EHR Usability Test Report of EHR Your Way 9.2.0.0

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

[EHR Your Way Version: 9.2.0.0]

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UCD Process Used:

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Description: This publication presents guidelines and best practices for implementing user-centered design in software, particularly within health IT. It emphasizes the importance of understanding user requirements and iterative testing, enabling developers to create more efficient, user-friendly systems.

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EXECUTIVE SUMMARY

A usability test of EHR Your Way, 9.2.0.0, and type of EHR: Web application, Cloud based EHR was conducted on 11/25/2024 Remotely by EHR Your Way Lab. The purpose of thistest was to test and validate the usability of the current user interface, and provide evidence of usability in the EHR Under Test (EHRUT). During the usability test, 5 healthcare providers and 7 users matching the target demographic criteria served as participants andused the EHRUT in simulated, but representative tasks.

This study collected performance data on 4 tasks typically

Conducted on an EHR:

1. Add a new DSI for a patient with diabetes.
2. Override a contraindicated medication recommendation.
3. Configure an alert for age-based screening.
4. Configure and use Predictive Decision Support Intervention functionality to make Patient Notes

During the 15 minutes of one-on-one usability test, each

participant was greeted by the administrator and asked to

review andsign an informed consent/release form (included in

Appendix 3); they were instructed that they could withdraw at

any time. Participants had prior experience with the EHR.[4]

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, along with the data logger(s)

recordeduser performance data on paper and electronically. The administrator did not give the

participant assistance in how to complete the task.

[4] If training or help materials were provided, describe the nature of it. The recommendation is that all participants be given the opportunity to complete training similar to what a real end user would receive prior to participating in the usability test.

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

The following types of data were collected for each participant:

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

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

Measure / Task	*N*	Task Success	Path Deviation	Task Time		Errors	Task Ratings
	#	Mean % (SD)	Deviations (Observed / Optimal)	Mean (SD)	Deviations (Observed / Optimal)	Mean (SD)	Mean (SD)
1.Add a new DSI for a patient with diabetes.	12	100% (0)	5/5	100(27)	0/0	0(0)	1.29(0.51)
2. Override a contraindicated medication recommendation.	12	100% (0)	6/6	77(14)	0/0	0(0)	1.12(0.39)
3. Configure an alert for age-based screening.	12	100% (0)	4/4	106(17)	0/0	0(0)	1.16(0.48)

4. Configure and use Predictive Decision Support Intervention functionality to make Patient Notes	12	91% (2.86)	8/8	194(49)	0/0	0.25(0.63)	2.5(0.67)

The results from the System Usability Scale scored the subjective satisfaction with the system based on performance with these tasks to be: 92.[5]

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

- Major findings
    - No Major Findings.
- Areas for improvement
    - The newly implemented PDSI task has multiple clicks for users to configure. One of the users is not able to complete the task, we may have to work on reducing the clicks to configure the functionality

[5] See Tullis, T. & Albert, W. (2008). Measuring the User Experience. Burlington, MA: Morgan

Kaufman (p. 149). Broadly interpreted, scores under 60 represent systems with poor usability; scores over 80 would be considered above average.

INTRODUCTION

The EHRUT(s) tested for this study was EHR Your Way, V 9.2.0.0. Designed to present medical information to healthcare

providers in [Out Patient and Medical and Behavioral Health Facilities], the EHRUT consists of

The Order Entry component of the EHR YOUR WAY Certified Edition is meticulously crafted to optimize workflows for managing outpatient lab, radiology, and medication orders. It offers healthcare professionals an intuitive and efficient system to review, add, and modify medication, laboratory, and radiology orders seamlessly, while also providing instant access to laboratory order results.

To enhance clinical decision-making, critical information such as allergies, diagnoses, and potential interactions is displayed in real-time as users handle various orders. Beyond order management, the platform empowers users to efficiently review, add, and update problems, demographics, and implantable devices, ensuring a comprehensive view of patient care.

Additionally, EHR YOUR WAY stands out with robust functionalities such as streamlined note-taking, customizable alerts, decision support interventions, and tapered-dose medication management, providing unparalleled support for clinicians in delivering high-quality care. The usability testing attemptedto 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 Under Test (EHRUT). . To this end, measures of effectiveness, efficiency and user satisfaction, such as [Task success ratio, time on task etc.,. , were captured during the usability testing.

METHOD

PARTICIPANTS

A total of 12 participants were tested on the EHRUT(s). Participants in the test were Gastroenterology and Internal Medicine. Participants were recruited by Jay Lacny and were compensated $15 start bucks gift card] for their time. In addition, participants had no direct connection to the development of or organization producing the EHRUT(s). Participants were not from the testing or supplier organization. Participants were given the opportunity to have the same orientation and level of training as the actual end userswould have received.

For the test purposes, end-user characteristics were identified and translated into a recruitment screener used to solicit potential participants; an example of a screener is provided in Appendix [1].

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

No Assistive Devices used by any of the participants

PID	Participant Occupation/Role	Participant Gender	Participant Age	Participant Education	Participant Professional Experience- In Months	Participant Computer Experience- In Months	Participant Product Experience - In Months
P1	Physician	Male	50-59	Doctorate degree (e.g., MD, DNP, DMD, PhD)	396	120	120
P2	Physician	Male	50-59	Doctorate degree (e.g., MD, DNP, DMD, PhD)	360	120	120
P3	Office Manager	Female	40-49	Bachelor's degree	144	84	84
P4	Nurse	Female	20-29	Bachelor's degree	1	1	1
P5	Nurse	Male	30-39	Bachelor's degree	48	48	48
P6	Physician	Male	20-29	Doctorate degree (e.g., MD, DNP, DMD, PhD)	12	12	12

P7	Physician	Male	20-29	Doctorate degree (e.g., MD, DNP, DMD, PhD)	12	12	12
P8	Physician	Female	50-59	Doctorate degree (e.g., MD, DNP, DMD, PhD)	360	120	120
P9	Nurse	Female	20-29	Bachelor's degree	36	36	36
P10	Front Office	Female	20-29	Bachelor's degree	36	36	36
P11	Nurse	Female	40-49	Bachelor's degree	20	20	10
P12	Nurse	Female	40-49	Bachelor's degree	15	15	8

12 participants (matching the demographics in the section on Participants) were recruited and 12 participated in the usability test. 0 participants failed to show forthe study. Participants were scheduled for [15 mins] sessions with [10 mins] in between each session for debrief by the administrator(s) and data logger(s), and to resetsystems to proper test conditions. A spreadsheet was used to keep track of the participant schedule, and included each participant's demographic characteristics as provided by the recruiting firm.

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 1 EHR(s). Each participant used the system in the same location, and was providedwith the same instructions. The system was evaluated for effectiveness, efficiency and satisfaction as defined by measures collected and analyzed for each participant:

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

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

TASKS

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

1. Add a new DSI for a patient with diabetes (170.315(b)(11))
2. Override a contraindicated medication recommendation (170.315(b)(11))
3. Configure an alert for age-based screening (170.315(b)(11))
4. PDSI - Configure and use Predictive Decision Support Intervention functionality to make Patient Notes (170.315(b)(11))

Tasks were selected based on their frequency of use, criticality of

function, and those that may be most troublesome for users.[6] Tasks should always be constructed in light of the study objectives.

PROCEDURES

Upon arrival, participants were greeted; their identity was verified and matched with a name on the participant schedule. Participants were then assigned a participant ID.[7] Each participant reviewed and signed an informed consent and release form (See Appendix 3). A representative from the test team witnessed the participant's signature.

To ensure that the test ran smoothly, two staff members participated in this test, the usability administrator and the data logger. The usability testing staff conducting the test was experienced usability practitioners with 15 years of experience, Bachelor degree and Business Analyst and Quality Lead.

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. A second person served as the data logger and took notes on task success, path deviations, number and type of errors, and comments.

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

- As quickly as possible making as few errors and deviations as possible.

[6] Constructing appropriate tasks is of critical importance to the validity of a usability test. These are the actual functions, but most tasks contain larger and more fleshed out context that aligns with the sample data sets available in the tested EHR. Please consult usability references for guidance on how to construct appropriate tasks.
[7] All participant data must be de-identified and kept confidential.

- Without assistance; administrators were allowed to give immaterial guidance and clarification on tasks, but not instructions on use.
- Without using a think aloud technique.

For each task, the participants were given a written copy of the task. 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. Scoring is discussed below in Section 3.9.

Following the session, the administrator gave the participant the post-test questionnaire (e.g., the System Usability Scale, see Appendix 5), 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 into a spreadsheet.

Participants were thanked for their time and compensated. Participants signed a receipt and acknowledgement form (See Appendix 6) indicating that they had received the compensation.

TEST LOCATION

The test facility included a waiting area and a quiet testing room with a table, computer for the participant, and recording computer for the administrator. Only the participant and administrator were in the test room. All observers and the data logger worked from a separate room where they could see the participant’s screen and face shot, and listen to

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

TEST ENVIRONMENT

The EHRUT would be typically be used in a healthcare office or facility.

In this instance, the testing was conducted in EHR Your Way's facility in San Diego, CA. For testing, the computer used a Intel i11 processor Laptop running Windows 11 23H2.

The participants used laptop inbuilt keyboard and trackpad with external mouse when interacting with the EHRUT.

The [EHR Your Way] used 1920 X 1080 pixels resolution and Night light color setting. The application was set up by the [EHR Your Way user acceptance team according to the vendor's documentation describing the system set-up and preparation. The application itself was running on a GCP Cloud platform using a [Training Database of 10000 dummy patients] 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).

TEST FORMS AND TOOLS

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

1. Informed Consent
2. Moderator's Guide

3. Post-test Questionnaire
4. Incentive Receipt and Acknowledgment Form

Examples of these documents can be found in Appendices 3-6 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 digitally with screen capture software running on the test machine. A web camera recorded each participant's facial expressions synced with the screen capture, and verbal comments were recorded with a microphone. [8] The test session were electronically transmitted to a nearby observation room where the data logger observed the test session.

PARTICIPANT INSTRUCTIONS

The administrator reads the following instructions aloud to the each participant (also see the full moderator's guide in Appendix [B4]):

> *Thank you for participating in this study. Your input is very important. Our session today will last about 15 minutes. During that time you will use an instance of an electronic health record. I will ask you to complete a few tasks using this system and answer some questions. You should complete the tasks as quickly as possible making as few errors as possible. Please try to complete the tasks on your own following the instructions very closely. Please note that we are not testing you we are testing the system, therefore if you have difficulty all this means is that something needs to be improved in the system. I will be here in case you need specific help, but I am not able to instruct you or provide help in how to use the application.*
>
> *Overall, we are interested in how easy (or how difficult) this system is to use, what in it would be useful to you, and how we could improve it. I did not have any involvement in its creation, so please be honest with your opinions. All of the information*

[8] There are a variety of tools that record screens and transmit those recordings across a local area network for remote observations.

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.

Following the procedural instructions, participants were shown the EHR and as their first task, were given time (5 minutes) to explore thesystem and make comments. Once this task was complete, the administrator gave the following instructions:

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. I would like to request that you not *talk aloud or verbalize while you are doing the tasks.*[9] *I will ask you your impressions about the task once you are done.*

Participants were then given 4 tasks to complete. Tasks are listed inthe moderator's guide in Appendix [B4].

USABILITY METRICS

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

1. Effectiveness of EHR Your Way by measuring participant successrates and errors
2. Efficiency of EHR Your Way by measuring the average task timeand path deviations

[9] Participants should not use a think-aloud protocol during the testing. Excessive verbalization or attempts to converse with the moderator during task performance should be strongly discouraged. Participants will naturally provide commentary, but they should do so, ideally, after the testing. Some verbal commentary may be acceptable between tasks, but again should be minimized by the moderator.

3. Satisfaction with EHR Your Way by measuring ease of use ratings

DATA SCORING

The following table (Table 3) details how tasks were scored, errors evaluated, and the time data analyzed.[10]

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, within the time allotted on a per task basis. 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, is recorded when constructing tasks. Target task times used for task times in the Moderator's Guide must be operationally defined by taking multiple measures of optimal performance and multiplying by some factor [e.g., 1.25] that allows some time buffer because the participants are presumably not trained to expert performance. Thus, if expert, optimal performance on a task was [180] seconds then allotted task time performance was [180 * 1.25] seconds. This ratio should be aggregated across tasks and reported with mean and variance scores.
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 an "Failures." 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.[11] 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.

[10] An excellent resource is Tullis, T. & Albert, W. (2008). Measuring the User Experience. Burlington, MA: Morgan Kaufman. Also see www.measuringusability.com

[11] Errors have to be operationally defined by the test team prior to testing.

	It is strongly recommended that task deviations be reported. Optimal paths (i.e., procedural steps) should be recorded when constructing tasks.
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). These data are averaged across participants. [12] 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 EHR Your Way overall, the testing team administered the System Usability Scale (SUS) post-test questionnaire. Questions included, "I think I would like to use this system frequently," "I thought the system was easy to use," and "I would imagine that most people would learn to use this system very quickly." See full System Usability Score questionnaire in Appendix 5.[13]

Table 3. Details of how observed data were scored.

RESULTS

DATA ANALYSIS AND REPORTING

The results of the usability test were calculated according to the methods specified in the Usability Metrics section above. Participants who failed to follow session and task instructions had their data excluded from the analyses No exclusions were necessary.

[12] See Tedesco and Tullis (2006) for a comparison of post-task ratings for usability tests. Tedesco, D. & Tullis, T. (2006) A comparison of methods for eliciting post-task subjective ratings in usability testing. *Usability Professionals association Conference*, June 12 – 16, Broomfield, CO.

[13] The SUS survey yields a single number that represents a composite measure of the overall perceived usability of the system. SUS scores have a range of 0 to 100 and the score is a relative benchmark that is used against other iterations of the system.

No testing irregularities or issues that affected data collection or interpretation of the results were reported

The usability testing results for the EHRUT are detailed below (see Table [4])[14]. The results should be seen in light of the objectives and goals outlined in Section 3.2 Study Design. The data should yield actionable results that, if corrected, yield material, positive impact on user performance. [Furthermore, the data should be presented in forms such as the table below so that the tasks can be easily identified and their performance results examined and compared.]

Measure / Task	*N*	Task Success	Path Deviation	Task Time		Errors	Task Ratings 5=Easy
	#	Mean % (SD)	Deviations (Observed / Optimal)	Mean (SD)	Deviations (Observed / Optimal)	Mean (SD)	Mean (SD)
1.Add a new DSI for a patient with diabetes.	12	100% (0)	5/5	100(27)	0/0	0(0)	1.29(0.51)
2. Override a contraindicated medication recommendation.	12	100% (0)	6/6	77(14)	0/0	0(0)	1.12(0.39)
3. Configure an alert for age-based screening.	12	100% (0)	4/4	106(17)	0/0	0(0)	1.16(0.48)
4. Configure and use Predictive Decision Support Intervention functionality to make Patient Notes	12	91 % (2.86)	8/8	194(49)	0/0	0.25(0.63)	2.5(0.67)

The results from the SUS (System Usability Scale) scored the subjective satisfaction with the system based on performance with these tasks to be: 95%. Broadly interpreted, scores under 60 represent systems with poor usability; scores over 80 would be considered above average.[15]

DISCUSSION OF THE FINDINGS

[14] Note that this table is an example. You will need to adapt it to report the actual data collected.
[15] See Tullis, T. & Albert, W. (2008). Measuring the User Experience. Burlington, MA: Morgan Kaufman (p. 149).

[The usability testing revealed no significant issues. Most users successfully completed the assigned tasks within the allotted time and with minimal deviations. However, one out of 12 users was unable to complete the 4th task, which involved predictive decision support. This outcome was anticipated, and we recognize the need to refine the configuration steps to make this process more user-friendly.]

EFFECTIVENESS

The EHR Your Way demonstrated strong effectiveness, with 11 out of 12 users completing all tasks within the time limit and with minimal deviations, indicating intuitive and efficient system design. The difficulty faced by one user with the predictive decision support task highlights a need to refine configuration steps. Addressing this will further enhance the system's usability and ensure accessibility for all users, even for complex tasks.

EFFICIENCY

Based on observations of task completion times and deviation data, the EHR Your Way demonstrates a high level of efficiency. Most users completed tasks within the expected time frames with minimal deviations, reflecting a streamlined workflow and intuitive interface. The time taken to complete each task closely aligned with usability benchmarks, further confirming the system's optimized design. The slight delay observed in the predictive decision support task indicates an opportunity to enhance efficiency through improved configuration steps, ensuring seamless task execution across all features.

SATISFACTION

Based on task ratings and System Usability Scale (SUS) results, the EHRUT received positive feedback, indicating a high level of user satisfaction. Most participants rated their experience as seamless and intuitive, with particular praise for the ease of navigation and task completion. The SUS scores align with industry standards, affirming that users find the system effective and user-friendly. While satisfaction was generally high, minor frustrations related to the predictive decision support task suggest an opportunity to further enhance user confidence and satisfaction through improved configuration clarity.

MAJOR FINDINGS

None

AREAS FOR IMPROVEMENT

[We observed that all users successfully completed their tasks, with the exception of one task related to configuring predictive decision support. Users encountered confusion with the steps involved, leading to slightly longer completion times than expected. To address this, we have decided to enhance the navigation and streamline the workflow for configuring this feature, ensuring a more intuitive and

efficient user experience.

APPENDICES

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

1: Sample Recruiting screener

2: Participant demographics

3: Non-Disclosure Agreement (NDA) and Informed Consent Form

4: Example Moderator's Guide

5: System Usability Scale Questionnaire

6: Incentive receipt and acknowledgment form

It is important to note that these Appendices are **examples** only. They are not intended to be used exactly as rendered below.

For example, the intended users of the system will determine sampling requirements which drive screener questions. Likewise, the goals of the study will determine the exact tasks and data to be recorded; this will create the tasks and data collection plan in the moderator's guide.

See some of the previously cited references for examples of these documents.

Appendix 1: SAMPLE RECRUITING SCREENER

The purpose of a screener to ensure that the participants selected represent the target user population as closely as possible. (Portions of this sample screener are taken from www.usability.gov/templates/index.html#Usability and adapted for use.)

Recruiting Script for Recruiting Firm

Hello, my name is Aparna, calling from *[EHR Your Way]*. We are recruiting individuals to participate in a usability study for an electronic health record. We would like to ask you a few questions to see if you qualify and if would like to participate. This should only take a few minutes of your time. This is strictly for research purposes. If you are interested and qualify for the study, you will be paid to participate. Can I ask you a few questions?

Customize this by dropping or adding questions so that it reflects your EHR's primary audience

1. Are you male or female?
2. Have you participated in a focus group or usability test in the past *6* months?
3. Do you, or does anyone in your home, work in marketing research, usability research, web design…etc.?
4. Do you, or does anyone in your home, have a commercial or research interest in an electronic health record software or consulting company?
5. Which of the following best describes your age? [23 to 39; 40 to 59; 60 - to 74; 75 and older] [Recruit Mix]
6. Which of the following best describes your race or ethnic group? [e.g., Caucasian, Asian, Black/African-American, Latino/a or Hispanic, etc.]
7. Do you require any assistive technologies to use a computer? [if so, please describe]

Professional Demographics *Customize this to reflect your EHR's primary audience*

8. What is your current position and title? (Must be healthcare provider)
   - ☐ RN: Specialty _____
   - ☐ Physician: Specialty_____
   - ☐ Resident: Specialty _____
   - ☐ Administrative Staff
   - ☐ Other [Terminate]

9. How long have you held this position?
10. Describe your work location (or affiliation) and environment? (Recruit according to the intended users of the application) [e.g., private practice, health system, government clinic, etc.]
11. Which of the following describes your highest level of education? [e.g., high school graduate/GED, some college, college graduate (RN, BSN), postgraduate (MD/PhD), other (explain)]

Computer Expertise *Customize this to reflect what you know about your EHR's audience*

12. Besides reading email, what professional activities do you do on the computer? [e.g., access EHR, research; reading news; shopping/banking; digital pictures; programming/word processing, etc.] [If no computer use at all, Terminate]
13. About how many hours per week do you spend on the computer? [Recruit according to the demographics of the intended users, e.g., 0 to 10, 11 to 25, 26+ hours per week]
14. What computer platform do you usually use? [e.g., Mac, Windows, etc.]
15. What Internet browser(s) do you usually use? [e.g., Firefox, IE, AOL, etc.]
16. In the last month, how often have you used an electronic health record?
17. How many years have you used an electronic health record?
18. How many EHRs do you use or are you familiar with?
19. How does your work environment patient records? [Recruit according to the demographics of the intended users]
    - ☐ On paper
    - ☐ Some paper, some electronic
    - ☐ All electronic

Contact Information *If the person matches your qualifications, ask*

Those are all the questions I have for you. Your background matches the people we're looking for. [If you are paying participants or offering some form of compensation, mention] For your participation, you will be paid with $ 15 start bucks gift card.

