failure” No task times were taken for errors.</p> <p>The total number of errors was calculated for each task and then divided by the optimum task time for each individual task.</p> <p>On a qualitative level, an enumeration of errors and error types should be collected.</p> |
| <p>Efficiency: Task Deviations</p> | <p>The participant’s path (i.e., steps) through the application was recorded. Deviations occur if the participant, for example, went to a wrong screen, clicked on an incorrect menu item, followed an incorrect link, or interacted incorrectly with an on-screen control. This path was compared to the optimal path. The number of steps in the observed path is divided by the number of optimal steps to provide a ratio of path deviation.</p> |
| <p>Efficiency: Task Time</p> | <p>Each task was timed from when the administrator completed reading task instructions until the participant said, “Done.” If he or she failed to say “Done,” the time was stopped when the participant stopped performing the task. Only task times for tasks that were successfully completed were included in the average task time analysis. Average time per task was calculated for each task. Variance measures (standard deviation) were also calculated.</p> |

| | |
|---|--|
| <p>Satisfaction: Task Rating</p> | <p>Participant's subjective impression of the ease of use of the application was measured by administering both a simple post-task question as well as a post-session questionnaire. After each task, the participant was asked to rate "Overall, this task was:" on a scale of 1 (Very Easy) to 5 (Very Difficult). These data are averaged across participants.</p> <p>Common convention is that average ratings for systems judged easy to use should be 3.3 or below.</p> <p>To measure participants' confidence in and likeability of digiChart overall, the testing team administered the System Usability Scale (SUS) post-test questionnaire. Questions included, "I think I would like to use this system frequently," "I thought the system was easy to use," and "I would imagine that most people would learn to use this system very quickly." See full System Usability Score questionnaire in Appendix 5.</p> |
|---|--|

DATA ANALYSIS AND REPORTING

The results of the usability test were calculated according to the methods specified in the Usability Metrics section above. Participants who failed to follow session and task instructions had their data excluded from the analyses.

The usability testing results for the EHRUT are detailed below. The results should be seen in light of the objectives and goals outlined in the Study Design. The data should yield actionable results that, if corrected, yield material, positive impact on user performance.

| Task | Measure | Task Success | Path Deviation | Task Time | | Errors | Task Ratings |
|----------|---|-------------------|---|---------------------|---|------------------------------|--------------|
| | | | | Mean (SD) | Deviations (Observed/Optimal) | | |
| | | Task Completion % | Mean: (# clicks) Optimal: (# clicks) Deviation: % | | | Path Mean minus optimal path | Mean (SD) |
| 1 | Medication List | | | | | | |
| 1.1 | Record the Patient's Reported Medications | 100% | Mean: 10.6 Optimal: 9 Deviation: (18%) | 88.8 sec (29.56) | Mean: 88.8 Optimal: 42 Deviation: (111%) | 1.6 | 1.4 (0.55) |
| 1.2 | Change the Patient's Reported Medications | 100% | Mean: 9.4 Optimal: 4 Deviation: (135%) | 39.2 sec (4.09) | Mean: 39.2 Optimal: 39 Deviation: (.01%) | 5.4 | 1.2 (0.45) |
| 1.3 | Access the Patient's Reported Medications | 100% | Mean: 1.4 Optimal: 1 Deviation: (40%) | 13.6 (2.7) | Mean: 13.6 Optimal: 9 Deviation: (51%) | .4 | 1.2 (0.45) |
| 2 | Medication Allergy List | | | | | | |
| 2.1 | Record Medication-Allergy List | 100% | Mean: 5.2 Optimal: 8 Deviation: 35% | 24.8 sec (8.07) | Mean: 24.8 Optimal: 31 Deviation: 25% | 0 | 1.2 (0.45) |
| 2.2 | Change Medication-Allergy List | 100% | Mean: 5.2 Optimal: 3 Deviation: (73%) | 32.6 sec (22.3) | Mean: 32.6 Optimal: 26 Deviation: (25%) | 2.2 | 1.2 (0.45) |
| 2.3 | Access Medication-Allergy List | 100% | Mean: 1.4 Optimal: 1 Deviation: (40%) | 11.2 sec (4.60) | Mean: 11.2 Optimal: 9 Deviation: (24%) | .4 | 1 (0) |
| 3 | Computerized Provider Order Entry | | | | | | |
| 3.1 | Record Medication Order | 100% | Mean: 7.2 Optimal: 6 Deviation: (20%) | 57.4 sec (46.37) | Mean: 57.4 Optimal: 22 Deviation: (161%) | 1.2 | 1.6 (0.89) |
| 3.2 | Change Medication Order | 100% | Mean: 3.6 Optimal: 3 Deviation: (20%) | 17.4 sec (14.17) | Mean: 17.4 Optimal: 8 Deviation: (118%) | 0 | 1.6 (0.89) |
| 3.3 | Access Medication Order | 100% | Mean: 1.8 Optimal: 1 Deviation: (80%) | 61 sec (100.21) | Mean: 61 Optimal: 6 Deviation: (917%) | .8 | 1 (0) |
| 3.4 | Record Laboratory Order | 100% | Mean: 3.8 Optimal: 6 Deviation: 37% | 15.6 sec (7.47) | Mean: 15.6 Optimal: 22 Deviation: 29% | 0 | 1.4 (0.89) |
| 3.5 | Change Laboratory Order | 100% | Mean: 4.4 Optimal: 3 Deviation: (47%) | 22.6 sec (11.59) | Mean: 22.6 Optimal: 8 Deviation: (183%) | 1.4 | 1 (0) |
| 3.6 | Access Laboratory Order | 100% | Mean: 2.2 Optimal: 1 Deviation: (110%) | 12 sec (9.41) | Mean: 12 Optimal: 6 Deviation: (100%) | 1.2 | 1 (0) |
| 3.7 | Record Radiology/Imaging Order | 80% | Mean: 5 Optimal: 6 Deviation: 17% | 17 sec (10.55) | Mean: 17 Optimal: 22 Deviation: 23% | 0 | 1.4 (0.89) |
| 3.8 | Change Radiology/Imaging | 80% | Mean: 4 Optimal: 3 | 15.25 sec | Mean: 15.25 Optimal: 8 | 1 | 1.2 (0.45) |

