EHR Usability Test Report of Welligent MU3

EHR: Welligent
Version: MU3
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Table of Contents

Introduction

The EHRUT tested for this study was the Welligent Version MU3, behavioral health software. Designed to chart assessments, treatment plans, and progress notes for behavioral health providers in community-based behavioral health and institutional facilities, the EHRUT is a web-based application consisting primarily of clinical documentation and billing functions. 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 provide evidence of usability in the EHR User Test (EHRUT). To this end, measures of effectiveness, efficiency and user satisfaction, such as specific tasks and time on tasks, were captured during the usability testing.

Method

Participants

A total of 10 participants were tested on the EHRUT. Participants in the test were a variety of non-health care providers with varying degrees of EHR experience. Tasks involved a combination of existing functionality and new components that have not yet been released. The participants were not compensated for their time.

NIST 7741 was utilized in the design and development of the features associated with the criteria tested. The Welligent team designed, developed and tested these features based on the understanding of specific user groups' needs, workflows, and environments. During implementation, the Welligent team works with customers, as customers take over the configuration of the system to more closely match customer's workflows.

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

Participant	Gender	Age	Education	Occupation	Professional Experience (months)	Computer Experience (months)	Product Experience (months)	Assistive Technology Needed?
1	Male	40-49	Bachelor's Degree	Billing Application Analyst	360	360	30	No
2	Female	40-49	Associate Degree	Billing Application Analyst	252	252	120	No
3	Female	50-59	Bachelor's Degree	Documentation Specialist	324	324	28	No
4	Female	20-29	Bachelor's Degree	Office Coordinator	60	60	1	No
5	Female	30-39	Bachelor's Degree	Customer Support Billing Specialist	96	96	1	No
6	Female	40-49	Bachelor's Degree	Director of Customer Success	300	300	180	No
7	Female	50-59	Master's Degree	Clinical Project Manager	120	336	2	No
8	Female	40-49	Master's Degree	Clinical Application Analyst	324	240	5	No
9	Female	40-49	Some College	EHR Software Trainer	396	96	12	No
10	Female	40-49	Bachelor's Degree	Clinical Application Analyst	312	180	180	No

All participants recruited participated. There were no no-shows.

Participants were scheduled for sessions of 60 minutes with a minimum of 20 minutes between each session for the administrator to reset systems to proper test conditions. A calendar was used to keep track of the participant schedule, and a Word document for each participant's demographic characteristics.

Tasks

This study collected performance data on seven tasks:
1. Demographics – Review, access, and edit client's date of birth, race and ethnicity, preferred language, sex, sexual orientation, and gender identity - MU § 170.315.(a)(5)
2. Problem List – access, view, and change active problems and add new problems - MU § 170.315.(a)(6)
3. Medication List – access, view, and edit active medications and add new medications – MU § 170.315.(a)(7)
4. Medication Allergy List – access, view, edit, and add medication allergies - MU § 170.315.(a)(8)
5. Clinical Decision Support – view alerts and take action based on the directive prescribed by the alert – MU § 170.315.(a)(9)
6. Implantable Device List – view a client's list of active and inactive implantable devices, update existing devices, and use SNOWMED codes to select new devices - MU § 170.315.(a)(14)
7. Clinical Information Reconciliation and Incorporation – reconcile a client's medications, medication allergies, and problems from multiple sources, retrieve and view a CCDA into a client record - MU § 170.315.(b)(2)

Test Environment

The EHRUT would typically be used in a behavioral health community or institutional setting.

In this instance, the testing was conducted in an office in the Welligent headquarters. Each participant had a scheduled time and arrived at that time. Only the participants and administrator were in the test room. To ensure that the environment was comfortable for users, noise levels were kept to a minimum with the ambient temperature within a normal range. All of the safety instruction and evacuation procedures were valid, in place, and visible to the participants.

For testing, the computer used was an HP PC running Windows 10 OS.

The participants used a mouse and keyboard when interacting with the EHRUT.

The monitor was set to a default Windows theme used a 1366 x 768 resolution with standard color settings. The application was set up by the administrator.