Would you be able to participate on [11/15/2024 9.00 AM PST]? [If so collect contact information]

May I get your contact information?

- Name of participant:
- Address:
- City, State, Zip:
- Daytime phone number:
- Evening phone number:
- Alternate [cell] phone number:
- Email address:

Before your session starts, we will ask you to sign a release form allowing us to videotape your session. The videotape will only be used internally for further study if needed. Will you consent to be videotaped?

This study will take place online and observer will be recording the session at EHR Your Way lab. You can stay remotely and turn on video on meeting. I will confirm your appointment a couple of days beforeyour session and provide you with directions to our office. What time is the best time to reach you?

Appendix 2: PARTICIPANT DEMOGRAPHICS

The report should contain a breakdown of the key participant demographics. A representative list is shown below.

Following is a high-level overview of the participants in this study.

Gender	
Men	[5]
Women	[7]
Total (participants)	[12]

Occupation/Role	
RN/BSN	[5]
Physician	[5]
Admin Staff	[2]
Total (participants)	[12]

Years of Experience	
Years experience	[10]
Facility Use of EHR	
All paper	[9]
Some paper, some electronic	[10]
All electronic	[8]
Total (participants)	[12]

As an appendix to the report, the full participant breakdown (de-identified) should be included.

Appendix 3: NON-DISCLOSURE AGREEMENT AND INFORMED CONSENT FORM

These are sample forms. The non-disclosure agreement is discretionary. Other examples may be found at www.usability.gov.

Non-Disclosure Agreement

THIS AGREEMENT is entered into as of 11/15/2024 between
("the Participant") and the testing organization *EHR Your Way* at *4276, 54th Place, Suite: B, San Diego, CA, 92115*.

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 *EHR Your Way*, 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 *EHR Your Way* 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:** _____

Informed Consent

Test Company 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. 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 *EHR Your Way* 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 the *EHR Your Way*.

I understand and consent to the use and release of the videotape by *EHR Your Way*. 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 *EHR Your Way* without further permission.

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

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

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

Please check one of the following:

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

Signature:_____ **Date:**

_____

Appendix 4:

EHRUT Usability Test

Administrator **Aparna Reddy**

Data Logger **Kiran Lakshmi Narasimham Ghantasala**

Date: 11/15/2024 Time: **10.00 AM PST**

Participant # **P1**

Location **Online session – EHR Your Way Lab**

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

Prior to each participant:
- Reset application
- Start session recordings with *tool*

Prior to each task:
- Reset application to starting point for next task

After each participant:
- End session recordings with *tool*

After all testing
- Back up all video and data files

Orientation (*2* minutes)

Thank you for participating in this study. Our session today will last ***15* 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 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 did not have any involvement in its creation, so please be honest with your opinions.

The product you will be using today is *Cloud based Web application i.e., EHR Your Way v 9.2.0.0*. Some of the data may not make sense as it is placeholder data.

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.

Do you have any questions or concerns? No.

Preliminary Questions (*3* minutes)

What is your job title / appointment?

I am a Physician

How long have you been working in this role?
33 years

What are some of your main responsibilities?
I am a physician with GI specialty. Taking
care of out patients in last 33 years.

Tell me about your experience with electronic health records.!!
EHR Your way is an EHR software which is used by me and my staff to save patient chart details. It is good at minimizing time in recording patient chart details. Helps with automated alerts relevant to clinical information and administration . I have been using this for more than 120 months.

Task 1: Add a new DSI for a patient with diabetes. (*120 Seconds*)

Navigated to the task starting point.

Task 1: Add a new Decision Support Intervention for a patient with diabetes.

Success:

V Easily completed
☐ Completed with difficulty or help :: Describe below
☐ Not completed
Comments: We have been doing this very frequently and looks easy for me

Task Time: 45 Seconds

Optimal Path: *Open chart* → Click on Dues Menu → *Choose Diagnosis based Intervention* → Mention the intervention required to shot up → *"OK" Button*

V Correct
☐ Minor Deviations / Cycles :: Describe below
☐ Major Deviations :: Describe below
Comments: Very easy to complete the task.

Observed Errors and Verbalizations:
Comments: No errors observed. God positive feedback that performing this action is easy.

Rating:

Overall, this task was: 1

Show participant written scale: "Very Easy" (1) to "Very Difficult" (5)

Administrator / Notetaker Comments:
Participant is very comfortable in performing this action.

Task 2: Override a contraindicated medication recommendation. (80 *Seconds*)

Take the participant to the starting point for the task.

Patient is allergic to Aspirin, try to prescribe aspirin and see if EHR Your Way shows drug contradiction popup and override it and continue prescribing.

Success:

V Easily completed
☐ Completed with difficulty or help :: Describe below
☐ Not completed
Comments:

Task Time:110 Seconds

Optimal Path: Open *Order Rx → Search for Aspirin and select drug → choose take, frequency, duration, dispense quantity → "OK" Button to save the prescription → You will get a popup about Drug contraindication → Choose the options to override it and continue prescribing.*

V Correct
☐ Minor Deviations / Cycles :: Describe below
☐ Major Deviations :: Describe below
Comments:

Observed Errors and Verbalizations:
Comments: No errors observed.

Rating:

Overall, this task was: 1

Show participant written scale: "Very Easy" (1) to "Very Difficult" (5)

Administrator / Notetaker Comments:
User is able to complete the task without any deviation and less than the expected time.

Task 3: Configure an alert for age-based screening. (120 *Seconds*)

Take the participant to the starting point for the task.

If patient is above 40 years show an alert to get Colonoscopy Screening procedure done.

Success:

V Easily completed
☐ Completed with difficulty or help :: Describe below
☐ Not completed
Comments:

Task Time:100 Seconds

Optimal Path: *Click on Dues → Select colonoscopy Screening → Mention Start age of the screening → "OK" Button*

V Correct
☐ Minor Deviations / Cycles :: Describe below
☐ Major Deviations :: Describe below
Comments:

Observed Errors and Verbalizations: No errors or verbalizations observed
Comments: No additional comments by the provider.

Rating:

Overall, this task was: 1

Show participant written scale: "Very Easy" (1) to "Very Difficult" (5)

Administrator / Notetaker Comments:

Provider has finished the task without any problem.

Task 4: Configure and use Predictive Decision Support Intervention functionality to make Patient Notes. (240 *Seconds*)

Take the participant to the starting point for the task.

Configure your notes template such that you will be able to use Predictive Decision support Intervention. Also use this functionality to generate notes by using Problem list as source of Predictive Decision support Intervention.

Success:

V Easily completed
☐ Completed with difficulty or help :: Describe below
☐ Not completed
Comments:

Task Time:100 Seconds

Optimal Path: Configuration path: *Open Notes Template → Use configuration button → Search and Select Clinical Decision Support - Manual → "OK" Button;*
Usage path: Click on PDSI hyperlink in notes → select Problem → Click "Generate button" → Ok button

V Correct
☐ Minor Deviations / Cycles :: Describe below
☐ Major Deviations :: Describe below
Comments:

Observed Errors and Verbalizations: Since this is new feature, user seems to be worried if he can complete the task. But able to complete it successfully.
Comments: No additional comments by the provider.

Rating:

Overall, this task was: 2

Show participant written scale: "Very Easy" (1) to "Very Difficult" (5)

Administrator / Notetaker Comments:

Provider has finished the task, but looks little worried if he is doing it appropriately or not, he looked satisfied when I reviled that he did it correct.

Final Questions (*2 Minutes*)

What was your overall impression of this system?

The new feature is good and looks better.

What aspects of the system did you like most?

The Predictive decision support intervention is able to generate the note as required with minimal correction. This will make my daily notes making ability faster.

What aspects of the system did you like least?

I believe all the 4 tasks which I have performed are done upto my satisfaction and no aspect which I like least out of these 4

Were there any features that you were surprised to see?

Yes, PDSI has surprised me and did not really expect this.

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

No missing thing were observed

Compare this system to other systems you have used.

I have been using this system for long time, I may not be able to comment about other systems without having good knowledge on others. I am happy with current one.

Would you recommend this system to your colleagues?

Yes.

Administer the SUS

Appendix 5: SYSTEM USABILITY SCALE QUESTIONNAIRE

*In 1996, Brooke published a "*low-cost usability scale that can be used for global assessments of systems usability*" known as the System Usability Scale or SUS.*[16] *Lewis and Sauro (2009) and others have elaborated on the SUS over the years. Computation of the SUS score can be found in Brooke's paper, in at* http://www.usabilitynet.org/trump/documents/Suschapt.doc *or in Tullis and Albert (2008).*

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

Administrator **Aparna Reddy**

Data Logger **Kiran Lakshmi Narasimham Ghantasala**

Date: 11/15/2024 Time: **10.30 AM PST**

Participant # **P2**

Location **Online session – EHR Your Way Lab**

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

Prior to each participant:
- Reset application
- Start session recordings with *tool*

Prior to each task:
- Reset application to starting point for next task

After each participant:
- End session recordings with *tool*

After all testing
- Back up all video and data files

Orientation (*2* minutes)

Thank you for participating in this study. Our session today will last ***15* 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 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 did not have any involvement in its creation, so please be honest with your opinions.

The product you will be using today is *Cloud based Web application i.e., EHR Your Way v 9.2.0.0*. Some of the data may not make sense as it is placeholder data.

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.

Do you have any questions or concerns? No.

Preliminary Questions (*3* minutes)

What is your job title / appointment?

I am a Physician

How long have you been working in this role?
30 years

What are some of your main responsibilities?
I am a physician with GI specialty. Taking
care of out patients in last 30 years.

Tell me about your experience with electronic health records.!!
EHR Your way is an EHR software which is used by me to save patient chart details. It is good at minimizing time in recording patient chart details. Helps with automated alerts relevant to clinical information and administration . I have been using this for more than 120 months.

Task 1: Add a new DSI for a patient with diabetes. (*120 Seconds*)

Navigated to the task starting point.

Task 1: Add a new Decision Support Intervention for a patient with diabetes.

Success:

V Easily completed
☐ Completed with difficulty or help :: Describe below
☐ Not completed
Comments: We have been doing this very frequently and looks easy for me

Task Time: 60 Seconds

Optimal Path: *Open chart* → Click on Dues Menu → *Choose Diagnosis based Intervention* → Mention the intervention required to shot up → *"OK" Button*

V Correct
☐ Minor Deviations / Cycles :: Describe below
☐ Major Deviations :: Describe below
Comments: Very easy to complete the task.

Observed Errors and Verbalizations:
Comments: No errors observed. Good positive feedback that performing this action is easy.

Rating:

Overall, this task was: 1

Show participant written scale: "Very Easy" (1) to "Very Difficult" (5)

Administrator / Notetaker Comments:

Participant is very comfortable in performing this action.

Task 2: Override a contraindicated medication recommendation. (80 *Seconds*)

Take the participant to the starting point for the task.

Patient is allergic to Aspirin, try to prescribe Aspirin and see if EHR Your Way shows drug contradiction popup and override it and continue prescribing.

Success:

V Easily completed
☐ Completed with difficulty or help :: Describe below
☐ Not completed
Comments:

Task Time:60 Seconds

Optimal Path: Open *Order Rx → Search for Aspirin and select drug → choose take, frequency, duration, dispense quantity → "OK" Button to save the prescription → You will get a popup about Drug contraindication → Choose the options to override it and continue prescribing.*

V Correct
☐ Minor Deviations / Cycles :: Describe below
☐ Major Deviations :: Describe below
Comments:

Observed Errors and Verbalizations:
Comments: No errors observed.

Rating:

Overall, this task was: 1

Show participant written scale: "Very Easy" (1) to "Very Difficult" (5)

Administrator / Notetaker Comments:
User is able to complete the task without any deviation and less than the expected time.

Task 3: Configure an alert for age-based screening. (120 *Seconds*)

Take the participant to the starting point for the task.

If patient is above 40 years show an alert to get Colonoscopy Screening procedure done.

Success:

V Easily completed
☐ Completed with difficulty or help :: Describe below
☐ Not completed
Comments:

Task Time:80 Seconds

Optimal Path: *Click on Dues → Select colonoscopy Screening → Mention Start age of the screening → "OK" Button*

V Correct
☐ Minor Deviations / Cycles :: Describe below
☐ Major Deviations :: Describe below
Comments:

Observed Errors and Verbalizations: No errors or verbalizations observed
Comments: No additional comments by the provider.

Rating:

Overall, this task was: 1

Show participant written scale: "Very Easy" (1) to "Very Difficult" (5)

Administrator / Notetaker Comments:

Provider has finished the task without any problem.

Task 4: Configure and use Predictive Decision Support Intervention functionality to make Patient Notes. (240 *Seconds*)

Take the participant to the starting point for the task.

Configure your notes template such that you will be able to use Predictive Decision support Intervention. Also use this functionality to generate notes by using Problem list as source of Predictive Decision support Intervention.

Success:

V Easily completed
☐ Completed with difficulty or help :: Describe below
☐ Not completed
Comments:

Task Time:150 Seconds

Optimal Path: Configuration path: *Open Notes Template → Use configuration button → Search and Select Clinical Decision Support - Manual → "OK" Button; Usage path: Click on PDSI hyperlink in notes → select Problem → Click "Generate button" → Ok button*

V Correct
☐ Minor Deviations / Cycles :: Describe below
☐ Major Deviations :: Describe below
Comments:

Observed Errors and Verbalizations: Since this is new feature, user seems to be worried if he can complete the task. But able to complete it successfully.
Comments: No additional comments by the provider.

Rating:

Overall, this task was: 1.5

Show participant written scale: "Very Easy" (1) to "Very Difficult" (5)

Administrator / Notetaker Comments:

Provider has finished the task, but looks little worried if he is doing it appropriately or not, he looked satisfied when I reviled that he did it correct.

Final Questions (*2 Minutes*)

What was your overall impression of this system?

My overall impression of the system is very positive. The new features are well-designed and intuitive, making it easier to navigate

What aspects of the system did you like most?

What I liked most about the system is its **user-friendly interface**. It's intuitive and easy to navigate, which makes it much quicker to access important patient information. I also appreciate the **streamlined workflow**; the system reduces the number of steps needed to complete tasks, saving time and improving efficiency.

What aspects of the system did you like least?

4 tasks which I have performed are done upto my satisfaction and no aspect which I like least out of these 4

Were there any features that you were surprised to see?

Yes, Predictive Decision Support Intervention has surprised me.

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

No missing thing were observed

Compare this system to other systems you have used.

I have been using this system for long time, I may not be able to comment about other systems without having good knowledge on others. I am happy with current one.

Would you recommend this system to your colleagues?

Yes.

Administer the SUS

Appendix 5: SYSTEM USABILITY SCALE QUESTIONNAIRE

*In 1996, Brooke published a "*low-cost usability scale that can be used for global assessments of systems usability*" known as the System Usability Scale or SUS.*[16] *Lewis and Sauro (2009) and others have elaborated on the SUS over the years. Computation of the SUS score can be found in Brooke's paper, in at* http://www.usabilitynet.org/trump/documents/Suschapt.doc *or in Tullis and Albert (2008).*

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

Administrator **Aparna Reddy**

Data Logger **Kiran Lakshmi Narasimham Ghantasala**

Date: 11/15/2024 Time: **11.00 AM PST**

Participant # **P3**

Location **Online session – EHR Your Way Lab**

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

Prior to each participant:
- Reset application
- Start session recordings with *tool*

Prior to each task:
- Reset application to starting point for next task

After each participant:
- End session recordings with *tool*

After all testing
- Back up all video and data files

Orientation (*2* minutes)

Thank you for participating in this study. Our session today will last ***15* 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 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 did not have any involvement in its creation, so please be honest with your opinions.

The product you will be using today is *Cloud based Web application i.e., EHR Your Way v 9.2.0.0*. Some of the data may not make sense as it is placeholder data.

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.

Do you have any questions or concerns? No.

Preliminary Questions (*3* minutes)

What is your job title / appointment?

I am an office manager

How long have you been working in this role?
12 years

What are some of your main responsibilities?
I am an office manager. Taking care of out
patients in last 7 years.

Tell me about your experience with electronic health records.!!
EHR Your way is an EHR software which is used by me to save patient chart details. It is good at minimizing time in recording patient chart details. Helps with automated alerts relevant to clinical information and administration . I have been using this for more than 120 months.

Task 1: Add a new DSI for a patient with diabetes. (*120 Seconds*)

Navigated to the task starting point.

Task 1: Add a new Decision Support Intervention for a patient with diabetes.

Success:

V Easily completed
☐ Completed with difficulty or help :: Describe below
☐ Not completed
Comments: We have been doing this very frequently and looks easy for me

Task Time: 100 Seconds

Optimal Path: *Open chart* → Click on Dues Menu → *Choose Diagnosis based Intervention* → Mention the intervention required to shot up → *"OK" Button*

V Correct
☐ Minor Deviations / Cycles :: Describe below
☐ Major Deviations :: Describe below
Comments: Very easy to complete the task.

Observed Errors and Verbalizations:
Comments: No errors observed. Good positive feedback that performing this action is easy.

Rating:

Overall, this task was: 1

Show participant written scale: "Very Easy" (1) to "Very Difficult" (5)

Administrator / Notetaker Comments:

Participant is very comfortable in performing this action.

Task 2: Override a contraindicated medication recommendation. (80 *Seconds*)

Take the participant to the starting point for the task.

Patient is allergic to Aspirin, try to prescribe Aspirin and see if EHR Your Way shows drug contradiction popup and override it and continue prescribing.

Success:

V Easily completed
☐ Completed with difficulty or help :: Describe below
☐ Not completed
Comments:

Task Time:70 Seconds

Optimal Path: Open *Order Rx → Search for Aspirin and select drug → choose take, frequency, duration, dispense quantity → "OK" Button to save the prescription → You will get a popup about Drug contraindication → Choose the options to override it and continue prescribing.*

V Correct
☐ Minor Deviations / Cycles :: Describe below
☐ Major Deviations :: Describe below
Comments:

Observed Errors and Verbalizations:
Comments: No errors observed.

Rating:

Overall, this task was: 1

Show participant written scale: "Very Easy" (1) to "Very Difficult" (5)

Administrator / Notetaker Comments:
User is able to complete the task without any deviation and less than the expected time.

Task 3: Configure an alert for age-based screening. (120 *Seconds*)

Take the participant to the starting point for the task.

If patient is above 40 years show an alert to get Colonoscopy Screening procedure done.

Success:

V Easily completed
☐ Completed with difficulty or help :: Describe below
☐ Not completed
Comments:

Task Time:100 Seconds

Optimal Path: *Click on Dues → Select colonoscopy Screening → Mention Start age of the screening → "OK" Button*

V Correct
☐ Minor Deviations / Cycles :: Describe below
☐ Major Deviations :: Describe below
Comments:

Observed Errors and Verbalizations: No errors or verbalizations observed
Comments: No additional comments by the provider.

Rating:

Overall, this task was: 1

Show participant written scale: "Very Easy" (1) to "Very Difficult" (5)

Administrator / Notetaker Comments:

User has finished the task without any problem.

Task 4: Configure and use Predictive Decision Support Intervention functionality to make Patient Notes. (240 *Seconds*)

Take the participant to the starting point for the task.

Configure your notes template such that you will be able to use Predictive Decision support Intervention. Also use this functionality to generate notes by using Problem list as source of Predictive Decision support Intervention.

Success:

V Easily completed
☐ Completed with difficulty or help :: Describe below
☐ Not completed
Comments:

Task Time:200 Seconds

Optimal Path: Configuration path: *Open Notes Template → Use configuration button → Search and Select Clinical Decision Support - Manual → "OK" Button; Usage path: Click on PDSI hyperlink in notes → select Problem → Click "Generate button" → Ok button*

V Correct
☐ Minor Deviations / Cycles :: Describe below
☐ Major Deviations :: Describe below
Comments:

Observed Errors and Verbalizations: Although the user was initially concerned about whether they could complete the task with the new feature, they were able to navigate through it successfully without issues.
Comments: No additional comments by the user.

