SolidPractice Technologies, Inc
EHR Usability Report for SolidPractice V2.0

Safety Enhanced Design 170.315 (g)(3)

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

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1. Executive Summary

SolidPractice Technologies uses ISO 13407 User Centered Design process in its software development. The ISO Center Design Processes for Interactive Systems, (ISO/IEC, 1999) https://www.iso.org/obp/ui/#iso:std:iso:13407:ed-1:v1:en is a concise reference model for User Centered Design (UCD). It includes four key UCD activities (processes) which we fully adopted during development of the EMR.

SolidPractice's designated staff conducted a usability study of V2.0 of the SolidPractice EHR in August 2021 as well as on November 22, 2024 with clinicians and support staff of typical medical practices who were recently introduced to the software. The purpose of the study was to evaluate the usability of the user interface and provide quantitative analysis of the usability of SolidPractice EHR V2.0.

During the usability test 12 providers and 12 support staff (August 2021) and then 12 different support staff (November 22, 2024) used SolidPractice V2.0 in a simulated environment using representative tasks. Each task was analyzed for the potential risk of harm to the patient.

The study collected performance data on various tasks typically conducted by physicians, mid-level providers and support staff. The tasks correspond to certification criteria in 45 CFR Part 170 Subpart C, initially identified in the Health Information Technology: 2015 Edition Health Information Technology (Health IT) Certification Criteria, 2015 Edition Base Electronic Health Record (EHR) Definition, and ONC Health IT Certification Program Modifications, and updated in the 21st Century Cures Act: Interoperability, Information Blocking, and the ONC Health IT Certification Program Final Rule.

Participants in the August 2021usability study had no prior experience with SolidPractice EHR except for a brief period of training in the weeks prior to the study. Participants in the November 22, 2024 usability study had varied experience with SolidPractice EHR but had limited experience with the newly introduced features.

The moderator introduced the test and instructed participants to complete a series of tasks following the testing procedures outlined in Appendix A and Appendix C. After the completion of the task, the participants were asked to complete an Ease-of-Use Rating Questionnaire for that task. The participants' interactions with the screen and verbalizations were recorded electronically during the test and later analyzed to collect time measurements and evaluate performance. The moderators did not assist the participants in completing the tasks. All participant data was anonymized.

Various metrics were used to evaluate the usability of the software. The following quantitative metrics and qualitative observations were collected from each participant:

- Number of tasks successfully completed within the allotted time without assistance
- Time to complete the tasks
- Number and types of errors
- Path deviations
- Participant's feedback rating of satisfaction with usability
- Task Failure %

2. Introduction

The EHR Usability Tests described in this report were conducted in July of 2021 using SolidPractice V2.0 and in November 2024 using SolidPractice V2.0

SolidPractice EHR is a comprehensive electronic medical record and practice management system. It possesses state of the art solutions using the latest technology in process automation, advanced algorithms and provider focused intuitive user interface allowing easy learning of the system and efficient clinical documentation.

The design of SolidPractice is unique in its precise alignment with the physician office work flow. The software design has focused on every single detail of this work flow to eliminate unnecessary keystrokes or mouse clicks and automate as many processes and features as possible.

3. Method

3.1. Participants

A total of 24 users participated in the August 2021 study and a total of 12 users participated in the November 2024 study. The users for the August 2021 were all new SolidPractice EHR users who had at least 1 year of experience with other EMR systems but no real life of user experience with SolidPractice EHR. The users for the November 2024 study had prior experience with SolidPractice EHR, but no experience with the tested features. The goal of the study was to demonstrate the ease of use and intuitiveness of the user interface in a cohort consisting of new users. The study participants received a 1-hour intensive group training and an additional 1 hour of one-on-one training on SolidPractice EHR after which they were given an opportunity to practice with the software themselves in a testing environment but were not using the SolidPractice EHR for patient care outside of the limited testing prior to the study. The demographic of testers included a representative sample of a primary care practice's providers and support staff. Each study participant for the August 2021 study was compensated for their time and effort with a $100 eGift Card, see Appendix D. No compensation was provided for the November 2024 study.

3.1.1.Physician and Mid-level Provider Participants

The following physicians and mid-level medical providers participated in the August 2021 study:

ID	Gender	Age	Education	Role/Degree	Months in healthcare	Months using SolidPractice	Computer Experience	Assistive technology
P1	female	62	Masters	Nurse Practitioner	180	< 1	180	no
P2	female	48	Doctorate	Physician	192	< 1	192	no
P3	Male	33	Masters	Nurse Practitioner	132	< 1	108	no
P4	Male	25	Masters	Nurse Practitioner	48	<1	48	no
P5	Male	51	Doctorate	Physician	180	< 1	180	no
P6	Female	50	Masters	Nurse Practitioner	96	< 1	80	no
P7	Male	41	Masters	Nurse Practitioner	30	< 1	30	no

P8	Male	30	Doctorate	Physician	18	< 1	18	no
P9	Female	52	Doctorate	Physician	192	< 1	192	no
P10	Male	47	Doctorate	Physician	276	< 1	180	no
P11	Male	56	Doctorate	Physician	228	< 1	216	No
P12	Male	52	Doctorate	Physician	312	<1	204	No

3.1.2.Support Staff Participants

The following support staff participated in the August 2021 study:

ID	Gender	Age	Education	Role/Degree	Months in healthcare	Months using SolidPractice	Computer Experience	Assistive technology
S1	Female	54	High School	Receptionist	21	< 1	21	no
S2	Female	33	Masters`s	Receptionist	20	< 1	20	no
S3	Female	38	High School	Medical Assistant	96	< 1	96	no
S4	Female	32	Associate	Receptionist	42	< 1	42	no
S5	Female	42	High School	Receptionist	55	< 1	55	no
S6	Female	50	Bachelor`s	Credentialing	252	< 1	252	no
S7	Female	42	Bachelor`s	Billing	216	< 1	216	no
P8	Female	32	Bachelor`s	Healthcare admin.	41	< 1	41	no
S9	Female	42	Bachelor`s	Healthcare admin.	240	< 1	228	no
S10	Male	30	Doctorate	Care coordinator	20	< 1	20	no
S11	Male	64	Doctorate	Healthcare admin.	480	< 1	360	no
S12	Female	28	Bachelor`s	Receptionist	24	< 1	24	no

The following support staff participated in the November 2024 study:

ID	Gender	Age	Education	Role/Degree	Months in healthcare	Months using SolidPractice	Computer Experience	Assistive technology
C1	female	34	Bachelor's	Care coordinator	120	36	0	no
C2	female	28	High school	Care coordinator	36	4	0	no
C3	female	32	Bachelor's	Care coordinator	17	17	0	no
C4	female	48	High school	Care coordinator	120	36	84	no
C5	female	41	Bachelor's	Care coordinator	12	3	36	no
C6	female	26	Bachelor's	Care coordinator	24	24	0	no
C7	female	40	High school	Care coordinator	120	36	84	no
C8	male	58	Doctorate	Care coordinator	60	36	24	no
C9	female	42	Doctorate	Care coordinator	120	36	84	no
C10	female	41	Bachelor's	Care coordinator	120	36	84	no
C11	female	48	High School	Care coordinator	84	36	48	no
C12	male	51	Master's	Care coordinator	60	36	24	no

3.2. Study Design

The objective of the test was to evaluate the system for effectiveness, efficiency and user satisfaction

Usability Metrics:

- Number of tasks successfully completed within the allotted time without assistance
- Time to complete the tasks

- Number and types of errors
- Path deviations
- Participant's verbal feedback rating of satisfaction with usability
- Participant's verbal unstructured comments

Usability scoring definitions:

Task Success:

We recorded a task as a success if the participant was able to achieve the correct outcome without assistance. To calculate the total number of successes we divided number of tasks attempted by the number of participants. The results are reported as a percentage. We recorded task times for successes only

Task Failure:

If the participant abandoned the task, did not reach the correct result, performed it Incorrectly, or gave up, we recorded the task as a failure. We did not record task times for failures in this report.

