

EHR Usability Test Report of ICANotes EHR/EMR for Behavioral Health v 11.6

ICANotes EHR/EMR for Behavioral Health v 11.6

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¹ <https://nvlpubs.nist.gov/nistpubs/Legacy/IR/nistir7742.pdf>

1. Executive Summary

A usability test of **ICANotes EHR/EMR for Behavioral Health v 11.6** was conducted on several dates between June 4, 2018 - September 13, 2018 via GoToMeeting virtual sessions. The purpose was to test and validate the safety of specific tasks and to evaluate the risk associated with those tasks through a study of the usability of the current interface and the evidence of usability in the EHR Under Test (EHRUT). During the usability test, 20 healthcare providers matching the target demographic criteria served as participants and used the EHRUT in simulated, but representative, tasks.

This study collected performance data on 37 tasks listed below and typically conducted on an EHR.

Safety-Design Order: These tasks are listed below and in order of highest risk to lowest:

Risk Level - Highest to Lowest

315.a.4 Drug-Drug, Drug-Allergy Interaction Checks for CPOE

- Using CPOE, trigger a drug-drug interaction by entering a new medication order.
- Using CPOE, trigger a drug-allergy interaction by entering a new medication order
- Adjust the severity level of a displayed drug-drug interaction

315.a.1 CPOE – Meds

- Record medication order via CPOE
- Change medication order via CPOE
- Display changed CPOE medication order

315.a.2 CPOE – Labs

- Record lab order via CPOE
- Change lab order via CPOE
- Display changed CPOE lab order

315.a.3 CPOE – Diagnostic Imaging

- Record imaging order via CPOE
- Change imaging order via CPOE
- Display changed CPOE imaging order

315.a.8 Medication Allergy list

- Record a medication allergy
- Change a medication allergy
- Display the active medication allergy list
- Display the historical medication allergy list

315.a.7 Medication List

- Record a medication to the medication list
- Change a medication on the medication list
- Display the active medication list
- Display the historical medication list

315.b.2 Clinical Information Reconciliation and Incorporation

- Incorporate a CCDA and conduct reconciliation of the medications, medication allergies, and problems in the CCDA with the information currently in the patient's record
- Generate a new CCDA with reconciled data

315.a.9 Clinical Decision Support

- Add a CDS intervention and/or reference resource for each of the required elements (Problem List, Medication List, Medication Allergy list, Demographics, Laboratory test, Vital Signs, and a combination of at least two of those elements).
- Trigger the CDS interventions/resources added using the applicable data elements from each of the required elements.
- View the intervention/resource information using the Info Button standard for data elements in the Problem list, Medication list, and Demographics.
- Trigger the CDS interventions/resources based on data elements in the Problem List, Medication List, and Medication Allergy List by incorporating patient information from a transition of care/referral summary.
- Access the following attributes for one of the triggered CDS interventions/resources: bibliographic citation, developer, funding source, release/revision date

315.a.6 Problem List

- Record a problem to the problem list.
- Change a problem on the problem list.
- Display the active problem list.
- Display the historical problem list.

315.a.14 Implantable Device List

- Record UDI.
- Change UDI status.
- Access UDI, device description, identifiers, and attributes.

315.a.5 Demographics

- Record a patient's preferred language, date of birth, birth sex, race, ethnicity, sexual orientation, gender identity, preliminary cause of death (inpatient only), and preliminary date of death (inpatient only).
- Change the patient's preferred language, date of birth, birth sex, race, ethnicity, sexual orientation, gender identity, preliminary cause of death, and preliminary date of death.
- Display the patient's changed preferred language, date of birth, birth sex, race, ethnicity, sexual orientation, gender identity, preliminary cause of death, and preliminary date of death.

Prior to testing, each participant was screened using the Recruiting and Screening Form (Appendix 1). The intended audience was behavioral health professionals with experience using an EHR.

During the 60-minute one-on-one usability test done online via GoToMeeting, a videoconferencing software, each participant was greeted by the ICANotes Clinical Director who acted as the administrator and asked participants to review and sign a Non-Disclosure

Agreement (Appendix 2) and an Informed Consent Form (Appendix 3). They were also asked to sign the Acknowledgment and Receipt Form (Appendix 4). The Administrator asked for their permission to record the event. She also told participants they could withdraw at any time.

Some participants had prior experience with this EHR; some did not. All had used an EHR and were behavioral health professionals. The administrator introduced the test and explained that the test was of the usability of specific tasks of the EHR and not the participants themselves.

For each task, the administrator set up the software and read the instructions for each task. Via directions included in the moderator's guide, she reviewed how the task was similar to how a customer would be trained on the task. She did not give the participant assistance on how to complete the task except in areas of clarification or reviewing of instructions when the directions seemed unclear. A separate individual served as the data logger who recorded user performance, time, success, steps, errors, comments and survey responses.

Participant screens and audio were recorded for analyses.

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
- Success or lack of
- Number and types of errors
- Path deviations
- Steps taken
- Participant's verbalizations
- Participant's satisfaction ratings of the system

All participant data was de-identified -- no confirmation of the identity of the participant could be made from the data collected.

Following the conclusion of the testing, participants were asked to complete a post-test questionnaire and were compensated with 1 free month of service or a \$150 Amazon or Visa gift card. Various recommended metrics, in accordance with the examples set forth in the *NIST 7741 Guide to the Processes Approach for Improving the Usability of Electronic Health Records*, were used to evaluate the safety-enhanced design of the software. Following is a summary of the performance and rating data collected on the EHRUT.

Overall the results from the EHRUT System Usability Score (SUS) scored the subjective satisfaction with the system based on performance with these tasks to be 83/100. As per Jeff

Sauro author of *Measuring Usability with the System Usability Score* “a SUS score above 68 would be considered above average and anything below 68 is below average.”²

Major findings from the testing revealed that the majority of tasks were completed accurately within the expected time, or in some cases, less time than was expected.

Major Findings

In conducting the testing, the EHRUT presented tasks familiar to some individuals such as Drug-Drug, Drug-Allergy, CPOE - Medication, Medication Allergy, and Medication List to name a few. Several tasks were brand new to other individuals including Problem List, CPOE - Labs, CPOE - Imaging, Implantable Device, Demographics, Clinical Information Reconciliation, Clinical Decision Support. While testing these, several participants saw the usefulness of the CCDA shown in the Clinical Information Reconciliation. Others liked the Labs function, Historical Problem List, Active Medication List and in the Demographics section the ability to select Gender Identity was mentioned by several people as demonstrating inclusiveness.

Adverse Drug Reaction in a.8 Medication Allergy tasks was not viewed positively by at least one participant. The b.2 Clinical Information Reconciliation measure, a new set of tasks for many, was viewed as “not intuitive” most frequently by participants though the CCDA itself which is part of that measure was said it could be useful when “referring patients to the hospital.” Another person noted the value of the Clinical Information Reconciliation despite it not being intuitive.

The risk potential in the EHRUT in the first measure a.4 Drug-Drug, Drug-Allergy Interaction checks was demonstrated as low though except through the adjustment of preferences for severity level of drug/drug and drug allergies which was not obvious to two participants. Two participants also identified that screen as “busy” with too much text. This is an area in which training would be helpful. Otherwise this measure did not present a risk. In a.1 CPOE Meds some participants had not used the prescription part of this before and found the screen “busy.” In a.2 CPOE Meds, two participants changed a medication order by discontinuing one and starting a new one instead of changing the existing one. This is not a flaw as much as it is an inefficiency issue. The task was accomplished but not in the most efficient way. Also, in CPOE Meds, participants expected the drug to appear after typing several letters and this was not always the case. This shows that accomplishing this task should be made more visible. The a.2 CPOE Labs measure is not always used in behavioral health, but some participants who do labs appreciated the usefulness and were unaware of the function. The a.3 CPOE Diagnostic imaging

² Measuring Usability with the System Usability Score. Jeff Sauro February 2, 2011 https://measuringu.com/sus/#Scoring_SUS Accessed 11/6/18

is not particularly relevant to behavioral health but participants had no problem accomplishing the tasks.

In a.8 Medication Allergy, the risk for recording and changing a medication allergy task is low, however the changing a medication allergy needs to be reviewed internally as one participant said it was “her least favorite part of the program” and that sometimes “it doesn’t save the first time.” Displaying the active medication allergy list and the historical medication allergy list were accomplished easily.

With regard to a.7 Medication List, many of our customers do not use this function internal to the EHRUT and one found it “more cumbersome than DrFirst,” DrFirst being ICANotes’ ePrescribing partner. Within this same set of a.7 tasks, Task 4 “Display the historical medication list” was considered “helpful” to view the historical list or as it is called in EHRUT -- the medication log. Participants were not necessarily aware of this log function and it provided an opportunity to see other logs used in the EHRUT. For b.2 Clinical Information Reconciliation, it proved a slow process in Task 1 - incorporate a CCDA and conduct reconciliation... Expressions of “not intuitive” were common, and while the value of the task was appreciated, the fact that the time standard deviation was 79 shows the variation in time and the task rating mean of 2.1 shows the variety of ratings. The a.9 Clinical Decision Support tasks were accomplished easily and without difficulty. The a.6 Problem List tasks were accomplished easily. One participant had difficulty enlarging the screen to “display the active problem list” but overall these did not present problems. (a.14) Implantable Device tasks were brand new but presented little difficulty for participants. The a.5 Demographics record and change tasks had a lot of details to be addressed and showed some areas where visibility could be improved -- race, ethnicity for example. Becoming familiar with the screen will help. The gender identity was mentioned several times as something important to see in the Demographics. The display task of Demographics was viewed as positive to “see everything on one screen.”

The risk associated with this EHRUT are low concerning the tasks of highest safety risk. The most difficult tasks as far as customer ratings were those associated with the a.7 Medication List and the b.2 Clinical Information Reconciliation and Incorporation.

Overall participants in the Final Survey had very positive things to say about the EHRUT. “Easy, intuitive, fast,” were mentioned frequently. One comment “even if you get logged off you don’t lose anything” speaks to the positiveness of the remote hosting feature of the EHRUT. For a behavioral health professional who is charting all the time this speaks well of ICANotes.

Areas for Improvement

Areas for improvement in Drug-Drug, Drug-Allergy Interaction checks include the task of adjusting the severity level of a displayed drug-drug interaction. This needs to be an area that customers should be made more aware of during training by discussing its importance.

Clinical Information and Reconciliation must be reorganized and presented more directly and intuitively. Presentation on the CCDA and its usefulness has been shown through this study as important to having all of the patient's current information in one place for sharing with any other provider.

Displaying historical medication allergy list, historical medication list and historical problem list are opportunities to show the importance of these "logs" to new and existing customers.

The Clinical Decision Support breadth of information is another possibility for informing customers of assistance in decision making that is built into the program.

2. Introduction

The EHRUT tested for this study was ICANotes EHR/EMR for Behavioral Health v 11.6. Designed to present medical information to healthcare providers in behavioral health settings, the EHRUT consists of electronic mental health record software for psychiatrists and other mental health professionals. The usability testing attempted to represent realistic exercises and conditions.

The purpose of this study was to test and validate the usability of the current user interface, and to provide evidence of usability in the EHRUT. To this end, measures of effectiveness, efficiency and user satisfaction, such as time spent on tasks, number of errors and deviations were captured during the usability testing.

3. Methods

3.1 Participants

Ten participants were tested on: a.4 Drug-Drug/Drug-Allergy, a.1 CPOE Medications, a.2 CPOE Labs, a.3 CPOE Imaging, a.8 Medication Allergy, a.7 Medication List. Ten other participants tested on b.2 Clinical Information Reconciliation, a.9 Clinical Decision Support, a.6 Problem List, a.14 Implantable Device and a.5 Demographics. All participants were from the behavioral health profession, the primary audience for ICANotes which is the EHRUT and included psychiatrists, psychiatric nurse practitioners and registered nurses from the behavioral health field.

Participants were recruited by ICANotes and compensated with 1 month free service or \$100-150 Amazon or Visa gift card. No participants had a direct connection to ICANotes. Participants were given the opportunity to have the same orientation and level of training as the actual end users would have received.

For test purposes, end-user characteristics were identified and translated into a recruitment screening used to solicit potential participants.

Recruited participants had a mix of backgrounds and demographic characteristics. The following is 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.

Participant ID	Gender	Age	Education	Occupation/Role	Professional Experience in Months	Computer Experience in Months	Product Experience in Months	Assistive Tech Needs
ID 1	Female	40-49	Master's Degree	Nurse Practitioner	240	300	120	None
ID 2	Male	40-49	MD/PhD	Physician	156	444	96	None
ID 3	Female	60-69	MD/PhD	Other	384	360	72	None
ID 4	Female	60-69	Master's Degree	Nurse Practitioner	420	300	36	None
ID 5	Female	40-49	Master's Degree	Nurse Practitioner	216	264	72	None
ID 6	Female	40-49	MD/PhD	Nurse Practitioner	156	240	60	None
ID 7	Male	50-59	MD/PhD	Physician	300	204	24	None
ID 8	Female	60-69	MD/PhD	Nurse Practitioner	216	348	108	None
ID 9	Female	50-59	Master's Degree	Nurse Practitioner	276	300	60	None
ID 10	Female	40-49	MD/PhD	Physician	204	300	192	None
ID 11	Female	50-59	Bachelor's Degree	RN	276	240	60	None
ID 12	Female	30-39	Bachelor's Degree	RN	168	264	120	None
ID 13	Female	30-39	Bachelor's Degree	RN	84	240	84	None
ID 14	Female	30-39	MD/PhD	Physician	72	240	144	None

ID 15	Female	30-39	Bachelor's Degree	RN	60	180	60	None
ID 16	Female	60-69	Bachelor's Degree	RN	456	360	108	None
ID 17	Female	40-49	Associate Degree	RN	360	240	12	None
ID 18	Female	30-39	Bachelor's Degree	RN	72	300	72	None
ID 19	Female	40-49	Bachelor's Degree	RN	24	420	24	None
ID 20	Female	60-69	Bachelor's Degree	RN	480	300	96	None
					Mean: 231	Mean: 292	Mean: 81	

Gender	
Men	2
Women	18
Total	20
Occupation/Role	
RN/BSN	9
NP	6
Physician	4
Other	1
Total	20
Facility Use of EHR	
All paper	1
Some paper, some electronic	8
All electronic	11
Total	20

An initial group of 30 participants were ICANotes customers recruited in May 2018 via email. Scheduling problems, failure to show, the test taking longer than the planned 60 minutes, and difficulties with development of some tasks -- Clinical Information Reconciliation, Clinical Decision Support, Implantable Device -- led to postponement of some tasks being tested and

failure to complete some surveys. A group of 10 tested fully on: a.4 Drug-Drug/Drug-Allergy, a.1 CPOE Medications, a.2 CPOE Labs, a.3 CPOE Diagnostic Imaging, a.8 Medication Allergy, a.7 Medication List.

