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:	Encite
Product Version:	v4.51
Domain:	Ambulatory
Test Type:	Complete EHR

1.2 Developer/Vendor Information

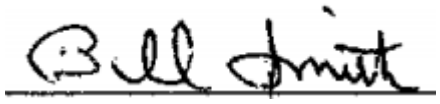
Developer/Vendor Name:	Encite, Inc.
Address:	2725 Water Ridge Pkwy., Ste. 300 Charlotte NC 28217
Website:	www.encite.us
Email:	dstewart@encite.us
Phone:	(704)461-1259
Developer/Vendor Contact:	Don Stewart

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	Certification Committee Chair
ONC-ACB Authorized Representative	**Function/Title**
 12/19/2014	
Signature and Date	

2.2 Gap Certification

The following identifies criterion or criteria certified via gap certification

§170.314			
[x] (a)(1)	[ ] (a)(17)	[x] (d)(5)	[ ] (d)(9)
[x] (a)(6)	[ ] (b)(5)*	[x] (d)(6)	[x] (f)(1)
[x] (a)(7)	[x] (d)(1)	[x] (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			
☐ (a)(1)	☐ (a)(14)	☐ (c)(3)	☐ (f)(1)
☐ (a)(2)	☐ (a)(15)	☐ (d)(1)	☐ (f)(2)
☐ (a)(3)	☐ (a)(16) *Inpt. only*	☐ (d)(2)	☐ (f)(3)
☐ (a)(4)	☐ (a)(17) *Inpt. only*	☐ (d)(3)	☐ (f)(4) *Inpt. only*
☐ (a)(5)	☐ (b)(1)	☐ (d)(4)	☐ (f)(5) *Optional & Amb. only*
☐ (a)(6)	☐ (b)(2)	☐ (d)(5)	
☐ (a)(7)	☐ (b)(3)	☐ (d)(6)	☐ (f)(6) *Optional & Amb. only*
☐ (a)(8)	☐ (b)(4)	☐ (d)(7)	
☐ (a)(9)	☐ (b)(5)	☐ (d)(8)	☐ (g)(1)
☐ (a)(10)	☐ (b)(6) *Inpt. only*	☐ (d)(9) *Optional*	☐ (g)(2)
☐ (a)(11)	☐ (b)(7)	☐ (e)(1)	☐ (g)(3)
☐ (a)(12)	☐ (c)(1)	☐ (e)(2) *Amb. only*	☐ (g)(4)
☐ (a)(13)	☐ (c)(2)	☐ (e)(3) *Amb. only*	

☒ No inherited certification

Part 3: NVLAP-Accredited Testing Laboratory Information

Report Number: SG-12122014-2775_A1

Test Date(s): 12/12/2014

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:

Sonia Galvan	Test Proctor
ATL Authorized Representative	**Function/Title**
Sonia Galvan 12/19/2014	Houston, TX
Signature and Date	**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
IngagePatient	170.314.e.1, 3	Patient Portal

☐ No additional software required

3.2.2 Test Tools

Test Tool	Version
[x] Cypress	2.4.1
[x] ePrescribing Validation Tool	1.0.4
[ ] HL7 CDA Cancer Registry Reporting Validation Tool	1.0.3
[ ] HL7 v2 Electronic Laboratory Reporting (ELR) Validation Tool	1.8
[x] HL7 v2 Immunization Information System (IIS) Reporting Validation Tool	1.8
[x] HL7 v2 Laboratory Results Interface (LRI) Validation Tool	1.7
[x] HL7 v2 Syndromic Surveillance Reporting Validation Tool	1.7
[x] Transport Testing Tool	179
[x] Direct Certificate Discovery Tool	3.0.2

[ ] 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)	[ ] §170.204(b)(1) HL7 Version 3 Implementation Guide: URL-Based Implementations of the Context-Aware Information Retrieval (Infobutton) Domain	[ ] §170.204(b)(2) HL7 Version 3 Implementation Guide: Context-Aware Knowledge Retrieval (Infobutton) Service-Oriented Architecture Implementation Guide
(a)(13)	[x] §170.207(a)(3) IHTSDO SNOMED CT® International Release July 2012 and US Extension to SNOMED CT® March 2012 Release	[ ] §170.207(j) HL7 Version 3 Standard: Clinical Genomics; Pedigree