Task Deviation:

We recorded the participant's path (i.e., steps) through the application. Deviations included, for example, navigating to the wrong screen, choosing an incorrect menu item, or interacting incorrectly with an on-screen control. We compared this path to the optimal path.

Task Time:

We timed each task from the moment the test administrator finished reading the task instructions aloud and provided the "start" prompt to the participants until the participant said, "Done." If the participant failed to say "Done," we stopped the time when the participant stopped performing the task. Only times for tasks that were successfully completed were included in the average task time analysis. Average time per task was calculated for each task.

3.3. Tasks

The following tasks were designed to test the EHR functionality for each feature specified by the ONC.

The risk level for each task was also assessed. The risk level was assigned based on the risk for adverse events to the patient. The categories of high, moderate or low risk were used.

Each task was also categorized whether they would be completed by a medical provider ("Provider")) or by a support administrative staff ("Support Staff"). Test participants then were assigned according to this categorization.

Task	Task Assignee	Risk Level
1. Section 170.315(a)(7): Medication list		Moderate
a. Record a medication	Provider	
b. Edit a previously recorded medication	Provider	
2. Section 170.315(a)(1): Computerized provider order entry – medications		High
a. Create a prescription order	Provider	
b. Edit a prescription order	Provider	
3. Section 170.315(a)(8): Medication allergy		High
a. Record a new drug allergy	Provider	
4. Section 170.315(a)(4): Drug-drug, drug-allergy interaction checks		High
a. Start a prescription order, acknowledge the drug-drug interaction and/or drug allergy alert	Provider	
5. Section 170.315(a)(2): Computerized provider order entry-- laboratory		Low
a. Start a new lab order	Provider	
b. Edit a lab order	Provider	
6. Section 170.315(a)(3): Computerized provider order entry - diagnostic imaging		Low
a. Start a new diagnostic imaging order	Provider	
b. Edit an imaging order	Provider	
7. Section 170.314(a)(9): Clinical Decision Support (CDS)		Low
a. Review Clinical Decision Support information (CDS)	Provider	
b. Review CDS information and Follow the Clinical Recommendation	Provider	
8. Section 170.315(a)(5): Demographics		Low
a. Document patient's ethnicity	Support Staff	
b. Change the patient's preferred language	Support Staff	
9. Section 170.315(a)(14): Implantable device list		Low
a. Document a patient's Implantable Device	Support Staff	
10. Section 170.315(a)(6) Problem list		Moderate
a. Add a diagnosis to the active problem list	Provider	
b. Remove a diagnosis from the active problem list	Provider	
11. Section 170.315(b)(3): Electronic Prescribing	Provider	High
a. Electronically prescribe a medication	Provider	
b. Approve an electronic prescription refill request from the pharmacy		
12. Section 170.315(b)(2) Clinical information reconciliation and incorporation		Moderate
a. Create A Continuity Of Care Document (CCD)	Support Staff	
b. Reconcile Information from a Continuity Of Care Document (CCD)	Provider	
13. Section 170.315(b)(11) Decision Support Intervention Use the Predictive Decision Support Intervention tool to manage a) chronic care management (CCM) prognosis of hypertension b) chronic care management (CCM) goal for hypertension c) chronic care management (CCM) barrier for hypertension d) chronic care management (CCM) intervention for hypertension	Support staff	moderate
14. Section 170.315(b)(11) Decision Support Intervention Use Evidence Based Decision Support Intervention tool to a) access the source attribute for the Evidence Based Decision Support tool b) provide feedback on the Evidence Based Decision Support tool c) Accept the recommendation of the Evidence Based Decision Support tool	Support staff	moderate
15. Section 170.315(b)(11) Decision Support Intervention Access and edit the source attribute for the Decision Support Intervention tool	Support staff	moderate

3.4. Procedures

All participants' computers were connected to the administrator's computer using shared display and shared audio feed. Administrator as well as participant computer screen capture live video and live audio capture of all participants' computer screens was set up. All video and audio feeds were continuously monitored and recorded.

Upon arrival, participants were greeted; their identity was verified and matched with a name on the participant schedule. The test administrator moderated the session, administered instructions and read the tasks. A written copy of the task and instructions were also provided by the administrator to the participants. The administrator also logged Participant's verbal unstructured comments

Prior to the session participant demographics were collected. During the session verbal responses were recorded and post-test questionnaire recording verbal feedback rating of satisfaction with usability was recorded as well.

Participants were thanked for their time at the conclusion of the session.

3.5. Test location

The study was conducted in various settings, including office and participant home. Computers equipped with internet connection, audio and video were used. Since SolidPractice EHR is a web-based system, no special hardware equipment was needed to allow participation from various settings. Audio and video conference and capture software was installed on each participant's computer.

3.6. Test Environment

To ensure a realistic environment, participants were asked to use their own computers and the networks they normally use to access the EHR system. Participants' computers were checked for compatibility of the screen capture and video conferencing software and audio and video capture was turned on at the start of the session. The test administrator was able to view the test participant's keyboard and mouse clicks and hear the participant's comments via these mechanisms to ensure that data was captured in real time during the course of the test.

3.7. Test forms and Tools

During the test the Administrator's log was used to allow capturing of free flowing comments of the users about the system's efficiency, ease of use. The Task Rating Form (see Appendix B.) and Task Instructions (see Appendix C.) were used by the administrator as well. The Test Administrator's work was aided by the Test Administrator's Guide (see Appendix A.)

3.8. Participant Instructions

We asked the participants to provide the following information required for the study prior to scheduling the testing session: gender, age, education, role/degree in their medical practices, highest level of education, years in healthcare, time using the SolidPractice EHR, time using other electronic health records, and use of assistive technology.

The following instructions were given to participants:

- Complete each task as quickly as possible with the fewest errors and least deviations without assistance.
- Timing will begin after the administrator finished reading task and task instructions aloud and provided the "start" prompt.

The participant was then asked to sign into the EHR testing system and complete each task, while the test administrator recorded video, audio, time to completion, errors, and deviations from the optimal path. Any volunteered comments that the participant shared during the tasks were also recorded

3.9. Usability Metrics

The system was evaluated by the following usability metrics:

- Number of tasks successfully completed within the allotted time without assistance
- Time to complete the tasks
- Number and types of errors
- Path deviations
- Participant's feedback rating of satisfaction with usability
- Task Failure %

3.10. Data Scoring

Usability scoring definitions:

Task Success:

We recorded a task as a success if the participant was able to achieve the correct outcome without assistance. To calculate the total number of successes we divided number of tasks attempted by the number of participants. The results are reported as a percentage. We recorded task times for successes only

Task Failure:

If the participant abandoned the task, did not reach the correct result, performed it incorrectly, or gave up, we recorded the task as a failure. We did not record task times for failures in this report.