Rating:

Overall, this task was: 2.5

Show participant written scale: "Very Easy" (1) to "Very Difficult" (5)

Administrator / Notetaker Comments:

The User completed the task but seemed a bit unsure if it was done correctly. She appeared relieved and satisfied when I confirmed that she had completed it accurately.

Final Questions (*2 Minutes*)

What was your overall impression of this system?

I have a very positive impression of the system. The new features are thoughtfully designed, making navigation and task completion much easier and more streamlined.

What aspects of the system did you like most?

What I liked most about the system is its simplicity and ease of use. The interface is intuitive, which makes it quick to find essential patient information. Additionally, the streamlined workflow reduces unnecessary steps, saving valuable time and boosting productivity.

What aspects of the system did you like least?

The four tasks I worked on were all done to my satisfaction, and there's no aspect that I found unsatisfactory or disappointing.

Were there any features that you were surprised to see?

I must say, the Predictive Decision Support Intervention has truly impressed me.

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

No missing thing were observed

Compare this system to other systems you have used.

Since I've been working with this system for an extended period, I can't offer much insight into other systems without a better comparison. That said, I am happy with the one I'm using.

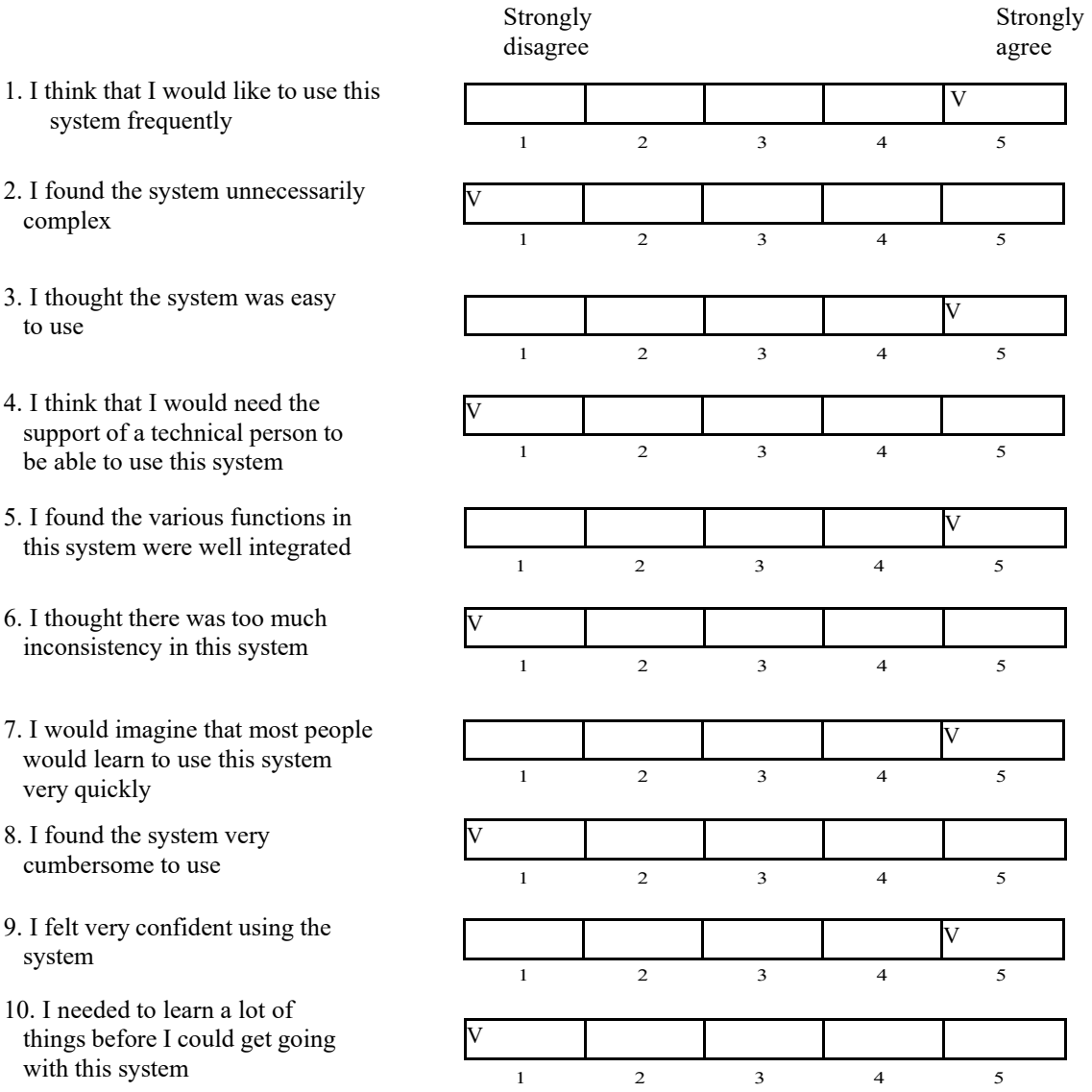
Would you recommend this system to your colleagues?

Yes.

Administer the SUS

Appendix 5: SYSTEM USABILITY SCALE QUESTIONNAIRE

*In 1996, Brooke published a "*low-cost usability scale that can be used for global assessments of systems usability*" known as the System Usability Scale or SUS.*[16] *Lewis and Sauro (2009) and others have elaborated on the SUS over the years. Computation of the SUS score can be found in Brooke's paper, in at* http://www.usabilitynet.org/trump/documents/Suschapt.doc *or in Tullis and Albert (2008).*



Administrator **Aparna Reddy**

Data Logger **Kiran Lakshmi Narasimham Ghantasala**

Date: 11/15/2024 Time: **11.30 AM PST**

Participant # **P4**

Location **Online session – EHR Your Way Lab**

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

Prior to each participant:
- Reset application
- Start session recordings with *tool*

Prior to each task:
- Reset application to starting point for next task

After each participant:
- End session recordings with *tool*

After all testing
- Back up all video and data files

Orientation (*2* minutes)

Thank you for participating in this study. Our session today will last ***15* 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 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 did not have any involvement in its creation, so please be honest with your opinions.

The product you will be using today is *Cloud based Web application i.e., EHR Your Way v 9.2.0.0*. Some of the data may not make sense as it is placeholder data.

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.

Do you have any questions or concerns? No.

Preliminary Questions (*3* minutes)

What is your job title / appointment?

I am a Nurse.

How long have you been working in this role?
1 month

What are some of your main responsibilities?
I am a Nurse

Tell me about your experience with electronic health records.!!
As a nurse, I use EHR Your Way to document patient details. It helps me save time on record-keeping and ensures that automated alerts for clinical and administrative tasks are delivered promptly.

Task 1: Add a new DSI for a patient with diabetes. (*120 Seconds*)

Navigated to the task starting point.

Task 1: Add a new Decision Support Intervention for a patient with diabetes.

Success:

V Easily completed
☐ Completed with difficulty or help :: Describe below
☐ Not completed
Comments: We have been doing this very frequently and looks easy for me

Task Time: 140 Seconds

Optimal Path: *Open chart* → Click on Dues Menu → *Choose Diagnosis based Intervention* → Mention the intervention required to shot up → *"OK" Button*

V Correct
☐ Minor Deviations / Cycles :: Describe below
☐ Major Deviations :: Describe below
Comments: Very easy to complete the task.

Observed Errors and Verbalizations:
Comments: No errors observed. Good positive feedback that performing this action is easy.

Rating:

Overall, this task was: 2

Show participant written scale: "Very Easy" (1) to "Very Difficult" (5)

Administrator / Notetaker Comments:

Participant is very comfortable in performing this action.

Task 2: Override a contraindicated medication recommendation. (80 *Seconds*)

Take the participant to the starting point for the task.

Patient is allergic to Aspirin, try to prescribe Aspirin and see if EHR Your Way shows drug contradiction popup and override it and continue prescribing.

Success:

V Easily completed
☐ Completed with difficulty or help :: Describe below
☐ Not completed
Comments:

Task Time:80 Seconds

Optimal Path: Open *Order Rx → Search for Aspirin and select drug → choose take, frequency, duration, dispense quantity → "OK" Button to save the prescription → You will get a popup about Drug contraindication → Choose the options to override it and continue prescribing.*

V Correct
☐ Minor Deviations / Cycles :: Describe below
☐ Major Deviations :: Describe below
Comments:

Observed Errors and Verbalizations:
Comments: No errors observed.

Rating:

Overall, this task was: 1.5

Show participant written scale: "Very Easy" (1) to "Very Difficult" (5)

Administrator / Notetaker Comments:
User is able to complete the task without any deviation and less than the expected time.

Task 3: Configure an alert for age-based screening. (120 *Seconds*)

Take the participant to the starting point for the task.

If patient is above 40 years show an alert to get Colonoscopy Screening procedure done.

Success:

V Easily completed
☐ Completed with difficulty or help :: Describe below
☐ Not completed
Comments:

Task Time:125 Seconds

Optimal Path: *Click on Dues → Select colonoscopy Screening → Mention Start age of the screening → "OK" Button*

V Correct
☐ Minor Deviations / Cycles :: Describe below
☐ Major Deviations :: Describe below
Comments:

Observed Errors and Verbalizations: No errors or verbalizations observed
Comments: No additional comments by the provider.

Rating:

Overall, this task was: 1.5

Show participant written scale: "Very Easy" (1) to "Very Difficult" (5)

Administrator / Notetaker Comments:

User has finished the task without any problem.

Task 4: Configure and use Predictive Decision Support Intervention functionality to make Patient Notes. (240 *Seconds*)

Take the participant to the starting point for the task.

Configure your notes template such that you will be able to use Predictive Decision support Intervention. Also use this functionality to generate notes by using Problem list as source of Predictive Decision support Intervention.

Success:

V Easily completed
☐ Completed with difficulty or help :: Describe below
☐ Not completed
Comments:

Task Time:250 Seconds

Optimal Path: Configuration path: *Open Notes Template → Use configuration button → Search and Select Clinical Decision Support - Manual → "OK" Button; Usage path: Click on PDSI hyperlink in notes → select Problem → Click "Generate button" → Ok button*

V Correct
☐ Minor Deviations / Cycles :: Describe below
☐ Major Deviations :: Describe below
Comments:

Observed Errors and Verbalizations: The user expressed some doubts about their ability to complete the task using the new feature, but they were ultimately able to accomplish it with ease.
Comments: No additional comments by the user.

Rating:

Overall, this task was: 2.5

Show participant written scale: "Very Easy" (1) to "Very Difficult" (5)

Administrator / Notetaker Comments:
Even though the user finished the task, he seemed a little uncertain if it was done appropriately or not.

Final Questions (*2 Minutes*)

What was your overall impression of this system?

My overall impression is highly favorable. The new features are designed with simplicity in mind, making it effortless to navigate and perform tasks efficiently.

What aspects of the system did you like most?

What stands out the most for me is the system's easy-to-navigate interface. It simplifies accessing important patient data. The efficient workflow is another highlight, as it cuts down on the number of steps required to complete tasks, saving time and improving overall productivity.

What aspects of the system did you like least?

I am fully satisfied with the completion of all four tasks, and there's nothing about these tasks that I would change or find fault with.

Were there any features that you were surprised to see?

I must say, Yes

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

No missing thing were observed

Compare this system to other systems you have used.

I've been using this system for the past month, and while I don't have a deep understanding of others, I'm already finding several shortcomings.

Would you recommend this system to your colleagues?

Yes.

Administer the SUS

Appendix 5: SYSTEM USABILITY SCALE QUESTIONNAIRE

*In 1996, Brooke published a "*low-cost usability scale that can be used for global assessments of systems usability*" known as the System Usability Scale or SUS.*[16] *Lewis and Sauro (2009) and others have elaborated on the SUS over the years. Computation of the SUS score can be found in Brooke's paper, in at* http://www.usabilitynet.org/trump/documents/Suschapt.doc *or in Tullis and Albert (2008).*

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

Administrator **Aparna Reddy**

Data Logger **Jhansi Majji**

Date: 11/15/2024 Time: **12.00 PM PST**

Participant # **P5**

Location **Online session – EHR Your Way Lab**

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

Prior to each participant:
- Reset application
- Start session recordings with *tool*

Prior to each task:
- Reset application to starting point for next task

After each participant:
- End session recordings with *tool*

After all testing
- Back up all video and data files

Orientation (*2* minutes)

Thank you for participating in this study. Our session today will last ***15* 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 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 did not have any involvement in its creation, so please be honest with your opinions.

The product you will be using today is *Cloud based Web application i.e., EHR Your Way v 9.2.0.0*. Some of the data may not make sense as it is placeholder data.

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.

Do you have any questions or concerns? No.

Preliminary Questions (*3* minutes)

What is your job title / appointment?

I am a Nurse.

How long have you been working in this role?
4 years.

What are some of your main responsibilities?
I am a Nurse

Tell me about your experience with electronic health records.!!
As a nurse, I use EHR Your Way to document patient details. It helps me save time on record-keeping and ensures that automated alerts for clinical and administrative tasks are delivered promptly.

Task 1: Add a new DSI for a patient with diabetes. (*120 Seconds*)

Navigated to the task starting point.

Task 1: Add a new Decision Support Intervention for a patient with diabetes.

Success:

V Easily completed
☐ Completed with difficulty or help :: Describe below
☐ Not completed
Comments: We have been doing this very frequently and looks easy for me

Task Time: 110 Seconds

Optimal Path: *Open chart* → Click on Dues Menu → *Choose Diagnosis based Intervention* → Mention the intervention required to shot up → *"OK" Button*

V Correct
☐ Minor Deviations / Cycles :: Describe below
☐ Major Deviations :: Describe below
Comments: Very easy to complete the task.

Observed Errors and Verbalizations:
Comments: No errors observed. Good positive feedback that performing this action is easy.

Rating:

Overall, this task was: 1

Show participant written scale: "Very Easy" (1) to "Very Difficult" (5)

Administrator / Notetaker Comments:

Participant is very comfortable in performing this action.

Task 2: Override a contraindicated medication recommendation. (80 *Seconds*)

Take the participant to the starting point for the task.

Patient is allergic to Aspirin, try to prescribe Aspirin and see if EHR Your Way shows drug contradiction popup and override it and continue prescribing.

Success:

V Easily completed
☐ Completed with difficulty or help :: Describe below
☐ Not completed
Comments:

Task Time:75 Seconds

Optimal Path: Open *Order Rx* → *Search for Aspirin and select drug* → *choose take, frequency, duration, dispense quantity* → *"OK" Button to save the prescription* → *You will get a popup about Drug contraindication* → *Choose the options to override it and continue prescribing.*

V Correct
☐ Minor Deviations / Cycles :: Describe below
☐ Major Deviations :: Describe below
Comments:

Observed Errors and Verbalizations:
Comments: No errors observed.

Rating:

Overall, this task was: 1

Show participant written scale: "Very Easy" (1) to "Very Difficult" (5)

Administrator / Notetaker Comments:
User is able to complete the task without any deviation and less than the expected time.

Task 3: Configure an alert for age-based screening. (120 *Seconds*)

Take the participant to the starting point for the task.

If patient is above 40 years show an alert to get Colonoscopy Screening procedure done.

Success:

V Easily completed
☐ Completed with difficulty or help :: Describe below
☐ Not completed
Comments:

Task Time:100 Seconds

Optimal Path: *Click on Dues → Select colonoscopy Screening → Mention Start age of the screening → "OK" Button*

V Correct
☐ Minor Deviations / Cycles :: Describe below
☐ Major Deviations :: Describe below
Comments:

Observed Errors and Verbalizations: No errors or verbalizations observed
Comments: No additional comments by the provider.

Rating:

Overall, this task was: 1

Show participant written scale: "Very Easy" (1) to "Very Difficult" (5)

Administrator / Notetaker Comments:

User has finished the task without any problem.

Task 4: Configure and use Predictive Decision Support Intervention functionality to make Patient Notes. (240 *Seconds*)

Take the participant to the starting point for the task.

Configure your notes template such that you will be able to use Predictive Decision support Intervention. Also use this functionality to generate notes by using Problem list as source of Predictive Decision support Intervention.

Success:

V Easily completed
☐ Completed with difficulty or help :: Describe below
☐ Not completed
Comments:

Task Time:210 Seconds

Optimal Path: Configuration path: *Open Notes Template → Use configuration button → Search and Select Clinical Decision Support - Manual → "OK" Button; Usage path: Click on PDSI hyperlink in notes → select Problem → Click "Generate button" → Ok button*

V Correct
☐ Minor Deviations / Cycles :: Describe below
☐ Major Deviations :: Describe below
Comments:

Observed Errors and Verbalizations: Despite some initial hesitation about using the new feature, the user was able to complete the task as intended, demonstrating the feature's effectiveness.
Comments: No additional comments by the user.

Rating:

Overall, this task was: 2

Show participant written scale: "Very Easy" (1) to "Very Difficult" (5)

Administrator / Notetaker Comments:
The user successfully completed the task but had a slight concern about whether he did it right. When I confirmed that it was correct, he seemed more confident and satisfied

Final Questions (*2 Minutes*)

What was your overall impression of this system?

I'm very pleased with the system overall. The new features are both well-organized and intuitive, significantly improving ease of use and helping to speed up daily tasks.

What aspects of the system did you like most?

The most impressive feature of the system for me is its intuitive interface. It's simple to use, enabling quick access to key patient information. I also value how the system has streamlined processes, reducing steps and making task completion faster and more efficient.

What aspects of the system did you like least?

The four tasks I executed went smoothly and met my expectations, with no areas that I found less than ideal

Were there any features that you were surprised to see?

I must say, Yes

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

No missing thing were observed

Compare this system to other systems you have used.

As I've been using this system for a long time, I can't really speak to other systems without firsthand experience. But, I'm very content with the current system.

Would you recommend this system to your colleagues?

Yes.

Administer the SUS

Appendix 5: SYSTEM USABILITY SCALE QUESTIONNAIRE

*In 1996, Brooke published a "*low-cost usability scale that can be used for global assessments of systems usability*" known as the System Usability Scale or SUS.*[16] *Lewis and Sauro (2009) and others have elaborated on the SUS over the years. Computation of the SUS score can be found in Brooke's paper, in at* http://www.usabilitynet.org/trump/documents/Suschapt.doc *or in Tullis and Albert (2008).*

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

Administrator **Aparna Reddy**

Data Logger **Jhansi Majji**

Date: 11/15/2024 Time: **12.30 PM PST**

Participant # **P6**

Location **Online session – EHR Your Way Lab**

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

Prior to each participant:
- Reset application
- Start session recordings with *tool*

Prior to each task:
- Reset application to starting point for next task

After each participant:
- End session recordings with *tool*

After all testing
- Back up all video and data files

Orientation (*2* minutes)

Thank you for participating in this study. Our session today will last ***15* 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 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 did not have any involvement in its creation, so please be honest with your opinions.

The product you will be using today is *Cloud based Web application i.e., EHR Your Way v 9.2.0.0*. Some of the data may not make sense as it is placeholder data.

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.

Do you have any questions or concerns? No.

Preliminary Questions (*3* minutes)

What is your job title / appointment?

I am a Physician.

How long have you been working in this role?
1 Year.

What are some of your main responsibilities?
I am a Physician and my main responsibilities include diagnosing and treating medical conditions, prescribing appropriate treatments, and providing patient care while collaborating with healthcare teams.

Tell me about your experience with electronic health records.!!
My experience with electronic health records (EHR) has been largely positive. EHR systems streamline patient data management, making it easier to access and update patient charts quickly. They help reduce errors associated with paper records and improve communication across healthcare teams. Automated alerts and reminders also enhance patient safety and ensure timely care.

Task 1: Add a new DSI for a patient with diabetes. (*120 Seconds*)

Navigated to the task starting point.

Task 1: Add a new Decision Support Intervention for a patient with diabetes.

Success:

V Easily completed
☐ Completed with difficulty or help :: Describe below
☐ Not completed
Comments: We have been doing this very frequently and looks easy for me

Task Time: 120 Seconds

Optimal Path: *Open chart* → Click on Dues Menu → *Choose Diagnosis based Intervention* → Mention the intervention required to shot up → *"OK" Button*

V Correct
☐ Minor Deviations / Cycles :: Describe below
☐ Major Deviations :: Describe below
Comments: Very easy to complete the task.