The first tests took longer than the allotted 60 minutes and because of that and the fact that some changes to tasks required by developers were not completed in time for scheduled tests required the second round of testing.

A second group of 22 participants recruited in August 2018 were a mix of ICANotes customers and non-ICANotes customers, but all work in the behavioral health profession. Scheduling issues including failure to show led to a final group of 10 from the second group who were tested on b.2 Clinical Information Reconciliation, a.9 Clinical Decision Support, a.6 Problem List, a.14 Implantable Device and a.5 Demographics that weren't completed by the first group of participants due to time and development constraints.

Participants were scheduled for 60-minute sessions with at least 1 hour in between each session for debrief by the administrator and data logger and to reset systems to proper test conditions. A spreadsheet was used to keep track of the participant ID and participant schedule with demographic characteristics.

3.2 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 EHR. Each participant used the system via GoToMeeting, a videoconferencing software, 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
- Success or lack of
- Number and types of errors
- Path deviations
- Steps taken

- Participants verbalizations (comments)
- Participants satisfaction ratings of the system

Additional information about the various measures can be found in Section 3.9 on Usability Metrics.

3.3 Tasks

A number of tasks were defined to be realistic and representative of the kinds of activities a user might do with this EHR.

Tasks were selected based on their relationship to patient safety, frequency of use, criticality of function, and those that can provide critical information for the provider in quality of care. A total of 37 tasks were tested, and they were tested in prioritized order to reflect safety concerns (see pages 3-5 for priority order). For this reason, drug-drug and drug-allergy interaction checks were done first.

All tasks tested correspond to those requested for 2015 EHR Certification. The order of the tasks and the actual test scenarios can be found in **Appendix 6, Moderator's Guide**.

3.4 Procedure

Upon arrival, participants were greeted and their identity was verified and matched with a name on the participant schedule. Participants were assigned a participant ID.³ Each participant reviewed and signed an Non-Disclosure Form (Appendix 2) and an Informed consent form (Appendix 3). The administrator witnessed the participant's signature.

To ensure that the test ran smoothly, two staff members participated in each test, the usability administrator and the data logger. The usability testing staff conducting the test was an experienced usability practitioner. The usability administrator is a behavioral health registered nurse with 20 years of experience in the behavioral health field, 10 years with an EHR, and 2 years with ICANotes. The data logger function was shared by the CEO of ICANotes who has 8 years of experience with ICANotes and the Compliance Officer who has 6 years of experience with ICANotes.

The administrator moderated the session including administering instructions and tasks. The data logger 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):

³ All participant data must be de-identified and kept confidential.

- 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 instructions and said “Please begin.”

The task time was stopped once the participant indicated they had successfully completed the task. Scoring is discussed below in Section 3.9.

At the end of each task, the participant rated the question on the Likert scale of 1-5, with 1 being the easiest and 5 the most difficult.

Following the session, the administrator gave the participant the post-test questionnaire (See Appendix 7: System Usability Scale), compensated them for their time, 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 onto a spreadsheet.

Participants were thanked for their time and compensated. Participants signed a Receipt and Acknowledgement Form (See Appendix 4) indicating they had received the compensation.

3.5 Test Location

The testing was done online via GoToMeeting video conferencing software. The participant, the administrator and the data logger viewed the screen simultaneously and were in voice contact with each other.

3.6 Test Environment

The EHRUT (ICANotes) software would typically be used in a behavioral healthcare office or facility. In this instance, the testing was conducted using GoToMeeting software and the administrator’s test patients. For testing, participants used their own computers and keyboards when interacting with the program.

ICANotes can function on both a PC and a Mac with a variety of screen sizes and resolutions. Because ICANotes uses a remote desktop application, the color settings are set by ICANotes rather than the user.

The application was set up by the administrator on her computer using the test environment. The application was running on Remote Desktop Application using test patient data. Technically, the system performance (i.e. response time) was representative to what actual users would experience in a field implementation. Participants did not have the ability to change any system settings.

3.7 Test Forms and Tools

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

1. Recruiting and Screening Tool (Appendix 1)
2. Non-Disclosure Agreement (Appendix 2)
3. Informed Consent (Appendix 3)
4. Incentive Receipt and Acknowledgement Form (Appendix 4)
5. Moderator's Guide (Appendix 6)
6. System Usability Scale (SUS) Questionnaire (Appendix 7)

Examples of these documents can be found in Appendices 1-7 respectively. 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 with GoToMeeting software. Verbal comments were recorded by the data logger on the moderator's guide.

3.8 Participant Instructions

The administrator reads the following instructions aloud to each participant (also see the full Moderator's Guide in Appendix 6):

Thank you for participating in this study. Our session today will last about 1 hour. During that time, you will take a look at ICANotes to perform specific tasks. I will ask you to complete a few tasks using the system and answer some questions. You will be asked to complete these tasks on your own trying to do them as quickly as possible with the fewest possible errors or deviations.

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 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.

Do not do anything more than asked. Please save your detailed comments until the end of a task or the end of the session as a whole when we can discuss freely. Please be honest with your opinions.

The product you will be using today is ICANotes EHR/EMR for Behavioral Health v11.6 for Meaningful Use and MIPS Stage 3 Certification. We are recording the audio and screenshots of our session today. 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. For each task, I will read the description to you and say “**Begin.**” At that point, please perform the task and say “**Done**” once you believe you have successfully completed the task.*

Following the procedural instructions, participants were shown the EHR test screen. The administrator set up the test patient and the appropriate setting for the first task.

After each task the administrator asked the participant to rate the task from 1-5, with 1 being very easy and 5 being very difficult.

Then the moderator set up for each of the 37 tasks; administering the 1-5 rating after each one. Tasks are listed in the Moderator’s Guide, Appendix 6.

3.9 Usability Metrics

According to the *NIST Guide to the Processes Approach of Improving the Usability of Electronic Health Records*, EHRs should support 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. The goals of the test were to assess:

1. Effectiveness of ICANotes EHR/EMR for Behavioral Health v11.6 by measuring participant success rates and errors in tasks related to Safety-Enhanced Design.
2. Efficiency of ICANotes EHR/EMR for Behavioral Health v11.6 by measuring the average task time and path deviations in tasks related to Safety-Enhanced Design.
3. Satisfaction with ICANotes EHR/EMR for Behavioral Health v11.6 by measuring ease of use ratings of specific tasks related to Safety-Enhanced Design as well as the System Usability Scale (SUS) questionnaire.

DATA SCORING

For actual data, see Appendix 5.

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

Measures Rationale and Scoring

<p>Effectiveness: Task Success</p>	<p>A task was counted as a “Success” if the participant task achieved the correct outcome, without assistance, within the time allotted on a per task basis. The data logger compared the task description to the actions of the participant. The data logger scored a participant’s performance as: 2 - completed without difficulty (100 %), 1 - completed with some difficulty (80%), 0 - did not complete the task.</p> <p>Each task was only attempted one time by a participant.</p> <p>A mean was calculated of the successes for each of these tasks. Optimal task performance time was benchmarked by expert performance under realistic conditions.</p> <p>Task times were recorded for successes. Observed task times were compared to the optimal time for each task as a measure of optimal efficiency. Task time deviation was calculated as the difference between the optimal time and the task time mean. Target task times used for the task times in the Moderator’s Guide must be operationally defined by taking multiple measures of optimal performance and multiplying by some factor (e.g., 1.25) that allows some buffer because the participants are presumably not trained to expert performance. Thus if expert, optimal performance on a task was x seconds, then allotted task time performance was [x 1.25] seconds. This ration was aggregated across tasks and reported with mean and variance scores.</p>
<p>Effectiveness: Task Errors</p>	<p>If the participant abandoned the task, did not reach the correct answer or performed it incorrectly, the task was counted as a “Failure.”</p> <p>The total number of errors was calculated for each task and then divided by the total number of persons who completed the task to arrive at the mean. Not all deviations were counted as errors.</p>
<p>Efficiency: Task Deviations</p>	<p>The participant’s path through the application was recorded. The optimal steps for each task were calculated prior to testing a task. Deviations occurred 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 said “Begin” until the participant said “Done.” If he or she failed to say “Done,” the time was stopped when the participant</p>

	stopped performing the task. Mean task time per task was calculated for each task. Standard deviation was also calculated.
Satisfaction: Task Rating	<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 all participants.</p> <p>To measure participants’ confidence in and likeability of the software overall, the testing team administered the System Usability Score 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 quickly.” See contents of the full System Usability Score questionnaire in Appendix 7. The results are on pp. 28-32.</p>

4 RESULTS

4.1 Data Analysis and Reporting

The results of the usability test were calculated according to the methods specified in the Usability Metrics section above.

A summary of results is found in Appendix 5 of this report.

The results from the SUS (System Usability Scale) scored the subjective satisfaction with the system based on performance with these tasks to be 83%. Broadly interpreted, scores under 60 represent systems with poor usability; scores over 80 would be considered above average.

System Usability Questionnaire Results

Would use system frequently	Unnecessarily complex	Easy to use	Need tech person to assist	Well-integrated functionality	Too much inconsistency	Lean to use quickly	Very cumbersome	Confident using	Needed to learn a lot first	Scores after adjustments
5	1	5	2	4	2	5	1	5	1	92.5
4	2	5	1	5	1	2	2	5	1	85
5	5	5	4	5	1	4	1	4	3	72.5
4	2	4	4	4	2	3	2	3	4	60
4	4	4	3	5	2	5	1	4	2	75
4	2	4	4	4	2	2	4	3	4	75
4	2	4	2	3	2	3	2	4	2	70
5	1	4	2	4	2	2	1	4	1	80
5	2	5	2	5	2	4	2	4	2	82.5
4	2	4	2	5	1	4	2	4	1	82.5
2	2	4	4	4	2	2	4	3	4	47.5
4	1	5	1	5	1	5	1	3	1	92.5
5	1	5	1	5	1	5	1	5	1	92.5
4	1	5	2	5	2	5	1	4	1	90
5	1	5	1	5	1	5	1	5	1	100
5	1	5	2	5	1	4	1	4	4	85
5	1	5	2	4	2	5	2	4	2	85
5	1	5	1	5	1	5	1	5	1	100
5	1	5	1	5	1	5	2	5	1	97.5
5	1	5	4	5	2	5	1	4	4	87.5
4.45 Mean	1.7 Mean	4.65 Mean	2.25 Mean	4.6 Mean	1.55 Mean	4 Mean	1.65 Mean	4.1 Mean	2.05 Mean	83

1=Strongly Disagree, 2=Disagree, 3=Neither agree nor disagree, 4=Agree, 5=Strongly Agree
83% System Usability Score

Effectiveness

Summary results show a summary of all tasks with task success, path deviation, task time, task time deviations, errors, steps and task ratings. In regard to patient safety, the lowest success was in b.2 Task 1 Clinical Information Reconciliation and Incorporation (88 %), a.4 followed by Task 3 Drug-Drug, Drug-Allergy Adjust the severity level (92 %). Both of these contribute to patient safety and should be addressed in both patient training and revision of process. Participants could benefit from detailed explanation of how to set interventions. Of Task b2 #2 Generate a CCDA all participants were able to complete this task successfully and noted the value of this document. Several did not know it was a chart component.

What is important for patient safety is that the error rate for a4 Task 1 Drug-Drug, Drug-Allergy/Trigger a drug-drug interaction is low 0.1 (with a low 0.3 standard deviation). The risk is even lower for a4 Task 2 Trigger a Drug-Allergy interaction with 0 errors and a success of 100 %. The next lower success 1.6 with a deviation of 0.5 is in a.2 Task 2 Change medication order followed by a.1 Task 1 Record medication order (94 %). Task 1 may have had to do with the lack of familiarity with the e-Prescribing function for some that was required in Record medication order. Tasks 2 and 1 for CPOE Med will be areas for our Clinical Director to share with trainers and support staff.

The a.6 Problem List Task 1 had a success rate of 100 %, however Task 2 - Change problem received a score of 94 % which showed some unfamiliarity with that area. Problem List Task 3 - Display problem list had a score of 98 % with a deviation of 0.5. The Change a problem including deactivation of an existing problem for task 2 seemed to confuse some participants and will be referred to trainers and other staff for ways of informing customers. This is important for having the full and current information concerning patients' conditions.

In a.2 Task 1 CPOE Labs Record lab order a success rate was 98 % with a deviation of 0.3. This is an area that behavioral health clinicians do not necessarily use but there are some who do since we do lab integrations. Providing information on lab order availability and usage could be beneficial for those who do.

Other tasks: Overall a.2 Labs Tasks 2 and 3 had no errors. In a.3 CPOE-Diagnostic Imaging the 1st task Record imaging order was 96 % success and 0.4 deviation. The a.3 change & display tasks 2 and 3 were done effectively and are not of concern.

The a.8 Task 1 Medication allergy was done very successfully with 100%. With a.8 Task 2 Change Medication allergy there were no errors and the same for Task 3 Display Historical Medication allergy. Task 4 Display Historical Med Allergy List had success rate of 98 % and deviation 0.5 and is not of huge concern but it is an area that can provide valuable information.

Generating a new CCDA b.2 Task 2 was done very successfully and also prompted remarks of how useful this could be which speaks to lack of awareness on some clinicians' part of the availability. More awareness provided by the various tools ICANotes has in addition to training would be helpful.

The a.9 Clinical Decision Support tasks were completed successfully with a large deviation in time for Task 4 Trigger the CDS Intervention but no errors. In completion of the a.14 Implantable Device tasks none of the participants had any major difficulty. Finally, the a.5 Demographics tasks 1 and 2 took time to complete but were done successfully at 98 % and 100 % each with no errors.

Path Deviations were slight. Some paths show “0” which reflects a measure where the participant had to point to a display on the screen and not take any actual “steps.”

In short there are some areas to address for safety and potential errors mentioned above, but overall participants performed well.

Efficiency

Most tasks were performed with great efficiency and in some cases better than expected. There were few errors. See Appendix 5 for Summary of Results.