Task Deviation:

We recorded the participant's path (i.e., steps) through the application. Deviations included, for example, navigating to the wrong screen, choosing an incorrect menu item, or interacting incorrectly with an on-screen control. We compared this path to the optimal path.

Task Time:

We timed each task from the moment the test administrator finished reading the task instructions aloud and provided the "start" prompt to the participants until the participant said, "Done." If the participant failed to say "Done," we stopped the time when the participant stopped performing the task. Only times for tasks that were successfully completed were included in the average task time analysis. Average time per task was calculated for each task.

4. Results

Data analysis and reporting:

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

There were a few participants that did not complete all of the tasks scheduled for the usability test, though this was a rare occurrence.

We offered the users to provide free comments. Only one participant provided free comments for the support staff tasks (“it is very easy”), all other participants omitted to comment on their form; therefore, we did not include the unstructured comments in our task by task analyses.

4.1. 170.315(a)(7): Medication list

Task 1.a. Record a Medication							
Participant ID (total n= 10)	Task Success	Task path observed steps	Task path optimal steps	Task time (seconds)	Task time deviation from mean optimal (seconds)	Ease of use rating (1 to 5, easiest: 5)	Unstructured comments
P1	1	5	5	26	0	5	
P2	1	5	5	10	0	5	
P3	1	6	5	35	1	5	
P4	1	5	5	10	0	5	
P5	1	5	5	13	0	5	
P6	1	5	5	8	0	5	
P7	1	6	5	81	1	3	
P8	1	5	5	17	0	5	
P9	1	5	5	10	0	5	
P10	1	5	5	11	0	5	
P11	1	5	5	33	0	5	
P12	1	5	5	10	0	5	
Total	12				2		
Average	100%	5.17		22.00	0.17	4.83	
SD	0.00	0.39		20.86	0.39	0.58	

Task 1.b. Edit a Previously Recorded Medication							
Participant ID (total n= 10)	Task Success	Task path observed steps	Task path optimal steps	Task time (seconds)	Task time deviation from mean optimal (seconds)	Ease of use rating (1 to 5, easiest: 5)	Unstructured comments
P1	1	3	3	33	0	5	
P2	1	3	3	5	0	5	
P3	1	3	3	7	0	5	
P4	1	3	3	5	0	5	
P5	1	3	3	8	0	5	
P6	1	3	3	7	0	5	
P7	1	3	3	3	0	5	
P8	1	3	3	7	0	5	
P9	1	3	3	7	0	5	
P10	1	3	3	6	0	5	
P11	1	3	3	7	0	5	
P12	1	3	3	5	0	5	
Total	12				0		
Average	100%	3.00		8.33	0.00	5.00	Average
SD	0.00	0.00		7.89	0.00	0.00	

4.2. §170.315 (a)(1) Computerized Physician Order Entry Medications

Task 2.a. Create a Prescription Order							
Participant ID (total n= 10)	Task Success	Task path observed steps	Task path optimal steps	Task time (seconds)	Task time deviation from mean optimal (seconds)	Ease of use rating (1 to 5, easiest: 5)	Unstructured comments
P1	1	11	10	113	1	5	
P2	1	10	10	9	0	5	
P3	1	10	10	16	0	5	
P4	1	10	10	15	0	5	
P5	1	10	10	12	0	5	
P6	1	10	10	12	0	5	
P7	1	10	10	13	0	4	
P8	1	10	10	7	0	5	
P9	1	10	10	18	0	5	
P10	1	10	10	18	0	5	
P11	1	10	10	19	0	5	
P12	1	10	10	12	0	5	
Total	12	121	120		1		
Average	100%	10.08		22.00	0.08	4.92	
SD	0.00	0.29		28.89	0.29	0.29	

The

Task 2.b. Edit a Prescription Order							
Participant ID (total n= 10)	Task Success	Task path observed steps	Task path optimal steps	Task time (seconds)	Task time deviation from mean optimal (seconds)	Ease of use rating (1 to 5, easiest: 5)	Unstructured comments
P1	1	3	3	15	0	5	
P2	1	3	3	6	0	5	
P3	1	3	3	6	0	5	
P4	1	3	3	4	0	5	
P5	1	3	3	6	0	5	
P6	1	3	3	7	0	5	
P7	1	3	3	5	0	5	
P8	1	3	3	5	0	5	
P9	1	3	3	9	0	5	
P10	1	3	3	6	0	5	
P11	1	3	3	6	0	5	
P12	1	3	3	5	0	5	
Total	12				0		
Average	100%	3.00		6.67	0.00	5.00	
SD	0.00	0.00		2.90	0.00	0.00	

4.3. 170.315(a)(8): Medication allergy

Task 3.a. Record a New Allergy							
Participant ID (total n= 10)	Task Success	Task path observed steps	Task path optimal steps	Task time (seconds)	Task time deviation from mean optimal (seconds)	Ease of use rating (1 to 5, easiest: 5)	Unstructured comments
P1	1	3	3	30	0	5	
P2	1	3	3	9	0	5	
P3	1	3	3	10	0	5	
P4	1	3	3	9	0	5	
P5	1	3	3	15	0	5	
P6	1	3	3	11	0	5	
P7	1	3	3	8	0	5	
P8	1	3	3	13	0	5	
P9	1	3	3	10	0	5	
P10	1	3	3	16	0	5	
P11	1	3	3	9	0	5	
P12	1	3	3	8	0	5	
Total	12				0		
Average	100%	3.00		12.33	0.00	5.00	
SD	0.00	0.00		6.15	0.00	0.00	

4.4. 170.315(a)(4): Drug-drug, drug-allergy interaction checks

Task 4.a. Drug-drug, Drug-allergy interaction checks							
Participant ID (total n= 10)	Task Success	Task path observed steps	Task path optimal steps	Task time (seconds)	Task time deviation from mean optimal (seconds)	Ease of use rating (1 to 5, easiest: 5)	Unstructured comments
P1	1	10	9	36	1	5	
P2	1	9	9	18	0	5	
P3	1	9	9	20	0	5	
P4	1	9	9	24	0	5	
P5	1	9	9	17	0	5	
P6	1	9	9	31	0	5	
P7	1	9	9	21	0	5	
P8	1	9	9	11	0	5	
P9	1	9	9	23	0	5	
P10	1	9	9	16	0	4	
P11	1	9	9	49	0	5	
P12	1	9	9	7	0	5	
Total	12				1		
Average	100%	9.08		22.75	0.08	4.92	
SD	0.00	0.29		11.41	0.29	0.29	

4.5. §170.315 (a)(2) Computerized Physician Order Entry - Labs

Task 5.a. Start a New Lab Order							
Participant ID (total n= 10)	Task Success	Task path observed steps	Task path optimal steps	Task time (seconds)	Task time deviation from mean optimal (seconds)	Ease of use rating (1 to 5, easiest: 5)	Unstructured comments
P1	1	4	3	77	1	5	
P2	1	3	3	6	0	5	
P3	1	3	3	8	0	5	
P4	1	3	3	9	0	5	
P5	1	3	3	9	0	5	
P6	1	3	3	10	0	5	
P7	1	3	3	7	0	4	
P8	1	3	3	3	0	5	
P9	1	3	3	8	0	5	
P10	1	3	3	9	0	5	
P11	1	3	3	6	0	5	
P12	1	3	3	7	0	5	
Total	12				1		
Average	100%	3.08		13.25	0.08	4.92	
SD	0.00	0.29		20.16	0.29	0.29	