Observed Errors and Verbalizations:
Comments: No errors observed. Good positive feedback that performing this action is easy.

Rating:

Overall, this task was: 1

Show participant written scale: "Very Easy" (1) to "Very Difficult" (5)

Administrator / Notetaker Comments:

Participant is very comfortable in performing this action.

Task 2: Override a contraindicated medication recommendation. (80 *Seconds*)

Take the participant to the starting point for the task.

Patient is allergic to Aspirin, try to prescribe Aspirin and see if EHR Your Way shows drug contradiction popup and override it and continue prescribing.

Success:

V Easily completed
☐ Completed with difficulty or help :: Describe below
☐ Not completed
Comments:

Task Time:80 Seconds

Optimal Path: Open *Order Rx → Search for Aspirin and select drug → choose take, frequency, duration, dispense quantity → "OK" Button to save the prescription → You will get a popup about Drug contraindication → Choose the options to override it and continue prescribing.*

V Correct
☐ Minor Deviations / Cycles :: Describe below
☐ Major Deviations :: Describe below
Comments:

Observed Errors and Verbalizations:
Comments: No errors observed.

Rating:

Overall, this task was: 1

Show participant written scale: "Very Easy" (1) to "Very Difficult" (5)

Administrator / Notetaker Comments:
User is able to complete the task without any deviation and less than the expected time.

Task 3: Configure an alert for age-based screening. (120 *Seconds*)

Take the participant to the starting point for the task.

If patient is above 40 years show an alert to get Colonoscopy Screening procedure done.

Success:

V Easily completed
☐ Completed with difficulty or help :: Describe below
☐ Not completed
Comments:

Task Time:120 Seconds

Optimal Path: *Click on Dues* → *Select colonoscopy Screening* → *Mention Start age of the screening* → *"OK" Button*

V Correct
☐ Minor Deviations / Cycles :: Describe below
☐ Major Deviations :: Describe below
Comments:

Observed Errors and Verbalizations: No errors or verbalizations observed
Comments: No additional comments by the provider.

Rating:

Overall, this task was: 1

Show participant written scale: "Very Easy" (1) to "Very Difficult" (5)

Administrator / Notetaker Comments:

User has finished the task without any problem.

Task 4: Configure and use Predictive Decision Support Intervention functionality to make Patient Notes. (240 *Seconds*)

Take the participant to the starting point for the task.

Configure your notes template such that you will be able to use Predictive Decision support Intervention. Also use this functionality to generate notes by using Problem list as source of Predictive Decision support Intervention.

Success:

V Easily completed
☐ Completed with difficulty or help :: Describe below
☐ Not completed
Comments:

Task Time:240 Seconds

Optimal Path: Configuration path: *Open Notes Template → Use configuration button → Search and Select Clinical Decision Support - Manual → "OK" Button; Usage path: Click on PDSI hyperlink in notes → select Problem → Click "Generate button" → Ok button*

V Correct
☐ Minor Deviations / Cycles :: Describe below
☐ Major Deviations :: Describe below
Comments:

Observed Errors and Verbalizations: Despite some initial hesitation about using the new feature, the user was able to complete the task as intended, demonstrating the feature's effectiveness.
Comments: No additional comments by the user.

Rating:

Overall, this task was: 2

Show participant written scale: "Very Easy" (1) to "Very Difficult" (5)

Administrator / Notetaker Comments:

The user successfully completed the task but had a slight concern about whether he did it right. When I confirmed that it was correct, he seemed more confident and satisfied

Final Questions (*2 Minutes*)

What was your overall impression of this system?

Overall, I'm extremely satisfied with the system. The new features are well-structured and user-friendly, making it much easier to navigate and accelerate everyday tasks.

What aspects of the system did you like most?

The standout feature of the system for me is its user-friendly interface. It's easy to navigate, allowing me to quickly access important patient information. I also appreciate how it simplifies processes, reducing unnecessary steps and making tasks more efficient.

What aspects of the system did you like least?

The four tasks I handled went as planned and met my expectations, with no parts that I would consider needing any changes.

Were there any features that you were surprised to see?

Yes, I was pleasantly surprised by the level of **personalization** in the system. The **predictive decision support** feature is particularly impressive, as it offers helpful insights and recommendations based on patient data. Additionally, the **automated alerts** for clinical and administrative tasks are very useful in streamlining workflows and ensuring nothing is overlooked. These features exceeded my expectations and have really enhanced the overall efficiency of the system.

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

No missing thing were observed

Compare this system to other systems you have used.

Although I've been using this system for a while, I feel that it falls short in many aspects when compared to other options I've encountered. While I may not have extensive experience with alternatives, the limitations of this system have become increasingly evident.

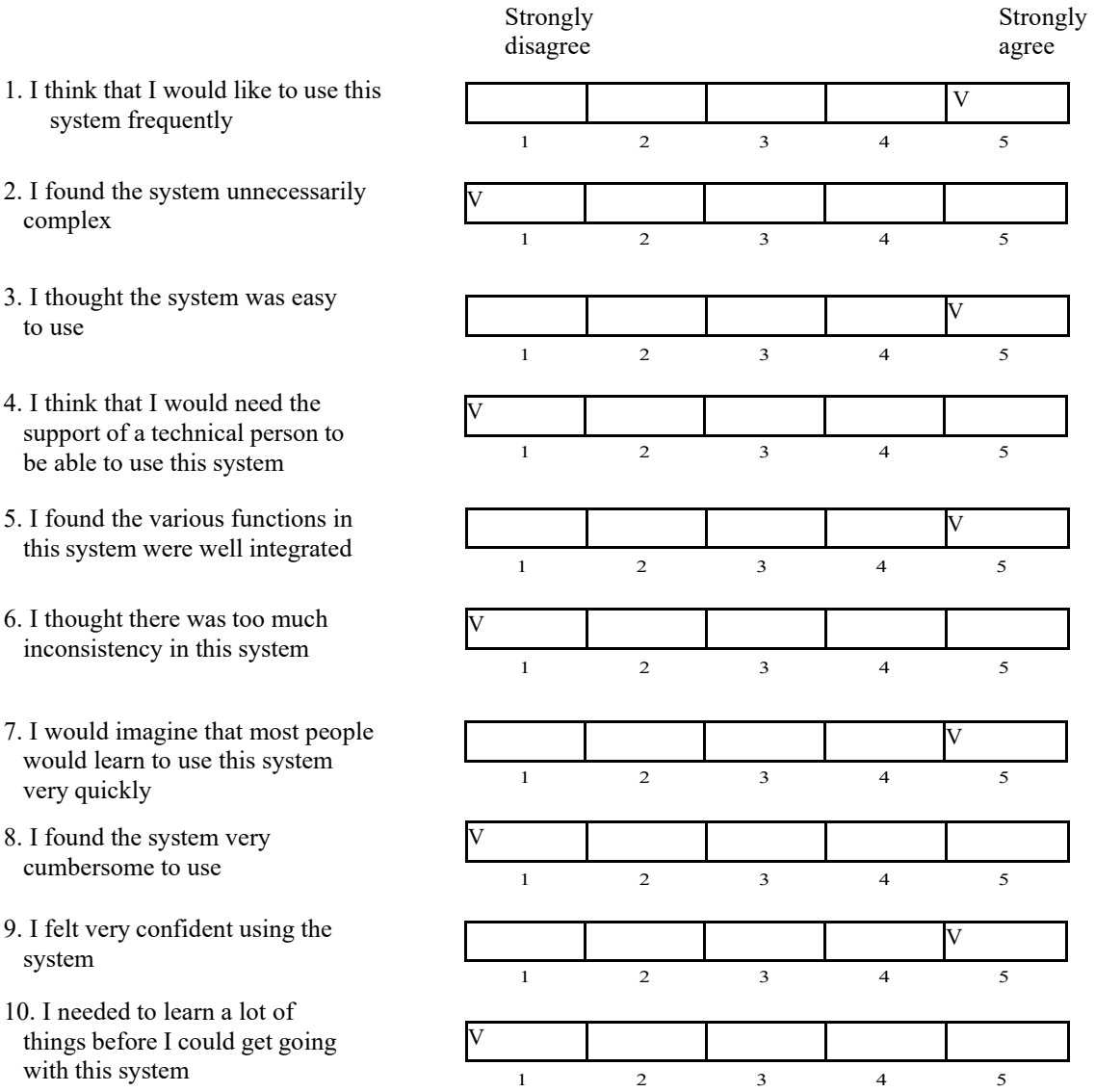
Would you recommend this system to your colleagues?

Yes.

Administer the SUS

Appendix 5: SYSTEM USABILITY SCALE QUESTIONNAIRE

*In 1996, Brooke published a "*low-cost usability scale that can be used for global assessments of systems usability*" known as the System Usability Scale or SUS.*[16] *Lewis and Sauro (2009) and others have elaborated on the SUS over the years. Computation of the SUS score can be found in Brooke's paper, in at* http://www.usabilitynet.org/trump/documents/Suschapt.doc *or in Tullis and Albert (2008).*



Administrator **Aparna Reddy**

Data Logger **Jhansi Majji**

Date: 11/15/2024 Time: **01.00 PM PST**

Participant # **P7**

Location **Online session – EHR Your Way Lab**

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

Prior to each participant:
- Reset application
- Start session recordings with *tool*

Prior to each task:
- Reset application to starting point for next task

After each participant:
- End session recordings with *tool*

After all testing
- Back up all video and data files

Orientation (*2* minutes)

Thank you for participating in this study. Our session today will last ***15* 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 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 did not have any involvement in its creation, so please be honest with your opinions.

The product you will be using today is *Cloud based Web application i.e., EHR Your Way v 9.2.0.0*. Some of the data may not make sense as it is placeholder data.

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.

Do you have any questions or concerns? No.

Preliminary Questions (*3* minutes)

What is your job title / appointment?

I am a Physician.

How long have you been working in this role?
1 Year.

What are some of your main responsibilities?
I am a Physician

Tell me about your experience with electronic health records.!!
As a Physician, I use EHR Your Way to document patient details to diagnose, treat, and manage patients' health conditions while providing comprehensive care and collaborating with healthcare teams.

Task 1: Add a new DSI for a patient with diabetes. (*120 Seconds*)

Navigated to the task starting point.

Task 1: Add a new Decision Support Intervention for a patient with diabetes.

Success:

V Easily completed
☐ Completed with difficulty or help :: Describe below
☐ Not completed
Comments: We have been doing this very frequently and looks easy for me

Task Time: 105 Seconds

Optimal Path: *Open chart* → Click on Dues Menu → *Choose Diagnosis based Intervention* → Mention the intervention required to shot up → *"OK" Button*

V Correct
☐ Minor Deviations / Cycles :: Describe below
☐ Major Deviations :: Describe below
Comments: Very easy to complete the task.

Observed Errors and Verbalizations:
Comments: No errors observed. Good positive feedback that performing this action is easy.

Rating:

Overall, this task was: 1

Show participant written scale: "Very Easy" (1) to "Very Difficult" (5)

Administrator / Notetaker Comments:

Participant is very comfortable in performing this action.

Task 2: Override a contraindicated medication recommendation. (80 *Seconds*)

Take the participant to the starting point for the task.

Patient is allergic to Aspirin, try to prescribe Aspirin and see if EHR Your Way shows drug contradiction popup and override it and continue prescribing.

Success:

V Easily completed
☐ Completed with difficulty or help :: Describe below
☐ Not completed
Comments:

Task Time:75 Seconds

Optimal Path: Open *Order Rx* → *Search for Aspirin and select drug* → *choose take, frequency, duration, dispense quantity* → *"OK" Button to save the prescription* → *You will get a popup about Drug contraindication* → *Choose the options to override it and continue prescribing.*

V Correct
☐ Minor Deviations / Cycles :: Describe below
☐ Major Deviations :: Describe below
Comments:

Observed Errors and Verbalizations:
Comments: No errors observed.

Rating:

Overall, this task was: 1

Show participant written scale: "Very Easy" (1) to "Very Difficult" (5)

Administrator / Notetaker Comments:
User is able to complete the task without any deviation and less than the expected time.

Task 3: Configure an alert for age-based screening. (120 *Seconds*)

Take the participant to the starting point for the task.

If patient is above 40 years show an alert to get Colonoscopy Screening procedure done.

Success:

V Easily completed
☐ Completed with difficulty or help :: Describe below
☐ Not completed
Comments:

Task Time:90 Seconds

Optimal Path: *Click on Dues → Select colonoscopy Screening → Mention Start age of the screening → "OK" Button*

V Correct
☐ Minor Deviations / Cycles :: Describe below
☐ Major Deviations :: Describe below
Comments:

Observed Errors and Verbalizations: No errors or verbalizations observed
Comments: No additional comments by the provider.

Rating:

Overall, this task was: 1

Show participant written scale: "Very Easy" (1) to "Very Difficult" (5)

Administrator / Notetaker Comments:

User has finished the task without any problem.

Task 4: Configure and use Predictive Decision Support Intervention functionality to make Patient Notes. (240 *Seconds*)

Take the participant to the starting point for the task.

Configure your notes template such that you will be able to use Predictive Decision support Intervention. Also use this functionality to generate notes by using Problem list as source of Predictive Decision support Intervention.

Success:

V Easily completed
☐ Completed with difficulty or help :: Describe below
☐ Not completed
Comments:

Task Time:180 Seconds

Optimal Path: Configuration path: *Open Notes Template → Use configuration button → Search and Select Clinical Decision Support - Manual → "OK" Button; Usage path: Click on PDSI hyperlink in notes → select Problem → Click "Generate button" → Ok button*

V Correct
☐ Minor Deviations / Cycles :: Describe below
☐ Major Deviations :: Describe below
Comments:

Observed Errors and Verbalizations: Despite some initial hesitation about using the new feature, the user was able to complete the task as intended, demonstrating the feature's effectiveness.
Comments: No additional comments by the user.

Rating:

Overall, this task was: 2.5

Show participant written scale: "Very Easy" (1) to "Very Difficult" (5)

Administrator / Notetaker Comments:
Despite some initial hesitation about using the new feature, the user was able to complete the task as intended, demonstrating the feature's effectiveness.

Final Questions (*2 Minutes*)

What was your overall impression of this system?

I'm really happy with the system as a whole. The new features are clear and intuitive, greatly enhancing usability and allowing me to complete tasks more efficiently.

What aspects of the system did you like most?

What I like most about the system is its intuitive interface. It's simple and quick to navigate, making patient information readily accessible. Additionally, the system streamlines workflows, reducing steps and enhancing efficiency in task management.

What aspects of the system did you like least?

The four tasks I completed went without any issues and fully met my expectations, with no aspects that I found problematic.

Were there any features that you were surprised to see?

Yes, I was surprised by the system's **advanced predictive analytics** feature, which provides valuable insights and anticipates patient needs. Additionally, the **automated workflow management** feature exceeded my expectations by streamlining administrative tasks and reducing the time spent on manual entry. These features added an extra layer of efficiency and convenience that I didn't initially expect.

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

No missing thing were observed

Compare this system to other systems you have used.

Since I've been using this system for quite some time, I'm not in a position to compare it to others. However, I'm very satisfied with how it works.

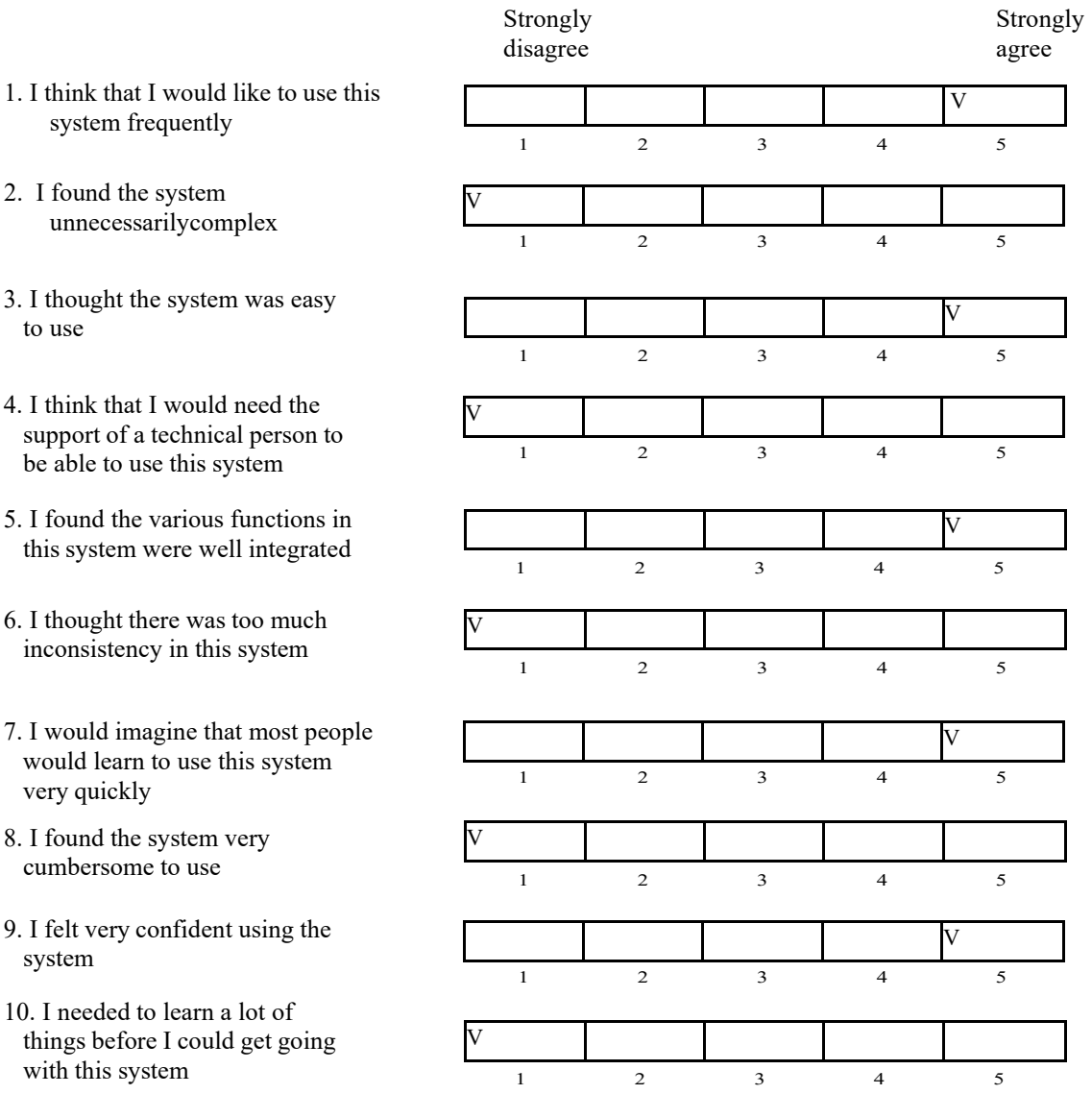
Would you recommend this system to your colleagues?

Yes.

Administer the SUS

Appendix 5: SYSTEM USABILITY SCALE QUESTIONNAIRE

*In 1996, Brooke published a "*low-cost usability scale that can be used for global assessments of systems usability*" known as the System Usability Scale or SUS.*[16] *Lewis and Sauro (2009) and others have elaborated on the SUS over the years. Computation of the SUS score can be found in Brooke's paper, in at* http://www.usabilitynet.org/trump/documents/Suschapt.doc *or in Tullis and Albert (2008).*



Administrator **Aparna Reddy**

Data Logger **Jhansi Majji**

Date: 11/15/2024 Time: **02.30 PM PST**

Participant # **P8**

Location **Online session – EHR Your Way Lab**

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

Prior to each participant:
- Reset application
- Start session recordings with *tool*

Prior to each task:
- Reset application to starting point for next task

After each participant:
- End session recordings with *tool*

After all testing
- Back up all video and data files

Orientation (*2* minutes)

Thank you for participating in this study. Our session today will last ***15* 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 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 did not have any involvement in its creation, so please be honest with your opinions.

The product you will be using today is *Cloud based Web application i.e., EHR Your Way v 9.2.0.0*. Some of the data may not make sense as it is placeholder data.

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.

Do you have any questions or concerns? No.

Preliminary Questions (*3* minutes)

What is your job title / appointment?

I am a Physician

How long have you been working in this role?
30 years.