Meaningful Use Stage 2 Usability Report - digiChart

| | | | | | | | |
|-----|--|------|--|-----------------------|--|------|-------------|
| | Order | | Deviation: (33%) | (8.18) | Deviation: (91%) | | |
| 3.9 | Access Radiology/Imaging Order | 100% | Mean: 4.2 Optimal: 1 Deviation: (320%) | 19.6 sec (22.01) | Mean: 19.6 Optimal: 6 Deviation: (227%) | 3.2 | 1.2 (0.45) |
| 4 | Drug-drug, drug-allergy interaction checks | | | | | | |
| 4.1 | Order contraindicating medication | 80% | Mean: 8 Optimal: 6 Deviation: (33%) | 80.5 sec (41) | Mean: 80.5 Optimal: 19 Deviation: (324%) | 2 | 2.6 (1.52) |
| 4.2 | Order additional medication that contraindicates Patient reported medication | 80% | Mean: 4 Optimal: 3 Deviation: (33%) | 28 sec (0) | Mean: 28 Optimal: 19 Deviation: (47%) | 1 | 0.2 (0.45) |
| 4.3 | Administrator Only: Adjust severity level of drug-drug interventions | 40% | Mean: 11 Optimal: 3 Deviation: (267%) | 74.5 sec (20.5) | Mean: 74.5 Optimal: 11 Deviation: (577%) | 8 | 04 (0.55) |
| 5 | Clinical Decision Support | | | | | | |
| 5.1 | Problem List Interventions | 40% | Mean: 8.5 Optimal: 7 Deviation: (21%) | 56 sec (1.41) | Mean: 56 Optimal: 27 Deviation: (107%) | 1.5 | 2.75 (1.71) |
| 5.2 | Medication List Interventions | 40% | Mean: 9 Optimal: 7 Deviation: (29%) | 59.5 sec (20.5) | Mean: 59.5 Optimal: 27 Deviation: (120%) | 2 | 1.5 (0.58) |
| 5.3 | Medication Allergy List Interventions | 40% | Mean: 23.5 Optimal: 7 Deviation: (236%) | 23.5 sec | Mean: 23.5 Optimal: 34 Deviation: 34% | 16.5 | 1.5 (1) |
| 5.4 | Demographics Interventions | 80% | Mean: 6.5 Optimal: 6 Deviation: (8%) | 34.75 sec (12.69) | Mean: 34.75 Optimal: 24 Deviation: (45%) | .5 | 1 (0) |
| 5.5 | Lab Tests and Results Interventions | 40% | Mean: 29.5 Optimal: 22 Deviation: (34%) | 173.5 sec (123.74) | Mean: 173.5 Optimal: 97 Deviation: (79%) | 7.5 | 1.25 (0.5) |
| 5.6 | Vital Signs Interventions | 60% | Mean: 5.7 Optimal: 5 Deviation: (14%) | 30.67 sec (7.5) | Mean: 30.67 Optimal: 26 Deviation: (18%) | .7 | 1 (0.45) |
| 5.7 | Identify User Diagnostic and Therapeutic Reference Information | 40% | Mean: 1 Optimal: 1 Deviation: 0% | 9 sec (9.9) | Mean: 9 Optimal: 3 Deviation: (200%) | 0 | 1 (1) |
| 5.8 | Administrator Only: Configuration of CDS interventions by user | 40% | Mean: 12.5 Optimal: 11 Deviation: (14%) | 113.5 sec (62.9) | Mean: 113.5 Optimal: 34 Deviation: (234%) | 1.5 | 0.4 (0.55) |
| 6 | Electronic Prescribing | | | | | | |
| 6.1 | Create Electronic Prescription | 20% | Mean: 4 Optimal: 18 Deviation: 22% | 37 sec (0) | Mean: 37 Optimal: 41 Deviation: 10% | 0 | 3 (2.83) |
| 7 | Clinical Information Reconciliation | | | | | | |
| 7.1 | Reconcile Patient Active Medication | 40% | Mean: 24 Optimal: 8 Deviation: (200%) | 166 sec (111.72) | Mean: 166 Optimal: 41 Deviation: (305%) | 16 | 1 (0) |
| 7.2 | Reconcile Patient Active Problem List | 40% | Mean: 10 Optimal: 8 Deviation: (25%) | 38 sec (21.2) | Mean: 38 Optimal: 41 Deviation: 7% | 2 | 1 (0) |
| 7.3 | Reconcile Patient Active Medication Allergy List | 40% | Mean: 9 Optimal: 8 Deviation: (13%) | 26.5 sec (9.19) | Mean: 26.5 Optimal: 41 Deviation: 35% | 1 | 1 (0) |