Task 5.b. Edit a Lab Order							
Participant ID (total n= 10)	Task Success	Task path observed steps	Task path optimal steps	Task time (seconds)	Task time deviation from mean optimal (seconds)	Ease of use rating (1 to 5, easiest: 5)	Unstructured comments
P1	1	3	3	7	0	5	
P2	1	3	3	4	0	5	
P3	1	3	3	4	0	5	
P4	1	3	3	3	0	5	
P5	1	3	3	9	0	5	
P6	1	3	3	6	0	5	
P7	1	3	3	4	0	5	
P8	1	3	3	5	0	5	
P9	1	3	3	5	0	5	
P10	1	3	3	5	0	4	
P11	0	n/a	3	n/a	n/a	5	
P12	1	3	3	5	0	5	
Total	12				0		
Average	92%	3.00		5.18	0.00	4.92	
SD	0.00	0.87		2.18	0.00	0.29	

4.6. §170.315 (a)(3) Computerized Physician Order Entry Diagnostic Imaging

Task 6.a. Start a New Diagnostic Imaging Order							
Participant ID (total n= 10)	Task Success	Task path observed steps	Task path optimal steps	Task time (seconds)	Task time deviation from mean optimal (seconds)	Ease of use rating (1 to 5, easiest: 5)	Unstructured comments
P1	1	5	4	32	1	5	
P2	1	4	4	9	0	5	
P3	1	4	4	9	0	5	
P4	1	5	4	21	1	5	
P5	1	4	4	19	0	5	
P6	1	4	4	13	0	5	
P7	1	4	4	11	0	4	
P8	1	4	4	10	0	5	
P9	1	4	4	35	0	5	
P10	1	4	4	15	0	5	
P11	0	n/a	4	n/a	n/a	5	
P12	1	4	4	9	0	5	
Total	12				2		
Average	92%	4.18		16.64	0.18	4.92	
SD	0.00	1.27		10.08	0.39	0.29	

Task 6.b. Edit a Diagnostic Imaging Order							
Participant ID (total n= 10)	Task Success	Task path observed steps	Task path optimal steps	Task time (seconds)	Task time deviation from mean optimal (seconds)	Ease of use rating (1 to 5, easiest: 5)	Unstructured comments
P1	1	3	3	13	0	5	
P2	1	3	3	13	0	5	
P3	1	3	3	6	0	5	
P4	1	3	3	22	0	5	
P5	1	3	3	4	0	5	
P6	1	3	3	6	0	5	
P7	1	3	3	5	0	5	
P8	1	3	3	18	0	5	
P9	1	3	3	5	0	5	
P10	1	3	3	8	0	5	
P11	1	3	3	6	0	5	
P12	1	3	3	8	0	5	
Total	12				0		
Average	100%	3.00		9.50	0.00	5.00	
SD	0.00	0.00		5.76	0.00	0.00	

4.7. §170.315 (a)(9) Clinical Decision Support

Task 7.a. Review Clinical Decision Support Information							
Participant ID (total n= 10)	Task Success	Task path observed steps	Task path optimal steps	Task time (seconds)	Task time deviation from mean optimal (seconds)	Ease of use rating (1 to 5, easiest: 5)	Unstructured comments
P1	1	3	3	12	0	5	
P2	1	3	3	9	0	5	
P3	1	3	3	12	0	5	
P4	1	3	3	7	0	5	
P5	1	3	3	19	0	5	
P6	1	3	3	8	0	5	
P7	1	3	3	14	0	5	
P8	1	3	3	7	0	5	
P9	1	3	3	7	0	5	
P10	1	3	3	17	0	4	
P11	1	3	3	8	0	5	
P12	1	3	3	5	0	5	
Total	12				0		
Average	100%	3.00		10.42	0.00	4.92	
SD	0.00	0.00		4.40	0.00	0.29	

Task 7.b. Review Clinical Decision Support Information and Follow the Clinical Recommendation							
Participant ID (total n= 10)	Task Success	Task path observed steps	Task path optimal steps	Task time (seconds)	Task time deviation from mean optimal (seconds)	Ease of use rating (1 to 5, easiest: 5)	Unstructured comments
P1	1	2	1	36	1	5	
P2	1	1	1	5	0	5	
P3	1	1	1	11	0	5	
P4	1	1	1	6	0	5	
P5	1	1	1	7	0	5	
P6	1	1	1	5	0	5	
P7	1	1	1	3	0	5	
P8	1	1	1	6	0	5	
P9	1	1	1	8	0	5	
P10	1	1	1	6	0	5	
P11	1	1	1	23	0	5	
P12	1	1	1	5	0	5	
Total	12				1		
Average	100%	1.08		10.08	0.08	5.00	
SD	0.00	0.29		9.68	0.29	0.00	

4.8. §170.315 (a)(5) Demographics

Task 8.a. Document Patient's Ethnicity							
Participant ID (total n= 12)	Task Success	Task path observed steps	Task path optimal steps	Task time (seconds)	Task time deviation from mean optimal (seconds)	Ease of use rating (1 to 5, easiest: 5)	Unstructured comments
S1	1	4	4	11	0	5	
S2	1	4	4	4	0	5	
S3	1	4	4	5	0	5	
S4	1	4	4	15	0	5	
S5	1	4	4	16	0	5	
S6	1	4	4	9	0	5	
S7	1	4	4	15	0	5	
S8	1	4	4	12	0	5	
S9	1	4	4	8	0	5	
S10	1	4	4	9	0	5	
S11	1	4	4	10	0	5	
S12	1	4	4	8	0	5	
Total	12				0		
Average	100%	4		10	0	5	
SD	0.00	0		4	0	0	

Task 8.b. Change Patient's Preferred Language							
Participant ID (total n= 12)	Task Success	Task path observed steps	Task path optimal steps	Task time (seconds)	Task time deviation from mean optimal (seconds)	Ease of use rating (1 to 5, easiest: 5)	Unstructured comments
S1	1	4	4	6	0	5	
S2	1	4	4	4	0	5	
S3	1	4	4	6	0	5	
S4	1	4	4	6	0	5	
S5	1	4	4	8	0	5	
S6	1	4	4	14	0	5	
S7	1	4	4	7	0	5	
S8	1	4	4	11	0	5	
S9	1	4	4	11	0	5	
S10	1	4	4	7	0	5	
S11	1	4	4	10	0	5	
S12	1	4	4	7	0	5	
Total	12				0		
Average	100%	4		8	0	5	
SD	0.00	0		3	0	0	