What are some of your main responsibilities?
As a physician, my main responsibilities include diagnosing and treating medical conditions, prescribing appropriate treatments, and monitoring patient progress. They also provide preventive care, educate patients, and collaborate with healthcare teams to ensure comprehensive patient care.

Tell me about your experience with electronic health records.!!

My experience with Electronic Health Records (EHR) has been positive overall. EHR systems significantly improve the efficiency of managing patient data, making it easier to store, retrieve, and update patient records. They reduce the risk of errors compared to paper records and facilitate better communication among healthcare providers. Features like automated alerts and decision support tools also enhance patient care by ensuring timely interventions. However, there can be challenges, such as the learning curve when transitioning to a new system and occasional technical issues, but overall, EHR systems have greatly streamlined workflows in healthcare settings.

Task 1: Add a new DSI for a patient with diabetes. (*120 Seconds*)

Navigated to the task starting point.

Task 1: Add a new Decision Support Intervention for a patient with diabetes.

Success:

V Easily completed
☐ Completed with difficulty or help :: Describe below
☐ Not completed
Comments: We have been doing this very frequently and looks easy for me

Task Time: 70 Seconds

Optimal Path: *Open chart* → Click on Dues Menu → *Choose Diagnosis based Intervention* → Mention the intervention required to shot up → *"OK" Button*

V Correct
☐ Minor Deviations / Cycles :: Describe below
☐ Major Deviations :: Describe below
Comments: Very easy to complete the task.

Observed Errors and Verbalizations:
Comments: No errors observed. Good positive feedback that performing this action is easy.

Rating:

Overall, this task was: 1

Show participant written scale: "Very Easy" (1) to "Very Difficult" (5)

Administrator / Notetaker Comments:

Participant is very comfortable in performing this action.

Task 2: Override a contraindicated medication recommendation. (80 *Seconds*)

Take the participant to the starting point for the task.

Patient is allergic to Aspirin, try to prescribe Aspirin and see if EHR Your Way shows drug contradiction popup and override it and continue prescribing.

Success:

V Easily completed
☐ Completed with difficulty or help :: Describe below
☐ Not completed
Comments:

Task Time: 50 Seconds

Optimal Path: Open *Order Rx → Search for Aspirin and select drug → choose take, frequency, duration, dispense quantity → "OK" Button to save the prescription → You will get a popup about Drug contraindication → Choose the options to override it and continue prescribing.*

V Correct
☐ Minor Deviations / Cycles :: Describe below
☐ Major Deviations :: Describe below
Comments:

Observed Errors and Verbalizations:
Comments: No errors observed.

Rating:

Overall, this task was: 1

Show participant written scale: "Very Easy" (1) to "Very Difficult" (5)

Administrator / Notetaker Comments:
User is able to complete the task without any deviation and less than the expected time.

Task 3: Configure an alert for age-based screening. (120 *Seconds*)

Take the participant to the starting point for the task.

If patient is above 40 years show an alert to get Colonoscopy Screening procedure done.

Success:

V Easily completed
☐ Completed with difficulty or help :: Describe below
☐ Not completed
Comments:

Task Time:80 Seconds

Optimal Path: *Click on Dues → Select colonoscopy Screening → Mention Start age of the screening → "OK" Button*

V Correct
☐ Minor Deviations / Cycles :: Describe below
☐ Major Deviations :: Describe below
Comments:

Observed Errors and Verbalizations: No errors or verbalizations observed
Comments: No additional comments by the provider.

Rating:

Overall, this task was: 1

Show participant written scale: "Very Easy" (1) to "Very Difficult" (5)

Administrator / Notetaker Comments:

User has finished the task without any problem.

Task 4: Configure and use Predictive Decision Support Intervention functionality to make Patient Notes. (240 *Seconds*)

Take the participant to the starting point for the task.

Configure your notes template such that you will be able to use Predictive Decision support Intervention. Also use this functionality to generate notes by using Problem list as source of Predictive Decision support Intervention.

Success:

V Easily completed
☐ Completed with difficulty or help :: Describe below
☐ Not completed
Comments:

Task Time:110 Seconds

Optimal Path: Configuration path: *Open Notes Template → Use configuration button → Search and Select Clinical Decision Support - Manual → "OK" Button; Usage path: Click on PDSI hyperlink in notes → select Problem → Click "Generate button" → Ok button*

V Correct
☐ Minor Deviations / Cycles :: Describe below
☐ Major Deviations :: Describe below
Comments:

Observed Errors and Verbalizations: Despite some initial hesitation about using the new feature, the user was able to complete the task as intended, demonstrating the feature's effectiveness.
Comments: No additional comments by the user.

Rating:

Overall, this task was: 1.5

Show participant written scale: "Very Easy" (1) to "Very Difficult" (5)

Administrator / Notetaker Comments:
No Comments

Final Questions (*2 Minutes*)

What was your overall impression of this system?

I'm really happy with the system. The new features are thoughtfully arranged and simple to use, streamlining daily tasks and improving overall workflow.

'What aspects of the system did you like most?

The feature that stands out to me the most is the system's user-friendly interface. It's easy to navigate, allowing me to quickly access critical patient information. Additionally, the streamlined processes reduce unnecessary steps, making tasks faster and more efficient.

What aspects of the system did you like least?

The four tasks I executed went smoothly and met my expectations, with no areas that I found less than ideal

Were there any features that you were surprised to see?

I must say, Yes

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

No missing thing were observed

Compare this system to other systems you have used.

Since I've been familiar with this system for a long time, I'm not in a position to assess other systems. But I'm very satisfied with the one I use.

Would you recommend this system to your colleagues?

Yes.

Administer the SUS

Appendix 5: SYSTEM USABILITY SCALE QUESTIONNAIRE

*In 1996, Brooke published a "*low-cost usability scale that can be used for global assessments of systems usability*" known as the System Usability Scale or SUS.*[16] *Lewis and Sauro (2009) and others have elaborated on the SUS over the years. Computation of the SUS score can be found in Brooke's paper, in at* http://www.usabilitynet.org/trump/documents/Suschapt.doc *or in Tullis and Albert (2008).*

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

Administrator **Aparna Reddy**

Data Logger **Jhansi Majji**

Date: 11/15/2024 Time: **03.00 PM PST**

Participant # **P9**

Location **Online session – EHR Your Way Lab**

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

Prior to each participant:
- Reset application
- Start session recordings with *tool*

Prior to each task:
- Reset application to starting point for next task

After each participant:
- End session recordings with *tool*

After all testing
- Back up all video and data files

Orientation (*2* minutes)

Thank you for participating in this study. Our session today will last ***15* 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 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 did not have any involvement in its creation, so please be honest with your opinions.

The product you will be using today is *Cloud based Web application i.e., EHR Your Way v 9.2.0.0*. Some of the data may not make sense as it is placeholder data.

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.

Do you have any questions or concerns? No.

Preliminary Questions (*3* minutes)

What is your job title / appointment?

I am a Nurse.

How long have you been working in this role?
3 years.

What are some of your main responsibilities?
I am a Nurse and main responsibilities include to provide patient care, administer treatments and medications, monitor patient conditions, and collaborate with healthcare teams to ensure optimal health outcomes.

Tell me about your experience with electronic health records.!!
As a nurse, I use EHR Your Way to document patient details. It helps me save time on record-keeping and ensures that automated alerts for clinical and administrative tasks are delivered promptly.

Task 1: Add a new DSI for a patient with diabetes. (*120 Seconds*)

Navigated to the task starting point.

Task 1: Add a new Decision Support Intervention for a patient with diabetes.

Success:

V Easily completed
☐ Completed with difficulty or help :: Describe below
☐ Not completed
Comments: We have been doing this very frequently and looks easy for me

Task Time: 100 Seconds

Optimal Path: *Open chart* → Click on Dues Menu → *Choose Diagnosis based Intervention* → Mention the intervention required to shot up → *"OK" Button*

V Correct
☐ Minor Deviations / Cycles :: Describe below
☐ Major Deviations :: Describe below
Comments: Very easy to complete the task.

Observed Errors and Verbalizations:
Comments: No errors observed. Good positive feedback that performing this action is easy.

Rating:

Overall, this task was: 1

Show participant written scale: "Very Easy" (1) to "Very Difficult" (5)

Administrator / Notetaker Comments:

Participant is very comfortable in performing this action.

Task 2: Override a contraindicated medication recommendation. (80 *Seconds*)

Take the participant to the starting point for the task.

Patient is allergic to Aspirin, try to prescribe Aspirin and see if EHR Your Way shows drug contradiction popup and override it and continue prescribing.

Success:

V Easily completed
☐ Completed with difficulty or help :: Describe below
☐ Not completed
Comments:

Task Time:75 Seconds

Optimal Path: Open *Order Rx* → *Search for Aspirin and select drug* → *choose take, frequency, duration, dispense quantity* → *"OK" Button to save the prescription* → *You will get a popup about Drug contraindication* → *Choose the options to override it and continue prescribing.*

V Correct
☐ Minor Deviations / Cycles :: Describe below
☐ Major Deviations :: Describe below
Comments:

Observed Errors and Verbalizations:
Comments: No errors observed.

Rating:

Overall, this task was: 1

Show participant written scale: "Very Easy" (1) to "Very Difficult" (5)

Administrator / Notetaker Comments:
User is able to complete the task without any deviation and less than the expected time.

Task 3: Configure an alert for age-based screening. (120 *Seconds*)

Take the participant to the starting point for the task.

If patient is above 40 years show an alert to get Colonoscopy Screening procedure done.

Success:

V Easily completed
☐ Completed with difficulty or help :: Describe below
☐ Not completed
Comments:

Task Time:100 Seconds

Optimal Path: *Click on Dues → Select colonoscopy Screening → Mention Start age of the screening → "OK" Button*

V Correct
☐ Minor Deviations / Cycles :: Describe below
☐ Major Deviations :: Describe below
Comments:

Observed Errors and Verbalizations: No errors or verbalizations observed
Comments: No additional comments by the provider.

Rating:

Overall, this task was: 1

Show participant written scale: "Very Easy" (1) to "Very Difficult" (5)

Administrator / Notetaker Comments:

User has finished the task without any problem.

Task 4: Configure and use Predictive Decision Support Intervention functionality to make Patient Notes. (240 *Seconds*)

Take the participant to the starting point for the task.

Configure your notes template such that you will be able to use Predictive Decision support Intervention. Also use this functionality to generate notes by using Problem list as source of Predictive Decision support Intervention.

Success:

V Easily completed
☐ Completed with difficulty or help :: Describe below
☐ Not completed
Comments:

Task Time:210 Seconds

Optimal Path: Configuration path: *Open Notes Template → Use configuration button → Search and Select Clinical Decision Support - Manual → "OK" Button; Usage path: Click on PDSI hyperlink in notes → select Problem → Click "Generate button" → Ok button*

V Correct
☐ Minor Deviations / Cycles :: Describe below
☐ Major Deviations :: Describe below
Comments:

Observed Errors and Verbalizations: Despite some initial hesitation about using the new feature, the user was able to complete the task as intended, demonstrating the feature's effectiveness.
Comments: No additional comments by the user.

Rating:

Overall, this task was: 2

Show participant written scale: "Very Easy" (1) to "Very Difficult" (5)

Administrator / Notetaker Comments:
While the user was able to complete the task, they had a small concern about whether it was done properly.

Final Questions (*2 Minutes*)

What was your overall impression of this system?

I'm thoroughly impressed with the system as a whole. The new features are thoughtfully arranged and intuitive, greatly enhancing usability and streamlining everyday tasks.

What aspects of the system did you like most?

I'm particularly impressed by the system's intuitive interface. It makes accessing important patient information quick and easy. The way it streamlines tasks, cutting down on steps, makes the whole process much more efficient.

What aspects of the system did you like least?

The tasks I completed went smoothly and met my expectations in every way, with no issues or shortcomings.

Were there any features that you were surprised to see?

Yes, the predictive analytics feature really caught my attention, as it provides valuable insights and helps foresee patient needs. The automated workflow management also exceeded my expectations by simplifying administrative tasks and reducing time spent on manual data input. These features brought an unexpected level of efficiency and convenience

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

No missing thing were observed

Compare this system to other systems you have used.

I haven't had the opportunity to use other systems extensively, so I can't compare them directly. However, I'm very pleased with how the current system meets my needs.

Would you recommend this system to your colleagues?

Yes.

Administer the SUS

Appendix 5: SYSTEM USABILITY SCALE QUESTIONNAIRE

*In 1996, Brooke published a "*low-cost usability scale that can be used for global assessments of systems usability*" known as the System Usability Scale or SUS.*[16] *Lewis and Sauro (2009) and others have elaborated on the SUS over the years. Computation of the SUS score can be found in Brooke's paper, in at* http://www.usabilitynet.org/trump/documents/Suschapt.doc *or in Tullis and Albert (2008).*

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

Administrator **Aparna Reddy**

Data Logger **Jhansi Majji**

Date: 11/15/2024 Time: **03.30 PM PST**

Participant # **P10**

Location **Online session – EHR Your Way Lab**

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

Prior to each participant:
- Reset application
- Start session recordings with *tool*

Prior to each task:
- Reset application to starting point for next task

After each participant:
- End session recordings with *tool*

After all testing
- Back up all video and data files

Orientation (*2* minutes)

Thank you for participating in this study. Our session today will last ***15* 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 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 did not have any involvement in its creation, so please be honest with your opinions.

The product you will be using today is *Cloud based Web application i.e., EHR Your Way v 9.2.0.0*. Some of the data may not make sense as it is placeholder data.

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.

Do you have any questions or concerns? No.

Preliminary Questions (*3* minutes)

What is your job title / appointment?

I am a Front Office Person.

How long have you been working in this role?
3 years.

What are some of your main responsibilities?
Responsible for managing patient registrations, scheduling appointments, maintaining accurate health records, handling billing, and ensuring compliance with privacy regulations.

Tell me about your experience with electronic health records.!!
As a front office person with electronic health records (EHR) typically involves using the system to manage patient information, schedule appointments, verify insurance details, and ensure that all patient records are accurately entered and updated in real time.

Task 1: Add a new DSI for a patient with diabetes. (*120 Seconds*)

Navigated to the task starting point.

Task 1: Add a new Decision Support Intervention for a patient with diabetes.

Success:

V Easily completed
☐ Completed with difficulty or help :: Describe below
☐ Not completed
Comments: We have been doing this very frequently and looks easy for me

Task Time: 115 Seconds

Optimal Path: *Open chart* → Click on Dues Menu → *Choose Diagnosis based Intervention* → Mention the intervention required to shot up → *"OK" Button*

V Correct
☐ Minor Deviations / Cycles :: Describe below
☐ Major Deviations :: Describe below
Comments: Very easy to complete the task.

Observed Errors and Verbalizations:
Comments: No errors observed. Good positive feedback that performing this action is easy.

Rating:

Overall, this task was: 2.5

Show participant written scale: "Very Easy" (1) to "Very Difficult" (5)

Administrator / Notetaker Comments:

Participant is very comfortable in performing this action.

Task 2: Override a contraindicated medication recommendation. (80 *Seconds*)

Take the participant to the starting point for the task.

Patient is allergic to Aspirin, try to prescribe Aspirin and see if EHR Your Way shows drug contradiction popup and override it and continue prescribing.

Success:

V Easily completed
☐ Completed with difficulty or help :: Describe below
☐ Not completed
Comments:

Task Time:90 Seconds

Optimal Path: Open *Order Rx → Search for Aspirin and select drug → choose take, frequency, duration, dispense quantity → "OK" Button to save the prescription → You will get a popup about Drug contraindication → Choose the options to override it and continue prescribing.*

V Correct
☐ Minor Deviations / Cycles :: Describe below
☐ Major Deviations :: Describe below
Comments:

Observed Errors and Verbalizations:
Comments: No errors observed.

Rating:

Overall, this task was: 2

Show participant written scale: "Very Easy" (1) to "Very Difficult" (5)

Administrator / Notetaker Comments:
User is able to complete the task without any deviation and less than the expected time.

Task 3: Configure an alert for age-based screening. (120 *Seconds*)

Take the participant to the starting point for the task.

If patient is above 40 years show an alert to get Colonoscopy Screening procedure done.

Success:

V Easily completed
☐ Completed with difficulty or help :: Describe below
☐ Not completed
Comments:

Task Time:125 Seconds

Optimal Path: *Click on Dues → Select colonoscopy Screening → Mention Start age of the screening → "OK" Button*

V Correct
☐ Minor Deviations / Cycles :: Describe below
☐ Major Deviations :: Describe below
Comments:

Observed Errors and Verbalizations: No errors or verbalizations observed
Comments: No additional comments by the provider.

Rating:

Overall, this task was: 2.5

Show participant written scale: "Very Easy" (1) to "Very Difficult" (5)

Administrator / Notetaker Comments:

User has finished the task without any problem.

Task 4: Configure and use Predictive Decision Support Intervention functionality to make Patient Notes. (240 *Seconds*)

Take the participant to the starting point for the task.

Configure your notes template such that you will be able to use Predictive Decision support Intervention. Also use this functionality to generate notes by using Problem list as source of Predictive Decision support Intervention.

Success:

V Easily completed
☐ Completed with difficulty or help :: Describe below
☐ Not completed
Comments:

Task Time:220 Seconds

Optimal Path: Configuration path: *Open Notes Template → Use configuration button → Search and Select Clinical Decision Support - Manual → "OK" Button; Usage path: Click on PDSI hyperlink in notes → select Problem → Click "Generate button" → Ok button*

V Correct
☐ Minor Deviations / Cycles :: Describe below
☐ Major Deviations :: Describe below
Comments:

Observed Errors and Verbalizations: Despite some initial hesitation about using the new feature, the user was able to complete the task as intended, demonstrating the feature's effectiveness.
Comments: No additional comments by the user.

Rating:

Overall, this task was: 2.5

Show participant written scale: "Very Easy" (1) to "Very Difficult" (5)

Administrator / Notetaker Comments:
The task was successfully completed by the user, though they had some doubts about its correctness

Final Questions (*2 Minutes*)

What was your overall impression of this system?

I'm very happy with how the system has evolved. The new features are organized in a user-friendly way, significantly improving both efficiency and ease of use

What aspects of the system did you like most?

For me, the system's most impressive feature is its intuitive design. It offers easy navigation and fast access to crucial patient details. The streamlined processes further enhance efficiency, reducing unnecessary steps and speeding up task completion

What aspects of the system did you like least?

The tasks I completed went smoothly and met my expectations in every way, with no issues or shortcomings.

Were there any features that you were surprised to see?

I was definitely surprised by the system's advanced predictive analytics, which provides meaningful insights and anticipates patient needs. The automated workflow management also impressed me by streamlining administrative processes and reducing the need for manual input. These additions enhanced efficiency in ways I didn't foresee.

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

No missing thing were observed

Compare this system to other systems you have used.

As someone who's been using this system for quite some time, I can't comment on others without direct experience. But, I'm very satisfied with the performance of the current system.

Would you recommend this system to your colleagues?

Yes.

Administer the SUS

Appendix 5: SYSTEM USABILITY SCALE QUESTIONNAIRE

*In 1996, Brooke published a "*low-cost usability scale that can be used for global assessments of systems usability*" known as the System Usability Scale or SUS.*[16] *Lewis and Sauro (2009) and others have elaborated on the SUS over the years. Computation of the SUS score can be found in Brooke's paper, in at* http://www.usabilitynet.org/trump/documents/Suschapt.doc *or in Tullis and Albert (2008).*

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

Administrator **Aparna Reddy**

Data Logger **Jhansi Majji**

Date: 11/15/2024 Time: **04.00 PM PST**

Participant # **P11**

Location **Online session – EHR Your Way Lab**

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

Prior to each participant:
- Reset application
- Start session recordings with *tool*

Prior to each task:
- Reset application to starting point for next task

After each participant:
- End session recordings with *tool*

After all testing
- Back up all video and data files

Orientation (*2* minutes)

Thank you for participating in this study. Our session today will last ***15* 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 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 did not have any involvement in its creation, so please be honest with your opinions.

The product you will be using today is *Cloud based Web application i.e., EHR Your Way v 9.2.0.0*. Some of the data may not make sense as it is placeholder data.

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.

Do you have any questions or concerns? No.

Preliminary Questions (*3* minutes)

What is your job title / appointment?

I am a Nurse.