The application itself used a test database in a development environment on a LAN connection. Technically, the system performance (i.e., response time) was representative to what actual users would experience in a field implementation. Additionally, participants were instructed not to change any of the default system settings (such as control of font size).

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

- Informed Consent
- Non-disclosure form
- Moderator's Guide

- Post-test Questionnaire

Examples of these documents can be found in Appendices 2-5 respectively. The Moderator's Guide was devised so as to be able to capture required data.

Testing Procedures

During the timed, one-on-one usability test, each participant was greeted by the administrator and asked to review and sign an informed consent (Appendix 3) and non-disclosure (Appendix 4) forms. Participants had varying degrees of prior experience with EHRs.

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

Upon arrival, participants were greeted and assigned a participant ID. Each participant reviewed and signed informed consent and non-disclosure forms.

The usability testing staff conducting the test was an experienced HIT professional with 17 years of experience in EHR and Practice Management software development, and a Master of Science degree in Health Informatics with extensive research experience in Human Factors/Usability Engineering processes in Product Design and Development.

The administrator moderated the session including administering instructions and tasks. The administrator also monitored task times, obtained post-task rating data, and took notes on participant comments.

Participants were instructed to perform the tasks (see specific instructions below):
- As quickly as possible making as few errors and deviations as possible
- Without assistance; administrators were allowed to give immaterial guidance and clarification on tasks, but not instructions on use.

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

Following the session, the administrator gave the participant the post-test questionnaire (e.g., the System Usability Scale, see Appendix 2), 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.

Usability Metrics Narrative

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

Effectiveness of Welligent by measuring participant success rates and errors

Efficiency of Welligent by measuring the average task time and path deviations

Satisfaction with Welligent by measuring ease of use ratings

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. 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 the EHR being tested for Meaningful Use Stage 3. Each participant used the system in the same location, and was provided with the same instructions. The system was evaluated for effectiveness, efficiency and satisfaction as defined by measures collected and analyzed for each participant:

1. Number of tasks successfully completed
2. Time to complete the tasks
3. Number and types of errors
4. Path deviations
5. Participant's verbalizations (comments)
6. Participant's satisfaction ratings of the system

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

1. Demographics – Review, access, and edit client's date of birth, race and ethnicity, preferred language, sex, sexual orientation, and gender identity - MU § 170.315.(a)(5)
2. Problem List – access, view, and change active problems and add new problems - MU § 170.315.(a)(6)
3. Medication List – access, view, and edit active medications and add new medications – MU § 170.315.(a)(7)
4. Medication Allergy List – access, view, edit, and add medication allergies - MU § 170.315.(a)(8)
5. Clinical Decision Support – view alerts and take action based on the directive prescribed by the alert – MU § 170.315.(a)(9)
6. Implantable Device List – view a client's list of active and inactive implantable devices, update existing devices, and use SNOWMED codes to select new devices - MU § 170.315.(a)(14)
7. Clinical Information Reconciliation and Incorporation – reconcile a client's medications, medication allergies, and problems from multiple sources, retrieve and view a CCDA into a client record - MU § 170.315.(b)(2)

Tasks were selected based on Meaningful Use testing criteria.

Data Scoring Narrative

The following table (Table 3) details how tasks were scored, errors evaluated, and the time data analyzed.

Table 3

Measures	Rationale and Scoring
Effectiveness: Task success	A task was counted as a "Success" if the participant was able to achieve the correct outcome, without assistance. The total number of successes were calculated for each task and then divided by the total number of times that task was attempted. The results are provided as a percentage. Task times were recorded for successes. Observed task times divided by the optimal time for each task is a measure of optimal efficiency. Optimal task performance time, as benchmarked by expert performance under realistic conditions, was recorded when constructing tasks. Target task times in the Moderator's Guide were developed by using the mean time of the optional performance of three users familiar with the path and screens and multiplying by 1.25 to allow for a time buffer because the participants are presumably not trained to expert performance.
Effectiveness: **Task Failures**	If the participant abandoned the task, did not reach the correct answer or performed it incorrectly, or reached the end of the allotted time before successful completion, the task was counted as "Not Completed." No task times were taken for errors. The total number of errors was calculated for each task and then divided by the total number of times that task was attempted. Not all deviations would be counted as errors. This should also be expressed as the mean number of failed tasks per participant. On a qualitative level, an enumeration of errors and error types should be collected.