The results from the SUS (System Usability Scale) scored the subjective satisfaction with the system based on performance with these tasks to be: **48.6**. Broadly interpreted, scores under 60 represent systems with poor usability; scores over 80 would be considered above average.

DISCUSSION OF THE FINDINGS

In an end to end test, the system rated average or above average with every user; however, the results of the System Usability indicated that satisfaction with the usability of digiChart are below average. The users appeared relaxed and comfortable when using the application correctly. When they committed mistakes, or the application did not respond in the way they anticipated, it was observed that some of the users did become agitated or flustered. Some users found it difficult to change the prescriber when creating electronic prescriptions, it was determined that this was a training issue and not a result of the application not working correctly. Users with less product knowledge struggled with basic tasks more than the experienced users.

EFFECTIVENESS

There was a high effectiveness rate when completing tasks where the users had at least an average level of experience with the application. Items such as CPOE, Add/Edit Allergies, Add/Edit Medications, Drug-Drug Drug-Allergy Checks and Electronic Prescribing were completed accurately with very little deviation from the intended target. New items that had just been introduced into the application such as Clinical Decision Support and Clinical Reconciliation appeared effective to the user, but were not completed completely based on initial design and will require some improvements.

EFFICIENCY

While the majority of tasks were completed correctly, some users expressed dissatisfaction with inefficient workflow by sighing and complaining of too many clicks to complete tasks. It is worth noting that in several cases users were adding unnecessary clicks when completing tasks. It was also observed that when the system administrator had to complete their tasks, they stated there wasn't a need to complete these tasks often and they were having a difficult time remembering how to do this.

SATISFACTION

Overall, users rated the system a high satisfaction rate, but indicated that system usability needed to be improved. They felt it was easy to use with appropriate training and felt new users should be able to learn the application with little assistance from a technical support team. The users all stated they would recommend the digiChart EHR to others.

AREAS FOR IMPROVEMENT

1. Workflow improvement should be a top priority when it comes to design specifically as it relates to minimize the number of clicks to complete a task.
2. Additionally, the consolidation or elimination of tabs in the main file headers could result in an efficiency gain allowing a user easier access to items completed less often.
3. Consider a new user interface that is easier for inexperienced users to navigate by adapting a natural flow or self-guided tour.
4. Ensure more robust integration with 3rd party software and hardware including Ultrasound machines, NST machines, signature pads etc.

APPENDICES

The following appendices include supplemental data for this usability test report. Following is a list of the appendices provided:

1. Sample recruiting screener
2. Participant demographics
3. Informed Consent Form
4. Moderator's Guide
5. System Usability Scale Questionnaire

Appendix 1: SAMPLE RECRUITING SCREENING PROCESS

Initiate phone call to current digiChart user:

Hello, I am calling from digiChart. We are recruiting individuals to participate in a usability study for our electronic health record. We would like to follow up by sending you an email that contains a few questions to see if you would be available to participate. This should only take a few minutes of your time. May I send you the email?