How long have you been working in this role?
20 months

What are some of your main responsibilities?
Main responsibilities of a nurse include providing direct patient care by monitoring vital signs, administering medications, and assisting with daily activities to ensure patient comfort and recovery.

Tell me about your experience with electronic health records.!!
As a nurse, I use EHR Your Way to document patient details. It helps me save time on record-keeping and ensures that automated alerts for clinical and administrative tasks are delivered promptly.

Task 1: Add a new DSI for a patient with diabetes. (*120 Seconds*)

Navigated to the task starting point.

Task 1: Add a new Decision Support Intervention for a patient with diabetes.

Success:

V Easily completed
☐ Completed with difficulty or help :: Describe below
☐ Not completed
Comments: We have been doing this very frequently and looks easy for me

Task Time: 140 Seconds

Optimal Path: *Open chart* → Click on Dues Menu → *Choose Diagnosis based Intervention* → Mention the intervention required to shot up → *"OK" Button*

V Correct
☐ Minor Deviations / Cycles :: Describe below
☐ Major Deviations :: Describe below
Comments: Very easy to complete the task.

Observed Errors and Verbalizations:
Comments: No errors observed. Good positive feedback that performing this action is easy.

Rating:

Overall, this task was: 2

Show participant written scale: "Very Easy" (1) to "Very Difficult" (5)

Administrator / Notetaker Comments:

Participant is very comfortable in performing this action.

Task 2: Override a contraindicated medication recommendation. (80 *Seconds*)

Take the participant to the starting point for the task.

Patient is allergic to Aspirin, try to prescribe Aspirin and see if EHR Your Way shows drug contradiction popup and override it and continue prescribing.

Success:

V Easily completed
☐ Completed with difficulty or help :: Describe below
☐ Not completed
Comments:

Task Time:90 Seconds

Optimal Path: Open *Order Rx → Search for Aspirin and select drug → choose take, frequency, duration, dispense quantity → "OK" Button to save the prescription → You will get a popup about Drug contraindication → Choose the options to override it and continue prescribing.*

V Correct
☐ Minor Deviations / Cycles :: Describe below
☐ Major Deviations :: Describe below
Comments:

Observed Errors and Verbalizations:
Comments: No errors observed.

Rating:

Overall, this task was: 2

Show participant written scale: "Very Easy" (1) to "Very Difficult" (5)

Administrator / Notetaker Comments:
User is able to complete the task without any deviation and less than the expected time.

Task 3: Configure an alert for age-based screening. (120 *Seconds*)

Take the participant to the starting point for the task.

If patient is above 40 years show an alert to get Colonoscopy Screening procedure done.

Success:

V Easily completed
☐ Completed with difficulty or help :: Describe below
☐ Not completed
Comments:

Task Time:130 Seconds

Optimal Path: *Click on Dues → Select colonoscopy Screening → Mention Start age of the screening → "OK" Button*

V Correct
☐ Minor Deviations / Cycles :: Describe below
☐ Major Deviations :: Describe below
Comments:

Observed Errors and Verbalizations: No errors or verbalizations observed
Comments: No additional comments by the provider.

Rating:

Overall, this task was: 2

Show participant written scale: "Very Easy" (1) to "Very Difficult" (5)

Administrator / Notetaker Comments:

User has finished the task without any problem.

Task 4: Configure and use Predictive Decision Support Intervention functionality to make Patient Notes. (240 *Seconds*)

Take the participant to the starting point for the task.

Configure your notes template such that you will be able to use Predictive Decision support Intervention. Also use this functionality to generate notes by using Problem list as source of Predictive Decision support Intervention.

Success:

V Easily completed
☐ Completed with difficulty or help :: Describe below
☐ Not completed
Comments:

Task Time:200 Seconds

Optimal Path: Configuration path: *Open Notes Template → Use configuration button → Search and Select Clinical Decision Support - Manual → "OK" Button; Usage path: Click on PDSI hyperlink in notes → select Problem → Click "Generate button" → Ok button*

V Correct
☐ Minor Deviations / Cycles :: Describe below
☐ Major Deviations :: Describe below
Comments:

Observed Errors and Verbalizations: Despite some initial hesitation about using the new feature, the user was able to complete the task as intended, demonstrating the feature's effectiveness.
Comments: No additional comments by the user.

Rating:

Overall, this task was: 2

Show participant written scale: "Very Easy" (1) to "Very Difficult" (5)

Administrator / Notetaker Comments:

The user successfully completed the task but had a slight concern about whether he did it right. When I confirmed that it was correct, he seemed more confident and satisfied

Final Questions (*2 Minutes*)

What was your overall impression of this system?

I'm delighted with the updates to the system. The new features are clearly organized and intuitive, making everyday tasks quicker and more efficient.

What aspects of the system did you like most?

I'm particularly impressed by the system's intuitive interface. It makes accessing important patient information quick and easy. The way it streamlines tasks, cutting down on steps, makes the whole process much more efficient.

What aspects of the system did you like least?

I completed the four tasks seamlessly, and each one met my expectations with no areas that I found less than satisfactory.

Were there any features that you were surprised to see?

I must say, Yes

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

No missing thing were observed

Compare this system to other systems you have used.

As someone who's been using this system for quite some time, I can't comment on others without direct experience. But, I'm very satisfied with the performance of the current system.

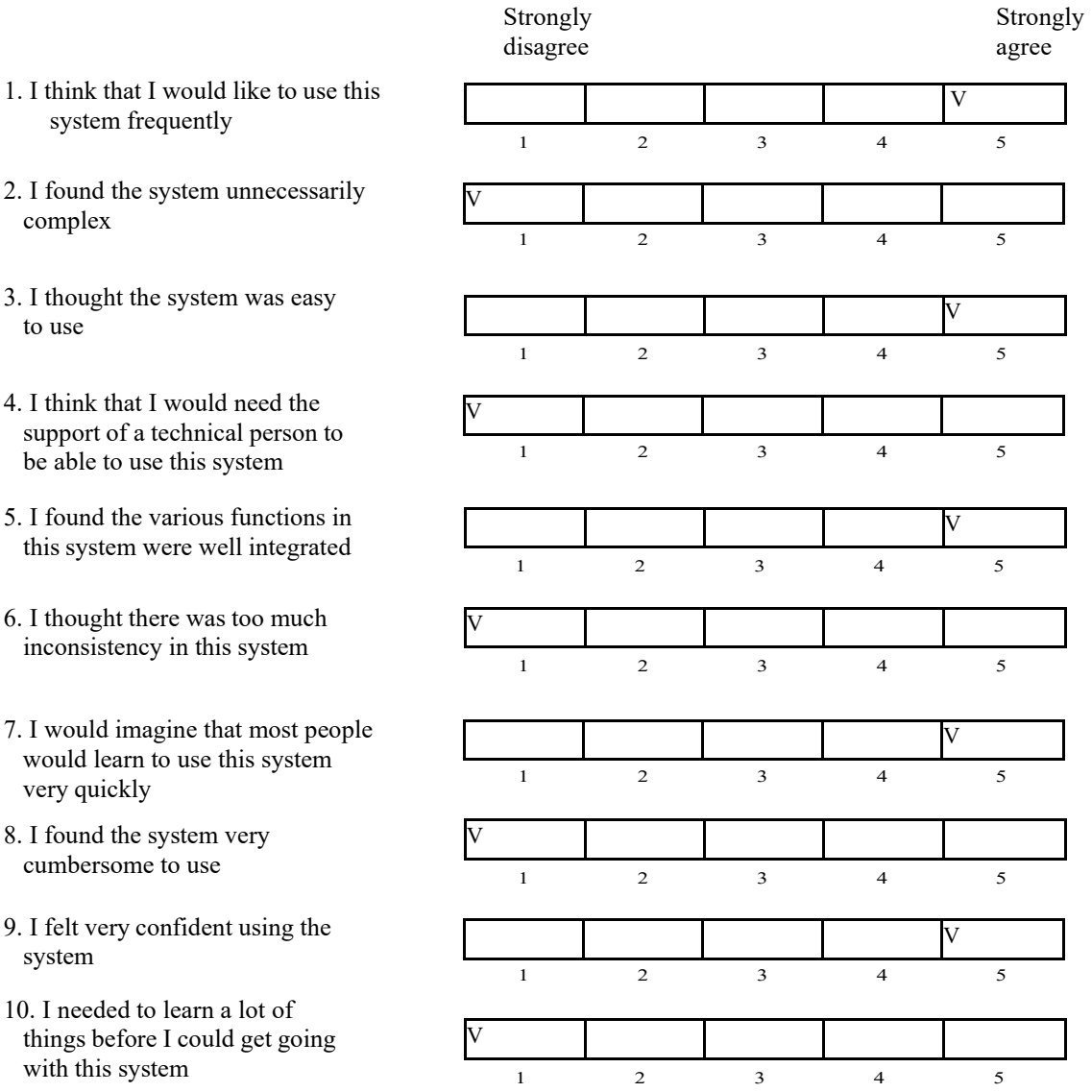
Would you recommend this system to your colleagues?

Yes.

Administer the SUS

Appendix 5: SYSTEM USABILITY SCALE QUESTIONNAIRE

*In 1996, Brooke published a "*low-cost usability scale that can be used for global assessments of systems usability*" known as the System Usability Scale or SUS.*[16] *Lewis and Sauro (2009) and others have elaborated on the SUS over the years. Computation of the SUS score can be found in Brooke's paper, in at* http://www.usabilitynet.org/trump/documents/Suschapt.doc *or in Tullis and Albert (2008).*



Administrator **Aparna Reddy**

Data Logger **Jhansi Majji**

Date: 11/15/2024 Time: **04.30 PM PST**

Participant # **P12**

Location **Online session – EHR Your Way Lab**

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

Prior to each participant:
- Reset application
- Start session recordings with *tool*

Prior to each task:
- Reset application to starting point for next task

After each participant:
- End session recordings with *tool*

After all testing
- Back up all video and data files

Orientation (*2* minutes)

Thank you for participating in this study. Our session today will last ***15* 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 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 did not have any involvement in its creation, so please be honest with your opinions.

The product you will be using today is *Cloud based Web application i.e., EHR Your Way v 9.2.0.0*. Some of the data may not make sense as it is placeholder data.

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.

Do you have any questions or concerns? No.

Preliminary Questions (*3* minutes)

What is your job title / appointment?

I am a Nurse.

How long have you been working in this role?
15 Months

What are some of your main responsibilities?
provide direct patient care, monitor health conditions, administer medications, and assist with daily activities.

Tell me about your experience with electronic health records.!!
Using EHR Your Way allows me to efficiently document patient details, saving time on paperwork and ensuring that automated reminders for clinical and administrative tasks are delivered on time.

Task 1: Add a new DSI for a patient with diabetes. (*120 Seconds*)

Navigated to the task starting point.

Task 1: Add a new Decision Support Intervention for a patient with diabetes.

Success:

V Easily completed
☐ Completed with difficulty or help :: Describe below
☐ Not completed
Comments: We have been doing this very frequently and looks easy for me

Task Time: 100 Seconds

Optimal Path: *Open chart* → Click on Dues Menu → *Choose Diagnosis based Intervention* → Mention the intervention required to shot up → *"OK" Button*

V Correct
☐ Minor Deviations / Cycles :: Describe below
☐ Major Deviations :: Describe below
Comments: Very easy to complete the task.

Observed Errors and Verbalizations:
Comments: No errors observed. Good positive feedback that performing this action is easy.

Rating:

Overall, this task was: 1

Show participant written scale: "Very Easy" (1) to "Very Difficult" (5)

Administrator / Notetaker Comments:

Participant is very comfortable in performing this action.

Task 2: Override a contraindicated medication recommendation. (80 *Seconds*)

Take the participant to the starting point for the task.

Patient is allergic to Aspirin, try to prescribe Aspirin and see if EHR Your Way shows drug contradiction popup and override it and continue prescribing.

Success:

V Easily completed
☐ Completed with difficulty or help :: Describe below
☐ Not completed
Comments:

Task Time:70 Seconds

Optimal Path: Open *Order Rx → Search for Aspirin and select drug → choose take, frequency, duration, dispense quantity → "OK" Button to save the prescription → You will get a popup about Drug contraindication → Choose the options to override it and continue prescribing.*

V Correct
☐ Minor Deviations / Cycles :: Describe below
☐ Major Deviations :: Describe below
Comments:

Observed Errors and Verbalizations:
Comments: No errors observed.

Rating:

Overall, this task was: 1

Show participant written scale: "Very Easy" (1) to "Very Difficult" (5)

Administrator / Notetaker Comments:
User is able to complete the task without any deviation and less than the expected time.

Task 3: Configure an alert for age-based screening. (120 *Seconds*)

Take the participant to the starting point for the task.

If patient is above 40 years show an alert to get Colonoscopy Screening procedure done.

Success:

V Easily completed
☐ Completed with difficulty or help :: Describe below
☐ Not completed
Comments:

Task Time:125 Seconds

Optimal Path: *Click on Dues → Select colonoscopy Screening → Mention Start age of the screening → "OK" Button*

V Correct
☐ Minor Deviations / Cycles :: Describe below
☐ Major Deviations :: Describe below
Comments:

Observed Errors and Verbalizations: No errors or verbalizations observed
Comments: No additional comments by the provider.

Rating:

Overall, this task was: 1.5

Show participant written scale: "Very Easy" (1) to "Very Difficult" (5)

Administrator / Notetaker Comments:

User has finished the task without any problem.

Task 4: Configure and use Predictive Decision Support Intervention functionality to make Patient Notes. (240 *Seconds*)

Take the participant to the starting point for the task.

Configure your notes template such that you will be able to use Predictive Decision support Intervention. Also use this functionality to generate notes by using Problem list as source of Predictive Decision support Intervention.

Success:

- ☐ Easily completed
- ☐ Completed with difficulty or help :: Describe below
- V Not completed

Comments:

Task Time:265 Seconds

Optimal Path: Configuration path: *Open Notes Template → Use configuration button → Search and Select Clinical Decision Support - Manual → "OK" Button; Usage path: Click on PDSI hyperlink in notes → select Problem → Click "Generate button" → Ok button*

- ☐ Correct
- ☐ Minor Deviations / Cycles :: Describe below
- V Major Deviations :: Describe below

Comments: User is unable to identify the path for configuring the feature. Got confused tried for 265 seconds and said, she is not able to figure out.

Observed Errors and Verbalizations: User said, I am confused with the path to configure the feature, but remember how to use it. I would try couple of other paths which could be possibly work. After few mins, she said I am unable to figure out the path to configure the functionality and stopped trying. ***Comments: Understood that user unable to figure out the path for configuration.***

Rating:

Overall, this task was: 4

Show participant written scale: "Very Easy" (1) to "Very Difficult" (5)

Administrator / Notetaker Comments:

User is confused with configuration steps. Unable to identify the menu which is required for configuring PDSI. We noted this and recommended the development team to make changes to the menu item to be more friendly.

Final Questions (*2 Minutes*)

What was your overall impression of this system?

The system as a whole has exceeded my expectations. With its intuitive design and well-placed new features, it's become much faster and easier to complete tasks

What aspects of the system did you like most?

The intuitive interface is the most notable feature of the system. Its simplicity allows for quick retrieval of key patient information. Moreover, the system has optimized workflows, reducing steps and speeding up task completion.

What aspects of the system did you like least?

The 3 tasks I completed went off without a hitch and fully met my expectations, but somehow I am confused with the path to configure the 4th task, which could be possibly remembered if I have got instructions from support. I am unable to recall the exact steps from the previous manual which I was provided.

Were there any features that you were surprised to see?

I was genuinely surprised by the advanced predictive analytics feature, which offers powerful insights and anticipates patient needs. Additionally, the automated workflow management streamlined administrative duties and minimized manual data entry, making processes far more efficient than I had anticipated.

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

No missing thing were observed

Compare this system to other systems you have used.

I've had the chance to use other systems extensively, and when compared to them, I find this one lacking in several areas. While it may meet basic needs, it falls short in terms of flexibility, speed, and overall performance. There are limitations that become apparent with more demanding tasks,

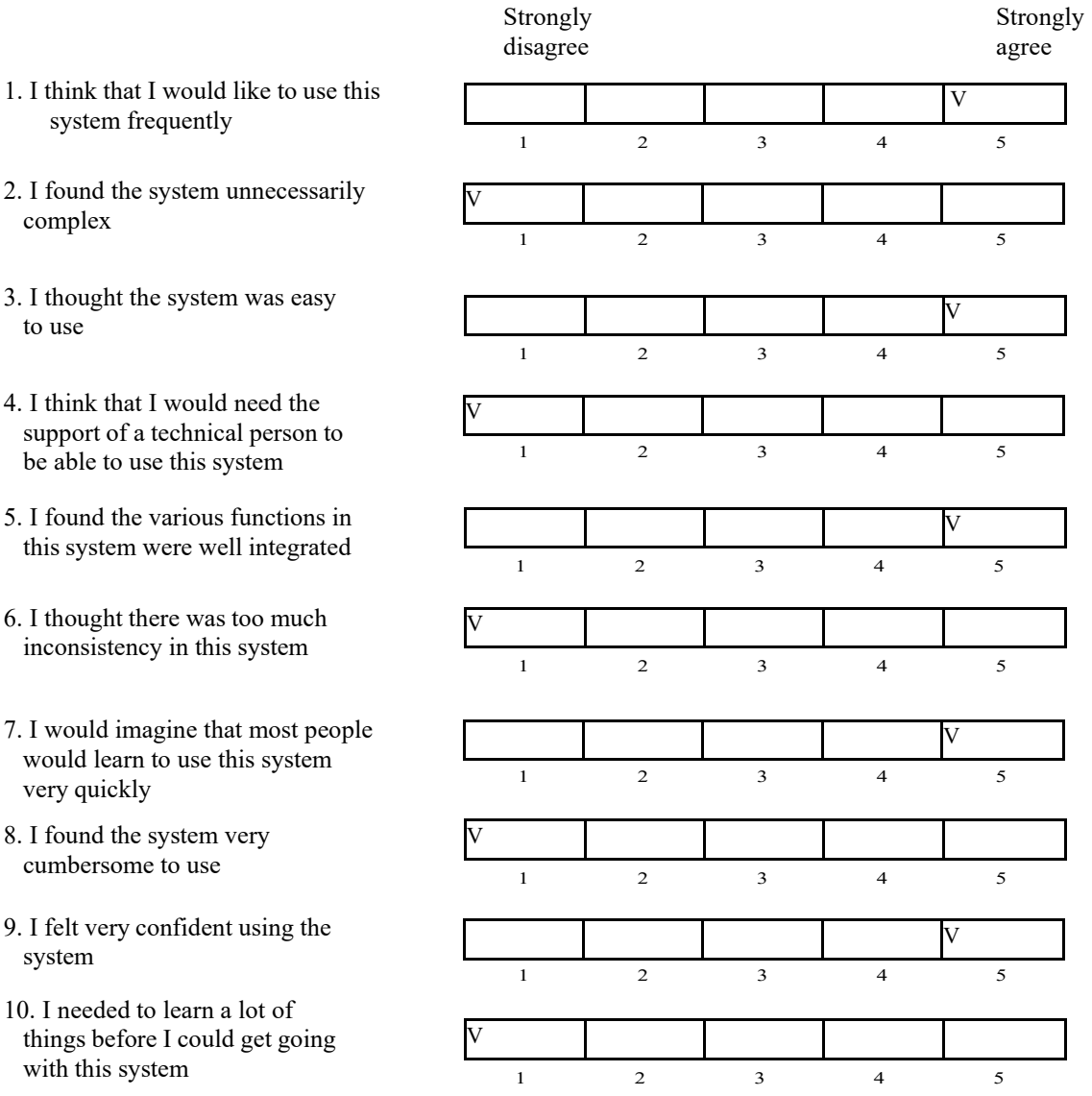
Would you recommend this system to your colleagues?

Yes.

Administer the SUS

Appendix 5: SYSTEM USABILITY SCALE QUESTIONNAIRE

*In 1996, Brooke published a "*low-cost usability scale that can be used for global assessments of systems usability*" known as the System Usability Scale or SUS.*[16] *Lewis and Sauro (2009) and others have elaborated on the SUS over the years. Computation of the SUS score can be found in Brooke's paper, in at* http://www.usabilitynet.org/trump/documents/Suschapt.doc *or in Tullis and Albert (2008).*



Appendix 6: INCENTIVE RECEIPT AND ACKNOWLEDGMENT FORM

[16] Brooke, J.: SUS: A "quick and dirty" usability scale. In: Jordan, P. W., Thomas, B., Weerdmeester, B.A., McClelland (eds.) *Usability Evaluation in Industry* pp. 189--194. Taylor & Francis, London, UK (1996). SUS is copyrighted to Digital Equipment Corporation, 1986.