4.9. §170.315 (a)(14) Implantable Device List

Task 9.a. Document a Patient's Implantable Device							
Participant ID (total n= 12)	Task Success	Task path observed steps	Task path optimal steps	Task time (seconds)	Task time deviation from mean optimal (seconds)	Ease of use rating (1 to 5, easiest: 5)	Unstructured comments
S1	1	5	5	60	0	5	
S2	1	5	5	11	0	5	
S3	1	5	5	6	0	5	
S4	1	5	5	17	0	5	
S5	0	n/a	5	n/a	n/a	5	
S6	1	5	5	9	0	5	
S7	1	5	5	14	0	5	
S8	0	n/a	5	n/a	n/a	3	
S9	1	5	5	8	0	5	
S10	1	5	5	25	0	5	
S11	1	7	5	37	2	5	
S12	1	5	5	14	0	5	
Total	12				2		
Average	83%	5		20	0	4.8	
SD	0.39	2		17	1	0.58	

4.10. §170.315 (a)(6) Problem List

Task 10.a. Add a Diagnosis from the Active Problem List to the Assessment							
Participant ID (total n= 10)	Task Success	Task path observed steps	Task path optimal steps	Task time (seconds)	Task time deviation from mean optimal (seconds)	Ease of use rating (1 to 5, easiest: 5)	Unstructured comments
P1	1	1	1	19	0	5	
P2	1	1	1	7	0	5	
P3	1	1	1	10	0	5	
P4	1	1	1	7	0	5	
P5	1	1	1	5	0	5	
P6	1	1	1	5	0	5	
P7	1	1	1	10	0	5	
P8	1	1	1	13	0	5	
P9	1	1	1	17	0	5	
P10	1	1	1	8	0	5	
P11	1	1	1	13	0	5	
P12	1	1	1	11	0	5	
Total	12				0		
Average	100%	1.00		10.42	0.00	5.00	
SD	0.00	0.00		4.46	0.00	0.00	

Task 10.b. Remove a Diagnosis from the Active Problem List							
Participant ID (total n= 10)	Task Success	Task path observed steps	Task path optimal steps	Task time (seconds)	Task time deviation from mean optimal (seconds)	Ease of use rating (1 to 5, easiest: 5)	Unstructured comments
P1	1	3	2	44	1	5	
P2	1	2	2	8	0	5	
P3	1	2	2	9	0	5	
P4	1	2	2	9	0	5	
P5	1	2	2	13	0	5	
P6	1	2	2	10	0	5	
P7	1	2	2	5	0	4	
P8	1	2	2	12	0	5	
P9	1	2	2	14	0	5	
P10	1	3	2	12	1	5	
P11	1	4	2	51	2	5	
P12	1	2	2	11	0	5	
Total	12				4		
Average	100%	2.33		16.50	0.33	4.92	
SD	0.00	0.65		14.76	0.65	0.29	

4.11. §170.315 (b)(3) Electronic Prescribing

Task 11.a. Electronically Prescribe a Medication							
Participant ID (total n= 10)	Task Success	Task path observed steps	Task path optimal steps	Task time (seconds)	Task time deviation from mean optimal (seconds)	Ease of use rating (1 to 5, easiest: 5)	Unstructured comments
P1	0	n/a	4	n/a	n/a	n/a	
P2	1	4	4	12	0	5	
P3	1	6	4	33	2	5	
P4	1	8	4	67	4	5	
P5	1	4	4	13	0	5	
P6	1	4	4	14	0	5	
P7	1	7	4	45	3	4	
P8	1	4	4	28	0	5	
P9	1	4	4	19	0	5	
P10	0	n/a	4	n/a	n/a	5	
P11	1	4	4	41	0	5	
P12	1	4	4	9	0	5	
Total	11				9		
Average	83%	4.90		28.10	0.90	4.91	
SD	0.29	2.35		20.09	1.42	1.45	

Task 11.b. Approve Electronic Prescription Refill Request from the Pharmacy							
Participant ID (total n= 10)	Task Success	Task path observed steps	Task path optimal steps	Task time (seconds)	Task time deviation from mean optimal (seconds)	Ease of use rating (1 to 5, easiest: 5)	Unstructured comments
P1	0	n/a	3	n/a	n/a	n/a	
P2	1	3	3	7	0	5	
P3	1	3	3	7	0	5	
P4	1	3	3	11	0	5	
P5	1	3	3	5	0	5	
P6	1	3	3	8	0	5	
P7	1	3	3	15	0	4	
P8	1	4	3	21	1	5	
P9	1	3	3	10	0	5	
P10	0	n/a	3	n/a	n/a	4	
P11	0	n/a	3	n/a	n/a	5	
P12	1	3	3	12	0	5	
Total	11				1		
Average	75%	3.11		10.67	0.11	4.82	
SD	0.45	1.44		6.40	0.29	1.44	

4.12. §170.315 (b)(2) Clinical Information Reconciliation and Incorporation

Task 12a. Create a Continuity of Care Document (CCD)							
Participant ID (total n= 12)	Task Success	Task path observed steps	Task path optimal steps	Task time (seconds)	Task time deviation from mean optimal (seconds)	Ease of use rating (1 to 5, easiest: 5)	Unstructured comments
S1	1	3	3	10	0	5	
S2	1	3	3	4	0	5	
S3	1	3	3	7	0	5	
S4	1	3	3	9	0	5	
S5	1	3	3	19	0	5	
S6	1	3	3	6	0	5	
S7	1	3	3	7	0	5	
S8	1	3	3	14	0	5	
S9	1	3	3	6	0	4	
S10	1	3	3	7	0	5	
S11	0	n/a	3	n/a	n/a	3	
S12	1	3	3	9	0	5	
Total	12				0		
Average	92%	3		9	0	4.75	
SD	0.00	1		5	0	0.62	

Task 12b. Reconcile Information from a Continuity of Care Document (CCD)							
Participant ID (total n= 10)	Task Success	Task path observed steps	Task path optimal steps	Task time (seconds)	Task time deviation from mean optimal (seconds)	Ease of use rating (1 to 5, easiest: 5)	Unstructured comments
P1	1	2	2	20	0	5	
P2	1	2	2	14	0	5	
P3	1	2	2	7	0	5	
P4	1	2	2	19	0	5	
P5	1	2	2	20	0	5	
P6	1	2	2	16	0	5	
P7	0	n/a	2	n/a	n/a	n/a	
P8	1	5	2	86	3	5	
P9	1	2	2	32	0	5	
P10	1	2	2	20	0	5	
P11	0	n/a	2	n/a	n/a	5	
P12	1	2	2	20	0	5	
Total	12				3		
Average	83%	2.30		25.40	0.30	5.00	
SD	0.00	1.24		22.37	0.87	1.44	

4.13. §170.315 (b)(11) Decision Support Interventions

Task 13a. Enter the CCM (Chronic Care Management) Prognosis of Hypertension (Predictive Decision Support)							
Participant ID (total n= 12)	Task Success	Task path observed steps	Task path optimal steps	Task time (seconds)	Task time deviation from mean optimal (seconds)	Ease of use rating (1 to 5, easiest: 5)	Task Failure %
C1	1	2	2	2	1	5	0
C2	1	2	2	1	0	5	0
C3	1	2	2	1	0	5	0
C4	1	2	2	3	2	5	0
C5	1	2	2	2	1	5	0
C6	1	2	2	2	1	5	0
C7	1	2	2	1	0	5	0
C8	1	2	2	3	2	5	0
C9	1	2	2	2	1	5	0
C10	1	2	2	2	1	5	0
C11	1	2	2	2	1	5	0
C12	1	2	2	2	0	5	0
Total	12				0		
Average	100%	2	2	1.92	0.83	5	0%
SD		0		0.08			