If yes, send user below email:

Thanks for speaking with me. My direct # is 615-312-1637. Here is a little more info on the testing: We would like to have you participate in a usability testing process for Meaningful Use using the digiChart application. The test is for us to evaluate the users' usability of digiChart. There are no "right" or "wrong" answers. Overall, we are interested in how easy (or difficult) this system is to use and how we can improve it.

We would like to do this testing while you are in town for the Client Training Event. We believe the testing should take no more than 1 hour, but we are allowing 75 minutes just in case. We will be recording the process, and you, via WebEx as we step through a detailed usability test. I will be facilitating the testing and providing instructions on each step we need you to complete. All of your feedback will be confidential and not associated with any comments you make. I will ask you to perform the tasks, giving explicit instructions. I will not be able to assist you by answering questions or directing you where to access the information. Again, the goal is to record how our users are using the digiChart application.

Are you willing to participate in this testing with us? Please let me know if you have any further questions.

Appendix 2: PARTICIPANT DEMOGRAPHICS

Following is a breakdown of the participants in this study.

Gender

| | |
|-----------------------------|----------|
| Men | 1 |
| Women | 4 |
| Total (participants) | 5 |

Occupation/Role

| | |
|-----------------------------|----------|
| RN/BSN | 2 |
| Physician | 1 |
| Admin Staff | 2 |
| Total (participants) | 5 |

Break down of participant demographics

| | Part ID | Gender | Age | Education | Occupation/role | Professional Experience | Computer Experience | Product Experience | Assistive Technology Needs |
|---|-------------|--------|-----|--------------|-----------------|-------------------------|---------------------|--------------------|----------------------------|
| 1 | 2014041001 | M | 57 | MD | Physician | 5 | 3 | 3 | None |
| 2 | 2014041002* | F | 31 | Ass. Degree | Collect/Billing | 4 | 4 | 3 | None |
| 3 | 2014041006 | F | 37 | Medical Ass. | Clinical | 4 | 2 | 4 | None |
| 4 | 2014041004 | F | 38 | CNS | Nurse | 4 | 3 | 4 | None |
| 5 | 2014041005* | F | 46 | Ass. Degree | MA/Superuser | 5 | 5 | 4 | None |

*Participants 2014041002 and 2014041005 completed all tasks in addition to the *Administrator Only* tasks included in the *Drug-drug/Drug-allergy*, and *Clinical Decision Support* measures.

Appendix 3: Informed Consent

digiChart would like to thank you for participating in this study. Your input is very important. Our session today will last about 75 minutes. The purpose of this study is to evaluate an electronic health records (EHR) system. You will be asked to perform several tasks using the EHR system, digiChart, and give your feedback.

Agreement

I understand and agree that as a voluntary participant in the present study conducted by digiChart, I am free to withdraw consent or discontinue participation at any time. I understand and agree to participate in the study conducted and videotaped by digiChart.

I understand and consent to the use and release of the videotape by digiChart. I understand that the information and videotape is for research purposes only and that my name and image will not be used for any purpose other than research. I relinquish any rights to the videotape and understand the videotape may be copied and used by digiChart without further permission.

I understand and agree that the purpose of this study is to make software applications more useful and usable in the future.

I understand and agree that the data collected from this study may be shared with organizations outside of digiChart. I understand and agree that data confidentiality is assured, because only de-identified data – i.e., identification numbers not names – will be used in analysis and reporting of the results. I agree to immediately raise any concerns or areas of discomfort with the study administrator. I understand that I can leave at any time.

Please check one of the following:

YES, I have read the above statement and agree to be a participant.

NO, I choose not to participate in this study

Signature: _____ Date: _____

Administrator/Data Logger: _____

Date: _____

Time: _____

Participant # _____

Location: _____

Prior to testing

- Confirm schedule with Participants
- Ensure EHRUT lab environment is running properly
- Ensure lab and data recording equipment is running properly

Prior to each participant:

- Reset application
- Start session recordings with tool

Prior to each task:

- Reset application to starting point for next task

After each participant:

- End session recordings with tool

After all testing

- Back up all video and data files

Orientation (2 minutes)

Thank you for participating in this study. Your input is very important. Our session today will last about 75 minutes. During that time you will be using digiChart. I will ask you to complete a few tasks using this system and answer some questions. You should complete the tasks as quickly as possible making as few errors as possible. Please try to complete the tasks on your own following the instructions very closely. Please note that we are not testing you we are testing the system, therefore if you have difficulty all this means is that something needs to be improved in the system. I will be here in case you need specific help, but I am not able to instruct you or provide help in how to use the application. Overall, we are interested in how easy (or how difficult) this system is to use and how we could improve it. Please be honest with your opinions, any feedback that you provide will be kept confidential and your name will not be associated with your comments at any time. Should you feel it necessary you are able to withdraw at any time during the testing.