In relation to those with the greatest difficulty:

For those of concern in terms of safety:

Task 1 a.4 Drug-Drug, Drug Allergy the mean time was 20 seconds which was **less** than the optimal of 49 seconds. Task 2 Trigger a drug allergy interaction took less than the optimal as well: 48 actual vs 56 optimal. Again with Task 3 Adjust severity level the same is true 54 seconds actual vs 76 optimal.

All of the a1 CPOE Meds took longer than the optimal:

CPOE Medication Task 1 Record Med order 114 actual vs 105 optimal (a small difference of 9 seconds)

CPOE Task 2 Change Med order 87 actual vs 34 optimal (a larger difference of 53 seconds)

CPOE Task 3 Display Med order 17 actual vs 11 optimal (a small difference of 6 seconds)

The a.2 CPOE Labs did not vary a lot from optimal:

CPOE Labs Task 1 Record Lab order 51 actual vs 61 optimal (close to optimal)

CPOE Labs Task 2 Change Lab 10 actual vs 15 optimal (close to optimal)

CPOE Labs Task 3 Display Lab 25 actual vs 6 optimal (a difference of 19 seconds, a little more time than expected)

All of these tasks varied little between performance and optimal times:

a.3 CPOE Imaging all 3 tasks and times were close to optimal.

a.8 Med Allergy List tasks were similar to optimal.

a.7 Medication List tasks also similar to optimal.

Task 1 b.2 Incorporate CCDA the performance time was 225 seconds and the optimal was 313 seconds showing the actual performance took less time. This reflects the difficulty participants

expressed concerning this task. Task 2 for Clinical Information Reconciliation took much less than optimal actually 225 seconds actual vs 313 optimal.

a.2 Clinical Decision Support Task 1 Add an intervention and Task 4 Trigger CDS intervention took less time than optimal. Task 2 Trigger interventions, Task 3 View using Infobutton, and Task 5 Access attributes were slightly more than optimal.

a.6 Problem List Task 1 Record a problem time was similar to optimal. Task 2 Change a problem list was slightly different. Task 3 Display active problem list was a difference of 11 seconds by participants vs 4 optimal. Task 4 Display historical problem list times were quite similar.

a.14 UDI in all 3 tasks the times were quite close to optimal.

The a.5 Demographics Task 1 Record demographics was 169 seconds actual vs 89 seconds optimal - a large difference of 80 seconds. Task 2 Change demographics, which was a similar task, was 127 seconds actual vs 71 optimal - again a large difference of 56 seconds. The screen which has a lot of text and the number of demographic requirements may have been why more time was required.

(a.7) Medication List Task 1 Record a medication took longer than expected but the greatest concern remains with b2 Incorporate CCDA. The process is difficult and took considerable more time than expected.

Satisfaction

A summary of task ratings is included in Appendix 5 Summary Measures. Participants were asked using the Likert scale to rate a task on a scale of 1 - 5 with 1 being the easiest and 5 being the most difficult. Task ratings showed participants viewed these tasks most unfavorably:

Note: Score is 1-5 with 1 being very easy and 5 being very difficult

A.4 Drug-drug, drug allergy Task 3: Adjust severity level of a displayed drug-drug interaction
Score of 2.2

B.2 Clinical Information Reconciliation Task 1: Incorporate a CCDA
Score of 2.1

A.3 CPOE Imaging Task 1: Record imaging order
Score of 1.8

A.1 CPOE Meds Task 1: Record Med order
Score of 1.6

A.1 CPOE Meds Task 2: Change Med order
Score of 1.5

Higher Degree of Satisfaction

Participants scored other tasks a mean of 1.4 or lower which reflect a high degree of satisfaction:

A.7 Med List Task 1: Record a Medication

Score of 1.4

A.8 Med Allergy Task 1: Record Medication Allergy

Score of 1.4

A.8 Med Allergy Task 2: Change a Medication Allergy

Score of 1.3

A.4 Drug-Drug Allergy Task 2: Trigger a drug-allergy

Score of 1.3

a.6 Problem List Task 2: Change a problem

Score of 1.3

The other tasks were viewed favorably with scores of 1.2 or less. The tasks that had issues earlier - a.4 Adjust severity level of drug-drug interaction and b.2 Incorporate a CCDA again require the most attention safety wise for process and ease of completion.

4.2 Discussion of the Findings

Major Findings

Overall participants did well on these tasks and performed them effectively and efficiently. The mean errors are very low and fall in the areas of:

- A4 Drug-drug drug allergy. Task 1: Trigger a drug-drug interaction by entering a new medication (mean error rate of 1%)
- A4 Drug-drug drug allergy. Task 3: Adjust severity level of displayed drug interaction (also mean error rate of 1%)
- A1 CPOE Meds Task 1: Record a medication order (mean error rate of 1%)
- B2 Clinical Information Reconciliation Task 1: Incorporate a CCDA (mean error rate of 1%)

Times as noted above often fell close to the optimal except in areas noted earlier above. Participants did not have great difficulty time-wise though everyone mentioned that b2 Clinical Information Reconciliation Task 1 - is "not intuitive." The process must be addressed to allow clinicians to capture all information in an effective and efficient manner. Concerning a4 Drug-drug drug allergy it is also critical that how to adjust the severity level of an interaction be made more obvious. While this is an e-Prescribing function, it is important to identify ways that our

customers can become aware of the importance of this function and how to perform it correctly.

Safety is not a major concern overall except with regard to these tasks noted above. The inherent “safety” of tasks tested and our participants’ performance speaks well of the design of the program and the ability of the clinicians to find what they need effectively and efficiently. Participants were not familiar with all the functionality and this will be shared with appropriate staff to determine ways to improve functions and communicate this to other clinicians.

Other major findings from the System Usability Scale (SUS):

Customers like the EHRUT very much and expressed it in the final survey. See Appendix 8 for full comments.

Under overall impression comments included “very user friendly,” “easy to use,” “excellent system,” “simple, easy to use,” “stellar YouTube video tutorials.” Of the 20 people who participated, 18 were very positive in what they liked about the system.

Aspects liked most to name a few: “Allows me to put together a concise note that meets documentation requirements (2 people).” “Well thought-out.” “When documenting symptoms it cues me on what to ask.” “Like dropdown menus for Dx and meds.” “Can get things through quickly; efficient system.” “Fast charting and clicking.”

Aspects liked least: “Med reconciliation [2 people] looks tricky.” “Too many steps [for some] things.” “Doing something that I don’t know how to do.” “Navigation because of my unfamiliarity.” Two people said “nothing.” “Adverse Drug Reaction.”

Features surprised to see: “Although Med rec confusing, I liked the functionality.” “CCDA” (3 people mentioned). “Medication Log.” “Gender identifier”[in demographics] (2 people mentioned. “I didn’t know how to add managed allergies & how to use medrec properly.”

Features Expected but not Seen: “Some meds use brand names/some use generic - more need to be in there.” “Can you enter meds in free form such as in the med rec?” “Need a way to send messages outside of the portal.” Others said no.

Comparison to Other EHRs: “Most all encompassing & best for psychiatrists. Not as smooth and a little lag. “Like that it is specific to psychiatry.” “Rate it higher than other EHRs.” “Even if you get logged off you don’t lose anything...that happened in other systems.”

Recommend this system y/n All 19 participants said yes. Several added “have done so many occasions.”

Areas for Improvement

Medication reconciliation and adverse drug reactions stand out as areas that require re-development of process in the first case and more information to clinicians in the second area. Communication about the CCDA -- what it is, how it can be used and why it's important to any new patient's behavioral health was made obvious through the testing. Adverse drug reactions input is not obvious to all either and also is of critical concern.

The value of "logs" (historical Medication Allergy list, Medication allergy and problem lists) were discussed earlier.

Concerning Clinical Decision Support, clinicians can find value in these as they become more visible and in greater quantity within ICANotes.

Labs for some behavioral health clinicians are part of their practice and several participants were not aware of the Labs feature and said they could use this with patients. One customer said "I'm very excited about this feature - didn't know about it."

The Demographics area may benefit from more visibility of the Gender Identifier since participants weren't necessarily aware that it was there. The drop-down menus in Demographics contain a great amount of choice and those doing Demographics data entry may benefit from more awareness of all of the information available.

Information that customers were surprised to learn will be shared with others via video tutorials, webinars, blog posts, newsletters and general training. Our clinical director together with trainers and customer support staff will address these issues and identify most effective ways to share these features.

5 APPENDICES

Appendix 1: Recruiting and Screening Script

Usability Study

Name *

First

Last

Best number to reach you:

Best time to call?

Gender *

Male Female

Have you participated in a usability test in the past 12 months?

Yes No

Does anyone in your home work in usability research or web design?

Yes No

Do you require any assistive technologies to use a computer?

Yes No

Which of the following best describes your age? *

What is your current position and title? *

How long have you worked in this profession? *

Describe your work location and environment. *

(private practice, inpatient facility, government clinic, etc.)

What is your highest level of education? *

Besides email, what professional activities do you do on the computer? *

How many hours per week do you spend on the computer? *

What computer platform do you typically use? *

(e.g., Mac, Windows, etc.)

What internet browser(s) do you usually use? *

In the last month how often have you used an EHR? *

(e.g., Firefox, IE, AOL, Chrome, Safari)

How many years have you used an EHR? *

How many EHRs do you use or are you familiar with? *

How does your work environment record patient records? *

Days Available in September: *

Submit

Appendix 2: Non-Disclosure Agreement

Usability Study Non-Disclosure Agreement

This Agreement is entered into as of:

Between this "Participant"

and the testing organization, ICANotes, located at 1600 Saint Margarets Road, Annapolis, MD 21409.


The Participant acknowledges his or her voluntary participation in today's 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 that is disclosed by ICANotes, or otherwise acquired by the Participant, in the course of today's study.

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

Any information the Participant acquires relating to this product during this study is confidential and proprietary to ICANotes 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 s/he will receive monetary compensation for feedback and will not disclose this confidential information obtained today to anyone else or any other organizations.

Participant's Printed Name

Signature



Date

Appendix 3: Informed Consent

Usability Study Informed Consent

ICANotes would like to thank you for participating in this study. The purpose of the study is to evaluate an electronic health records system. If you decide to participate, you will be asked to perform several tasks using the system and give your feedback. The study will last about one hour. At the conclusion of the test, you will be compensated for your time.

Agreement

I understand and agree that as a voluntary participant in the present study conducted by ICANotes, 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 ICANotes.

I understand and consent to the use and release of the videotape by ICANotes. 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 ICANotes 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 outside of ICANotes and ICANotes clients. I understand and agree that data confidentiality is assured, because only deidentified 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

Printed Name

Witness Signature:

Date:

Printed Name and Affiliation:

Appendix 4: Incentive Receipt and Acknowledgement Form

Incentive Receipt and Acknowledgment Form

I hereby acknowledge receipt of the following incentive for my participation in a research study run by ICANotes.

Name

Address

Signature

Date

Tester:

(Printed Name, Signature, and Date)

Witness:

(Printed Name, Signature, and Date)

Appendix 5: Summary Results

Summary Results

Task	N	Task success Mean(SD)	Path Deviation Deviations (Observed/Optimal)	Task Time Mean (SD)	Task Time Optimal Sec	Task Time Deviations (Observed/Optimal)	Errors Mean (SD)	Steps (Observed/Optimal)	Task Ratings 1=Easy Mean (SD)
315a.4 Drug-Drug/Drug-Allergy Task #1: Using CPOE, trigger a drug-drug interaction by entering a new medication order	10	100 % (0)	(2/2)	20(12)	49 sec	(-29/49)	.1(-.3)	(2.1 /2)	1(0)
315.a.4 Drug-Drug, Drug Allergy Task #2: Trigger a Drug-Allergy Interaction by Entering a new Med order	10	100 % (0)	(4/2)	48(18)	56 sec	(-8/56)	0(0)	(0/0)	1.3(.5)
315.a.4 Drug-Drug, Drug Allergy Task #3 Adjust the severity level of a displayed drug-drug interaction	10	92 %(.5)	(5/4)	54(32)	76 sec	(-12/76)	.6(.7)	(0/0)	2.2(.7)
315.a.1 CPOE-Medications Task #1: Record medication order via CPOE	10	94% (.5)	(3.3/3)	114(7.9)	105 sec	(9/105)	0(0)	(3.3 /3)	1.6 (.8)
315.a.1 CPOE-Medications Task #2: Change Medication order via CPOE	10	90%(.5)	(3.2 /3)	87(57)	34 sec	(53/34)	0(0)	(3.2 /3)	1.5 (.7)
315.a.1 CPOE-Medications Task #3: Display changed CPOE Medication order	10	96 %(.6)	(0/0)	17(13)	11 sec	(6/11)	0(0)	0/0	1 (0)
315.a.2 CPOE-Labs Task #1: Record Lab order via CPOE	10	98% (.3)	(6/6)	51(13)	61 sec	(-10/61)	0(0)	(6/6)	1.2(.4)

315.a.2 CPOE-Labs Task #2: Change Lab order via CPOE	10	100 %(0)	(3/3)	10(7)	15 sec	(-5/15)	0(0)	(3/3)	1.1(.9)
315.a.2 CPOE-Labs Task #3: Display changed CPOE Lab order	10	100 %(0)	(0/0)	25(36)	6 sec	(19/6)	0(0)	(0/0)	1/(0)
315.a.3 CPOE-Diagnostic Imaging Task #1: Record imaging order via CPOE	10	96 %(.4)	(7/6)	75(40)	79 sec	(-4/79)	1(1)	(6.6/6)	1.8(.8)
315.a.3 CPOE-Diagnostic Imaging Task #2: Change imaging order via CPOE	10	100 %(0)	(3/3)	11(6)	14 sec	(-3/14)	0(0)	(3/3)	1(0)
315.a.3 CPOE-Diagnostic Imaging Task #3: Display changed CPOE imaging order	10	100 %(0)	(0/0)	7(6)	5 sec	(%)	0(0)	(0/0)	1(0)
315.a.8 Medication Allergy List Task #1: Record a medication allergy	10	100 %(0)	(6/6)	30(8)	38 sec	(-8/38)	0(0)	6(6)	1(0)
315.a.8 Medication Allergy List Task #2: Change a medication allergy	10	100 %(0)	(3/3)	21(12)	19 sec	(2/19)	0(0)	3(3)	1.8(.8)
315.a.8 Medication Allergy List Task #3: Display active medication allergy list	10	100 %(0)	(0/0)	5(3)	5 sec	(0/5)	0(0)	0(0)	1(0)
315.a.8 Medication Allergy List Task #4: Display historical medication allergy list	10	100 %(0)	(1/0)	8(4)	9 sec	(-1/9)	0(0)	1(1)	1(0)