Criterion #	Standard Successfully Tested	
(a)(15)(i)	[x] §170.204(b)(1) HL7 Version 3 Implementation Guide: URL-Based Implementations of the Context-Aware Information Retrieval (Infobutton) Domain	[ ] §170.204(b)(2) HL7 Version 3 Implementation Guide: Context-Aware Knowledge Retrieval (Infobutton) Service-Oriented Architecture Implementation Guide
(a)(16)(ii)	[ ] §170.210(g) Network Time Protocol Version 3 (RFC 1305)	[ ] §170. 210(g) Network Time Protocol Version 4 (RFC 5905)
(b)(2)(i)(A)	[ ] §170.207(i) The code set specified at 45 CFR 162.1002(c)(2) (ICD-10-CM) for the indicated conditions	[x] §170.207(a)(3) IHTSDO SNOMED CT® International Release July 2012 and US Extension to SNOMED CT® March 2012 Release
(b)(7)(i)	[ ] §170.207(i) The code set specified at 45 CFR 162.1002(c)(2) (ICD-10-CM) for the indicated conditions	[x] §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 [*list encryption and hashing algorithms*] AES SHA-1	
(e)(1)(ii)(A)(2)	[ ] §170.210(g) Network Time Protocol Version 3 (RFC 1305)	[x] §170. 210(g) Network Time Protocol Version 4 (RFC 5905)
(e)(3)(ii)	Annex A of the FIPS Publication 140-2 [*list encryption and hashing algorithms*] AES SHA-1	
Common MU Data Set (15)	[x] §170.207(a)(3) IHTSDO SNOMED CT® International Release July 2012 and US Extension to SNOMED CT® March 2012 Release	[ ] §170.207(b)(2) The code set specified at 45 CFR 162.1002(a)(5) (HCPCS and CPT-4)

[ ] 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
☒ (a)(4)(iii)	Plot and display growth charts
☐ (b)(1)(i)(B)	Receive summary care record using the standards specified at §170.202(a) and (b) (Direct and XDM Validation)
☐ (b)(1)(i)(C)	Receive summary care record using the standards specified at §170.202(b) and (c) (SOAP Protocols)
☐ (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)
☐ (b)(2)(ii)(C)	Transmit health information to a Third Party using the standards specified at §170.202(b) and (c) (SOAP Protocols)
☒ (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)
☐ 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)
☐ 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
☐ (a)(1)	1.2	1.5	☒ (c)(3)	1.6	1.6
☒ (a)(2)	1.2		☐ (d)(1)	1.2	
☒ (a)(3)	1.2	1.4	☒ (d)(2)	1.5	
☒ (a)(4)	1.4	1.3	☒ (d)(3)	1.3	
☒ (a)(5)	1.4	1.3	☒ (d)(4)	1.3	
☐ (a)(6)	1.3	1.4	☐ (d)(5)	1.2	
☐ (a)(7)	1.3	1.3	☐ (d)(6)	1.2	
☒ (a)(8)	1.2		☒ (d)(7)	1.2	
☒ (a)(9)	1.3	1.3	☐ (d)(8)	1.2	
☒ (a)(10)	1.2	1.4	☐ (d)(9) *Optional*	1.2	
☒ (a)(11)	1.3		☒ (e)(1)	1.8	1.5
☒ (a)(12)	1.3		☒ (e)(2) *Amb. only*	1.2	1.6
☒ (a)(13)	1.2		☒ (e)(3) *Amb. only*	1.3	
☒ (a)(14)	1.2		☐ (f)(1)	1.2	1.2
☒ (a)(15)	1.5		☒ (f)(2)	1.3	1.7.1
☐ (a)(16) *Inpt. only*	1.3	1.2	☒ (f)(3)	1.3	1.7
☐ (a)(17) *Inpt. only*	1.2		☐ (f)(4) *Inpt. only*	1.3	1.7
☒ (b)(1)	1.7	1.4	☐ (f)(5) *Optional & Amb. only*	1.2	1.2
☒ (b)(2)	1.4	1.6			
☒ (b)(3)	1.4	1.2	☐ (f)(6) *Optional & Amb. only*	1.3	1.0.3
☒ (b)(4)	1.3	1.4			
☒ (b)(5)	1.4	1.7	☐ (g)(1)	1.7	1.9
☐ (b)(6) *Inpt. only*	1.3	1.7	☒ (g)(2)	1.7	1.9
☒ (b)(7)	1.4	1.6	☒ (g)(3)	1.3	
☒ (c)(1)	1.6	1.6	☒ (g)(4)	1.2	
☒ (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:

- [x] 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
☐ 2		☐ 90		☐ 136		☐ 155	
☒ 22	v2	☐ 117		☐ 137		☒ 156	v2
☒ 50	v2	☐ 122		☒ 138	v2	☐ 157	
☐ 52		☐ 123		☐ 139		☐ 158	
☐ 56		☐ 124		☐ 140		☐ 159	
☐ 61		☒ 125	v2	☐ 141		☐ 160	
☐ 62		☐ 126		☐ 142		☐ 161	
☐ 64		☒ 127	v2	☐ 143		☐ 163	
☐ 65		☐ 128		☐ 144		☐ 164	
☐ 66		☐ 129		☐ 145		☒ 165	v2
☒ 68	v3	☒ 130	v2	☐ 146		☐ 166	
☒ 69	v2	☐ 131		☒ 147	v2	☐ 167	
☐ 74		☐ 132		☐ 148		☐ 169	
☐ 75		☐ 133		☐ 149		☐ 177	
☐ 77		☐ 134		☐ 153		☐ 179	
☐ 82		☐ 135		☐ 154		☐ 182	

Inpatient CQMs							
CMS ID	Version	CMS ID	Version	CMS ID	Version	CMS ID	Version
☐ 9		☐ 71		☐ 107		☐ 172	
☐ 26		☐ 72		☐ 108		☐ 178	
☐ 30		☐ 73		☐ 109		☐ 185	
☐ 31		☐ 91		☐ 110		☐ 188	
☐ 32		☐ 100		☐ 111		☐ 190	
☐ 53		☐ 102		☐ 113			
☐ 55		☐ 104		☐ 114			
☐ 60		☐ 105		☐ 171			

3.2.8 Automated Numerator Recording and Measure Calculation

3.2.8.1 Automated Numerator Recording

Automated Numerator Recording Successfully Tested			
☐ (a)(1)	☐ (a)(9)	☐ (a)(16)	☐ (b)(6)
☐ (a)(3)	☐ (a)(11)	☐ (a)(17)	☐ (e)(1)
☐ (a)(4)	☐ (a)(12)	☐ (b)(2)	☐ (e)(2)
☐ (a)(5)	☐ (a)(13)	☐ (b)(3)	☐ (e)(3)
☐ (a)(6)	☐ (a)(14)	☐ (b)(4)	
☐ (a)(7)	☐ (a)(15)	☐ (b)(5)	

☒ Automated Numerator Recording was not tested

3.2.8.2 Automated Measure Calculation

Automated Measure Calculation Successfully Tested			
☒ (a)(1)	☒ (a)(9)	☐ (a)(16)	☐ (b)(6)
☒ (a)(3)	☒ (a)(11)	☐ (a)(17)	☒ (e)(1)
☒ (a)(4)	☒ (a)(12)	☒ (b)(2)	☒ (e)(2)
☒ (a)(5)	☒ (a)(13)	☒ (b)(3)	☒ (e)(3)
☒ (a)(6)	☒ (a)(14)	☒ (b)(4)	
☒ (a)(7)	☒ (a)(15)	☒ (b)(5)	

☐ Automated Measure Calculation was not tested

3.2.9 Attestation

Attestation Forms (as applicable)	Appendix
☒ Safety-Enhanced Design*	A
☒ Quality Management System**	B
☒ 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 Change History

Test Report ID	Description of Change	Date
SG-12122014-2775	Version Change requested by Vendor	18Dec2014

2014 Edition Test Report Summary

EHR Usability Test Report

Product: Encite v4.51

Test Type: Complete EHR

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

Date of Usability Test:	**September 2, 2014 – October 24, 2014**
Date of Report:	**October 24, 2014**
Report Prepared By:	**Encite, Inc.** **2725 Water Ridge Pkwy.** **Charlotte, NC 28217** **704.461.1255** **www.encite.us**

The following study was developed using the NISTR 7742 template as a guide.