Efficiency: Task Deviations	The participant's path (i.e., steps) through the application was recorded. Deviations occur if the participant, for example, went to a wrong screen, clicked on an incorrect menu item, followed an incorrect link, or interacted incorrectly with an on-screen control. This path was compared to the optimal path. The number of steps in the observed path is divided by the number of optimal steps to provide a ratio of path deviation.
Efficiency: Task Time	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 stopped performing the task. Only task times for tasks that were successfully completed were included in the average task time analysis. Average time per task was calculated for each task. Variance measures (standard deviation and standard error) were also calculated.

Satisfaction: **Task Rating**	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 Difficult) to 5 (Very Easy). Common convention is that average ratings for systems judged easy to use should be 3.3 or above. To measure participants' confidence in and likeability of the Welligent EHR overall, the testing team administered the System Usability Scale (SUS) post-test questionnaire. Questions included, "I think I would like to use this system frequently," "I thought the system was easy to use," and "I would imagine that most people would learn to use this system very quickly." See full System Usability Score questionnaire in Appendix 2.

Results

Data Analysis & Reporting

The results of the usability test were calculated according to the methods specified in the Usability Metrics section above. Participants who failed to follow session and task instructions had their data excluded from the analyses. There were no exclusions. There were no testing irregularities or issues that affected data collection or interpretation of results.

The usability testing results for the EHRUT are detailed below (see Table 4).

Table 4

Task Identifier	Task Description	Task Success - Mean (%)	Task Success - Standard Deviation (%)	Task Path Deviation - Observed #	Task Path Deviation - Optimal #	Task Time - Mean Observed (seconds)	Task Time - Standard Deviation (seconds)	Task Time Deviation - Mean Observed	Task Time Deviation - Mean Optimal Seconds	Task Errors Mean (%)	Task Errors - Standard Deviation (%)	Task Rating - Scale Type	Task Rating Mean	Task Rating - Standard Deviation
Task 1: Demographics §170.315(a)(5)	Record and view client's DOB, Race, Ethnicity, Preferred Language, Sex, Sexual Orientation, and Gender Identity.	100	0	16	15	86.2	15.4	82	75	1.0	0.63	Likert Scale	4.5	0.5
Task 2: Problem List §170.315(a)(6)	Review, edit, and add to client's problem list.	100	0	14	12	54.7	12.9	66	56	1.0	0.77	Likert Scale	4.0	0.63
Task 3: Medication List §170.315(a)(7	Review, edit, and add to client's medication list.	100	0	12	11	61.4	7.6	68	63	1.6	1.2	Likert Scale	3.8	0.75
Task 4: Medication Allergy List §170.315(a)(8)	Review, edit, and add to client's medication allergies.	100	0	15	13	78.8	19.6	74	73	1.2	0.98	Likert Scale	4.0	0.89
Task 5: Clinical Decision Support (CDS) §170.315(a)(9)	Clinical Decision Support – view an alert and take action based on what is prescribed by the alert.	100	0	17	16	114	17.7	120	100	2.8	1.78	Likert Scale	3.5	.68
Task 6: Implantable Device List §170.315(a)(14)	Review and update client's list of active and inactive implantable devices using SNOMED codes.	100	0	18	15	60.3	13.1	64	62	1.0	0.89	Likert Scale	4.2	.87
Task 7: Clinical Information Reconciliation and Incorporation §170.315(b)(2)	Reconcile client's medication, medication allergies, problems, and retrieve and view CCDA within the client record.	100	0	19	13	126.8	15.9	130	125	2.6	1.5	Likert Scale	3.8	.60

Discussion of the Findings

EFFECTIVENESS

All participants found success. Some participants were new users to the application but were successful in completing the tasks without assistance. Some participants were not familiar with SNOMED codes which led to some hesitation on what on what search criteria to use.