315.a.7 Medication List Task #1: Record a medication to the medication list	10	2(0)	(8/8)	47(15)	73 sec	(-26/73)	0(0)	8.8(8)	1.4(.5)
315.a.7 Medication List Task #2: Change a medication on the medication list	10	100 %(0)	(2/2)	24(10)	26 sec	(-2/26)	0(0)	2.2(2)	1.1(.3)
315.a.7 Medication List Task #3: Display the active medication list	10	100 %(0)	(0/0)	6(15)	5 sec	(%)	0(0)	0(0)	1.1(.3)
315.a.7 Medication List Task #4: Display the historical medication list	10	98 %(.5)	(0/0)	6(4)	8 sec	(-2/8)	0(0)	0(0)	1.1(.3)
315.b.2 Clinical Information reconciliation and incorporation Task #1: Incorporate a CCDA and conduct reconciliation	10	88 %(.5)	(13/13)	225(79)	313 sec	(-88/313)	1(1)	13.3(13)	2.1(1.9)
315.b.2 Clinical Information reconciliation and incorporation Task #2: Generate a new CCDA with reconciled data	10	100 %(0)	(1/1)	13(16)	19 sec	(-6/19)	0(0)	1(1)	1(0)
315.a.9 Clinical Decision Support Task #1: Add a CDS intervention	10	98 %(.3)	5(5)	86(37)	95 sec	(-9/95)	0(0)	5(5)	1.2(.3)
315.a.9 Clinical Decision Support Task	10	100 %(0)	1(1)	15(7)	6 sec	(9/6)	0(0)	1(1)	1.1(.1)

#2: Trigger the CDS interventions									
315.a.9 Clinical Decision Support Task #3: View the intervention/resource information	10	100 %(0)	1(1)	39(18)	33 sec	(6/33)	0(0)	1(1)	1.1(.1)
315.a.9 Clinical Decision Support Task #4: Trigger the CDS interventions/resources	10	98 % (.3)	3(3)	65(30)	79 sec	(-14/79)	0(0)	3(3)	1.3(.6)
315.a.9 Clinical Decision Support Task #5: Access the following attributes...	10	100 %(0)	1(1)	36(25)	23 sec	(13/23)	0(0)	1(1)	1(0)
315.a.6 Problem List Task #1: Record a problem	10	100 %(0)	3(3)	9(5)	11 sec	(-2/11)	0(0)	3(3)	1(0)
315.a.6 Problem List Task #2: Change a problem	10	94 %(.5)	4(4)	22(13)	14 sec	(8/14)	0(0)	4.2(4)	1.3(.4)
315.a.6 Problem List Task #3: Display the active problem list	10	98 %(.5)	0(0)	11(16)	4 sec	(7/4)	0(0)	0(0)	1.2(.6)
315.a.6 Problem List Task #4: Display the historical problem list	10	100 %(0)	0(0)	9(9)	6 sec	(3/6)	0(0)	0(0)	1.1(.3)
315.a.14 Implantable Device List Task #1: Record UDI	10	100 %(0)	1(1)	11(20)	5 sec	(6/5)	0(0)	1(1)	1(0)
315.a.14 Implantable Device List Task #2:	10	100 %(0)	2(2)	5(5)	9 sec	(-4/9)	0(0)	2(2)	1(0)

Change UDI status									
315.a.14 Implantable Device List Task #3: Access UDI...	10	1.9(.5)	5(5)	5(5)	4 sec	(1 / 4)	0(0)	1(1)	1(0)
315.a.5 Demographics Task #1: Record a patient's preferred language...	10	98 %(.5)	10(10)	163(31)	89 sec	(74/89)	0(0)	10(10)	1.1(.3)
315.a.5 Demographics Task #2: Change the patient's preferred language...	10	100 %(0)	10(10)	127(31)	71 sec	(56/71)	0(0)	10(10)	1.1(.3)
315.a.5 Demographics Task #3: Display the patient's changed preferred language...	10	100 %(0)	0(0)	20(43)	5 sec	(15/5)	0(0)	Show screen	1.1(.3)

Appendix 6: Moderator’s Guide

Thank you for participating in this study. Our session today will last about 1 hour.

During that time, you will take a look at ICANotes to perform specific tasks.

I will ask you to complete a few tasks using the system and answer some questions. You will be asked to complete these tasks on your own trying to do them as quickly as possible with the fewest possible errors or deviations.

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 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.

Do not do anything more than asked. Please save your detailed comments until the end of a task or the end of the session as a whole when we can discuss freely. Please be honest with your opinions.

The product you will be using today is ICANotes EHR/EMR for Behavioral Health v11.6 for Meaningful Use and MIPS Stage 3 Certification. We are recording the audio and screenshots of our session today. 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. For each task, I will read the description to you and say “**Begin.**” At that point, please perform the task and say “**Done**” once you believe you have successfully completed the task.

Participant Number: Click or tap here to enter text.	Date: Click or tap to enter a date.	Time: Click or tap here to enter text.
Tester: Click or tap here to enter text.	Administrator: Click or tap here to enter text.	Incentive: \$150 Gift Card

Verify that informed consent has been submitted. If not, ask participant to complete: <https://www.cognitoforms.com/ICANotes/UsabilityStudyInformedConsent>

Verify that Non-Disclosure Agreement has been submitted. If not, ask participant to complete: <https://www.cognitoforms.com/ICANotes/UsabilityStudyNonDisclosureAgreement>

Verify that Incentive Receipt and Acknowledgment Form been submitted. If not, ask participant to complete: <https://www.cognitoforms.com/ICANotes/IncentiveReceiptAndAcknowledgmentForm>

Instructions for User Tasks

Please Note: User tasks have been prioritized in accordance with the level of risk associated with user errors. The single exception is Drug-Drug/Drug-Allergy Interaction Checks, which needs to precede our first prioritized item, CPOE.

315.a.4 Drug-Drug, Drug-Allergy Interaction Checks for CPOE, Task 1: Trigger a Drug-Drug Interaction by Entering a New Medication Order

Directions to Tester:

Create a new patient chart with the following current medication in the e-prescribe section: Amiodarone 200 mg tablet with any instructions. Show the participant that the interaction setting for drug-drug is set to show Contraindicated and Severe alerts only.

Directions to Participant:

When asked to begin, please order Coumadin 5 mg tablet. Because this interacts severely with the Amiodarone medication the patient is already taking, we should see an alert. The test is completed when we see the alert on the screen.

Success:

- Easily completed
- Completed with difficulty or help (describe below in Comments)
- Not completed

Comments:

Click or tap here to enter text.

Task Time: Click or tap here to enter text. seconds. *(Task starts when participant is asked to begin. Task ends when the drug interaction alert appears on the screen.)*

Optimal Path: Participant finds Coumadin and selects the 5 mg tablet dose to show the drug alert on screen.

- Correct
- Minor Deviation
- Major Deviations (describe below in Comments)

___Steps

Comments:

Click or tap here to enter text.

Observed Errors and Verbalizations:

Click or tap here to enter text.

Participant Rating Scale, overall this task was:

<input type="checkbox"/> 1. Very Easy	<input type="checkbox"/> 2. Easy	<input type="checkbox"/> 3. Neither Easy nor Difficult	<input type="checkbox"/> 4. Difficult	<input type="checkbox"/> 5. Very Difficult
---------------------------------------	----------------------------------	--	---------------------------------------	--

Administrator/Note taker comments:

Click or tap here to enter text.

315.a.4 Drug-Drug, Drug-Allergy Interaction Checks, Task 2: Trigger a Drug-Allergy Interaction by Entering a New Medication Order

Directions to the Tester:

Take Participant to the starting point, at the top of the layout PN2 >>” Go to E Prescribe.” At DrFirst opening screen, instruct Participant to scroll down to and push “Correct Allergies/Adverse reactions.”

Directions to the Participant:

“When asked to begin, please scroll down and push the “Current Allergies/Adverse Reactions” button and then push “Manage Allergies.” Please indicate that there is now a reported allergy to Penicillin, with details about the kind of reaction and date of onset of your choice. End by pushing the “Enter” button. Any questions? Please begin.”

Success:

- Easily completed

Completed with difficulty or help (describe below in Comments)

Not completed

____Steps

Comments:

Click or tap here to enter text.

Task Time: Click or tap here to enter text. seconds. (Task starts when participant is asked to begin. Task ends when the Penicillin information has been entered and the button, "Enter" is pushed.)

Optimal Path: The following buttons and fields are used, in this order: "Current Allergies/Adverse Reactions" button, "Manage Allergies" select Penicillin from the Common Allergies dropdown list, select from Reaction dropdown, select from Onset Date dropdown, "Add" button pushed.

Correct

Minor Deviation

Major Deviations (describe below in Comments)

Comments:

Click or tap here to enter text.

Observed Errors and Verbalizations:

Click or tap here to enter text.

Participant Rating Scale, overall this task was:

<input type="checkbox"/> 1. Very Easy	<input type="checkbox"/> 2. Easy	<input type="checkbox"/> 3. Neither Easy nor Difficult	<input type="checkbox"/> 4. Difficult	<input type="checkbox"/> 5. Very Difficult
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Administrator/Note taker comments:

Click or tap here to enter text.

315.a.4 Drug-Drug, Drug-Allergy Interaction Checks, Task 3: Adjust the Severity Level of a Displayed Drug-Drug Interaction

Directions to the Tester:

Take Participant to the starting point at the top of the layout PN2 >>" Go to E Prescribe." At DrFirst opening screen instruct Participant to push the "Additional Options" button on the right side of the banner at the top of the screen.

Directions to the Participant:

"When asked to begin, please push the "Preferences/ Locations" button. In the middle of the screen look for When checking for drug allergy interaction "please set the severity levels for both drug/drug and drug/allergies. Please set the severity levels at the lowest level, meaning that you want to be alerted even if it is the most minor of interactions. Please end by pushing, "Make these changes." Please begin."

Success:

Easily completed

Completed with difficulty or help (describe below in Comments)

Not completed

____Steps

Comments:

Click or tap here to enter text.

Task Time: Click or tap here to enter text. seconds. (Task starts when participant is asked to begin. Task ends when the *“Make these changes button”* is pushed.)

Optimal Path: The dropdown menu at the end of the sentence “When checking for drug/drug interactions show....” is used to select the lowest setting. The dropdown menu at the end of the sentence “When checking for drug/allergy interactions show....” is used to select the lowest setting. The task is completed by pushing the *“Make These Changes”* button.

- Correct
- Minor Deviation
- Major Deviations (describe below in Comments)

Comments:

Click or tap here to enter text.

Observed Errors and Verbalizations:

Click or tap here to enter text.

Participant Rating Scale, overall this task was:

<input type="checkbox"/> 1. Very Easy	<input type="checkbox"/> 2. Easy	<input type="checkbox"/> 3. Neither Easy nor Difficult	<input type="checkbox"/> 4. Difficult	<input type="checkbox"/> 5. Very Difficult
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Administrator/Note taker comments:

Click or tap here to enter text.

315.a.1 CPOE – Meds, Task 1: Record Medication Order via CPOE

Directions to the Tester:

Take Participant to the starting point, PN 2 e-prescribe of a patient who is allergic to Penicillin. Direct Participant’s attention to the section of the screen, Medication Orders. During testing the Participant will get an alert about the Penicillin allergy. Please instruct the Participant to continue and compile the note.

Directions to the Participant:

“We are on PN 2 in e-prescribe where medication orders can be written. When asked to begin please order the new medication Penicillin, with instructions of your choice. After this medicine order, please compile the note. Any questions? Please begin.”

Success:

- Easily completed
- Completed with difficulty or help (describe below in Comments)
- Not completed

___Steps

Comments:

Click or tap here to enter text.

Task Time: Click or tap here to enter text. seconds. (Task starts when participant is asked to begin. Task ends after the Penicillin is ordered and the note is compiled.)

Optimal Path: The Medications, dose, and timing are entered in order as the Penicillin is ordered. The Compile the note button is pushed. No typing is necessary

- Correct
- Minor Deviation
- Major Deviations (describe below in Comments)

____Steps

Comments:

Click or tap here to enter text.

Observed Errors and Verbalizations:

Click or tap here to enter text.

Participant Rating Scale, overall this task was:

<input type="checkbox"/> 1. Very Easy	<input type="checkbox"/> 2. Easy	<input type="checkbox"/> 3. Neither Easy nor Difficult	<input type="checkbox"/> 4. Difficult	<input type="checkbox"/> 5. Very Difficult
---------------------------------------	----------------------------------	--	---------------------------------------	--

Administrator/Note taker comments:

Click or tap here to enter text.

315.a.1 CPOE – Meds, Task 2: Change Medication Order via CPOE

Directions to the Tester:

Take Participant to the starting point, PN 2, eprescribe. Direct Participant’s attention to the section of the screen, Medication Orders. When the medication change is made please direct the participant to compile the note so that the change is recorded.

Directions to the Participant: “We are on PN 2 where medication orders can be changed. When asked to begin please change the medication dosage for Penicillin. Choose the new dosage of your choice. Please compile the note after making the dosage change. Any questions? Please begin.”

Success:

- Easily completed
- Completed with difficulty or help (describe below in Comments)
- Not completed

____Steps

Comments:

Click or tap here to enter text.

Task Time: Click or tap here to enter text. seconds. (Task starts when participant is asked to begin. Task ends when medication dose is changed and note is compiled.

Optimal Path: The dosage field is entered and a dosage selected from the dropdown list. The note is compiled.

- Correct
- Minor Deviation
- Major Deviations (describe below in Comments)

Comments:

Click or tap here to enter text.

Observed Errors and Verbalizations:

Click or tap here to enter text.

Participant Rating Scale, overall this task was:

<input type="checkbox"/> 1. Very Easy	<input type="checkbox"/> 2. Easy	<input type="checkbox"/> 3. Neither Easy nor Difficult	<input type="checkbox"/> 4. Difficult	<input type="checkbox"/> 5. Very Difficult
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Administrator/Note taker comments:

Click or tap here to enter text.

315.a.1 CPOE – Meds, Task 3: Display Changed CPOE Medication Order

Directions to the Tester:

Take Participant to the starting point, the Chart Face.