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Table of Contents

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Executive Summary

A usability test of Encite v4.51 was conducted during the months of September and October 2014. The purpose of this was to test and validate the usability of the current software user interface, and to provide evidence of usability in accordance with Meaningful Use Stage 2 requirements.

During the usability test, 5 healthcare professionals served as participants and simulated related tasks with respect to clinical decision support.

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

During 40 minute one-on-one usability test, each participant was informed to allot 40 minutes to complete the entire testing and was asked to sign an informed consent. Testing was conducted by a testing administrator who introduced the test and instructed the participant to complete a series of tasking using the EHR. The testing administrator was responsible for administrative tasks along with recording any pertinent testing observations. The administrator did not give the participant assistance during testing.

The following types of data were collected for each participant:

- Time to complete each task
- Number and types of errors
- Path deviations

- Participant's verbalizations
- Participants 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. Upon completion of testing, the participant was asked to complete a post-test questionnaire. The following is a summary of the performance and rating data collected on the test.

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Usability Test Results Table

				Errors		Deviations	
Task	Participants	Task Success	Time to Complete (Average) (Seconds)	Total	Average (Total Observed/Completed Task)	Total (Observed/ Optimal) (Seconds)	Average (Observed/ Optimal)
Computerized Provider Order Entry	3	3	35	0	0	35/30	1.17
Create Rx from Favorite List	5	5	7	0	0	7/7	1
Create Rx from Drug Search	5	5	24	0	0	24/20	1.20
Renew 2 Active Meds	5	5	45	0	0	45/40	1.13
Set Preference to Show All Warnings	5	5	34	0	0	34/30	1.13
Prescribe Medication that Displays Alert	5	5	27	0	0	27/25	1.08
Stop 1 Medication	5	5	26	0	0	26/22	1.18
Add Common Allergy	5	5	12	0	0	12/12	1
Create a Pending Prescription	5	5	24	0	0	24/20	1.20
Electronic Prescribe	5	5	48	0	0	48/40	1.20
Clinical Decision Support	3	3	46	0	0	46/40	1.15
Clinical Information Reconciliation	5	4	123	1	20%	123/100	1.23

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

- Major Findings
- Areas for Improvement

Introduction

The EHR SUT for this study is Encite v4.51 which is the version to be certified for Meaningful Use Stage 2. The software is designed to present medical information to healthcare providers in an ambulatory setting. The usability testing was to represent realistic exercises and conditions.

The purpose of this test study was to provide and validate usability for the user in the EHR. To this end, measure of effectiveness and efficiency were captured during the usability testing.

Method

Participants

A total of 5 participants were tested on the EHR. Participant in the test were individuals the word and are familiar with an ambulatory healthcare environment. The participants were contacted by Encite to take part in the study. In addition, participants have no direct connection with the development of Encite. All participants have prior experience using an EHR and the same level of training as actual end users.

The following is a table of participants by characteristics, including demographics, professional EHR experience and user needs for assistive technology. Participant names were replaced with Participant IDs so an individual's data cannot be tied back to individual identities.

Participant ID	Gender	User Role	EHR Experience (Years)	Assistive Technology Needs
001	M	Physician	4	None
002	F	Physician	3	None
003	M	Physician	2	None
004	F	Medical Assistant	2	None
005	F	Medical Assistant	1	None

All participants that were recruited for the test showed up to participate in the test.

Participants were advised that the test would take approximately 30 minutes. An extra 10 minutes were added for administrative instructions and time between tasks. A spreadsheet was used to track the testing schedule and each patient's demographic information.