Task 13b. Enter the CCM (Chronic Care Management) Goal for Hypertension (Predictive Decision Support)							
Participant ID (total n= 12)	Task Success	Task path observed steps	Task path optimal steps	Task time (seconds)	Task time deviation from mean optimal (seconds)	Ease of use rating (1 to 5, easiest: 5)	Task Failure %
C1	1	3	3	4	1	5	0
C2	1	3	3	4	1	5	0
C3	1	3	3	3	0	5	0
C4	1	3	3	3	0	5	0
C5	1	3	3	5	2	5	0
C6	1	3	3	6	3	5	0
C7	1	3	3	3	0	5	0
C8	1	3	3	3	0	5	0
C9	1	3	3	3	0	5	0
C10	1	3	3	4	1	5	0
C11	1	3	3	3	3	5	0
C12	1	3	3	3	0	5	0
Total	12						
Average	100%	3	3	3.66	0.92	5	0%
SD		0		0.66			

Task 13c. Enter the CCM (Chronic Care Management) Barrier for Hypertension (Predictive Decision Support)							
Participant ID (total n= 12)	Task Success	Task path observed steps	Task path optimal steps	Task time (seconds)	Task time deviation from mean optimal (seconds)	Ease of use rating (1 to 5, easiest: 5)	Task Failure %
C1	1	2	2	2	0	5	0
C2	1	2	2	2	0	5	0
C3	1	2	2	3	1	5	0
C4	1	2	2	1	-1	5	0
C5	1	2	2	2	0	5	0
C6	1	2	2	2	0	5	0
C7	1	2	2	1	-1	5	0
C8	1	2	2	3	1	5	0
C9	1	2	2	2	0	5	0
C10	1	2	2	1	1	5	0
C11	1	2	2	2	0	5	0
C12	1	2	2	2	0	5	0
Total	12						
Average	100%	2	2	1.92	0.08	5	0%
SD		0		0.08			

Task 13d. Enter the CCM (Chronic Care Management) Intervention for Hypertension (Predictive Decision Support)							
Participant ID (total n= 12)	Task Success	Task path observed steps	Task path optimal steps	Task time (seconds)	Task time deviation from mean optimal (seconds)	Ease of use rating (1 to 5, easiest: 5)	Task Failure %
C1	1	2	2	2	0	5	0
C2	1	2	2	2	0	5	0
C3	1	2	2	2	0	5	0
C4	1	2	2	1	-1	5	0
C5	1	2	2	2	0	5	0
C6	1	2	2	3	-1	5	0
C7	1	2	2	1	-1	5	0
C8	1	2	2	3	1	5	0
C9	1	2	2	3	1	5	0
C10	1	2	2	2	0	5	0
C11	1	2	2	3	0	5	0
C12	1	3	2	1	-1	5	0
Total	12						
Average	100%	2	2	2.17	-0.16	5	0%
SD		0		0.17			

Task 14a. View the source of the plan recommendation for Diabetes Mellitus (Evidence Based Decision Support)							
Participant ID (total n= 12)	Task Success	Task path observed steps	Task path optimal steps	Task time (seconds)	Task time deviation from mean optimal (seconds)	Ease of use rating (1 to 5, easiest: 5)	Task Failure %
C1	1	2	2	3	0	5	0
C2	1	2	2	3	0	5	0
C3	1	2	2	4	1	5	0
C4	1	2	2	2	2	5	0
C5	1	2	2	3	1	5	0
C6	1	2	2	4	0	5	0
C7	1	2	2	4	0	5	0
C8	1	2	2	3	1	5	0
C9	1	2	2	3	1	5	0
C10	1	2	2	4	0	5	0
C11	0	2	2	4	1	5	0
C12	1	3	2	4	1	5	0
Total	12						
Average	100%	2	2	3.41	0.66	5	0%
SD		0		5	0		

Task 14b. Provide Feedback of the plan recommendation for Diabetes Mellitus (Evidence Based Decision Support)							
Participant ID (total n= 12)	Task Success	Task path observed steps	Task path optimal steps	Task time (seconds)	Task time deviation from mean optimal (seconds)	Ease of use rating (1 to 5, easiest: 5)	Task Failure %
C1	1	5	5	6	1	5	0
C2	1	5	5	4	-1	5	0
C3	1	6	5	7	2	5	0
C4	1	5	5	5	0	5	0
C5	1	5	5	5	0	5	0
C6	1	6	5	7	2	5	0
C7	1	6	5	7	2	5	0
C8	1	5	5	6	1	5	0
C9	1	5	5	4	-1	4	0
C10	1	6	5	5	0	5	0
C11	1	6	5	6	1	3	0
C12	1	5	5	5	0	5	0
Total	12						
Average	100%	5.4	5	5.58	0.5	5	0%
SD		0.5		0.58			

Task 14c. Accept the plan recommendation for Diabetes Mellitus (Evidence Based Decision Support)							
Participant ID (total n= 12)	Task Success	Task path observed steps	Task path optimal steps	Task time (seconds)	Task time deviation from mean optimal (seconds)	Ease of use rating (1 to 5, easiest: 5)	Task Failure %
C1	1	1	1	1	0	5	0
C2	1	1	1	1	0	5	0
C3	1	1	1	2	1	5	0
C4	1	1	1	1	0	5	0
C5	1	1	1	1	0	5	0
C6	1	1	1	2	1	5	0
C7	1	1	1	1	0	5	0
C8	1	1	1	1	0	5	0
C9	1	1	1	1	0	5	0
C10	1	1	1	2	1	5	0
C11	0	1	1	1	0	5	0
C12	1	1	1	1	0	5	0
Total	12				0		
Average	100%	1	1	1.25	0.25	5	0%
SD		0		0.25			

Task 15a. Edit the source attribute for the plan recommendation (Evidence Based Decision Support)							
Participant ID (total n= 12)	Task Success	Task path observed steps	Task path optimal steps	Task time (seconds)	Task time deviation from mean optimal (seconds)	Ease of use rating (1 to 5, easiest: 5)	Task Failure %
C1	1	4	4	6	1	5	0
C2	1	4	4	5	0	5	0
C3	1	4	4	7	2	5	0
C4	1	4	4	5	0	5	0
C5	1	4	4	5	0	5	0
C6	1	5	4	4	-1	5	0
C7	1	4	4	7	2	5	0
C8	1	5	4	5	0	5	0
C9	1	4	4	6	1	5	0
C10	1	4	4	4	-1	5	0
C11	1	4	4	4	-1	5	0
C12	1	4	4	7	2	5	0
Total	12						
Average	100%	4.16	4	5.41	0.4	5	0%
SD		0		1.41			

Major Test Findings:

The test results demonstrate the easiness of completing each task as well as errors, path deviations, task completion time.

Errors were analyzed not only from an insight into efficiency but also from a patient safety point of view. This information was shared with the software developer team to assist with future enhancements.

We expect the reported errors in data-entry to be greatly reduced with additional user training. Given the excellent error free task completion rate of the testers with very limited training and no real-life experience with the software behind any of them, we feel that the error rate would be minimal after real life training and real-life user experience.