Task 1: Record Patient's Reported Medications (42 Seconds)

Optimal Path: Encounters> Medical Check In> Add/Edit Medications

Directions:

Record the Patient's Reported Medications - Show that the patient is reporting taking Aleve & Bactrim

| Time to complete task | Number and type of error(s) | Path Deviation | Participant's comments | Participant's satisfaction ratings of the system (Very Easy(1) to Very Difficult(5)) |
|-----------------------|-----------------------------|----------------|------------------------|--|
| | | | | |

Task 2: Change the Patient's Reported Medications (39 Seconds)

Optimal Path: *MDM>Current Medications>STOP*

Directions:

Change the Patient's Reported Medications - The patient has stopped taking Bactrim and is now taking Aleve & Amoxicillin

| Time to complete task | Number and type of error(s) | Path Deviation | Participant's comments | Participant's satisfaction ratings of the system (Very Easy(1) to Very Difficult(5)) |
|-----------------------|-----------------------------|----------------|------------------------|--|
| | | | | |

Task 3: Access the Patient's Reported Medications (9 Seconds)

Optimal Path: *Refresh Patient Info Bar or Summary Page*

Directions:

Access the Patient's Reported Medications - Show that the application displays an active medication list which includes Amoxicillin & Aleve

| Time to complete task | Number and type of error(s) | Path Deviation | Participant's comments | Participant's satisfaction ratings of the system (Very Easy(1) to Very Difficult(5)) |
|-----------------------|-----------------------------|----------------|------------------------|--|
| | | | | |

Task 4: Record Medication-Allergy List (31 Seconds)

Optimal Path: *Encounters>Medical Check In>Add/Edit Allergies*

Directions:

Record Medication-Allergy List - Show that the patient is allergic to Codeine

| Time to complete task | Number and type of error(s) | Path Deviation | Participant's comments | Participant's satisfaction ratings of the system (Very Easy(1) to Very Difficult(5)) |
|-----------------------|-----------------------------|----------------|------------------------|--|
| | | | | |

Task 5: Change Medication-Allergy List (26 Seconds)

Optimal Path: (1) Encounters>Medical Check In>Add/Edit Allergies (2) Deactivate allergy (3) Save new allergy

Directions:

Change Medication-Allergy List - Show that the patient is not Allergic to Codeine but to Aspirin

| Time to complete task | Number and type of error(s) | Path Deviation | Participant's comments | Participant's satisfaction ratings of the system (Very Easy(1) to Very Difficult(5)) |
|-----------------------|-----------------------------|----------------|------------------------|--|
| | | | | |

Task 6: Access Medication-Allergy List (9 Seconds)

Optimal Path: Refresh Patient Info bar or Summary Page

Directions:

Access Medication- Allergy List - Show that the patient Medication-Allergy List is displaying the patient is allergic to Aspirin and not Codeine.

| Time to complete task | Number and type of error(s) | Path Deviation | Participant's comments | Participant's satisfaction ratings of the system (Very Easy(1) to Very Difficult(5)) |
|-----------------------|-----------------------------|----------------|------------------------|--|
| | | | | |

Task 7: Record Medication Order (22 Seconds)

Optimal Path: MDM>Rx tab

Directions:

Record Medication Order - You do not have to fulfill this request simply place the order. Order for Flagyl 500mg tablet to be taken twice daily. Quantity 28.

| Time to complete task | Number and type of error(s) | Path Deviation | Participant's comments | Participant's satisfaction ratings of the system (Very Easy(1) to Very Difficult(5)) |
|-----------------------|-----------------------------|----------------|------------------------|--|
| | | | | |

Task 8: Change Medication Order (8 Seconds)

Optimal Path: *Red X next to current order, drag and drop new medication*

Directions:

Change Medication Order - Change order from Quantity 28 to quantity 14.

| Time to complete task | Number and type of error(s) | Path Deviation | Participant's comments | Participant's satisfaction ratings of the system (Very Easy(1) to Very Difficult(5)) |
|-----------------------|-----------------------------|----------------|------------------------|--|
| | | | | |