Directions to the Participant:

“We are on the Chart Face, the front of the patient’s chart. Here there is a list of all currently prescribed medications. When asked to begin, please locate that list and identify verbally the recently changed Penicillin order. Please begin.”

Success:

- Easily completed
- Completed with difficulty or help (describe below in Comments)
- Not completed

____Steps

Comments:

Click or tap here to enter text.

Task Time: Click or tap here to enter text. seconds. (Task starts when participant is asked to begin. Task ends when the new Penicillin order is identified verbally.)

Optimal Path: On the chart face the Current Medications field is identified and entered, if necessary, so that the recently changed order can be seen and read.

- Correct
- Minor Deviation
- Major Deviations (describe below in Comments)

Comments:

Click or tap here to enter text.

Observed Errors and Verbalizations:

Click or tap here to enter text.

Participant Rating Scale, overall this task was:

<input type="checkbox"/> 1. Very Easy	<input type="checkbox"/> 2. Easy	<input type="checkbox"/> 3. Neither Easy nor Difficult	<input type="checkbox"/> 4. Difficult	<input type="checkbox"/> 5. Very Difficult
---------------------------------------	----------------------------------	--	---------------------------------------	--

Administrator/Note taker comments:

Click or tap here to enter text.

315.a.2 CPOE – Labs, Task 1: Record Lab Order via CPOE

Directions to the Tester:

Take Participant to the starting point, PN 2 >> Clinical Order Sheet >> Lab & Imaging & EEG Order Form

Directions to the Participant:

“We are in the form where labs are ordered. When asked to begin please use the “new order” button and order a Blood Alcohol Level, Routine, Once, and then “Save” the test request.”

Success:

- Easily completed
- Completed with difficulty or help (describe below in Comments)
- Not completed

____Steps

Comments:

Click or tap here to enter text.

Task Time: Click or tap here to enter text. seconds. (Task starts when participant is asked to begin. Task ends when the order is completed and “Save” pushed.)

Optimal Path: From Clinical Order Sheet use the Lab and Imaging and EEG button. When there, use “New Order” button. On that screen select proper test from “Test” dropdown and other orders from Frequency and Times x dropdowns. No typing is necessary.

- Correct
- Minor Deviation
- Major Deviations (describe below in Comments)

Comments:

Click or tap here to enter text.

Observed Errors and Verbalizations:

Click or tap here to enter text.

Participant Rating Scale, overall this task was:

<input type="checkbox"/> 1. Very Easy	<input type="checkbox"/> 2. Easy	<input type="checkbox"/> 3. Neither Easy nor Difficult	<input type="checkbox"/> 4. Difficult	<input type="checkbox"/> 5. Very Difficult
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Administrator/Note taker comments:

Click or tap here to enter text.

315.a.2 CPOE – Labs, Task 2: Change Lab Order via CPOE

Directions to the Tester:

Take Participant to the starting point, PN 2 >> Clinical Order Sheet >> Lab & Imaging & EEG Order Form, of the patient for whom Blood Alcohol was ordered.

Directions to the Participant:

“We are in the form where lab is ordered and modified. When asked to begin please push the Blood Alcohol test on the left. When the detail box opens please change “once” to “x2”. Save the change. Please begin.”

Success:

- Easily completed
- Completed with difficulty or help (describe below in Comments)
- Not completed

____Steps

Comments:

Click or tap here to enter text.

Task Time: Click or tap here to enter text. seconds. (Task starts when participant is asked to begin. Task ends when the order is modified and “Save” pushed.)

Optimal Path: After selecting the Blood Alcohol test, in the detail window that opens, the frequency dropdown should be entered and “X2” selected. No typing is necessary. “Save” button is pushed, completing the task.

- Correct
- Minor Deviation
- Major Deviations (describe below in Comments)

Comments:

Click or tap here to enter text.

Observed Errors and Verbalizations:

Click or tap here to enter text.

Participant Rating Scale, overall this task was:

<input type="checkbox"/> 1. Very Easy	<input type="checkbox"/> 2. Easy	<input type="checkbox"/> 3. Neither Easy nor Difficult	<input type="checkbox"/> 4. Difficult	<input type="checkbox"/> 5. Very Difficult
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Administrator/Note taker comments:

Click or tap here to enter text.

315.a.2 CPOE – Labs, Task 3: Display Changed CPOE Lab Order

Directions to the Tester:

Take Participant to the starting point, PN 2 >> Clinical Order Sheet >> Lab & Imaging & EEG Order Form, of the patient for whom Blood Alcohol was ordered.

Directions to the Participant:

“You have previously ordered and then modified a Blood Alcohol level for this patient. Please locate and verbally identify that laboratory order.”

Success:

- Easily completed
- Completed with difficulty or help (describe below in Comments)
- Not completed

____Steps

Comments:

Click or tap here to enter text.

Task Time: Click or tap here to enter text. seconds. (Task starts when participant is asked to begin. Task ends when the order is verbally identified.)

Optimal Path: The correct laboratory order is located visually and identified verbally. It is not necessary to enter any fields.

- Correct
- Minor Deviation
- Major Deviations (describe below in Comments)

Comments:

Click or tap here to enter text.

Observed Errors and Verbalizations:

Click or tap here to enter text.

Participant Rating Scale, overall this task was:

<input type="checkbox"/> 1. Very Easy	<input type="checkbox"/> 2. Easy	<input type="checkbox"/> 3. Neither Easy nor Difficult	<input type="checkbox"/> 4. Difficult	<input type="checkbox"/> 5. Very Difficult
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Administrator/Note taker comments:

Click or tap here to enter text.

315.a.3 CPOE – Diagnostic Imaging, Task 1: Record Imaging Order via CPOE

Directions to the Tester:

Take Participant to the starting point, PN 2 >> Clinical Order Sheet >> Lab & Imaging & EEG Order Form.

Directions to the Participant:

“We are in the form where radiology tests are ordered. When asked to begin please use the “new order” button and order (select) “X-ray, right knee with contrast,” routine, once, and then “Save” the test request. Please begin.”

Success:

- Easily completed
- Completed with difficulty or help (describe below in Comments)
- Not completed

____Steps

Comments:

Task Time: Click or tap here to enter text. seconds. (Task starts when participant is asked to begin. Task ends when the order is completed and “Save” pushed.)

Optimal Path: Use the “New Order” button. On that screen select proper test from “Test” dropdown and other orders from Frequency and Times x dropdowns. No typing is necessary.

- Correct
- Minor Deviation
- Major Deviations (describe below in Comments)

Comments:

Click or tap here to enter text.

Observed Errors and Verbalizations:

Click or tap here to enter text.

Participant Rating Scale, overall this task was:

<input type="checkbox"/> 1. Very Easy	<input type="checkbox"/> 2. Easy	<input type="checkbox"/> 3. Neither Easy nor Difficult	<input type="checkbox"/> 4. Difficult	<input type="checkbox"/> 5. Very Difficult
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Administrator/Note taker comments:

Click or tap here to enter text.

315.a.3 CPOE – Diagnostic Imaging, Task 2: Change Imaging Order via CPOEDirections to the Tester:

Take Participant to the starting point, PN 2 >> Clinical Order Sheet >> Lab & Imaging & EEG Order Form, of the patient for whom “x-ray right knee with contrast” was ordered.

Directions to the Participant:

“We are in the form where labs are ordered and modified. When asked to begin please push the “X-ray right knee” on the left. When the detail box opens please change “x-ray right knee with contrast” to “x-ray left knee with contrast.” “Save the change.” Any questions? Please begin.

Success:

- Easily completed
- Completed with difficulty or help (describe below in Comments)
- Not completed

___Steps

Comments:

Click or tap here to enter text.

Task Time: Click or tap here to enter text. seconds. (Task starts when participant is asked to begin. Task ends when the order is modified and “Save” pushed.)

Optimal Path: After selecting the “X-ray right knee”, in the detail window that opens, the test selected from the dropdown is “x-ray left knee with contrast”. No typing is necessary. “Save” button is pushed, completing the task.

- Correct
- Minor Deviation
- Major Deviations (describe below in Comments)

Comments:

Click or tap here to enter text.

Observed Errors and Verbalizations:

Click or tap here to enter text.

Participant Rating Scale, overall this task was:

<input type="checkbox"/> 1. Very Easy	<input type="checkbox"/> 2. Easy	<input type="checkbox"/> 3. Neither Easy nor Difficult	<input type="checkbox"/> 4. Difficult	<input type="checkbox"/> 5. Very Difficult
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Administrator/Note taker comments:

Click or tap here to enter text.

315.a.3 CPOE – Diagnostic Imaging, Task 3: Display Changed CPOE Imaging Order

Directions to the Tester:

Take Participant to the starting point, PN 2 >> Clinical Order Sheet >> Lab & Imaging & EEG Order Form, of the patient for whom X-ray of left knee was ordered.

Directions to the Participant:

“You have previously ordered and then modified an X-ray Left Knee for this patient. Please locate and verbally identify that radiology order. Any questions? Please begin.”

Success:

- Easily completed
- Completed with difficulty or help (describe below in Comments)
- Not completed

____Steps

Comments:

Click or tap here to enter text.

Task Time: Click or tap here to enter text. seconds. (Task starts when participant is asked to begin. Task ends when the order is verbally identified.)

Optimal Path: The correct Radiology order is located visually and identified verbally. It is not necessary to enter any fields.

- Correct
- Minor Deviation
- Major Deviations (describe below in Comments)

Comments:

Click or tap here to enter text.

Observed Errors and Verbalizations:

Click or tap here to enter text.

Participant Rating Scale, overall this task was:

<input type="checkbox"/> 1. Very Easy	<input type="checkbox"/> 2. Easy	<input type="checkbox"/> 3. Neither Easy nor Difficult	<input type="checkbox"/> 4. Difficult	<input type="checkbox"/> 5. Very Difficult
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Administrator/Note taker comments:

Click or tap here to enter text.

315.a.8 Medication Allergy List, Task 1: Record a Medication Allergy

Directions to the Tester:

Take Participant to the starting point Initial Exam >> Medical History >> Adverse Drug Reaction >> List Adverse Drug Reaction >> Adverse Drug Reaction (ADR) List.

Directions to the Participant:

“We are on the screen where new Adverse Drug Reactions can be recorded. Please add a new ADR to Ampicillin. You may include any details that you wish, such as date of reaction type of reaction, etc. When finished please push the button #5, “Save.” Please begin.”

Success:

- Easily completed
- Completed with difficulty or help (describe below in Comments)
- Not completed

____Steps

Comments:

Click or tap here to enter text.

Task Time: Click or tap here to enter text. seconds. (Task starts when participant is asked to begin. Task ends when #5, “Save” is pushed.)

Optimal Path: On the Adverse Drug Reaction layout the Participant should enter information, in order, following number 1 thru 5, starting with #1. New and #5. Save.

- Correct
- Minor Deviation
- Major Deviations (describe below in Comments)

Comments:

Click or tap here to enter text.

Observed Errors and Verbalizations:

Click or tap here to enter text.

Participant Rating Scale, overall this task was:

<input type="checkbox"/> 1. Very Easy	<input type="checkbox"/> 2. Easy	<input type="checkbox"/> 3. Neither Easy nor Difficult	<input type="checkbox"/> 4. Difficult	<input type="checkbox"/> 5. Very Difficult
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Administrator/Note taker comments:

Click or tap here to enter text.

315.a.8 Medication Allergy List, Task 2: Change a Medication Allergy

Directions to the Tester:

Take Participant to the starting point List Adverse Drug Reaction >> Adverse Drug Reaction (ADR) List.

Directions to the Participant:

“On the left is the ADR to Ampicillin that you just added. Please click on that field and make a change to either date of reaction or type of reaction and record your Reason for Status Change. Finish by pushing #5. “Save.” Any questions? Please begin.”

Success:

- Easily completed
- Completed with difficulty or help (describe below in Comments)
- Not completed

____Steps

Comments:

Click or tap here to enter text.

Task Time: Click or tap here to enter text. seconds. (Task starts when participant is asked to begin. Task ends when #5, "Save" is pushed.)

Optimal Path: Click on Ampicillin entry on left. Change detail in #3. or #4. Add Reason for Status Change using dropdown or by typing. Push #5. "Save."

- Correct
- Minor Deviation
- Major Deviations (describe below in Comments)

Comments:

Click or tap here to enter text.

Observed Errors and Verbalizations:

Click or tap here to enter text.

Participant Rating Scale, overall this task was:

<input type="checkbox"/> 1. Very Easy	<input type="checkbox"/> 2. Easy	<input type="checkbox"/> 3. Neither Easy nor Difficult	<input type="checkbox"/> 4. Difficult	<input type="checkbox"/> 5. Very Difficult
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Administrator/Note taker comments:

Click or tap here to enter text.

315.a.8 Medication Allergy List, Task 3: Display the Active Medication Allergy List

Directions to the Tester:

Take Participant to the starting point of the task, which is the Chart Face of the patient in Task 5, parts 1 and 2.

Directions to the Participant:

"This is the chart face of the patient you have created an ADR for. Please point out the list of ADR's and the new entry for Ampicillin. Any questions? Please begin."

Success:

- Easily completed
- Completed with difficulty or help (describe below in Comments)
- Not completed

____Steps

Comments:

Click or tap here to enter text.

Task Time: Click or tap here to enter text. seconds. (Task starts when participant is asked to begin. Task ends when the Participant identifies the list of ADR's and the new entry for Ampicillin.)

Optimal Path: Participant identifies the field on the front of the chart labeled "Adverse Drug Reaction Active List." (It is highlighted in red.)

- Correct

- Minor Deviation
- Major Deviations (describe below in Comments)

Comments:

Click or tap here to enter text.

Observed Errors and Verbalizations:

Click or tap here to enter text.

Participant Rating Scale, overall this task was:

<input type="checkbox"/> 1. Very Easy	<input type="checkbox"/> 2. Easy	<input type="checkbox"/> 3. Neither Easy nor Difficult	<input type="checkbox"/> 4. Difficult	<input type="checkbox"/> 5. Very Difficult
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Administrator/Note taker comments:

Click or tap here to enter text.

315.a.8 Medication Allergy List, Task 4: Display the Historical Medication Allergy List

Directions to the Tester:

Take Participant to the starting point of the task, which is in the Chart Face, in the logs section of the program. Click on the logs section to show the drop-down tab. In the middle of the logs tab you will see the adverse drug reaction log.