Effectiveness

The vast majority of the users were able to complete the majority of the tasks. User completion rate was 100% in 14 of the 21 tasks (2/3 of the tasks) , while 2 tasks had completion rate over 90%, and only one task at 75% completion. We believe that even a very limited real-life experience would have allowed the completion of those incomplete tasks at the 100% rate, given the high success rate for the majority of users and tasks after such a limited training and zero experience.

Lab test ordering and diagnostic imaging ordering required the users to remember a simple keyword. The testers who failed, appeared to be stressed and mixed up the keywords even though the EMR displayed these for them. With some additional experience and elimination of the stress of test taking these users would probably have not had any problem with completing the tasks.

Electronically prescribing a new prescription and electronically refilling a pharmacy prescription request had 83% and 75% success rate respectively. CCD reconciliation had a success rate of 83% and CCD creation had a success rate of 92%. We attribute these less than 100% success rates to the fact that all other tasks required working on the same page of the software, while these tasks required navigating to a different area of the software which some users forgot and were looking for the tasks in the wrong area. In addition to the challenge of navigating to a different area of the software, the CCD reconciliation was a completely unfamiliar concept for all the users which was revealed during training. None of the testers in their previous other EHR user experience have done that task before. These problems again would likely be eliminated with minimal additional training and a small amount of user experience.

Use of both the predictive as well as the evidenced based decision support interventions had 100% success rates with completion rate between 1-4 seconds and even though viewing the source, providing feedback and editing the source attribute for decision support intervention had slightly longer completion rates up to 7 seconds, they still had 100% success rates.

Efficiency

Efficiency was measured by recording individual times on task and averaging across successful attempts.

All tasks were completed under 30 seconds, in fact most tasks were completed within less than 20 seconds and a good portion of the tasks were completed within 10 seconds, which is a remarkable achievement for novice users without real life experience. Even after a few days of use, the completion time for the majority if not all, tasks likely would drop below 10 seconds given that the higher averages were the result of a few users who with additional experience would likely catch up with the majority of the users.

Ease of Use and User Satisfaction

Ease of use was measured by self-reported participant ratings for efficiency (5-point scale, where 5 was easiest, 1 was most difficult).

Average user rating was the maximum 5 in more than half of the users, and 4.8 or above in the remaining users, which is exceptionally high, demonstrating very high user satisfaction on usability.

Areas of Improvement

The highest priority in conducting this Usability Test was to assess for patient safety. We found no errors in design that would impact patient safety. Neither path deviation nor completion rate suggested design issues that would affect patient safety. Minimal additional training and brief user experience would easily eliminate the incompletion and path deviation problems. Further training on the concept of CCDs and CCD reconciliation would be one of the important training topics.

Appendix A. Test Administrator Guide

To start the session:

- Thank participants for signing up as testers
- Explain goals: Emphasize: testing usability of the system not their skills
- Encourage to comment while doing the tasks and after the tasks

Explain about the tasks:

- Do the tasks as quickly and efficiently as they can
- The timer starts when the task is read and “start now” said
- Tasks will be also given in written format to each participant on a printed sheet, they are free to refer to the printed version of the task.

Agenda

- Read the description of the task
- State “start now”
- After completion or task abandonment thank the participants.
- Ask the participants to fill out the task Ease of Use Rating Questionnaire.

Appendix B. Task Ease of Use Questionnaire

Tasks for August 2021 Test Session

Provider Tasks	
Tester Name: Test Date:	Efficiency rating (5 easy, 1 hard)
1.A. RECORD A MEDICATION In the patient's current medication list document a medication that the patient is taking: "**Amlodipine 2.5 mg orally once a day**" Please write free comments here:	
1.B. EDIT A PREVIOUSLY RECORDED MEDICATION In the patient's current medication list edit the existing medication **Amlodipine 2.5 mg,** change dose to **10 mg**. Please write free comments here:	
2.A. CREATE A PRESCRIPTION ORDER In the Progress Note Assessment and Plan section under the existing diagnosis of hypothyroidism start the new medication "**Synthroid 200 mg orally once a day, 30 day duration, dispense 30, no refills**" Please write free comments here:	
2.B. EDIT A PRESCRIPTION ORDER In the Progress Note Assessment and Plan section under the existing diagnosis of hypothyroidism change the medication "**Synthroid 200 mg"**, change dose to **100 mg**. Please write free comments here:	
3.a. Record a new drug allergy In the progress note allergy history section, enter the allergy "penicillins, reaction: hives" Please write free comments here:	
4.A. DRUG-DRUG, DRUG-ALLERGY INTERACTION CHECKS	

In the plan section, under streptococcal pharyngitis start the new medication "**Ampicillin 500 mg orally once a day, 30 day duration, dispense 30, no refills**" in the Progress Note Assessment and Plan section under an existing diagnosis. **Notice the interaction alert and open the details of the drug-allergy interaction**. Please write free comments here:	
5.A. START A NEW LAB ORDER Order a lab **"TSH"** in the Progress Note Assessment and Plan section under the existing diagnosis of hypothyroidism. Please write free comments here:	
5.B. EDIT A LAB ORDER **Edit** the existing lab order "TSH" to **"fasting"** designation. Please write free comments here:	
6.A. START A NEW DIAGNOSTIC IMAGING ORDER Order a new diagnostic test **"MRI brain with IV contrast, do within 1 week"** in the Progress Note Assessment and Plan section under the diagnosis of hypothyroidism. Please write free comments here:	
6.B. EDIT A DIAGNOSTIC IMAGING ORDER Edit the existing diagnostic test **"MRI brain with IV contrast"**, change it to "**MRI of the head without IV contrast** " Please write free comments here:	
7.A. REVIEW CLINICAL DECISION SUPPORT INFORMATION In the progress note **find the patient education material** for the diagnosis hypothyroidism **and print** the patient education material. Please write free comments here:	
7.B. REVIEW CLINICAL DECISION SUPPORT INFORMATION AND FOLLOW THE CLINICAL RECOMMENDATION In the progress note find the diagnosis of "Opioid Abuse, uncomplicated", and **find the clinical recommendation of "drug cessation counseling". Accept this treatment recommendation** and document in the plan that the drug cessation counseling was done. Please write free comments here:	
10. A. ADD A DIAGNOSIS FROM THE ACTIVE PROBLEM LIST TO THE ASSESSMENT	

Add the diagnosis **"anxiety disorder unspecified" to the Assessment** section and with that, to the active problem list. Please write free comments here:	
10. B. REMOVE A DIAGNOSIS FROM THE ACTIVE PROBLEM LIST Mark the diagnosis **"anxiety disorder unspecified" as resolved** whereby adding it to the resolved problem list. Please write free comments here:	
11. A. ELECTRONICALLY PRESCRIBE A MEDICATION **Send t**he previously entered Synthroid and Ampicillin **medications to the pharmacy electronically.** Please write free comments here:	
11. B. APPROVE AN ELECTRONIC PRESCRIPTION REFILL REQUEST FROM THE PHARMACY **Approve the electronic refill request message** that you received from the pharmacy Please write free comments here:	
12.B RECONCILE INFORMATION FROM A CONTINUITY OF CARE DOCUMENT (CCD) Open the **continuity of care document (CCD)** in the current patient's progress notes and **reconcile the medication** from the CCD. Accept the medication Albuterol. Please write free comments here:	

Tasks for Test Session 11/22/2024

Tester Name: Test Date:	Efficiency rating (5 easy, 1 hard)