Task 9: Access Medication Order (6 Seconds)

Optimal Path: *Summary Page*

Directions:

Access Medication Order - Show that the quantity of 14 was saved in the application

| Time to complete task | Number and type of error(s) | Path Deviation | Participant's comments | Participant's satisfaction ratings of the system (Very Easy(1) to Very Difficult(5)) |
|-----------------------|-----------------------------|----------------|------------------------|--|
| | | | | |

Task 10: Record Laboratory Order (22 Seconds)

Optimal Path: *MDM>Procedure tab*

Directions:

Record Laboratory Order - You do not have to fulfill this request simply place the order. Order a Lipid Panel.

| Time to complete task | Number and type of error(s) | Path Deviation | Participant's comments | Participant's satisfaction ratings of the system (Very Easy(1) to Very Difficult(5)) |
|-----------------------|-----------------------------|----------------|------------------------|--|
| | | | | |

Task 11: Change Laboratory Order (8 Seconds)

Optimal Path: *Red X next to current order, drag and drop new Lab*

Directions:

Change Laboratory Order - Remove the Lipid Panel & Replace with A1C

| Time to complete task | Number and type of error(s) | Path Deviation | Participant's comments | Participant's satisfaction ratings of the system (Very Easy(1) to Very Difficult(5)) |
|-----------------------|-----------------------------|----------------|------------------------|--|
| | | | | |

Task 12: Access Laboratory Order (6 Seconds)

Optimal Path: *Patient Info>Orders or Summary Page or Orders (left side of MDM)*

Directions:

Access Laboratory Order - Show that the A1C is displayed In the application and not the Lipid panel

| Time to complete task | Number and type of error(s) | Path Deviation | Participant's comments | Participant's satisfaction ratings of the system (Very Easy(1) to Very Difficult(5)) |
|-----------------------|-----------------------------|----------------|------------------------|--|
| | | | | |

Task 13: Record Radiology/imaging Order (22 Seconds)

Optimal Path: *MDM>Procedure tab*

Directions:

Record Radiology/imaging Order - You do not have to fulfill this request simply place the order. Order a 76830 (U/S Pelvic Transvag)

| Time to complete task | Number and type of error(s) | Path Deviation | Participant's comments | Participant's satisfaction ratings of the system (Very Easy(1) to Very Difficult(5)) |
|-----------------------|-----------------------------|----------------|------------------------|--|
| | | | | |

Task 14: Change Radiology/imaging Order (8 Seconds)

Optimal Path: *Red X next to current order, drag and drop new Radiology*

Directions:

Change Radiology/imaging Order - Replace the above with a 76831 (Hysterosonography)

| Time to complete task | Number and type of error(s) | Path Deviation | Participant's comments | Participant's satisfaction ratings of the system (Very Easy(1) to Very Difficult(5)) |
|-----------------------|-----------------------------|----------------|------------------------|--|
| | | | | |

Task 15: Access Radiology/imaging Order (6 Seconds)

Optimal Path: *Patient Info>Orders or Summary Page or Orders (left side of MDM)*

Directions:

Access Radiology/imaging Order - Show that the 76831 Hysterosonography is displayed in the application and not the 76830 U/S Pelvic Transvaginal

| Time to complete task | Number and type of error(s) | Path Deviation | Participant's comments | Participant's satisfaction ratings of the system (Very Easy(1) to Very Difficult(5)) |
|-----------------------|-----------------------------|----------------|------------------------|--|
| | | | | |

Task 16: Order contraindicating medication (19 Seconds for each contraindicator)

Optimal Path: *MDM>Rx tab*

Directions:

*On your patient with a codeine allergy, order a medicine that contraindicates.
Order an additional medication that contraindicates.*

| Time to complete task | Number and type of error(s) | Path Deviation | Participant's comments | Participant's satisfaction ratings of the system (Very Easy(1) to Very Difficult(5)) |
|-----------------------|-----------------------------|----------------|------------------------|--|
| | | | | |

Task 17: Order additional contraindicating medication (19 Seconds for each contraindicator)

Optimal Path: *MDM>Rx tab*

Directions:

Order an additional medication that contraindicates the Patient reported Amoxicillin.

| Time to complete task | Number and type of error(s) | Path Deviation | Participant's comments | Participant's satisfaction ratings of the system (Very Easy(1) to Very Difficult(5)) |
|-----------------------|-----------------------------|----------------|------------------------|--|
| | | | | |

Task 18: Adjust severity level of drug-drug interventions (11 Seconds)

Optimal Path: *Options>Sys Admin Functions>Settings*

Directions:

Administrator Only: Adjust severity level of drug-drug interventions

| Time to complete task | Number and type of error(s) | Path Deviation | Participant's comments | Participant's satisfaction ratings of the system (Very Easy(1) to Very Difficult(5)) |
|-----------------------|-----------------------------|----------------|------------------------|--|
| | | | | |

Task 19: Problem List Interventions (27 Seconds)

Optimal Path: *MDM>Drag & Drop Diagnosis> Mark as a problem>Save>Refresh pt info bar*

Directions:

Problem List Interventions - Diagnose a patient with Polycystic Ovaries and allow Intervention to trigger

| Time to complete task | Number and type of error(s) | Path Deviation | Participant's comments | Participant's satisfaction ratings of the system (Very Easy(1) to Very Difficult(5)) |
|-----------------------|-----------------------------|----------------|------------------------|--|
| | | | | |

Task 20: Medication List Interventions (27 Seconds)

Optimal Path: *MDM>Drag & Drop Medication> Save>Refresh pt info bar*

Directions:

Medication List Interventions - Trigger an intervention by indicating the patient is taking Coumadin

| Time to complete task | Number and type of error(s) | Path Deviation | Participant's comments | Participant's satisfaction ratings of the system (Very Easy(1) to Very Difficult(5)) |
|-----------------------|-----------------------------|----------------|------------------------|--|
| | | | | |

Task 21: Medication Allergy List Interventions (34 Seconds)

Optimal Path: *MDM>Drag & Drop Medication> Save>Refresh pt info bar*

Directions:

Medication Allergy List Interventions - Trigger an intervention by Indicating the patient is allergic to Neurontin & then prescribe it

| Time to complete task | Number and type of error(s) | Path Deviation | Participant's comments | Participant's satisfaction ratings of the system (Very Easy(1) to Very Difficult(5)) |
|-----------------------|-----------------------------|----------------|------------------------|--|
| | | | | |

Task 22: Demographics Interventions (24 Seconds)

Optimal Path: *Patient Info>View/Edit Demographics> Save>Refresh pt info bar*

or

Patient Info Bar>Pt. Demographics link> Go to Demographics> SAVE> Refresh pt info bar

Directions:

Demographics Interventions - Select a female patient over 40 to trigger a mammogram alert

| Time to complete task | Number and type of error(s) | Path Deviation | Participant's comments | Participant's satisfaction ratings of the system (Very Easy(1) to Very Difficult(5)) |
|-----------------------|-----------------------------|----------------|------------------------|--|
| | | | | |

Task 23: Lab Tests and Results Interventions (97 Seconds)

Optimal Path: MDM>Procedure Tab>Save>Orders> Complete & Print>Global>Test Result Entry> Save> Refresh pt info bar

Directions:

Lab Tests and Results Interventions - Order procedure 86701 and result it as positive to ensure an alert is triggered

| Time to complete task | Number and type of error(s) | Path Deviation | Participant's comments | Participant's satisfaction ratings of the system (Very Easy(1) to Very Difficult(5)) |
|-----------------------|-----------------------------|----------------|------------------------|--|
| | | | | |

Task 24: Vital Signs Interventions (26 Seconds)

Optimal Path: Medical Check in>SAVE> refresh pt info bar

Directions:

Vital Signs Interventions - Enter in a height and weight that will give you a BMI > 25

| Time to complete task | Number and type of error(s) | Path Deviation | Participant's comments | Participant's satisfaction ratings of the system (Very Easy(1) to Very Difficult(5)) |
|-----------------------|-----------------------------|----------------|------------------------|--|
| | | | | |

Task 25: Identify User Diagnostic and Therapeutic Reference Information (3 Seconds)

Optimal Path: Click on Infobutton

Directions:

Identify User Diagnostic and Therapeutic Reference Information

| Time to complete task | Number and type of error(s) | Path Deviation | Participant's comments | Participant's satisfaction ratings of the system (Very Easy(1) to Very Difficult(5)) |
|-----------------------|-----------------------------|----------------|------------------------|--|
| | | | | |

Task 26: Configuration of CDS interventions by user (34 Seconds)

Optimal Path: *Options>Sys Admin Function>Edit Clinical Alerts>Create New Rule> Complete all the info there and Save*

Directions:

Administrator Only - Configuration of CDS interventions by user

| Time to complete task | Number and type of error(s) | Path Deviation | Participant's comments | Participant's satisfaction ratings of the system (Very Easy(1) to Very Difficult(5)) |
|-----------------------|-----------------------------|----------------|------------------------|--|
| | | | | |

Task 27: Create electronic Prescription (41 Seconds)