Directions to the Participant:

“In the log section of the chart please click on the adverse drug reaction log for the patient you have created an ADR for. Please point out the list of ADR’s and the new entry for Ampicillin. Any questions? Please begin.”

Success:

- Easily completed
- Completed with difficulty or help (describe below in Comments)
- Not completed

___Steps

Comments:

Click or tap here to enter text.

Task Time: Click or tap here to enter text. seconds. (Task starts when participant is asked to begin. Task ends when ?)

Optimal Path:

- Correct
- Minor Deviation
- Major Deviations (describe below in Comments)

Comments:

Click or tap here to enter text.

Observed Errors and Verbalizations:

Click or tap here to enter text.

Participant Rating Scale, overall this task was:

<input type="checkbox"/> 1. Very Easy	<input type="checkbox"/> 2. Easy	<input type="checkbox"/> 3. Neither Easy nor Difficult	<input type="checkbox"/> 4. Difficult	<input type="checkbox"/> 5. Very Difficult
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Administrator/Note taker comments:

Click or tap here to enter text.

315.a.7 Medication List, Task 1: Record a Medication to the Medication List

Directions to the Tester:

Take Participant to the starting point, PN 2 of a patient who is allergic to Penicillin. Direct Participant’s attention to the section of the screen, Medication Orders. During testing the Participant will get an alert about the Penicillin allergy. Please instruct the Participant to continue and compile the note.

Directions to the Participant:

“We are on PN 2 where medication orders can be written. When asked to begin please order the new medication Penicillin, with instructions of your choice. After this medicine order, please to compile the note. Any questions? Please begin.”

Success:

- Easily completed
- Completed with difficulty or help (describe below in Comments)
- Not completed

___Steps

Comments:

Click or tap here to enter text.

Task Time: Click or tap here to enter text. seconds. (Task starts when participant is asked to begin. Task ends after the Penicillin is ordered and the note is compiled.)

Optimal Path: The Medications, dose, and timing are entered in order, as the Penicillin is ordered. The Compile the note button is pushed. No typing is necessary.

- Correct
- Minor Deviation
- Major Deviations (describe below in Comments)

Comments:

Click or tap here to enter text.

Observed Errors and Verbalizations:

Click or tap here to enter text.

Participant Rating Scale, overall this task was:

<input type="checkbox"/> 1. Very Easy	<input type="checkbox"/> 2. Easy	<input type="checkbox"/> 3. Neither Easy nor Difficult	<input type="checkbox"/> 4. Difficult	<input type="checkbox"/> 5. Very Difficult
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Administrator/Note taker comments:

Click or tap here to enter text.

315.a.7 Medication List, Task 2: Change a Medication on the Medication List

Directions to the Tester:

Take Participant to the starting point, PN 2. Direct Participant’s attention to the section of the screen, Medication Orders. When the medication change is made please direct the participant to compile the note so that the change is recorded.

Directions to the Participant:

“We are on PN 2 where medication orders can be changed. When asked to begin please change the medication dosage for Penicillin. Choose the new dosage of your choice. Please compile the note after making the dosage change. Any questions? Please begin.”

Success:

- Easily completed
- Completed with difficulty or help (describe below in Comments)
- Not completed

____Steps

Comments:

Click or tap here to enter text.

Task Time: Click or tap here to enter text. seconds. (Task starts when participant is asked to begin. Task ends when medication dose is changed and note is compiled.)

Optimal Path: The dosage field is entered and a dosage selected from the dropdown list. The note is compiled.

- Correct
- Minor Deviation
- Major Deviations (describe below in Comments)

Comments:

Click or tap here to enter text.

Observed Errors and Verbalizations:

Click or tap here to enter text.

Participant Rating Scale, overall this task was:

<input type="checkbox"/> 1. Very Easy	<input type="checkbox"/> 2. Easy	<input type="checkbox"/> 3. Neither Easy nor Difficult	<input type="checkbox"/> 4. Difficult	<input type="checkbox"/> 5. Very Difficult
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Administrator/Note taker comments:

Click or tap here to enter text.

315.a.7 Medication List, Task 3: Display the Active Medication List

Directions to the Tester:

Take Participant to the starting point, Chart Face.

Directions to the Participant:

“We are on the Chart Face, the front of the patient’s chart. Here there is a list of all currently prescribed medicines. When asked to begin, please locate that list and identify verbally the recently changed Penicillin order. Questions? Please begin.”

Success:

- Easily completed

- Completed with difficulty or help (describe below in Comments)
 - Not completed
- ___Steps

Comments:

Click or tap here to enter text.

Task Time: Click or tap here to enter text. seconds. (Task starts when participant is asked to begin. Task ends when the new Penicillin order is identified verbally.)

Optimal Path: On the chart face the Current Medications field is identified and entered, if necessary, so that the recently changed order can be seen and read.

- Correct
- Minor Deviation
- Major Deviations (describe below in Comments)

Comments:

Click or tap here to enter text.

Observed Errors and Verbalizations:

Click or tap here to enter text.

Participant Rating Scale, overall this task was:

<input type="checkbox"/> 1. Very Easy	<input type="checkbox"/> 2. Easy	<input type="checkbox"/> 3. Neither Easy nor Difficult	<input type="checkbox"/> 4. Difficult	<input type="checkbox"/> 5. Very Difficult
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Administrator/Note taker comments:

Click or tap here to enter text.

315.a.7 Task 4: Medication List/Display the Historical Medication List

Directions to the Tester:

Take Participant to the starting point, Chart Face and log section.

Directions to the Participant:

“We are on the Chart Face in the log section. Please select medication log and view the list of medications. When asked to begin, please locate that list and identify verbally the recently changed Penicillin order. Questions? Please begin.”

Success:

- Easily completed
 - Completed with difficulty or help (describe below in Comments)
 - Not completed
- ___Steps

Comments:

Click or tap here to enter text.

Task Time: Click or tap here to enter text. seconds. (Task starts when participant is asked to begin. Task ends when Screen is shown.)

Optimal Path: The user will select the medication log without hesitate and will then identify correctly the medication in the log.

- Correct
- Minor Deviation
- Major Deviations (describe below in Comments)

Comments:

Click or tap here to enter text.

Observed Errors and Verbalizations:

Click or tap here to enter text.

Participant Rating Scale, overall this task was:

<input type="checkbox"/> 1. Very Easy	<input type="checkbox"/> 2. Easy	<input type="checkbox"/> 3. Neither Easy nor Difficult	<input type="checkbox"/> 4. Difficult	<input type="checkbox"/> 5. Very Difficult
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Administrator/Note taker comments:

Click or tap here to enter text.

315.b.2 Clinical Information Reconciliation and Incorporation, Task 1: Incorporate a CCDA and Conduct Reconciliation of the Medications, Medication Allergies, and Problems in the CCDA with the Information Currently in the Patient’s Record

Directions to Tester:

Prepare a patient with one diagnosis, one ADR, and one medication. Take the participant to the the reconciliation form on PN2 of the progress note and ask them to add a new diagnosis that has been received from a primary care physician. Ask the participant to make up whatever details are needed, to "continue" that new diagnosis, and to reconcile it with the existing diagnoses. Instruct the participant to do exactly the same with a new ADR and a new Medication, making up whatever details are necessary. Start the participant at the new reconciliation form with its three tabs at the top.

Directions to Participant:

“We will be using the three buttons on the top of the reconciliation form. This patient has a diagnosis, a medication ordered, and an ADR. We are going to pretend that a different diagnosis, medication order, and ADR have been received from the primary care physician. When asked to start, **your task is to enter, continue, and reconcile the new medication and the ADR.** We would similarly like you **enter the new diagnosis, decide to continue it, and “reconcile” it, thereby making it part of your diagnosis list.** When reconciling the new diagnosis do not choose “yes” when asked if you want to validate and transfer the diagnosis - instead choose “no” and re-enter the diagnosis in Field II before using the Select to Reconcile two lists button in Field III.

Again, we would like you to enter a new diagnoses, medication and ADR.

Please make up whatever details are necessary about the diagnosis, medication, and ADR. Questions? Please begin.”

Success:

- Easily completed
- Completed with difficulty or help (describe below in Comments)
- Not completed

___Steps

Comments:

Click or tap here to enter text.

Task Time: secs. (Task starts when participant is asked to begin. Task ends when all three ADR, DX and medication have been entered.)

Optimal Path: The participant will enter all three ADR, DX and medication from the reconciliation form and there will be no deviation in attempting to go to other areas in the program. All three can be changed from the reconciliation form. Specifically, for the diagnosis, it will be entered with an active status and an ICD-9 selection before being set to 'transfer' in Field I ahead of ultimately clicking to reconcile the two lists on Field/Button III.

- Correct
- Minor Deviation
- Major Deviations (describe below in Comments)

Comments:

Click or tap here to enter text.

Observed Errors and Verbalizations:

Click or tap here to enter text.

Participant Rating Scale, overall this task was:

<input type="checkbox"/> 1. Very Easy	<input type="checkbox"/> 2. Easy	<input type="checkbox"/> 3. Neither Easy nor Difficult	<input type="checkbox"/> 4. Difficult	<input type="checkbox"/> 5. Very Difficult
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Administrator/Note taker comments:

Click or tap here to enter text.

315.b.2 Clinical Information Reconciliation and Incorporation, Task 2: Generate a New CCDA with Reconciled Data

Directions to the Tester:

Compile the note for the participant. Go into the document section of the patient's chart. On the left-hand side choose the filter button and hover on CCDA.

Directions to the Participant:

Please select the CCDA in the filter documents tab. Then select the CCDA that has the reconciled data and click the green button to view the new CCDA. Any Questions? Please begin."

Success:

- Easily completed
- Completed with difficulty or help (describe below in Comments)
- Not completed

___Steps

Comments:

Click or tap here to enter text.

Task Time: Click or tap here to enter text. seconds. (Task starts when participant is asked to begin. Task ends when Screen is shown.)

Optimal Path: The participant will be able to identify the CCDA and view the contents of the CCDA.

- Correct
- Minor Deviation
- Major Deviations (describe below in Comments)

Comments:

Click or tap here to enter text.

Observed Errors and Verbalizations:

Click or tap here to enter text.

Participant Rating Scale, overall this task was:

<input type="checkbox"/> 1. Very Easy	<input type="checkbox"/> 2. Easy	<input type="checkbox"/> 3. Neither Easy nor Difficult	<input type="checkbox"/> 4. Difficult	<input type="checkbox"/> 5. Very Difficult
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Administrator/Note taker comments:

Click or tap here to enter text.

315.a.9 Clinical Decision Support, Task 1: Add a CDS Intervention and/or Reference Resource for each of the required elements (Problem List, Medication List, Medication Allergy List, Demographics, Laboratory Test, Vital Sign, and a combination of at least two of those elements)

Directions to Tester:

In Settings and Directories > Specific to Individual > Options, turn on Clinical Decision Support Rules and Diagnostic Algorithm. Turn off Patient Education Material.

Prepare a new patient age 65 with adverse drug reaction to Ampicillin. Compile this note and make a new Prescriber Progress note for this patient with the following data:

1. Diagnoses: Bipolar F31.32
2. Medications: a. Abilify 1 mg po am
b. Adderall 10 mg po am
c. Ampicillin 250 mg po am
3. Lab Result: PN1 > Enter Test Results > Chemistry > BUN 30 mg/dl > Save
4. Vital Signs: Enter a height of 5'0 and a weight of 200 lbs

Do not compile this note. The user will be taken to PN2 of this patient and asked to compile the note. Tester will observe how the Participant navigates through the various alerts that pop up after the note is compiled.

Directions to Participant:

“You are on PN 2 of a patient’s chart. When asked to start please Compile this note. **Because of certain information in this patient’s note you will be offered a number of pop ups that will offer Clinical Decision Support (diagnostic and therapeutic reference information).** Please do accept these offers. You needn’t read all the information that is presented to you. We simply wish to see how you navigate through these various screens. Please start.”

Success:

- Easily completed
- Completed with difficulty or help (describe below in Comments)
- Not completed

____Steps

Comments:

Click or tap here to enter text.

Task Time: Click or tap here to enter text. seconds. (Task starts when Participant is asked to compile the note. Task is completed when compiled note appears, after all CDS screens have been navigated past.)

Optimal Path: “Compile Note” is pushed. The Participant accepts the various CDS screens and then closes them. In the Algorithm one of the stage buttons is pressed, which returns the Participant to the note where the note must again be compiled.

- Correct
- Minor Deviation
- Major Deviations (describe below in Comments)

Comments:

Click or tap here to enter text.

Observed Errors and Verbalizations:

Click or tap here to enter text.

Participant Rating Scale, overall this task was:

<input type="checkbox"/> 1. Very Easy	<input type="checkbox"/> 2. Easy	<input type="checkbox"/> 3. Neither Easy nor Difficult	<input type="checkbox"/> 4. Difficult	<input type="checkbox"/> 5. Very Difficult
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Administrator/Note taker comments:

Click or tap here to enter text.

315.a.9 Clinical Decision Support, Task 2: Trigger the CDS interventions/resources added using the applicable data elements from each of the required elements

Directions to the Tester:

In the patient chart with a Penicillin allergy order Ampicillin in the standard medication list on PN part 2.

Directions to the Participant:

Please observe the patient is allergic to Penicillin and is ordered Ampicillin please hit compile to enter this medication order into the system. Please note if a clinical decision rule appears and repeat what that rule states. Any questions? Please begin.

Success:

- Easily completed
- Completed with difficulty or help (describe below in Comments)
- Not completed

____Steps

Comments:

Click or tap here to enter text.

Task Time: Click or tap here to enter text. seconds. (Task starts when participant is asked to begin. Task ends when the CDS alert has been triggered.)

Optimal Path: When Ampicillin is ordered it will trigger a CDS alert.

- Correct
- Minor Deviation
- Major Deviations (describe below in Comments)

Comments:

Click or tap here to enter text.

Observed Errors and Verbalizations:

Click or tap here to enter text.

Participant Rating Scale, overall this task was:

<input type="checkbox"/> 1. Very Easy	<input type="checkbox"/> 2. Easy	<input type="checkbox"/> 3. Neither Easy nor Difficult	<input type="checkbox"/> 4. Difficult	<input type="checkbox"/> 5. Very Difficult
---------------------------------------	----------------------------------	--	---------------------------------------	--

Administrator/Note taker comments:

Click or tap here to enter text.