EFFICIENCY

Overall the participants commented that the system was easily navigated. No participant failed to complete a task. In a few cases, the participant realized an incorrect selection, but corrected before the task time ended.

SATISFACTION

Participants reported an overall positive experience with the application.

MAJOR FINDINGS

Most users were familiar with the application, but not with some of the screens used for this test. Two participants were new users to the system. All users were able to successfully follow the workflow for all tasks. Some users were not familiar with SNOMED codes or drug formularies, which led to some minimal confusion on selection of search criteria on some tasks. All test participants completed the assigned tasks. There were no failures or tasks not completed.

AREAS FOR IMPROVEMENT

Participants noted some areas where additional close buttons would be helpful, as there were some screens where they were unsure how to exit the screen after task completion. The newer users were not as familiar with standard terminology used within the application, which did lead to some path deviations as the instructions were misinterpreted. In the future, this could be avoided by conducting a brief overview of system navigation with new users, as it would be expected that any user of the EHR would at least have basic training on the system before using it for these types of tasks.

Appendices

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

1. Participant demographics
2. System Usability Scale Questionnaire
3. Informed Consent Form
4. Non-Disclosure Agreement (NDA)
5. Example Moderator's Guide

Appendix 1: Participant Demographics

Following is an overview of the participants in this study.

Gender

Men	1
Women	9
Total	10

Age

20-29	1
30-39	1
40-49	6
50-59	2
Total	10

Occupation/Role

Customer Support Billing Specialist	1
EHR Software Trainer	1
Director of Customer Success	1
Billing Application Analyst	2
Clinical Application Analyst	2
Documentation Specialist	1
Clinical Project Manager	1
Office Coordinator	1
Total	10

Years of Experience Using EHR

0	1
1	1
2	2
5	1
7	1
8	1
10	1
15	1
19	1
Total	10

Appendix 2: System Usability Scale Questionnaire

Welligent Meaningful Use EHR Usability Study

Participant # _____

Date: _____

SYSTEM USABILITY SCALE QUESTIONNAIRE

Circle your answer.

	Strong Disagree				Strong Agree
1. I think I would like to use this system frequently.	1	2	3	4	5
2. I found this system unnecessarily complex.	1	2	3	4	5
3. I thought the system was easy to use.	1	2	3	4	5
4. I think I would need the support of a technical person to use this system.	1	2	3	4	5
5. I found the various functions in this system were well integrated.	1	2	3	4	5
6. I thought there was too much inconsistency in this system.	1	2	3	4	5
7. I imagine that most people would learn to use this system.	1	2	3	4	5
8. I found the system very cumbersome to use.	1	2	3	4	5
9. I felt very confident using the system.	1	2	3	4	5
10. I needed to learn a lot of things before I could get going with this system.	1	2	3	4	5

Appendix 3: Informed Consent Form

Informed Consent – Welligent EHR Meaningful Use Usability Study

Welligent, Inc. would like to thank you for participating in this study. The purpose of this study is to evaluate an electronic health records system. If you decide to participate, you will be asked to perform several tasks using the prototype and give your feedback. The study will last about 60 minutes.

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

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

I understand and agree that the data collected from this study may be shared with outside of Welligent, Inc. I understand and agree that data confidentiality is assured, because only de- identified data – i.e., identification numbers not names – will be used in analysis and reporting of the results.

I agree to immediately raise any concerns or areas of discomfort with the study administrator. I understand that I can leave at any time.

Please check one of the following:

☐   YES, I have read the above statement and agree to be a participant.
☐   NO, I choose not to participate in this study.

Participant's printed name: _____

Signature: _____   **Date:** _____

Appendix 4: Non-Disclosure Agreement

Welligent Meaningful Use EHR Usability Study

Non-Disclosure Agreement

THIS AGREEMENT is entered into as of _____ between

_____ ("the Participant") and the testing organization

Welligent, Inc. located at 5005 Colley Ave, Norfolk, VA 23505.