Lewis, J R & Sauro, J. (2009) "The Factor Structure Of The System Usability Scale." in *Proceedings of theHuman Computer Interaction International Conference (HCII 2009), San Diego CA, USA*

Acknowledgement of Receipt

I hereby acknowledge receipt of *$15 Star Bucks Gift Card* for my participation in a research study run by *EHR*

Your Way.

Printed Name:_____Address:_

_____

Signature:_____Date: _____

Usability Researcher:_____ Signature of Usability

Researcher: _____

Date:_____

Witness: _____

Witness Signature:_____Date:_

ISO/IEC 205062
Common Industry Format for Usability Test Reports

Table of Contents

Executive Summary

A core part of our Software Development Lifecycle (SDLC) includes integration of a US (User Experience) team with a focus on usability based upon safety-enhanced design including patient safety, increased individual effectiveness and efficiency through increased user productivity/efficiency, decreased user errors, and increase in safety and improved cognitive support. A user centered design process is integrated into the SDLC to ensure a safety-enhanced design is achieved.

The User Centered Design process that is utilized at Adaptamed is the NISTIR 7741. Standard is aimed to improve the usability enhancing the effectiveness, efficiency, and satisfaction with which the intended users can achieve their tasks in the intended context of product use. This document includes the following steps: description of the product, goals ofthe test, test participants, tasks the users were asked to perform, experimental design of the test, the method or process by which the test was conducted, the usability metrics and data collection methods, and the numerical results. This process is used because it very closely aligns with the requirements set for Safety-Enhanced Design. It also providesthe most clarity on what the best practice is for execution of each step.

This standard was applied to the usability test of EHR YOUR WAY Certified Edition version 9.2.0.0 which was conducted July1, 2018 at Adaptamed's facility in San Diego, CA. Report related to this test is prepared on 08/15/2018. This test measured the usability of the application by tracking efficiency, effectiveness, and satisfaction. Ten participants of varying experience levels completed tasks which were reflective of frequently used tasks in the application, such as medication/lab/radiology ordering, recording problems and medication allergies, and viewing drug-drug and drug- allergy interactions.

Experienced usability specialists moderated the tests and compiled the metrics. Key metrics that were tracked included task completion rate, task time, error rate, task deviations, satisfaction ratings, and participant verbalizations and recommendations.

The testing showed a 100% task completion rate and a less than a minute average task time.
And while these metrics support the usability of the application, there is always room for improvement. Based on recommendations voiced during the tests and the rate of errors/task times associated with certain tasks, there were afew notable improvement ideas.

Date of Usability Test: 07/01/2018

Date of Report Prepared: 08/15/2018

Report Prepared by: Aparna Reddy

(C.O.O);Phone: 619-622-0666;

Email address: aparna@ehryourway.com;

Mailing Address: 4276, 54th Place, Suite: B, San Diego, CA, 92115.

Introduction

Full Product Description

The Order Entry component of EHR YOUR WAY Certified Edition is designed to maximize the workflows for managing outpatient lab, radiology and medications orders. EHR YOUR WAY provides our users with an efficient workflow to review, add, and change medication, laboratory, and radiology orders as well as laboratory order results. Information like allergies, diagnoses, and interactions are displayed to the user as they work with the various orders. Users can also review, add, and change problems, demographics, and implantable devices as well.

Test Objectives

This test was to evaluate the usefulness and functionality (does the application work as intended), ease of use (do both physicians and non-physicians understand how to use the application), safety (ability to avoid errors), and satisfaction (what is the desirability of the application of EHR YOUR WAY Certified Edition.

The goals for this usability test for the EHR YOUR WAY Certified Edition were to test against 10 different areas being certified:

- 170.315(a)(1) CPOE - Medications
- 170.315(a)(2) CPOE - Laboratory
- 170.315(a)(3) CPOE – Diagnostic Imaging (NEW)
- 170.315(a)(4) Drug-drug, Drug-allergy Interaction Checks
- 170.315(a)(5) Demographics (NEW)
- 170.315(a)(6) Problem List
- 170.315(a)(7) Medication List
- 170.315(a)(8) Medication Allergy List
- 170.315(a)(14) Implantable Device List (NEW)
- 170.315(b)(3) Electronic Prescribing
- 170.315(a)(9) Clinical Decision Support
- 170.315(b)(2) Clinical Information Reconciliation and Incorporation

Methods

Participants

Ten participants were tested in this study. Our intended users are clinicians, so we used participants with a clinical background. We also used participants with varying professional experience and licenses, computer experience levels, and experience with the product. We used these different experience levels because we believe that in a real-world setting, users would have varying computer and product experience levels. The below represents the demographics that were collected from each participant. The participants chosen were not compensated fiscally. These participantswere no directly involved in the development of the application.

Additional Technology used: None is used

S. No	Participant ID	**Occupation/Role**	**Professional Experience**	**Age**	**Sex**	**Education**	**Computer Experience**	**Product Experience**
1	ID1	Clinician	35 years	60-69	M	MD	25 years	5 years
2	ID2	Clinician	30 years	60-69	F	MD	25 years	5 years
3	ID3	Clinician	26 years	60-69	M	MD	25 Years	8 years
4	ID4	Nurse Practitioner	18 years	60-69	M	NP	20years	5 years
5	ID5	Medical Asst	30 years	60-69	F	Medical assistant certificate	25 years	5 years
6	ID6	Medical assistant	2 years	20-29	F	Medical assistant certificate	5 years	2 years
7	ID7	Receptionist	2 years	20-29	F	Medical assistant certificate	5 years	2 years
8	ID8	Clinician	25 years	60-69	M	MD	25 Years	8 years
9	ID9	Front End Staff	6 years	20-29	F	no degree	6 years	4 years
10	ID10	Front End Staff	2 years	30-39	F	no degree	2 years	1.5 years

Participant Instructions

All participants were given a short explanation of what the tests are about and were given the ability to ask questions before the test was administered. The test moderator read the tasks to each participant and the participant then attempted the explained task. We measured task completion rate, task time, error rate, and satisfaction ratings. We observed their behavior and documented verbalizations to see patterns of across participants. This information was reviewed after the session to collect metrics.

Experimental/Study Design

The objective of this test was to measure effectiveness, efficiency, and satisfaction. The participants' vocal feedback and reactions were recorded. This qualitative feedback was analyzed for patterns in their responses. This feedback was used to inform the design. Quantitative observations were made through the dependent variables below. The quantitative metrics measured were task success rate, task failure rate, task deviation rate, error rate, task time, and user satisfaction rating. The participants filled out the SUS questionnaire to assess the satisfaction of the participant after using the application.

Tasks/Scenarios

The participant was given the set of tasks below which reflect tasks that a user of the application would complete. The tasks were chosen because of their importance in regards to functionality, criticality in regards to safety, and frequencyof use in the application. The participants were welcome to ask the moderator questions and refer back to the task sheet given. Below are the scenarios that were given to participants.

Scenario 1 – Patient 1 – Tasks: Record demographics (170.315 (a)(5))

- A new client comes in for an appointment. Verify if that patient exists in your system and Add if not available.
- Document patients Last Name (Richard), First Name(John), Sex(Male), DOB(25/06/1962) and Save.
- Search for the existing patient and add More information by Editing the patient demographics.
- Edit the patient and enter Home Address (1357 Amber Drive, Beaverton, OR 97006, US) Home Telephone((816)276-6909), Ethnicity(Not Hispanic or Latino), Race (white), Preferred Language(English), Gender Identity(Male) and Save.

Scenario 2 – Patient 2 – Tasks: View demographics (170.315 (a)(5)), Change demographics (170.315 (a)(5))

- Patient has changed the address. He wants his address to be changed to 1369 Amber Drive, Beaverton, OR 97006, US). Change the address.

Scenario 3 – Patient 2 – Tasks: View medications/medication list (170.315 (a)(1)) & (170.315 (a)(7)), View medication allergy list (170.315 (a)(8)), Change medication/medication list (170.315 (a)(1)) & (170.315 (a)(7)), Electronically Prescribe (170.315 (b)(3))

- Based on your patients input you understood that Paxil 10 mg is not giving good progress, and observed he has Paxil 10 mg in drug allergy list. So you decided to give "Lexapro" and stop Paxil 10mg.
- You prescribe a new drug, Lexapro 10 mg table oral, 1 tab, QD.
- Upon completing the prescription will send via eRx to the CVS pharmacy.
- Change the frequency of Lexapro 10 mg from QD to BID.

Scenario 4 – Patient 2– Tasks: View medication allergies (170.315 (a)(8)), Record medication allergy (170.315 (a)(8)), Change medication allergy (170.315 (a)(8)), View lab tests (170.315 (a)(2)), Order lab test (170.315 (a)(2)), Record medication (170.315 (a)(1)), View drug-allergy interactions (170.315 (a)(4)), View drug-drug interactions (170.315 (a)(4)), Change medication (170.315 (a)(1)), Change the level of severity for drug-drug interactions (170.315 (a)(4))

- Patient has come for regular visit. After few mins of discussion with him you understood that patient is experiencing Mild Irritable after he takes Hydralazine drug. Update the chart with this information
- View all allergies for the patient. Verify that the Hydralazine allergy appears in the client's known allergies list.
- The client also indicates that their Egg allergy has gone away and they no longer have any reactions to eating Egg. Discontinue the Egg allergy. Return to allergies, change the severity of the Hydralazine allergy to Moderate, because the patient indicated that their Irritable gets severe after taking Hydralazine.
- The patient complains about painful urinating. Order urinalysis and CMP.
- You also want to prescribe Bactrim for the suspected UTI.
- Proceed to prescribe Bactrim.

- After you speak to your client more, you decide to add a Comprehensive Metabolic Panel.

- The patient reports they don't feel like the Flonase has been working, so you decide to discontinue Flonase as well as Hydralazine, since the client reported the allergic reaction.

Scenario 5 – Patient 2 – Tasks: View implantable device list (170.315 (a)(14)), Change implantable device list(170.315 (a)(14)), Record implantable device list (170.315 (a)(14))

- The client tells you that they just had an implantable device removed. You want to see if the history of this implantable device is in their record. Open the Implantable Device List.
- Enter the unique device identifier (00643169007222). Get the information of device using Parse functionality in EHR. Review the information that has been returned and save to patient.
- Since the device is removed from the patient currently, Edit the record and set the status as inactive.

Scenario 6 – Patient 2 – Tasks: View problem list (170.315 (a)(6)), Record problem (170.315 (a)(6)), Changeproblem (170.315 (a)(6))

- The patient has been complaining of a Foot Pain.
- Add the problem Foot Pain to the patient's problem list and the Date Identified.
- The patient also tells you they no longer have the Low back pain. Convert the status of low back pain to resolve.

Scenario 7 – Patient 3 – Tasks: View lab test results (170.315 (a)(2)), Change lab test (170.315 (a)(2)), Add radiology order (170.315 (a)(3)), Change radiology order (170.315 (a)(3)), View radiology order (170.315 (a)(3)), Change medication (170.315 (a)(1))

- At the last visit you ordered a urinalysis lab test. Review the lab test results for the order.
- You decide to order a CT scan to determine if the patient's symptoms could be related to a stroke.
- After placing the order, the patient tells he will be out of town for 1 week, Now change the order start date to 1 week later. Edit the placed order and re-order the new order with the new start date. Confirm the order change.

Scenario 8 – Patient 3 – Tasks: Clinical Decision Support (170.315(a) (9))

- Enable the Clinical Decision Support for a provider through the CDS admin.
- Configure each CDS alert with a combination of:
  - 1 Problem & 1 Medication
  - Patient Gender & Problem List
  - 1 Medication & 1 Allergy
  - Hba1c >8.0 & High Blood Pressure
- The Patient was added with CDS Intervention and /or reference resource for all the 7 required elements listed below:

1) Problem List;
2) Medication List;
3) Medication allergy list;
4) At least one demographic (specified in 170.315(a)(5)(i));
5) Laboratory tests;
6) Vital Signs; and
7) Combination (based on at least two of the elements listed above)

- Now the user triggers the CDS interventions/resources added using the applicable data elements from each of the required elements.
- Verify that the user can view the intervention/resource information using the Infobutton standard for data

elements in the problem list, medication list, and demographics

- Create a new patient and import a CDA through incorporate CCDA module with at least one matching alert from above configured rules.
- Verify that the CDS alert gets triggered post successful incorporation of data from CCDA.
- Verify that following attributes exists for one of the triggered CDS interventions/resources: bibliographic citation, developer, funding source, release/revision date.

Scenario 9 – Patient C – Tasks: Clinical Information Reconciliation and Incorporation 170.315(b) (2)

- Verify that you have received a sample CCDA for Isabella Jones before executing this test.
- Search a patient with name "Isabella Jones". If not found, create a new patient with same first name, last name and DOB as in sample CCDA.
- Import the sample CCDA into "Isabella Jones" clinical documents.
- Right click and select incorporate data.
- Verify that reconciliation confirmation dialog shows you external data with respect to problems and medications as in sample CCDA.
- Accept the changes and verify that problems and medications are added to patient chart, post successful reconciliation.
- Navigate to release of information module and create a new transition of care document for the patient.
- Verify that the reconciled data shows in generated CCDA.

Test Procedure

The tests were moderated by experienced usability specialists. The moderators gave each participant a brief explanation of what they could expect in the test, read through each task and scenario to the user, and tracked comments and behaviors of the participants. Participants were instructed that they could ask for clarification along theway and were able to refer to a printed copy of the task. Task timing began at the point that the task had begun and ended once the participant had completed that task. Following the test, the participant was given an SUS questionnaireto complete. Metric information was stored into a report following the testing.

Test Location

Testing was conducted on July 1, 2018 at Adaptamed LLC, San Diego CA. In-person tests were conducted with participants who were onsite and virtually with remote participants. The tests were completed in a quiet meeting room with, at most, one other user test being conducted at the same time.

Test Environment

The intended facility would be an Outpatient Medical health facility where orders are recorded and used in a clinical setting. In this instance, the testing was conducted in the Adaptamed building. Testing was conducted on Windows 10Pro, Dell24 Inches;1920 X 1080 pixels resolution laptops. Color settings is set to "Night light".Laptop is connected to aLAN. The laptops were provided and setup by Adaptamed for the duration of the test. The participants used a standard keyboard and mouse for input. The environment had content similar to what appears in the field on this application. The system performance during the testing is reflective of what would be experienced in the field.

Test Forms and Tools

The laptops were equipped withZoom meeting (screen recording/audio recording tool).

Usability Metrics

The usability metrics captured during the test were based on the NIST Guide to the Processes Approach for Improving the Usability of Electronic Health Records. These metrics include effectiveness, efficiency, and satisfaction.

Effectiveness was measured by tracking success and error rates. Efficiency was measured through task time and deviations. Satisfaction was measured with a satisfaction questionnaire (SUS).

Effectiveness

A task was considered a success if the user was able to complete the task. If the participant abandoned the task, it was counted as a failure. If a participant deviated away from the optimal path to complete a task, but ultimately was still able to accomplish the task, then the task was marked as a success. A percentage was measured for success and failure rate. Any errors that occurred during tasks were recorded as well. An error was defined as an action taken that disrupted the completion of the task.

Efficiency

Task time was measured for each task based on when the user first began a task to when the user finished the task. An average task time was measured at a task level and individual level and the standard deviation of these times were also measured. Task deviation was recorded to measure the amount of deviation from the optimal or quickest path throughthe task.

Satisfaction

In systems engineering, the SUS is a simple, ten-item attitude Likert scale giving a global view of subjective assessments of usability. It was developed by John Brooke at Digital Equipment Corporation in the UK in 1996 as a tool to be used in usability engineering of electronic office systems. An SUS questionnaire was given to each participant after completing the tasks in the application. Common conventions find that systems with a rating of 66 of higher can be seen as easy to use. See J. Sauro, Measuring Usability With the System Usability Scale (SUS)

Results

Data Analysis and Reporting

The findings and details of the usability testing are detailed below. The results were measured based on explanations in the “Usability Metrics” section above. Detailed description of tasks are mentioned in page : 6

Task Description	No Of participants	Task Success mean %	Path Deviation			Task Time			Task Errors - Standard Deviation (%)	Errors %	Rating 5= Easy 1= Very Hard	Task Rating - Standard Deviation
			Path Deviations Observed / Optimal	Optimal No.of Steps	Observed No.of Steps	Mean SD Secs	Deviations Observed	Optimal Time				
Record Demographics	10	100	0	4	4	99	21	120	0	0	5	0
View and Change Demographics	10	100	0	5	5	56	4	60	0	0	5	0
View Medication list, Medication allergy list,change Medication listand Prescribe drug electronically	10	100	0	10	10	187	23	210	0	0	4	0

View, change and Record medication allergy;View, Order and Record Lab Test;View Drug - Allergy; Drug - Drug allergy interactions and change Medication.	10	100	0	16	16	318	42	360	0	0	4	0
Record, View and change Implantable device list	10	100	0	7	7	96	23	120	0	0	5	0
Record, View and change Problem list	10	100	0	10	10	92	27	120	0	0	5	0
View and change lab results Order, view and change radiology order Change Medication	10	100	0	15	16	290	69	360	0	0	4	0
Configure Clinical Decision support rules and view if alert gets triggered	10	100	0	12	13	324	24	300	0	0	4	0
View CCDA message and import to patient chart; Perform Reconciliation for the imported files.	10	100	0	14	16	392	32	360	0	0	4	0

Analysis (Participant)

Participant	Success/Failure	Number/Type of Errors	Avg Task Time (seconds)	SUS
ID1	100% Success	0	204	4
ID2	100% Success	0	204	5
ID3	100% Success	0	205	5
ID4	100% Success	0	205	4
ID5	100% Success	0	205	4

ID6	100% Success	0	206	4

ID7	100% Success	0	207	5
ID8	100% Success	0	208	5
ID9	100% Success	0	209	4
ID10	100% Success	0	207	4

Effectiveness

100% of the tasks were successfully completed by the participants. There were tasks that involved more effort than others, but even so, every task was successfully completed by all of the participants. There were no system errors that presented themselves during the test.

Efficiency

The average task time for all tasks and all participants was under one minute.

Satisfaction

We used the System Usability Scale (SUS) to gauge participant satisfaction. This is a 10 question weighted scale that scores the application from 0-5 with 5 being the most usable, but there are few negative questions for which rating is given 1 it is considered as good. However we asked the participants to rate the product from 1-5 (1 bad experience and5 Excellent experience). The average score amongst the participants was 4.4.

Major Findings

It can be deducted that with a 100% task completion rate, a less than 3 minute average task time, and an SUS of 4.4, the applications are indeed user-friendly based on the three criteria above that were measured. In addition, there were no critical safety concerns that presented themselves during the test.

In all instances where specific safety /risk scenarios were presented, the participants were supplied with accurate information and were able to use that information to keep from risking the patient's safety. For example, when the participant was tasked to consider placing an order for Hydralazine while the patient has a Hydralazine drug allergy, the system effectively presented the user with the critical information and the participant was able to avoid a safety issue.

Areas for Improvement

The application overall performed well in the three areas being measured: efficiency, effectiveness, and satisfaction.

Appendix 2:

PARTICIPANT DEMOGRAPHICS:

Gender:

Men: 4

Women: 6

Total(participants): 10

Occupation/Role

RN/BSN : 1

Physician : 4

Admin Staff: 5

Total(participants) : 10

Years of Experience Years experience: 20 – 25

yearsFacility Use of EHR

All paper: 0

Some paper, some, electronic: 0

All electronic: 10 years

Total (participants): 10

Appendix 4: EXAMPLE MODERATOR'S GUIDE:

EHRUT Usability Test Moderator's

GuideAdministrator: Kumra Prathipati

MD Data Logger: Kiran Ghantasala

********** Participant # : 1

Location: 4276 54th place, San Dieog, CA,

92115Date: 07/01/2018

Time: 09.00 AM

Prior to testing

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

Prior to each participant:

- Reset application
- Start session recordings with *tool*

Prior to each task:

- Reset application to starting point for next task

After each participant:

- End session recordings with *tool*

After all testing

- Back up all video and data files

Orientation (*10 mins*)

Thank you for participating in this study. Our session today will last ***60 mins***. During that time you will take alook 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. Youwill 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 help you with anything to do with the system itself. Please save your detailed comments until the end of atask or the end of the session as a whole when we can discuss freely.