Study Design

Overall, the objective of this test was to uncover areas where the application performed well—that is, 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 one (1) EHR. Each participant 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:

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

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:

- Computerized Provider Order Entry
- Create Rx from Favorite List
- Create Rx from Drug Search
- Renew 2 Active Meds
- Set Preference to Show All Warnings
- Prescribe Medication that Displays Alert
- Stop 1 Medication
- Add Common Allergy
- Create a Pending Prescription
- Electronic Prescribe
- Clinical Decision Support
- Clinical Information Reconciliation

Tasks were selected based on their frequency of use, criticality of function, and those that may be most troublesome for users. Tasks should always be constructed in light of the study objectives.

Procedures

Upon testing, participants were greeted; their identity was verified and matched with a name on the participant schedule. Participants were then assigned a participant ID. Prior to the testing, each participant was allowed to read and sign/refuse to sign an informed consent in the presence of the test administrator. The test administrator provided the instructions for each test and documented any verbal comments from the

participants. The activity log from the SUT logged all participants ID's, times, deviations and errors. All participant data must be de-identified and kept confidential.

Participants were instructed to perform the tasks:

- After listening to the instructions from the test administrator
- Perform the test as quickly as possible
- Without assistance

Task timing began after the completion of the verbal instructions from the test administrator; and after an acknowledgment from the participant they were ready to begin upon the first-key stroke. The task time was stopped when the participant completed the final test step.

After the completion of testing, the test administrator presented the participant with a post-test questionnaire and thanked for their time.

Upon completion of testing, The SUT's activity log was recorded on participant's demographic information, task success rate, time on task, errors, and deviations into a spreadsheet.

Test Location

The test was administered in a one-on-one setting with only the test administrator and one participant present at the time of testing. To ensure that there were no environmental distractions, noise levels were kept to a minimum with the ambient temperature within a normal range. Remote testing was conducted using Go-To-Meeting with secure screen share and audio technology.

Test Environment

The computers used for the test were PCs, Tablet PCs running Windows 7 and 8. Participants also used a mouse and keyboard or touchscreen while interacting with the EHR. The testing application is client/server based and was configured to operate as intended in a production environment. Remote Desktop Protocol (RDP) was used for remote testing. All participants indicated that system performance during the test was what they were used to seeing during their typical work day.

Test Forms and Tools

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

- Informed Consent
- Moderator Guide
- Post-test Questionnaire

Examples of these documents are to be found in the Appendix section.

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Participant Instructions

The administrator reads the following instructions aloud to the each participant:

“Thank you for participating in today’s usability study of Encite’s EHR application. Our session today will last approximately 40 minutes; 10 of those 40 minutes will be dedicated for administrative instructions and time between tasks. In a few minutes, you will be asked to perform a series of tasks. Please attempt to complete each task as quickly as possible. Your participation in this study will allow Encite to gather data that will help determine the effectiveness of the current application as well as provide insight for future enhancements.

When it is time to perform each task, I will state the instructions and then tell you to begin and will start the time upon your first keystroke. Once you have completed the task, please say ‘Done’. After you have completed the task, I will ask you for feedback on the action you had taken during the task. You will be given a specific amount of time to complete each task. However this time will not be communicated to you as we wish to use your time as a comparison in our study.

Upon completing the final task of the test study, you will be asked to complete a post-test questionnaire. All information that you provide will be kept confidential and your name will not be associated with your comments at any time.”

Usability Metrics

The goal is for users to interact with the Encite 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. The goals of the test were to assess:

- The efficiency of Encite's EHR by measuring the length of time it takes for each user to complete specific tasks; and the total number of tasks completed during the study.
- The efficiency of Encite by measuring the path deviations taken by the user during the tasks.
- The effectiveness of Encite by measuring the number and types of errors experienced by the user during the tasks.
- The satisfaction of the user with Encite by logging their comments on the tasks.

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Data Scoring

The table below details how each task was scored.