Optimal Path: *MDM>Rx Tab>Click on appropriate medicine> Visit Note tab (change provider)>Fulfill tab>Delivery Method eRx to Pharmacy>Fulfill*

Directions:

Create electronic Prescription - Using PTX100 Flowers user, Order and Send Lipitor 20 mg Tablet to Test000 Pharmacy Store 10.6

| Time to complete task | Number and type of error(s) | Path Deviation | Participant's comments | Participant's satisfaction ratings of the system (Very Easy(1) to Very Difficult(5)) |
|-----------------------|-----------------------------|----------------|------------------------|--|
| | | | | |

Task 28: Reconcile patient's active medication list with another source (41 Seconds)

Optimal Path: *Patient Info>Interoperability>Click on blue hyperlink Ingage Patient> View Documents>Reconciliation*

Directions:

Reconcile patient's active medication list with another source

| Time to complete task | Number and type of error(s) | Path Deviation | Participant's comments | Participant's satisfaction ratings of the system (Very Easy(1) to Very Difficult(5)) |
|-----------------------|-----------------------------|----------------|------------------------|--|
| | | | | |

Task 29: Reconcile patient's active problem list with another source (41 Seconds)

Optimal Path: *Patient Info>Interoperability>Click on blue hyperlink Ingage Patient> View Documents>Reconciliation*

Directions:

Reconcile patient's active problem list with another source

| Time to complete task | Number and type of error(s) | Path Deviation | Participant's comments | Participant's satisfaction ratings of the system (Very Easy(1) to Very Difficult(5)) |
|-----------------------|-----------------------------|----------------|------------------------|--|
| | | | | |

Task 30: Reconcile patient's active medication allergy list with another source (41 Seconds)

Optimal Path: *Patient Info>Interoperability>Click on blue hyperlink Ingage Patient> View Documents>Reconciliation*

Directions:

Reconcile patient's active medication allergy list with another source

| Time to complete task | Number and type of error(s) | Path Deviation | Participant's comments | Participant's satisfaction ratings of the system (Very Easy(1) to Very Difficult(5)) |
|-----------------------|-----------------------------|----------------|------------------------|--|
| | | | | |

Appendix 5: System Usability Scale Questionnaire

April 2, 2014

Drummond Group Inc
Attn: Bill Smith, Chief Financial Officer
13359 North Hwy 183, Suite B-406-238
Austin, TX. 78750
817.294.7339

Dear Bill,

I, Bobby Addison, representing Artemis Health Group located at 100 Winners Circle Suite 450 Brentwood, TN. 37027 hereby attest that I have read and agree with the Quality Management Report provided to Drummond Group Inc. stating that our home grown QMS approach incorporates a number of ISO 9001:2008 tenets.

Sincerely,



Bobby Addison
Chief Technology Officer



Bridging Your Practice to Your Patients

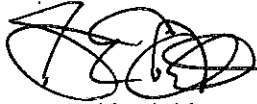
April 16, 2014

Drummond Group Inc
Attn: Bill Smith, Chief Financial Officer
13359 North Hwy 183, Suite B-406-238
Austin, TX. 78750
817.294.7339

Dear Bill,

I, Bobby Addison, representing Artemis Health Group located at 100 Winners Circle Suite 450 Brentwood, TN. 37027 hereby attest that digiChart version 8.1 does not allow any user (including administrators) to enable or disable audit logs, audit log status or encryption status within the application. The audit log is a read-only report and cannot be altered by a user in any way. We can restore, backup and compare audit log tables every 15 minutes to protect the integrity of each audit log. The auditable events recorded during certification are gathered in every installation of digiChart 8.1.

Sincerely,



Bobby Addison
Chief Technology Officer



Bridging Your Practice to Your Patients

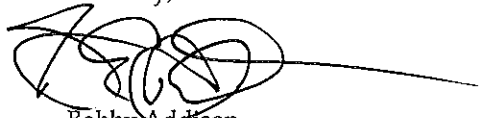
April 16, 2014

Drummond Group Inc
Attn: Bill Smith, Chief Financial Officer
13359 North Hwy 183, Suite B-406-238
Austin, TX. 78750
817.294.7339

Dear Bill,

I, Bobby Addison, representing Artemis Health Group located at 100 Winners Circle Suite 450 Brentwood, TN. 37027 hereby attest that digiChart 8.1 prevents local storage on any user device. Upon system close, sign-off, auto log-off or system crash all local storage is removed.

Sincerely,



Bobby Addison,
Chief Technology Officer



Bridging Your Practice to Your Patients