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 which is disclosed by Welligent, Inc., 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 Welligent, Inc. and is being disclosed solely for the purposes of the Participant's participation in today's usability study. By signing this form the Participant acknowledges that 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 5: Administrator's/Moderator's Guide

Participant # _____

Welligent Meaningful Use EHR Usability Study

EHR **Usability Test**

Administrator _____

Date_____Time_____Location _____

Thank you for participating in this study. Our session today will last less than 60 minutes. During that time you will take a look at an electronic health record system.

I will ask you to complete a few tasks using this system and answer some questions. 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. 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. Do not do anything more than asked. If you get lost or have difficulty I cannot answer or help you with anything to do with the system itself. 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.

I am not a developer for this system, so please be honest with your opinions.

The product you will be using today is a behavioral health electronic health record being modified to meet Meaningful Use requirements. Some of the data may not make sense as it is placeholder data.

Do you have any questions or concerns?

Preliminary Questions

What is your job title / appointment?

How long have you been working in this role?

What are some of your main responsibilities?

Tell me about your experience using electronic health records.

Task 1: Demographics *§170.315(a)(5)*

Take the participant to the starting point for the task.

This task requires you to access client demographics and update according to items below.

Task 1 – Record, view, or access client's date of birth

1. Client A
   Find the client's date of birth.

   Done: Yes ☐ No ☐
   Time (in secs):

2. Client B
   Find the client's date of birth and change the date.

   Done: Yes ☐ No ☐
   Time (in secs):

Optimal Path:
Client charts are open
Click Client Information > Select 'Demographics' from dropdown > Basic Tab
*Locate the indicated fields and complete. **Save** and **Close**.*

Task 1A – Record or change client's race and ethnicity

1. Client A
   Races: Asian/White/Native Hawaiian, Ethnicity: Not Hispanic
   Enter the client's races and ethnicity.

   Done: Yes ☐ No ☐
    Time (in secs):

2. Client B
   Declines to specify race and ethnicity
   Indicate the client declines to specify race and/or ethnicity.

   Done: Yes ☐ No ☐
   Time (in secs):

Optimal Path:
Client chart is open
Click Client Information > Select 'Demographics' from dropdown > Click the Extended Tab
*Locate the indicated fields and complete. **Save** and **Close**.*

_____

Task 1B – Record or change client's preferred Language

1. Client A
   Preferred language is English
   Enter the client's preferred language.

   Done: Yes ☐ No ☐
   Time (in secs):

2. Client B: Declines to specify preferred language
   Indicate the client declines to specify their preferred language.

   Done: Yes ☐ No ☐
   Time (in secs):

Optimal Path:
Client chart is open
Click Client Information > Select 'Demographics' from dropdown > Click the Extended Tab
*Locate the indicated fields and complete. **Save** and **Close**.*

Task 1C – Record client's sex

1. Client A
   Sex: Male
   Change the client's sex at birth from unknown to male.

   Done: Yes ☐ No ☐
   Time (in secs):

Optimal Path:
Client chart is open
Click Client Information > Select 'Demographics' from dropdown > Click the Extended Tab
*Locate the indicated fields and complete. **Save** and **Close**.*

Task 1D – Record client's sexual orientation

1. Client A
   Sexual Orientation: Declines to specify sexual orientation
   Indicate the client declines to specify sexual orientation.

   Done: Yes ☐ No ☐
   Time (in secs):

2. Client B
   Sexual orientation: Something else, please describe

Indicate the client's sexual orientation is something else and include a description

Done: Yes ☐ No ☐
Time (in secs):

Optimal Path:
Client chart is open
Click Client Information > Select 'Demographics' from dropdown > Click the Extended Tab
Locate the indicated fields and complete. ***Save*** *and* ***Close****.*

<u>*Task 1E – Record client's gender identity*</u>

1. Client A
   Gender identity: Declines to specify
   Indicate the client declines to specify gender identity.

   Done: Yes ☐ No ☐
   Time (in secs):