Measure	Rationale and Scoring
Task Time	Timing started when the test administrator said “Begin” upon the participant’s first keystroke. The time ended when the participant said “Done”, the test administrator stopped the clock when it was clear the participant had completed the task. Task times were only counted if the participant completed the task in the allotted time. The average time per task was calculated for each task.
Errors	The task resulted in an error if the participant: failed to finish the task in the allotted time; or, if they became ‘stuck’ and could not proceed without asking for assistance. Task time was not counted when the task resulted in an error. We calculated the error % for task by the total number of errors for each task and divide that number by the total attempts at that task.
Path Deviations	Path deviations were recorded as actions taken during the task that were not part of the necessary actions needed to complete the task. We calculated path deviations by taking the total number of observed deviations and dividing that number of steps taken using an optimal path.
Task Success	A task was considered a success if the participant completed the task in the allotted time. To calculate the task success rate, we simply divided the total number of successful tasks by the total number of tasks completed. The time designated for each task was determined by taking the optimal time to compete the task and multiplying it by a factor of 1.25 to allow for those users that may not have been fully trained on the application.

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Results

Data Analysis and Reporting

The results of the usability test were calculated according to the methods specified in the Usability Metrics section above. All participants followed instructions and no issues were encountered that would have prevented capturing test data and results.

The testing results for Encite are detailed below. The table below easily identifies the tasks performed and the performance level for each task.

				Errors		Deviations	
Task	Participants	Task Success	Time to Complete (Average) (Seconds)	Total	Average (Total Observed/Completed Task)	Total (Observed/ Optimal)	Average (Observed/ Optimal)
Computerized Provider Order Entry	3	3	35	0	0	35/30	1.17
Create Rx from Favorite List	5	5	7	0	0	7/7	1
Create Rx from Drug Search	5	5	24	0	0	24/20	1.20
Renew 2 Active Meds	5	5	45	0	0	45/40	1.13
Set Preference to Show All Warnings	5	5	34	0	0	34/30	1.13
Prescribe Medication that Displays Alert	5	5	27	0	0	27/25	1.08
Stop 1 Medication	5	5	26	0	0	26/22	1.18
Add Common Allergy	5	5	12	0	0	12/12	1
Create a Pending Prescription	5	5	24	0	0	24/20	1.20
Electronic Prescribe	5	5	48	0	0	48/40	1.20
Clinical Decision Support	3	3	46	0	0	46/40	1.15
Clinical Information Reconciliation	5	4	123	1	20%	123/100	1.23

Effectiveness

Participants in the study experienced errors in only one area of Clinical Information Reconciliation. The errors found in this area were no surprise being this was a relatively new component to the application. The users who encountered this error were with the least amount of experience with the application. This made development aware that this area could be made more user-friendly in future releases to help the end user effectiveness.

Efficiency

Participants in the study, for the most part, followed the optimal paths to complete the assigned tasks. However, the area of exception was Clinical Information Reconciliation. As stated above, this is a newer component to Encite and it was expected that users may not be aware of the most optimal path to take when performing the task. Again, this area has been marked for review by the development team.

Conclusion: The EHR proved to be efficient based on the path ratios and average time to complete each task.

Satisfaction

4 out 5 users expressed they were “Very Satisfied” with Encite’s EHR. The remainder was “Satisfied”.

Major Findings

The study showed no major findings and the EHR performed extremely well during the usability test. Most tasks were performed within the anticipated testing times. The users overall expressed their satisfaction with the EHR and said they would recommend it to others.

Areas for Improvement

The study did find in the area of Clinical Information Reconciliation the participants appeared to have a minor struggle. This has been marked as an area that needs improvement by our development team.

With regards to the post-study questionnaire, the questionnaire revealed that new features and enhancements within Encite needed to optimize usability. We need to improve a better means of communication on these new features and enhancements to the end user. The end users reported that they were not aware of a particular new feature within Encite. Improving communication with our users will be discussed internally at Encite. We will improve the process of making our users aware of new features and enhancements that will benefit them both clinically and operationally.

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EHR Usability Test Report Attestation

I hereby attest to the veracity and authenticity of this Usability Test Report.