1A (B. 11 PREDICTIVE DECISION SUPPORT INTERVENTION) **ENTER THE CCM PROGNOSIS OF HYPERTENSION** In the Progress Note Assessment and Plan section under Essential primary hypertension document the Prognosis using the artificial intelligence driven decision support tool. Please write free comments here:	
1.B. [§ 170.315 (B)(11) PREDICTIVE DECISION SUPPORT INTERVENTION] **ENTER THE CCM GOAL FOR HYPERTENSION** In the Progress Note Assessment and Plan section under Essential primary hypertension document a Goal using the artificial intelligence driven decision support tool. Please write free comments here:	
1.C. [§ 170.315 (B)(11) PREDICTIVE DECISION SUPPORT INTERVENTION] **ENTER THE CCM BARRIER FOR HYPERTENSION** In the Progress Note Assessment and Plan section under Essential primary hypertension document a recommended Barrier using the artificial intelligence driven decision support tool. Please write free comments here:	
1.D. [§ 170.315 (B)(11) PREDICTIVE DECISION SUPPORT INTERVENTION] **ENTER THE CCM INTERVENTION FOR HYPERTENSION** In the Progress Note Assessment and Plan section under Essential primary hypertension document a recommended Intervention using the artificial intelligence driven decision support tool. Please write free comments here:	
2.a. [§ 170.315 (B)(11) EVIDENCE BASED DECISION SUPPORT INTERVENTION] **Access the source of the plan recommendation for Diabetes Mellitus**	*Page 2*

In the Progress Note Assessment and Plan section under Type 2 diabetes mellitus without complications, access the source attributes for the plan recommendation Intervention "diabetes self-management training". Please write free comments here:	
2.b. **[§ 170.315 (B)(11) EVIDENCE BASED DECISION SUPPORT INTERVENTION]** **Provide feedback of the plan recommendation for Diabetes Mellitus** In the Progress Note Assessment and Plan section under Type 2 diabetes mellitus without complications, provide feedback for the plan recommendation Intervention "diabetes self-management training" Please write free comments here:	
2.c. **[§ 170.315 (B)(11) EVIDENCE BASED DECISION SUPPORT INTERVENTION]** **Accept the plan recommendation for Diabetes Mellitus** In the Progress Note Assessment and Plan section under Type 2 diabetes mellitus without complications, accept the plan recommendation Intervention "diabetes self-management training". Please write free comments here:	
3.a. **[§ 170.315 (B)(11) DECISION SUPPORT INTERVENTION]** **Edit the source attribute for the plan recommendation** In the Administrative Section under the Plan Recommendation section "Morbid Obesity Recommendation, edit the source attribute by entering "123" in the source attribute section. Please write free comments here:	

* CCM is abbreviation for Chronic Care Management

Support Staff Tasks

Support Staff Tasks	
Tester Name: Test Date:	**Efficiency rating (5 easy, 1 hard)**
8. a. Document patient's ethnicity Open the demographic information section for the patient and document the patient's ethnicity by **changing from "declined" to "Hispanic or Latino"** and save the changes Please write free comments here:	
8. b. Change the patient's preferred language Open the demographic information section for the patient and **change** the patient's **preferred language from "Spanish" to "English"** and save the changes Please write free comments here:	
9.a. Document a patient's implantable device Open the "procedure report" section of the patient chart and **document the implantable device ID**: "pacemaker ID 123" under the pacemaker procedure. Please write free comments here:	
12. a. Create A Continuity Of Care Document (CCD) **Create/Download a continuity of care document (CCD)** for the currently open patient. Please write free comments here:	

Appendix C. Task Instructions

A. Provider Tasks

Task 1.a. Record a medication
In the patient's current medication list document a medication that the patient is taking: "Amlodipine 2.5 mg orally once a day"

Task 1.b. Edit a previously recorded medication
In the patient's current medication list edit the existing medication Amlodipine 2.5 mg, change dose to 10 mg.

Task 2.a. Create a prescription order
In the Progress Note Assessment and Plan section under the existing diagnosis of hypothyroidism start the new medication "Synthroid 200 mg orally once a day, 30 day duration, dispense 30, no refills"

Task 2.b. Edit a prescription order
In the Progress Note Assessment and Plan section under the existing diagnosis of hypothyroidism change the medication "Synthroid 200 mg", change dose to 100 mg.

Task 3.a. Record a new drug allergy
In the progress note allergy history section, enter the allergy "penicillins, reaction: hives"

Task 4.a. Drug-drug, drug-allergy interaction checks
In the plan section, under streptococcal pharyngitis start the new medication "Ampicillin 500 mg orally once a day, 30 day duration, dispense 30, no refills" in the Progress Note Assessment and Plan section under an existing diagnosis. Notice the interaction alert and open the details of the drug-allergy interaction.

Task 5.a. Start a new lab order
Order a lab "TSH" in the Progress Note Assessment and Plan section under the existing diagnosis of hypothyroidism.

Task 5.b. Edit a new lab order
Edit the existing lab order "TSH" to "fasting" designation.

Task 6.a. Start a new diagnostic imaging order
Order a new diagnostic test "MRI brain with IV contrast, do within 1 week" in the Progress Note Assessment and Plan section under the diagnosis of hypothyroidism.

Task 6.b. Edit a diagnostic imaging order
Edit the existing diagnostic test "MRI brain with IV contrast", change it to "MRI of the head without IV contrast "

Task 7.a. Review Clinical Decision Support information

In the progress note find the patient education material for the diagnosis hypothyroidism and print the patient education material.

Task 7.b. Review Clinical Decision Support Information and Follow the Clinical Recommendation

In the progress note find the diagnosis of "Opioid Abuse, uncomplicated", and find the clinical recommendation of "drug cessation counseling". Accept this treatment recommendation and document in the plan that the drug cessation counseling was done.

10. a. Add a diagnosis to the active problem list

Add the diagnosis "anxiety disorder unspecified" to the Assessment section and with that, to the active problem list.

10. b. Remove a diagnosis from the active problem list

Mark the diagnosis "anxiety disorder unspecified" as resolved whereby adding it to the resolved problem list.

11. a. Electronically prescribe a medication

Send the previously entered Synthroid and Ampicillin medications to the pharmacy electronically.

11. b. Approve an electronic prescription refill request from the pharmacy

Approve the electronic refill request message that you received from the pharmacy

12. b. Reconcile Information from a Continuity Of Care Document (CCD)

Open the continuity of care document (CCD) in the current patient's progress notes and reconcile the medication from the CCD. Accept the medication Albuterol.

B. Support Staff Tasks

8. a. Document patient's ethnicity

Open the demographic information section for the patient and document the patient's ethnicity by changing from "declined" to "Hispanic or Latino" and save the changes

8. b. Change the patient's preferred language

Open the demographic information section for the patient and change the patient's preferred language from "Spanish" to "English" and save the changes

9.a. Document a patient's implantable device

Open the "procedure report" section of the patient chart and document the implantable device ID: "pacemaker ID 123" under the pacemaker procedure.

12. a. Create A Continuity Of Care Document (CCD)

Create/Download a continuity of care document (CCD) for the currently open patient.

Appendix D. Test Participant Compensation

The screenshot below illustrates the Amazon eGift Card that participants received and redeemed.