2. Client B:
   Gender Identity: Female
   Enter the client's gender identity as female.

   Done: Yes ☐ No ☐
   Time (in secs):

Optimal Path:
Client chart is open
Click Client Information > Select 'Demographics' from dropdown > Click the Extended Tab
Locate the indicated fields and complete. ***Save*** *and* ***Close****.*

Total time for all of Task 1: ___ seconds

Rate Success:
___ Easily completed
___ Completed with difficulty or help (Describe below)
___ Not completed

Comments:

Rate:

Overall, this task was:

Very Easy	Easy	Average	Difficult	Very Difficult
1	2	3	4	5

Task 2: Problem List *§170.315(a)(6)*

Take the participant to the starting point for the task.

This task requires you to access a client's problem list to view or change active problems and add new problems.

1. Client A
   Locate and view the client's active problem list.
   Update an active problem from chronic to acute.

   Done: Yes ☐ No ☐
   Time (in secs):

2. Client B
   Locate and view the client's active problem list.
   Using SNOMED codes, add a new problem.

   Done: Yes ☐ No ☐
   Time (in secs):

Optimal Path:
Client charts are open
Click Client Information > Select 'Problems/Conditions' from dropdown
> *Select 'Active/Current' and click Search to view existing problems*
> *Click 'Edit' to open an existing problem and update >* **Save** *and* **Close**.
> *Select 'New' > select SnoMed code > add required fields >* **Save** *and* **Close**

Total time for all of Task 2: ___ seconds

Rate Success:
___ Easily completed
___ Completed with difficulty or help (Describe below)
___ Not completed

Comments:

Rate:

Overall, this task was:

Very Easy	Easy	Average	Difficult	Very Difficult
1	2	3	4	5

Task 3: Medication List *§170.315(a)(7)*

Take the participant to the starting point for the task.

This task requires you to access a client's medication list to view or change active medications and add new medications.

1. Client A
   Locate and view the client's active medication list.
   Update an active medication by changing the frequency.
   Close the medication record.
   Update another medication by adding 'sleepiness' as a side effect

   Done: Yes ☐ No ☐
   Time (in secs):

2. Client B
   Locate and view the client's active medication list.
   Using the formulary, add valium as a new drug for the client.
   Close the medication record.
   Using the formulary, add acetaminophen as a new drug for the client.

   Done: Yes ☐ No ☐
   Time (in secs):

Optimal Path:
Client charts are open
Click Medications
   Select 'Current/Active' as the medication status and click Refresh to view existing medications
   *Click 'Edit' to open an existing medication and update > **Save** and **Close**.*
   *Select 'New' > click magnifying class and select medication > add required fields > **Save** and **Close***

Total time for all of Task 3: ___ seconds

Rate Success:
___ Easily completed
___ Completed with difficulty or help (Describe below)
___ Not completed

Comments:

Rate:

Overall, this task was:

Very Easy	Easy	Average	Difficult	Very Difficult
1	2	3	4	5

Task 4: Medication Allergy List *§170.315(a)(8)*

Take the participant to the starting point for the task.

This task requires you to access a client's allergy list to view, change, and add allergies to medications.

1. Client A
    Locate and view the client's active allergy list.
    Update a medication allergy by changing the severity from mild to moderate.
    Close the medication record.
    Update another medication allergy by adding 'hives' as a reaction

    Done: Yes ☐ No ☐
    Time (in secs):

2. Client B
    Locate and view the client's active allergy list.
    Add penicillin as a new medication allergy for the client and make the severity moderate.
    Close the medication record.
    Update the penicillin allergy severity to severe.

    Done: Yes ☐ No ☐
    Time (in secs):

Optimal Path:
Client charts are open
Click Client Information > Allergies
> *Select 'Active Current' as the allergy status and click Refresh to view existing medications*
> *Click 'Edit' to open an existing allergy and update > **Save** and **Close**.*
> *Select 'New' > select drug/medication as allergy type > click magnifying glass and select medication > add required fields > **Save** and **Close***

Total time for all of Task 4: ___ seconds

Rate Success:
___ Easily completed
___ Completed with difficulty or help (Describe below)
___ Not completed

Comments:

Rate:

Overall, this task was:

Very Easy	Easy	Average	Difficult	Very Difficult
1	2	3	4	5

Task 5: Clinical Decision Support (CDS) *§170.315(a)(9)*

Take the participant to the starting point for the task.