Signature: Edward L. Horner

Name: Edward L. Horner

Title: President & CEO

Date: 10 / 24 / 2014

Appendices

The following appendices include supporting data for this usability study. The follow is a list of appendices provided:

- Appendix 1 - Informed Consent Form
- Appendix 2 - Non-Disclosure Agreement
- Appendix 3 - Sample Post-Test Questionnaire
- Appendix 4 - Participants Demographics
- Appendix 5 - Moderator Guide
- Appendix 6 - Designated Tasks Times
- Appendix B - Quality Management System (QMS)
- Appendix C - Privacy and Security

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Appendix 1 - Informed Consent Form

Encite would like to take this opportunity to thank you for your participation in this study. The purpose of this study is to evaluate the usability of Encite's EHR application. Your participation in this study will include performing specific tasks within the EHR; and completing a short survey following the study. This usability study should take approximately 40 minutes to complete. The information collected by Encite during the study is for research purposes only. Your participation in this study is voluntary, so you are free to withdraw at any point during the usability study.

By signing below, I agree to participate in the study.

Name of Medical Practice	
Name of Participant / ID Number	
User Role	
Experience with EHR (Yrs.)	
Date of Study	
Location	

Signature:_____

Print Name:_____

Date:_____

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Appendix 2 - Non-Disclosure Agreement

THIS AGREEMENT is entered into as of between _____ ("the Participant") and the testing organization ("Encite, Inc.*")* located at 2725 Water Ridge, Suite 300, Charlotte, NC 28217.

The Participant acknowledges their voluntary participation in this usability study may bring the Participant into possession of Confidential Information. The term "Confidential Information" means all technical and commercial information of a proprietary or confidential nature which is disclosed by Encite, Inc., that may be acquired by the Participant during today's study.

By way of illustration, but not limitation, Confidential Information includes trade secrets, processes, formulae, data, know-how, products, designs, drawings, and other computer files, computer software, ideas, improvements, inventions, training methods and materials, marketing techniques, plans and strategies.

Any information the Participant acquires relating to this product during this study is confidential and proprietary to Encite, Inc. and is being disclosed solely for the purposes of the Participant's participation in today's usability study.

By signing this form the Participant acknowledges that they will not disclose this confidential information obtained today to anyone else or any other organization.

Signature:_____

Print Name:_____

Date:_____

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Appendix 3 - Post-Test Questionnaire

1. How would you prefer we communicate new enhancements to your medical practice?

   ☐ Email ☐ Newsletter ☐ We do not care to be notified

2. What is your preferred method of working with Encite's support department?

   ☐ Phone ☐ Email ☐ Online Chat (instant message)

3. Ease of Use: On a scale of 1 to 5 with 5 being 'very easy to use' how would you rate the ease of use with the system when completing the tasks within this study?

   ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

4. If you could change one part of Encite's EHR, what would you change?

5. If you could add one piece of functionality to Encite, what would you add ?

6. On a scale of 1 to 5, how would you rate your overall satisfaction with Encite with 5 being 'Very Satisfied'?

   ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

7. Would you recommend Encite EHR to other healthcare professionals?

   ☐ Yes ☐ Not Sure ☐ No

Appendix 4 - Participants Demographics

Gender	
Male	2
Female	3
Total Participants	5

User Role	
Physicians (Providers)	3
Medical Assistants	2
Total Participants	5

Years of Experience with EHR	
Less than 1 Year	0
1 Year	1
2 Years	2
3 Years	1
4 Years	1
Total Participants	5

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Appendix 5 - Moderator Guide

Tasks to perform during study:

Preparation	Task	Goal	Optimal Paths
Provider needs to be logged into EHR Rx module	Computerized Provider Order Entry (create and send a prescription)	30 seconds	3
No Pending Rx's No Active Medications No Allergies	Create Rx from Favorite List	7 seconds	3
No Pending Rx's No Active Medications No Allergies Select Search by Drug Name option	Create Rx Drug Search	20 seconds	2
Create a minimum of 2 Active Medications	Renew 2 Active Medications	40 seconds	2
None	Set Preference to Show All Warnings for Drug-Allergy Interactions	30 seconds	1
Create an Allergy for the Patient	Prescribe Medication that Displays Alert	25 seconds	2
1 Active Medication needs to be created	Stop 1 Medication	22 seconds	2
No Pending Rx's No Active Medications No Allergies	Add Common Allergy	12 seconds	2
No Pending Rx's No Active Medications No Allergies	Create a Pending Prescription	24 seconds	2
No Pending Rx's No Active Medications No Allergies	Electronic Prescribe	40 seconds	6
Provider needs to be logged into EHR; Patient History need to be entered for Female Patient	Clinical Decision Support (Alert for Pregnancy test prior to Isotretinoin Rx)	40 seconds	1
Access an outside Medical Record, Create Medical Record within EHR	Clinical Information Reconciliation (Consolidating Problem List, Medications and Medication Allergies)	100 seconds	1