315.a.9 Clinical Decision Support, Task 3: View the intervention/resource information using the Info button standard for data elements in the problem list, medication list, and demographics

Directions to the Tester:

In a patient that is over the age of 65 go into a progress note on PN part 2 enter in the standard medication list enter Seroquel as a medication with a dosage and time.

Directions to the Participant:

A new medication has been ordered in the patient record. Please compile this note and identify any alerts that you see identifying all the information regarding that alert. When you see the alert please confirm. Any questions? Please begin.

Success:

- Easily completed
 - Completed with difficulty or help (describe below in Comments)
 - Not completed
- ___Steps

Comments:

Click or tap here to enter text.

Task Time: Click or tap here to enter text. seconds. (Task starts when participant is asked to begin. Task ends when the CDS alert appears.

Optimal Path: The participant will hit the compile button and will visualize the alert and state the objectives.

- Correct
- Minor Deviation
- Major Deviations (describe below in Comments)

Comments:

Click or tap here to enter text.

Observed Errors and Verbalizations:

Click or tap here to enter text.

Participant Rating Scale, overall this task was:

<input type="checkbox"/> 1. Very Easy	<input type="checkbox"/> 2. Easy	<input type="checkbox"/> 3. Neither Easy nor Difficult	<input type="checkbox"/> 4. Difficult	<input type="checkbox"/> 5. Very Difficult
---------------------------------------	----------------------------------	--	---------------------------------------	--

Administrator/Note taker comments:

Click or tap here to enter text.

315.a.9 Clinical Decision Support, Task 4: Trigger the CDS Interventions/resources based on data elements in the problem list, medication list, and medication allergy list by incorporating patient information from a transition of care/referral summary

Directions to the Tester:

Take the participant to the Documents tab -Select CCDA

Directions to the Participant:

This is a CCDA that was sent from another provider. At the top hit the button reconcile ccda. From here we are going to open up a complete evaluation and go to the final tab. Look at med recs pending.

1. Reconcile
2. Then compile
3. Go to Documents tab see the new CCDA

Success:

- Easily completed
- Completed with difficulty or help (describe below in Comments)
- Not completed

____Steps

Comments:

Click or tap here to enter text.

Task Time: Click or tap here to enter text. seconds. (Task starts when participant is asked to begin. Task ends when Screen is shown)

Optimal Path:

- Correct
- Minor Deviation
- Major Deviations (describe below in Comments)

Comments:

Click or tap here to enter text.

Observed Errors and Verbalizations:

Click or tap here to enter text.

Participant Rating Scale, overall this task was:

<input type="checkbox"/> 1. Very Easy	<input type="checkbox"/> 2. Easy	<input type="checkbox"/> 3. Neither Easy nor Difficult	<input type="checkbox"/> 4. Difficult	<input type="checkbox"/> 5. Very Difficult
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Administrator/Note taker comments:

Click or tap here to enter text.

315.a.9 Clinical Decision Support, Task 5: Access the following attributes for one of the triggered CDS interventions/resources: bibliographic citation, developer, funding source, release/revision date

Directions to the Tester:

In a progress note on PN part 2 under the stand medication list enter Clozaril as a medication with a dosage and time.

Directions to the Participant:

A new medication has been ordered in the patient record. Please compile this note and identify any alerts that you see identifying all the information regarding that alert. When you see the alert please confirm and verbalize **the bibliographic citation, developer, funding source, release/revision date.**

Any questions? Please begin.

Success:

- Easily completed
- Completed with difficulty or help (describe below in Comments)
- Not completed

____Steps

Comments:

Click or tap here to enter text.

Task Time: Click or tap here to enter text. seconds. (Task starts when participant is asked to begin. Task ends when the participant verbalizes the information.)

Optimal Path: The participant will hit the compile button and will visualize the alert and state the objectives.

- Correct
- Minor Deviation
- Major Deviations (describe below in Comments)

Comments:

Click or tap here to enter text.

Observed Errors and Verbalizations:

Click or tap here to enter text.

Participant Rating Scale, overall this task was:

<input type="checkbox"/> 1. Very Easy	<input type="checkbox"/> 2. Easy	<input type="checkbox"/> 3. Neither Easy nor Difficult	<input type="checkbox"/> 4. Difficult	<input type="checkbox"/> 5. Very Difficult
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Administrator/Note taker comments:

Click or tap here to enter text.

315.a.6 Problem List, Task 1: Record a problem to the problem list

Directions to Tester:

Prepare the patient chart by going to the Chart Face and open up a new progress note. Go to PN part 2 and open up the diagnoses area.

Directions to Participant:

“We are in the diagnoses / problem list. When asked to start, please enter a problem of Major Depression.” When the

diagnosis has been entered to your satisfaction, please push “Done.” Please start.

Success:

- Easily completed
- Completed with difficulty or help (describe below in Comments)
- Not completed

Comments:

Click or tap here to enter text.

Task Time: Click or tap here to enter text. (Task starts when Participant is asked to start. Task is completed when the second Done button is pushed.)

Optimal Path: Diagnoses of F33.1 was entered in the Problem List

- Correct
- Minor Deviation
- Major Deviations (describe below in Comments)

____Steps

Comments:

Click or tap here to enter text.

Observed Errors and Verbalizations:

Click or tap here to enter text.

Participant Rating Scale, overall this task was:

<input type="checkbox"/> 1. Very Easy	<input type="checkbox"/> 2. Easy	<input type="checkbox"/> 3. Neither Easy nor Difficult	<input type="checkbox"/> 4. Difficult	<input type="checkbox"/> 5. Very Difficult
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Administrator/Note taker comments:

Click or tap here to enter text.

315.a.6 Problem List, Task 2: Change a problem on the problem list

Directions to Tester:

Prepare the patient chart by going to the Chart Face and open up a new progress note. Go to PN part 2 and open up the diagnoses area.

Directions to Participant:

“We are on the progress note part 2 in the diagnoses area. When asked to start, please enter a problem of Generalized Anxiety Disorder, then deactivate the current problem of Major Depression. When the diagnoses has been entered to your satisfaction, please push “Done.” Please start.

Success:

- Easily completed
- Completed with difficulty or help (describe below in Comments)
- Not completed

____Steps

Comments:

Click or tap here to enter text.

Task Time: Click or tap here to enter text. Task starts when Participant is asked to start. Task is completed when the

second Done button is pushed.

Optimal Path: Diagnoses of GAD was entered in the Problem List

- Correct
- Minor Deviation
- Major Deviations (describe below in Comments)

Comments:

Click or tap here to enter text.

Observed Errors and Verbalizations:

Click or tap here to enter text.

Participant Rating Scale, overall this task was:

<input type="checkbox"/> 1. Very Easy	<input type="checkbox"/> 2. Easy	<input type="checkbox"/> 3. Neither Easy nor Difficult	<input type="checkbox"/> 4. Difficult	<input type="checkbox"/> 5. Very Difficult
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Administrator/Note taker comments:

Click or tap here to enter text.

315.a.6 Problem List, Task 3: Display the active problem list

Directions to Tester:

Prepare the patient chart by going to the Chart Face. On the chart face the problem list is located on the right upper corner of the patient's record

Directions to Participant:

"We are in the problem list. When asked to start, please display the active problem list. Please start.

Success:

- Easily completed
 - Completed with difficulty or help (describe below in Comments)
 - Not completed
- ____Steps

Comments:

Click or tap here to enter text.

Task Time: Click or tap here to enter text. Seconds. (Task starts when Participant is asked to start. Task is completed when the second Done button is pushed.)

Optimal Path: Diagnoses of F33.1 was changed in the Problem List and a diagnosis of Generalized Anxiety Disorder was entered.

- Correct
- Minor Deviation
- Major Deviations (describe below in Comments)

Comments:

Click or tap here to enter text.

Observed Errors and Verbalizations:

Click or tap here to enter text.

Participant Rating Scale, overall this task was:

<input type="checkbox"/> 1. Very Easy	<input type="checkbox"/> 2. Easy	<input type="checkbox"/> 3. Neither Easy nor Difficult	<input type="checkbox"/> 4. Difficult	<input type="checkbox"/> 5. Very Difficult
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Administrator/Note taker comments:

Click or tap here to enter text.

315.a.6 Problem List, Task 4: Display the Historical Problem List

Directions to Tester:

Prepare the patient chart by going to the Chart Face on the chart face go to the log section of the chart. Display the problem list for the participant.

Directions to Participant:

“We are in the problem list. When asked to start, please display the historical problem list. Please start.

Success:

- Easily completed
- Completed with difficulty or help (describe below in Comments)
- Not completed

____Steps

Comments:

Click or tap here to enter text.

Task Time: Click or tap here to enter text. Seconds. (Task starts when Participant is asked to start. Task is completed when the second Done button is pushed.)

Optimal Path: Diagnoses of F33.1 was changed in the Problem List and a diagnosis of Generalized Anxiety Disorder was entered.

- Correct
- Minor Deviation
- Major Deviations (describe below in Comments)

Comments:

Click or tap here to enter text.

Observed Errors and Verbalizations:

Click or tap here to enter text.

Participant Rating Scale, overall this task was:

<input type="checkbox"/> 1. Very Easy	<input type="checkbox"/> 2. Easy	<input type="checkbox"/> 3. Neither Easy nor Difficult	<input type="checkbox"/> 4. Difficult	<input type="checkbox"/> 5. Very Difficult
---------------------------------------	----------------------------------	--	---------------------------------------	--

Administrator/Note taker comments:

Click or tap here to enter text.

315.a.14 Implantable Device List, Task 1: Record UDI

Directions to Tester:

Prepare the patient chart by going to the Chart Face and then go to the demographics section of the chart. Go to the Implantable Device List.

Steps for successful Implantable device entry

#1 Must use one this id to enter- (can't make up your own)

(01)10884521062856(11)141231(17)150707(10)A213B1(21)1234

+B066000325011NS1/\$\$420020216LOT123456789012345/SXYZ456789012345678/16D20130202C1

=/W4146EB0010T0475=,000025=A99971312345600=>014032=}013032&,1000000000000XYZ123

(AFTER USING ONE OF THESE CODES-YOU MUST CONTACT SEPTIMUS TO REMOVE THE CODE

Directions to Participant:

"We are in the demographics section and we will record an Implantable Device for the patient. When asked to start, please select the device to record the UDI. Then push "Done". When the device has been entered in to your satisfaction, please push "Done." Please start.

Success:

- Easily completed
- Completed with difficulty or help (describe below in Comments)
- Not completed

____Steps

Comments:

Click or tap here to enter text.

Task Time: Click or tap here to enter text. Seconds. (Task starts when Participant is asked to start. Task is completed when the second Done button is pushed.)

Optimal Path: The Implantable Device List was accessed and documented by the participant.

- Correct
- Minor Deviation
- Major Deviations (describe below in Comments)

Comments:

Click or tap here to enter text.

Observed Errors and Verbalizations:

Click or tap here to enter text.

Participant Rating Scale, overall this task was:

<input type="checkbox"/> 1. Very Easy	<input type="checkbox"/> 2. Easy	<input type="checkbox"/> 3. Neither Easy nor Difficult	<input type="checkbox"/> 4. Difficult	<input type="checkbox"/> 5. Very Difficult
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Administrator/Note taker comments:

Click or tap here to enter text.

315.a.14 Implantable Device List, Task 2: Change UDI Status

Directions to Tester:

Prepare the patient chart by going to the Chart Face and then go to the demographics section. Go to the Implantable Device List. Change UDI status-Select "i" so then deactivate (change Status)

Directions to Participant:

"We are in the demographics section and we will change an Implantable Device for the patient. When asked to start, please change the UDI status. Then push "Done". When the device has been changed to your satisfaction, please push "Done." Please start.

Success:

- Easily completed
- Completed with difficulty or help (describe below in Comments)
- Not completed

____Steps

Comments:

Click or tap here to enter text.

Task Time: Click or tap here to enter text. Seconds. (Task starts when Participant is asked to start. Task is completed when the second Done button is pushed.)

Optimal Path: The Implantable Device List was accessed and documented by the participant.

- Correct
- Minor Deviation
- Major Deviations (describe below in Comments)

Comments:

Click or tap here to enter text.

Observed Errors and Verbalizations:

Click or tap here to enter text.

Participant Rating Scale, overall this task was:

<input type="checkbox"/> 1. Very Easy	<input type="checkbox"/> 2. Easy	<input type="checkbox"/> 3. Neither Easy nor Difficult	<input type="checkbox"/> 4. Difficult	<input type="checkbox"/> 5. Very Difficult
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Administrator/Note taker comments:

Click or tap here to enter text.

315.a.14 Implantable Device list, Task 3: Access UDI, device description, identifiers, and attributes

Directions to Tester:

Prepare the patient chart by going to the Chart Face and then go to the demographics section. Go to the Implantable Device List.

Directions to Participant:

"We are in the demographics section where we will access the information for the Implantable Device for the patient. When asked to start, please review the UDI device description, identifiers and attributes. Then push "Done." When the

device has been reviewed to your satisfaction, please push “Done.” Please start.

Success:

- Easily completed
- Completed with difficulty or help (describe below in Comments)
- Not completed

____Steps

Comments:

Click or tap here to enter text.

Task Time: Click or tap here to enter text. Seconds. (Task starts when Participant is asked to start. Task is completed when the second Done button is pushed.)

Optimal Path: The Implantable Device List was accessed and documented by the participant.

- Correct
- Minor Deviation
- Major Deviations (describe below in Comments)

Comments:

Click or tap here to enter text.

Observed Errors and Verbalizations:

Click or tap here to enter text.

Participant Rating Scale, overall this task was:

<input type="checkbox"/> 1. Very Easy	<input type="checkbox"/> 2. Easy	<input type="checkbox"/> 3. Neither Easy nor Difficult	<input type="checkbox"/> 4. Difficult	<input type="checkbox"/> 5. Very Difficult
---------------------------------------	----------------------------------	--	---------------------------------------	--

Administrator/Note taker comments:

Click or tap here to enter text.

315.a.5 Demographics, Task 1: Record a patient’s preferred language, date of birth, birth sex, race, ethnicity, sexual orientation, gender identity, preliminary cause of death (inpatient only), and preliminary date of death (inpatient only)

Directions to Tester:

Prepare the patient chart by going to the Chart Face and then go to the demographics section.

Directions to Participant:

“We are going to enter information into the demographics section of the chart. When asked to start, please enter the following in the appropriately labeled fields. When done, click Continue. Please start.