This task requires you to view an alert and take an action based on what is prescribed by the alert (e.g., lab test, depression screening, etc.)

1. Client A
   Locate the Clinical Decision Support in the client dashboard and open.
   Open and view the citation (expect a page error)
   Open the client's program history; note that an alert popup interrupts the workflow

   Done: Yes ☐ No ☐
   Time (in secs):

2. Client B
   Review the client's birth date and if the client is not between 6 and 17, change the birthdate to reflect that.
   Add the following problem to the client's problem list, selecting the program and making it the primary diagnosis:
   Major Depressive Disorder
   Check the dashboard and program history to see if a clinical decision support displays.

   Done: Yes ☐ No ☐
   Time (in secs):

Optimal Path:
Client charts are open
Dashboard
Program History > Program > Edit
*Client Information > Demographics > Basic Tab > update > **Save** and **Close***
*Client Information > Problems/Conditions > New > add required fields > **Save** and **Close***

Total time for all of Task 5: ___ seconds

Rate Success:
___ Easily completed
___ Completed with difficulty or help (Describe below)
___ Not completed

Comments:

Rate:

Overall, this task was:

Very Easy	Easy	Average	Difficult	Very Difficult
1	2	3	4	5

Task 6: Implantable Device List *§170.315(a)(14)*

Take the participant to the starting point for the task.

This task requires you to view a client's list of active and inactive implantable devices, update existing devices, and use SNOMED codes to select new devices.

1. Client A
    View the client's list of implantable devices.
    Select a SNOMED code to add a new device to the list.

    Done: Yes ☐ No ☐
    Time (in secs):

2. Client B
    View the client's list of active implantable devices.
    View the inactive devices
    Update an existing device by making it inactive.

    Done: Yes ☐ No ☐
    Time (in secs):

Optimal Path:
Client charts are open
Client > Information > Implantable Devices
  Select Implant Status > Search
  *Select Implant Status > Search > Edit > **Save** and **Close***
  *New > Select SNOMED > add required fields > **Save** and **Close***

Total time for all of Task 6: ___ seconds

Rate Success:
___ Easily completed
___ Completed with difficulty or help (Describe below)
___ Not completed

Comments:

Rate:

Overall, this task was:

Very Easy	Easy	Average	Difficult	Very Difficult
1	2	3	4	5

Task 7: Clinical Information Reconciliation and Incorporation *§170.315(b)(2)*

Take the participant to the starting point for the task.

This task requires you to reconcile the client's medications, medication allergies, and problems from multiple sources. You will also retrieve and view a CCDA into a client record.

1. Client A
   View the client's list of medications and compare to the outside medications log.
   >   If already on the client list, make one of the medications inactive.
   >   If not on the client list, add the medication to it.
   View the client's list of medication allergies and reconcile with the outside allergy log (if any outside allergies).
   View the client's list of problems and reconcile with the outside problems log (if any outside problems).

   Done: Yes ☐ No ☐
   Time (in secs):

2. Client B (*use Rachel Hellstrom as the client*)
   Retrieve the client's C-CCDA.
   View the client's name, medications, medication allergies, and outside problems.

   Done: Yes ☐ No ☐
   Time (in secs):

Optimal Path:
Client charts are open
Medications > Other>> Outside Med Log/Reconcile
Client Information > Allergies > Reconcile
Client Information > Problems/Conditions > Reconcile
Client Information > EHR Extracts > C-CDA Message type > Formatted view

Total time for all of Task 7: ___ seconds

Rate Success:
___ Easily completed
___ Completed with difficulty or help (Describe below)
___ Not completed

Comments:

Rate:

Overall, this task was:

Very Easy	Easy	Average	Difficult	Very Difficult
1	2	3	4	5