Appendix 6 - Designated Task Times

Task	Time Designated (seconds)
Computerized Provider Order Entry (create and send a prescription)	30 seconds
Create Rx from Favorite List	7 seconds
Create Rx Drug Search	20 seconds
Renew 2 Active Medications	40 seconds
Set Preference to Show All Warnings for Drug-Allergy Interactions	30 seconds
Prescribe Medication that Displays Alert	25 seconds
Stop 1 Medication	22 seconds
Add Common Allergy	12 seconds
Create a Pending Prescription	24 seconds
Electronic Prescribe	40 seconds
Clinical Decision Support (Alert for Pregnancy test prior to Isotretinoin Rx)	40 seconds
Clinical Information Reconciliation (Consolidating Problem List, Medications and Medication Allergies)	100 seconds

Appendix B - Quality Management Systems (QMS)

170.314(g)(4)

Encite, Inc. attest that the Quality Management System used in the development, testing, implementation and maintenance of certification criteria is categorized as modified and “home-grown”. The descriptions for each of these criteria are as follows:

Development:

Encite’s revision control software manages the version build of the database using client-server architecture. This facilitates any defects, enhancement requests and version management during the development process. We use the scrum methodology for development. The software projects are broken down into manageable units and prioritized.

Testing:

Our Quality Assurance department verifies any changes based on the requirements of the defect or enhancement request. If any errors or issues arise, the version build is labeled as failed and is pushed back to development with detailed documentation. The process is repeated until the version build passes testing.

Implementation:

During the testing process, implementation notes are recorded for reference and guidance. Once the changes pass the Quality Assurance department, the notes are verified and ready to incorporate into the next version build for release.

Maintenance:

In addition to the revision control software, Encite uses a support tracking systems for logging any errors, maintenance, issues and or training. A history audit is kept for quality reporting and management purposes. If the issue is urgent or common, it is processed to be prioritized and assigned.

I hereby attest to the veracity and authenticity of this QMS document.

Signature: Edward L. Horner

Name: Edward L. Horner

Title: President & CEO

Date: 10 / 24 / 2014

Appendix C - Privacy and Security

170.314(d)(2) and 170.314(d)(7)

The EHR SUT, (Encite) does not allow the disabling of the audit log.

The EHR SUT, (Encite) does prevent electronic health information from being stored on end-user devices. Data is stored only on the server and the local and remote devices access the EHR SUT through a Remote Desktop Connect (RDP). Inherently with the thin-client RDP connection there is no information transferred to the device.

The EHR SUT, (Encite) audit log records the following data elements:

- Date and time of the event
- Patient identification
- User identification
- Type of action (additions, deletions, changes, queries, print, copy)
- Identification of patient data accessed

The EHR SUT, (Encite) monitors each of the required actions for all instances of electronic health information utilized in accordance with the specified standard, ASTM E2147-01.

The EHR SUT, (Encite) does not allow the audit logs to changed, overwritten or deleted by the EHR technology itself, thereby protecting the audits. The audit log information is only viewable within the EHR SUT. A separate copy of SQL transaction logs are saved separately from the EHR database which maintain full historical values of audit log entries. Within those transaction logs all audit log entries are maintained as well as any update or deletion attempts.

I hereby attest to the veracity and authenticity of this Privacy and Security document.

Signature: Edward L. Horner

Name: Edward L. Horner

Title: President & CEO

Date: 10 / 24 / 2014