- Record a patient’s preferred language as English
- Enter Date of birth as 9/30/1977
- Enter Sex as Female
- Enter Race as Asian
- Enter Ethnicity as Chinese
- Enter Sexual orientation as Straight
- Enter Gender identity as Female
- In Episodes of Care -Enter Preliminary cause of death as COPD
- Enter Preliminary date of death at 5/22/2018

Success:

- Easily completed
- Completed with difficulty or help (describe below in Comments)
- Not completed

____Steps

Comments:

Click or tap here to enter text.

Task Time: Click or tap here to enter text. Seconds. (Task starts when Participant is asked to start. Task is completed when the date of death is entered.

Optimal Path:

- Correct
- Minor Deviation
- Major Deviations (describe below in Comments)

Comments:

Click or tap here to enter text.

Observed Errors and Verbalizations:

Click or tap here to enter text.

Participant Rating Scale, overall this task was:

<input type="checkbox"/> 1. Very Easy	<input type="checkbox"/> 2. Easy	<input type="checkbox"/> 3. Neither Easy nor Difficult	<input type="checkbox"/> 4. Difficult	<input type="checkbox"/> 5. Very Difficult
---------------------------------------	----------------------------------	--	---------------------------------------	--

Administrator/Note taker comments:

Click or tap here to enter text.

315.a.5 Demographics, Task 2: Change the patient’s preferred language, date of birth, birth sex, race, ethnicity, sexual orientation, gender identity, preliminary cause of death, and preliminary date of death.

Directions to Tester:

Prepare the patient chart by going to the Chart Face and then go to the demographics section.

Directions to Participant:

“We are now going to change the information in the demographic section of the chart. When asked to start, please change each of the fields below to a value of your choice. When done, click Continue. Please start.

- Change the preferred language
- Change the date of birth
- Change the patient’s sex
- Change the patient’s race
- Change the Ethnicity
- Change Sexual orientation
- Change Gender identity
- Change the preliminary cause of death
- Change the preliminary date of death

Success:

- Easily completed
- Completed with difficulty or help (describe below in Comments)
- Not completed

____Steps

Comments:

Click or tap here to enter text.

Task Time: Click or tap here to enter text. (Task starts when Participant is asked to start. Task is completed when the date of death is entered.

Optimal Path:

- Correct
- Minor Deviation
- Major Deviations (describe below in Comments)

Comments:

Click or tap here to enter text.

Observed Errors and Verbalizations:

Click or tap here to enter text.

Participant Rating Scale, overall this task was:

<input type="checkbox"/> 1. Very Easy	<input type="checkbox"/> 2. Easy	<input type="checkbox"/> 3. Neither Easy nor Difficult	<input type="checkbox"/> 4. Difficult	<input type="checkbox"/> 5. Very Difficult
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Administrator/Note taker comments:

Click or tap here to enter text.

315.a.5 Demographics, Task 3: Display the patient’s changed preferred language, date of birth, birth sex, race, ethnicity, sexual orientation, gender identity, preliminary cause of death, and preliminary date of death

Directions to Tester:

Prepare the patient chart by going to the Chart Face and then go to the demographics section.

Directions to Participant:

“We are in the demographic section. Please display the information that was changed in the patient’s demographics.”

- Preferred language
- Date of birth
- Sex
- Race
- Ethnicity
- Sexual orientation
- Gender identity
- Preliminary cause of death
- Preliminary date of death

Success:

- Easily completed
- Completed with difficulty or help (describe below in Comments)

Not completed

____Steps

Comments:

Click or tap here to enter text.

Task Time: Click or tap here to enter text. Seconds. (Task starts when Participant is asked to start. Task is completed when the date of death is entered.)

Optimal Path:

Correct

Minor Deviation

Major Deviations (describe below in Comments)

Comments:

Click or tap here to enter text.

Observed Errors and Verbalizations:

Click or tap here to enter text.

Participant Rating Scale, overall this task was:

<input type="checkbox"/> 1. Very Easy	<input type="checkbox"/> 2. Easy	<input type="checkbox"/> 3. Neither Easy nor Difficult	<input type="checkbox"/> 4. Difficult	<input type="checkbox"/> 5. Very Difficult
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Administrator/Note taker comments:

Click or tap here to enter text.

Final Questions

What was your overall impression of this system?

Click or tap here to enter text.

What aspects of the system did you like most?

Click or tap here to enter text.

What aspects of the system did you like least?

Click or tap here to enter text.

Were there any features that you were surprised to see?

Click or tap here to enter text.

What features did you expect to encounter but did not see? That is, is there anything that is missing in this application?

Click or tap here to enter text.

Compare this system to other systems you have used.

Click or tap here to enter text.

Would you recommend this system to your colleagues?

Click or tap here to enter text.

Appendix 7: System Usability Scale (SUS) Questionnaire

Please rate the following statements on a scale of 1 to 5, with 1 being strongly disagree and 5 being strongly agree.

I think that I would like to use this system frequently.

<input type="checkbox"/> 1. Strongly Disagree	<input type="checkbox"/> 2. Disagree	<input type="checkbox"/> 3. Neither Agree nor Disagree	<input type="checkbox"/> 4. Agree	<input type="checkbox"/> 5. Strongly Agree
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I found the system unnecessarily complex.

<input type="checkbox"/> 1. Strongly Disagree	<input type="checkbox"/> 2. Disagree	<input type="checkbox"/> 3. Neither Agree nor Disagree	<input type="checkbox"/> 4. Agree	<input type="checkbox"/> 5. Strongly Agree
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I thought the system was easy to use.

<input type="checkbox"/> 1. Strongly Disagree	<input type="checkbox"/> 2. Disagree	<input type="checkbox"/> 3. Neither Agree nor Disagree	<input type="checkbox"/> 4. Agree	<input type="checkbox"/> 5. Strongly Agree
---	--------------------------------------	--	-----------------------------------	--

I think that I would need the support of a technical person to be able to use this system.

<input type="checkbox"/> 1. Strongly Disagree	<input type="checkbox"/> 2. Disagree	<input type="checkbox"/> 3. Neither Agree nor Disagree	<input type="checkbox"/> 4. Agree	<input type="checkbox"/> 5. Strongly Agree
---	--------------------------------------	--	-----------------------------------	--

I found the various functions in this system were well integrated.

<input type="checkbox"/> 1. Strongly Disagree	<input type="checkbox"/> 2. Disagree	<input type="checkbox"/> 3. Neither Agree nor Disagree	<input type="checkbox"/> 4. Agree	<input type="checkbox"/> 5. Strongly Agree
---	--------------------------------------	--	-----------------------------------	--

I thought there was too much inconsistency in this system.

<input type="checkbox"/> 1. Strongly Disagree	<input type="checkbox"/> 2. Disagree	<input type="checkbox"/> 3. Neither Agree nor Disagree	<input type="checkbox"/> 4. Agree	<input type="checkbox"/> 5. Strongly Agree
---	--------------------------------------	--	-----------------------------------	--

I would imagine that most people would learn to use this system very quickly.

<input type="checkbox"/> 1. Strongly Disagree	<input type="checkbox"/> 2. Disagree	<input type="checkbox"/> 3. Neither Agree nor Disagree	<input type="checkbox"/> 4. Agree	<input type="checkbox"/> 5. Strongly Agree
---	--------------------------------------	--	-----------------------------------	--

I found the system very cumbersome to use.

<input type="checkbox"/> 1. Strongly Disagree	<input type="checkbox"/> 2. Disagree	<input type="checkbox"/> 3. Neither Agree nor Disagree	<input type="checkbox"/> 4. Agree	<input type="checkbox"/> 5. Strongly Agree
---	--------------------------------------	--	-----------------------------------	--

I felt very confident using the system.

<input type="checkbox"/> 1. Strongly Disagree	<input type="checkbox"/> 2. Disagree	<input type="checkbox"/> 3. Neither Agree nor Disagree	<input type="checkbox"/> 4. Agree	<input type="checkbox"/> 5. Strongly Agree
---	--------------------------------------	--	-----------------------------------	--

I needed to learn a lot of things before I could get going with this system.

<input type="checkbox"/> 1. Strongly Disagree	<input type="checkbox"/> 2. Disagree	<input type="checkbox"/> 3. Neither Agree nor Disagree	<input type="checkbox"/> 4. Agree	<input type="checkbox"/> 5. Strongly Agree
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Appendix 8: Participant Comments from SUS

Participant	Overall impression	Aspects liked most	Aspects Liked Least	Features surprised to see	Features expected not seen	Comparison to other EHRS	Recommend y/n
	ICANotes is such a great system... I wish I could use more of the ICANotes functionality	Allows me to put together a concise note that meets documentation requirements. Using the Code for Me feature helps me avoid tendency to Overchart. Saves me from having to quadruple check myself in case of an audit.	Med rec looks tricky.	Although Med rec confusing, I loved the functionality	Unfamiliar with how CQM codes could be documented in ICANotes. excited to see that demonstrated.	Use PIMSY currently because required but dislikes because it's all free text entry. Used Practice Fusion for many years. ICANotes is so much better because of mental health focus. Eliminates 99 % of free text entry. All words you need are already there.	Yes. Have done so many occasions.
	Before survey began: comment always a bit of delay. Wants MSE customizable. Overall impression: Good. I'm used to it. A little bit not so intuitive.	Encompasses all options, all the variables, well thought-out.	Lag, lack of intuitiveness	None	Nothing I can think of.	Most all encompassing & best for psychiatrists. Not as smooth and a little lag.	Yes definitely.
	Really simple & easy to use		Entering ADR's	Medication log	Indicated that med list needs		Yes

					to be updated w/new drugs.		
	Certain aspects I really like. User friendly and almost idiot proof. Love the YouTube video tutorials.	Ease of the code for me feature. Also that when documenting symptoms it cues me on what to ask.	DrFirst occasionally doesn't work.			I used Avatar. It was horrid, not user friendly.	Yes absolutely
	It's ok. I don't love it.	Ease of eprescribing, ease of clinical progress note.	Lot of steps to get a task done. Too many steps. Don't like med rec. Always use DrFirst.	CCDA - wasn't aware of.	Can't send messages easily outside. CCDA - wasn't aware of.	Only EMR that I've used. Did trials but don't remember their names. Rate it higher.	Yes and I have.
	Overall pretty user friendly	Pulldown menus	DrFirst screens are hard to see, allergies are cumbersome, difficult to control quality of screen viewing.	CCDA	No	In other systems like PracticeFusion you are able to pull up a previous note and populate portions of it into the new note, but overall ICANotes is more feature rich than PracticeFusion.	Yes
	Like system in general	Like system in general	Printing issues. Can't print my computer.	No		Much faster than Epic which we use at hospital and ICANotes is better for psychiatrists.	Yes

	Easy to use, you can figure it out without training. It's quick. I like it.	Like dropdown lists for Dx and meds.	Nothing	I didn't know how to add managed allergies through DrFirst& how to use medrec properly.	None	Used a different EHR at VA in Texas. Theirs wasn't specific to psychiatry. Like that ICANotes is specific behavioral health. ICANotes is the best.	Yes
	User friendly	Fast	Sometimes things are not intuitive such as typing am it goes to M (type ahead in dropdown lists	No	No	Never used other systems	Yes
	Generally easy to use. Your videos are stellar & I use them all the time. Drug interactions was busy but you learn after you use it. Easy to use. Makes sense. Warnings are very visible. Cust support is the best.	Can get things through quickly; efficient system.	Doing something that I don't know how to Entering med choices when not in the list is hard. Upload site - going to is tough.	Didn't know CCDA existed. Sometimes I print med list for patients. If I have a phone list I would print out the CCDA and it will help. Didn't know how to enter allergies. I'm scared of technology things are easier now		My fav thing is that even if you get logged off you don't lose anything. My previous systems would log you out and I would lose everything.	Yes I recommend this to everyone I know.

				that I see them.			
	Neither easy nor difficult	Demographics page. Drop-down menus. Easy	Med rec, ADR rec	No	No	I used one other system. Is neither easy nor difficult	No
	Easy to use. Easy to navigate - user friendly.	All in one screen. Don't have to jump from 1 tab to another.	Nothing in particular	No	Nothing	I've used some that are not user friendly. Shouldn't take me 20 in to chart a 2 min conversation w/patient. Doesn't like Epic.	Yes I would.
	Intuitive. Easier to use Than had in previous jobs. Awesome.	Ability to write a note very quickly. Ability to change demo info quickly.	Interface. Primitive looking.	Gender inclusivene ss. Not part of the health system right now.	Some [Meds]use brand names/some use generic - more need to be in there.	Much more streamlined, easier. Less repetition. Easier to chart.	Yes absolutely
	User friendly	Different colors. Easy to find things.	Lot of stuff on the page but there were things I wasn't familiar with.	No	No	I can find what I'm looking for	Yes
	Very easy to use	All the buttons - free up your hands. Fast charting & clicking.	Feel overwhelmed by buttons sometimes.	Gender identifier	Not that I can think of	Not really. Prior to working here didn't work in mental health	Yes

	Excellent system. All inclusive. Really good.	Documentation, clinical notes, order entry.	Navigation because of my unfamiliarity.	Take keywords and change into a clinical code/document. Social work info looked very helpful and I would be interested in as a nurse rather than going back to a social worker.	No	Much easier to learn. With practice time it would be simple. Cerner took a lot of time to learn. Does different things than Epic. Epic parts I know because of repetitive use.	Yes if I were using it.
	Very good; easy to use	Accessibility; navigation - getting where I need to get to-very easily.	Font or color or underline-differentiation of important info.	Gender roles. Med reconciliation without having to go into escribe.	Code for Clozaril is missing. Lab order needs a code. When generating something for the client to take out.	This is much easier than other system I used.	Yes
	Very user friendly	Preprogrammed info – toggle buttons off/on without having to type.	No negatives – nothing I actively disliked.	All the options-charting the nursing note with pushing buttons.	No	Moved quickly. No pressing buttons and waiting. Self-explanatory. Probably could have figured it out myself. System I use you have to be taught very well.	Yes

	Best one we've had out of many.	Easy to figure out if you don't know.	Can't think of any.	CCDA	No	We've used Kareo and Advanced MD. Advanced MD was too expensive. I like this better than Advanced MD,	I do all the time.
	Very easy	Point and click. Drop-down box, autofill features are there. Saves time.	Hard to say because I'm not familiar. Tabs need to be more visible.	# of language. Info via CDS.	No	Compared to previous system this is much easier. Used Clinical Advisor. Didn't work well with clinician if he/she had not done all the work.	Absolutely.