I did not have any involvement in its creation, so please be honest with your opinions.The

product you will be using today is *EHR Your Way (6.9.0.0)*

Some of the data may not make sense as it is placeholder data.

We are recording the audio and screenshots of our session today. All of the information that you provide will bekept confidential and your name will not be associated with your comments at any time.

Do you have any questions or concerns?

Preliminary Questions (*2* minutes)

What is your job title / appointment? I am a Physician.
How long have you been working in this role? About 25 years
What are some of your main responsibilities? I am an Internal Medicine Specialist.
Tell me about your experience with electronic health records. : I have been using EHR for approximately4-5 years. Initially it was a great hassle, but I am able to overcome the problems upon using it daily. May it takesome time because I am not good with technology and computer usage.

Task 0: First Impressions (45 *Seconds*)

This is the application you will be working with. Have you heard of it?
Yes, I have heard about it. I am using this application from past few years. Its been great and user friendly application.Performance and support is pretty good. It is customizable according to my needs.

Please don't click on anything just yet.
What do you notice? : I see "Scheduler", icon to "Add Demographics", "Dashboard folders", "Inbox" and my "To dolist".
What are you able to do here? : I will be able ot see and book appointments, add patient demographic information, Inbox will help me to find all pending documents and notes which need my signature. To do list will show my messages, fax andRefill requests.
Notes / Comments: None

Task 1: Record Demographics (*98 Seconds*)

Take the participant to the starting point for the task.
Record demographics (170.315 (a)(5))

- A new client comes in for an appointment. Verify if that patient exists in your system and Add if not available.
- Document patients Last Name (Richard), First Name(John), Sex(Male), DOB(25/06/1962) and Save.
- Search for the existing patient and add More information by Editing the patient demographics.
- Edit the patient and enter Home Address (1357 Amber Drive, Beaverton, OR 97006, US) Home Telephone((816)276-6909), Ethnicity(Not Hispanic or Latino), Race (white), Preferred Language(English), Gender Identity(Male) and Save.

Success:
[X] Easily completed
☐ Completed with difficulty or help :: Describe below
☐ Not completed *Comments:*

Task Time: 98 Seconds

Optimal Path: *Dashboard □ Add Patient Icon □ Enter data and click Save button*
Optimal Path is Correct

Observed Errors and Verbalizations: No errors observed

Comments: Looks good

Rating: Overall, this task was: 1
Show participant written scale: "Very Easy" (1) to "Very Difficult" (5)

Administrator / Note taker Comments: Client is enthusiastic and happy that he is able to finish his first task successfully.

Task 2: View and Change Demographics (*56 Seconds*)

Patient 2 – Tasks: View demographics (170.315 (a)(5)), Change demographics (170.315 (a)(5))

•Patient has changed the address. He wants his address to be changed to 1369 Amber Drive, Beaverton, OR 97006, US). Change the address.

Success:
[X] Easily completed
☐ Completed with difficulty or help :: Describe below
☐ Not completed *Comments:*

Task Time: 56 Seconds
Optimal Path: *Dashboard Search Patient Edit Demographics*
[X] Correct
☐ Minor Deviations / Cycles :: Describe below ☐ Major Deviations :: Describe below *Comments:*

Observed Errors and Verbalizations: No errors. Participant said it is easy.
Comments:

Rating: 1
Show participant written scale: "Very Easy" (1) to "Very Difficult" (5)

Administrator / Notetaker Comments: None

Task 3: View Medication list, Medication allergy list, change Medication list and Prescribe drug electronically (*180 Seconds*)

Patient 2 –: View medications/medication list (170.315 (a)(1)) & (170.315 (a)(7)), View medication allergy list (170.315 (a)(8)), Change medication/medication list (170.315 (a)(1)) & (170.315 (a)(7)), Electronically Prescribe (170.315 (b)(3))

- Based on your patients input you understood that Paxil 10 mg is not giving good progress, and observed he has Paxil 10 mg in drug allergy list. So you decided to give "Lexapro" and stop Paxil 10mg.
- You prescribe a new drug, Lexapro 10 mg table oral, 1 tab, QD.
- Upon completing the prescription will send via eRx to the CVS pharmacy.
- Change the frequency of Lexapro 10 mg from QD to BID.

Success:
[X] Easily completed
[ ] Completed with difficulty or help :: Describe below[
] Not completed *Comments:*

Task Time:180 Seconds

Optimal Path: 1. *Open Chart □ Summary □ Current Medications*
2. Open Chart □ Chart Left Folders □ Prescription folder □ Order Rx
3. Open Chart □ Summary □ Allergies

[X] Correct
[ ] Minor Deviations / Cycles :: Describe below ☐ Major Deviations :: Describe below *Comments:*

Observed Errors and Verbalizations: No errors made. User felt difficult in recalling the path to identify order rx window.

Rating: 2
Show participant written scale: "Very Easy" (1) to "Very Difficult" (5)

Administrator / Notetaker Comments: None

Task 4: Patient 2– Tasks: View medication allergies (170.315 (a)(8)), Record medication allergy (170.315 (a)(8)), Change medication allergy (170.315 (a)(8)), View lab tests (170.315 (a)(2)), Order lab test (170.315 (a)(2)), Record medication (170.315 (a)(1)), View drug-allergy interactions (170.315 (a)(4)), View drug-drug interactions (170.315 (a)(4)), Change medication (170.315 (a)(1)), Change the level of severity for drug-drug interactions (170.315 (a)(4))

- Patient has come for regular visit. After few mins of discussion with him you understood that patient is experiencing Mild Irritable after he takes Hydralazine drug. Update the chart with this information
- **View all allergies for the patient. Verify that the Hydralazine allergy appears in the client's known allergies list.**
- The client also indicates that their Egg allergy has gone away and they no longer have any reactions to eating Egg. Discontinue the Egg allergy. Return to allergies, change the severity of the Hydralazine allergy to Moderate, because the patient indicated that their Irritable gets severe after taking Hydralazine.
- **The patient complains about painful urinating. Order urinalysis and CMP.**
  - You also want to prescribe Bactrim for the suspected UTI.
- **Proceed to prescribe Bactrim.**
  - After you speak to your client more, you decide to add a Comprehensive Metabolic Panel.
- **The patient reports they don't feel like the Flonase has been working, so you decide to discontinue Flonase as well as Hydralazine, since the client reported the allergic reaction.. (315 seconds)**

Success:
[X] Easily completed
[ ] Completed with difficulty or help :: Describe below[
] Not completed *Comments:*

Task Time: 315 Seconds

Optimal Path: 1. *Open Chart □ Summary □ Current Medications*
2. Open Chart □ Chart Left Folders □ Prescription folder □ Order Rx
3. Open Chart □ Summary □ Allergies
4. Open Chart □ Chart Left Folders □ Lab Orders

[X] Correct
Minor Deviations / Cycles :: Describe below ☐ Major Deviations :: Describe below *Comments:*

Observed Errors and Verbalizations: No errors made.
Comments:

Rating: 2
Show participant written scale: "Very Easy" (1) to "Very Difficult" (5)

Administrator / Note taker Comments: None

Task 5: Patient 2 – Tasks: View implantable device list (170.315 (a)(14)), Change implantable device list (170.315 (a)(14)), Record implantable device list (170.315 (a)(14))

- The client tells you that they just had an implantable device removed. You want to see if the history of thisimplantable device is in their record. Open the Implantable Device List.
- **Enter the unique device identifier (00643169007222). Get the information of device using Parse functionality in EHR. Review the information that has been returned and save to patient.**
- Since the device is removed from the patient currently, Edit the record and set the status as inactive.

Success:
[X] Easily completed
[ ] Completed with difficulty or help :: Describe below[
] Not completed *Comments:*

Task Time:100 Seconds

Optimal Path: 1. *Open Chart □ Chart Left Folders □ Implantable Device*

[X] Correct
Minor Deviations / Cycles :: Describe below ☐ Major Deviations :: Describe below *Comments:*

Observed Errors and Verbalizations: No errors made.
Comments:

Rating: 1
Show participant written scale: "Very Easy" (1) to "Very Difficult" (5)

Administrator / Note taker Comments: None

Task 6:

Patient 3 – Patient 2 – Tasks: View problem list (170.315 (a)(6)), Record problem (170.315 (a)(6)), Changeproblem (170.315 (a)(6))

- **The patient has been complaining of a Foot Pain.**
  - Add the problem Foot Pain to the patient's problem list and the Date Identified.
- **The patient also tells you they no longer have the Low back pain. Convert the status of low back pain to resolve.**

Success:

[X] Easily completed
[ ] Completed with difficulty or help :: Describe below[
] Not completed *Comments:*

Task Time:85 Seconds

Optimal Path: 1. *Open Chart □ Summary □ Problem list.*

[X] Correct
Minor Deviations / Cycles :: Describe below ☐ Major Deviations :: Describe below *Comments:*

Observed Errors and Verbalizations: No errors made. Felt that completing task is easy and application is userfriendly in finding the appropriate diagnosis code.

Comments:

Rating: 1
Show participant written scale: "Very Easy" (1) to "Very Difficult" (5)

Administrator / Note taker Comments: None

Task 7: Patient 3 – Tasks: View lab test results (170.315 (a)(2)), Change lab test (170.315 (a)(2)), Add radiology order (170.315 (a)(3)), Change radiology order (170.315 (a)(3)), View radiology order (170.315 (a)(3)), Change medication (170.315 (a)(1))

- At the last visit you ordered a urinalysis lab test. Review the lab test results for the order.
- **You decide to order a CT scan to determine if the patient's symptoms could be related to a stroke.**
  - After placing the order, the patient tells he will be out of town for 1 week, Now change the order start dateto 1 week later. Edit the placed order and re-order the new order with the new start date. Confirm the order change.

Success:

[X] Easily completed
[ ] Completed with difficulty or help :: Describe below[
] Not completed *Comments:*

Task Time: 298 Seconds

Optimal Path: 1. *Open Chart □ Chart Left side folders □ Labs Folder*

[X] Correct
Minor Deviations / Cycles :: Describe below ☐ Major Deviations :: Describe below *Comments:*

Observed Errors and Verbalizations: No errors made. Participant took time to find the option to enter result forthe test.

Rating: 2
Show participant written scale: “Very Easy” (1) to “Very Difficult” (5)

Administrator / Notetaker Comments: Even though participant did not find the lab result path, took few secondsto observe the screen and get to the location. Participant felt that it will be good if he spent time on this before thetest.

Task 8: Patient 3 – Tasks: Clinical Decision Support (170.315(a) (9))

- Enable the Clinical Decision Support for a provider through the CDS admin.
- **Configure each CDS alert with a combination of:**

1 Problem & 1 Medication

- **Patient Gender & Problem List**

1 Medication & 1 Allergy

- **Hba1c >8.0 & High Blood Pressure**
  - The Patient was added with CDS Intervention and /or reference resource for all the 7 required elementslisted below:

1) Problem List;

2) Medication List;

3) Medication allergy list;

4) At least one demographic (specified in 170.315(a)(5)(i));

5) Laboratory tests;

6) Vital Signs; and

7) Combination (based on at least two of the elements listed above)

  - Now the user triggers the CDS interventions/resources added using the applicable data elements from eachof the required elements.
- **Verify that the user can view the intervention/resource information using the Infobutton standard for data elements in the problem list, medication list, and demographics**
  - Create a new patient and import a CDA through incorporate CCDA module with at least one matchingalert from above configured rules.
- **Verify that the CDS alert gets triggered post successful incorporation of data from CCDA.**
  - Verify that following attributes exists for one of the triggered CDS interventions/resources: bibliographiccitation, developer, funding source, release/revision date.

Success:
[X] Easily completed
[ ] Completed with difficulty or help :: Describe below[
] Not completed *Comments:*

Task Time: 315 Seconds

Optimal Path: 1. *Dashboard □ Settings □ Add/ Edit/Delete clinical decision support rules (HM Rules)*

[X] Correct
Minor Deviations / Cycles :: Describe below ☐ Major Deviations :: Describe below *Comments:*

Observed Errors and Verbalizations: No errors made. Participant says; tasks looks too heavy and took time to accomplish it.
Comments:

Rating: 2
Show participant written scale: "Very Easy" (1) to "Very Difficult" (5)

Administrator / Note taker Comments: Participant felt comfortable in creating the rules.

Task 9: Patient C – Tasks: Clinical Information Reconciliation and Incorporation 170.315(b) (2)

- Verify that you have received a sample CCDA for Isabella Jones before executing this test.
- **Search a patient with name "Isabella Jones". If not found, create a new patient with same first name, last name and DOB as in sample CCDA.**
- Import the sample CCDA into "Isabella Jones" clinical documents.
- **Right click and select incorporate data.**
  - Verify that reconciliation confirmation dialog shows you external data with respect to problems andmedications as in sample CCDA.
- **Accept the changes and verify that problems and medications are added to patient chart, post successful reconciliation.**
- Navigate to release of information module and create a new transition of care document for the patient.
- **Verify that the reconciled data shows in generated CCDA.**

Success:
[X] Easily completed
[ ] Completed with difficulty or help :: Describe below[
] Not completed *Comments:*

Task Time:395 Seconds

Optimal Path: 1. *Dashboard □ Import Clinical Message Received Electronically*
2. Open Chart □ Patient chart left folders □ Clinical Information Reconciliation

[X] Correct
Minor Deviations / Cycles :: Describe below ☐ Major Deviations :: Describe below *Comments:*

Observed Errors and Verbalizations: No errors made. User felt difficult in recalling the path to identify clinical information reconciliation of Problem list in chart. Finally able to get it after thinking for 2 seconds.
Comments:

Rating: 2
Show participant written scale: “Very Easy” (1) to “Very Difficult” (5)

Administrator / Note taker Comments: None

End of Participant # 1

Participant # : 2

Location: 4276 54th place, San Dieog, CA,

92115Date: 07/01/2018

Time: 10.30 AM

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

Prior to each participant:
- Reset application
- Start session recordings with *tool*

Prior to each task:
- Reset application to starting point for next task

After each participant:
- End session recordings with *tool*

After all testing
- Back up all video and data files

Orientation (*10 mins*)

Thank you for participating in this study. Our session today will last ***60 mins***. During that time you will take alook 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. Youwill 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 help you with anything to do with the system itself. Please save your detailed comments until the end of atask or the end of the session as a whole when we can discuss freely.

I did not have any involvement in its creation, so please be honest with your opinions.

The product you will be using today is *EHR Your Way (6.9.0.0)*
Some of the data may not make sense as it is placeholder data.

We are recording the audio and screenshots of our session today. All of the information that you provide will bekept confidential and your name will not be associated with your comments at any time.

Do you have any questions or concerns?

Preliminary Questions (*5* minutes)

What is your job title / appointment? I am a Physician.
How long have you been working in this role? About 25 years
What are some of your main responsibilities? I am an Internal Medicine Specialist.
Tell me about your experience with electronic health records. : I have been using EHR for approximately4-5 years.

Task 0: First Impressions (45 *Seconds*)

This is the application you will be working with. Have you heard of it?I heard about it. I have experience working with this application.

Please don't click on anything just yet.
What do you notice? Scheduler, demogrpahics and few other basic functionalities.
Notes / Comments: None

Task 1: Record Demographics (*101 Seconds*)

Take the participant to the starting point for the task.
Record demographics (170.315 (a)(5))

- A new client comes in for an appointment. Verify if that patient exists in your system and Add if not available.
- Document patients Last Name (Richard), First Name(John), Sex(Male), DOB(25/06/1962) and Save.
- Search for the existing patient and add More information by Editing the patient demographics.
- Edit the patient and enter Home Address (1357 Amber Drive, Beaverton, OR 97006, US) Home Telephone((816)276-6909), Ethnicity(Not Hispanic or Latino), Race (white), Preferred Language(English), Gender Identity(Male) and Save.

Success:
[X] Easily completed
☐ Completed with difficulty or help :: Describe below
☐ Not completed *Comments:*

Task Time: 101 Seconds

Optimal Path: *Dashboard □ Add Patient Icon □ Enter data and click Save button*
Optimal Path is Correct

Observed Errors and Verbalizations: No errors observed.

Comments: Looks good

Rating: Overall, this task was: 1
Show participant written scale: "Very Easy" (1) to "Very Difficult" (5)
Administrator / Note taker Comments: Participant made a good start.

Task 2: View and Change Demographics (*55 Seconds*)

Patient 2 – Tasks: View demographics (170.315 (a)(5)), Change demographics (170.315 (a)(5))

•Patient has changed the address. He wants his address to be changed to 1369 Amber Drive, Beaverton, OR 97006, US). Change the address.

Success:
[X] Easily completed
☐ Completed with difficulty or help :: Describe below
☐ Not completed *Comments:*

Task Time: 55 Seconds
Optimal Path: *Dashboard □ Search Patient □ Edit Demographics*
[X] Correct
☐ Minor Deviations / Cycles :: Describe below ☐ Major Deviations :: Describe below
☐ *Comments:*

Observed Errors and Verbalizations: No errors.
Comments:

Rating: 1
Show participant written scale: "Very Easy" (1) to "Very Difficult" (5)

Administrator / Notetaker Comments: None

Task 3: View Medication list, Medication allergy list, change Medication list and Prescribe drug electronically (*178 Seconds*)

Patient 2 –: View medications/medication list (170.315 (a)(1)) & (170.315 (a)(7)), View medication allergy list (170.315 (a)(8)), Change medication/medication list (170.315 (a)(1)) & (170.315 (a)(7)), Electronically Prescribe (170.315 (b)(3))

- Based on your patients input you understood that Paxil 10 mg is not giving good progress, and observed he has Paxil 10 mg in drug allergy list. So you decided to give "Lexapro" and stop Paxil 10mg.
- You prescribe a new drug, Lexapro 10 mg table oral, 1 tab, QD.
- Upon completing the prescription will send via eRx to the CVS pharmacy.
- Change the frequency of Lexapro 10 mg from QD to BID.

Success:
[X] Easily completed
[ ] Completed with difficulty or help :: Describe below[
] Not completed *Comments:*

Task Time:178 Seconds

Optimal Path: 1. *Open Chart □ Summary □ Current Medications*
2. Open Chart □ Chart Left Folders □ Prescription folder □ Order Rx
3. Open Chart □ Summary □ Allergies

[X] Correct
[ ] Minor Deviations / Cycles :: Describe below ☐ Major Deviations :: Describe below *Comments:*

Observed Errors and Verbalizations: No errors made. Completed the task without deviations and comfortably.Rating: 1
Show participant written scale: "Very Easy" (1) to "Very Difficult" (5)
Administrator / Notetaker Comments: None

Task 4: Patient 2– Tasks: View medication allergies (170.315 (a)(8)), Record medication allergy (170.315 (a)(8)), Change medication allergy (170.315 (a)(8)), View lab tests (170.315 (a)(2)), Order lab test (170.315 (a)(2)), Record medication (170.315 (a)(1)), View drug-allergy interactions (170.315 (a)(4)), View drug-drug interactions (170.315 (a)(4)), Change medication (170.315 (a)(1)), Change the level of severity for drug-drug interactions (170.315 (a)(4))

- Patient has come for regular visit. After few mins of discussion with him you understood that patient is experiencing Mild Irritable after he takes Hydralazine drug. Update the chart with this information
- **View all allergies for the patient. Verify that the Hydralazine allergy appears in the client's known allergies list.**
- The client also indicates that their Egg allergy has gone away and they no longer have any reactions to eating Egg. Discontinue the Egg allergy. Return to allergies, change the severity of the Hydralazine allergy to Moderate, because the patient indicated that their Irritable gets severe after taking Hydralazine.
- **The patient complains about painful urinating. Order urinalysis and CMP.**
- You also want to prescribe Bactrim for the suspected UTI.
- **Proceed to prescribe Bactrim.**
- After you speak to your client more, you decide to add a Comprehensive Metabolic Panel.
- **The patient reports they don't feel like the Flonase has been working, so you decide to discontinue Flonase as well as Hydralazine, since the client reported the allergic reaction.. (315 seconds)**

Success:
[X] Easily completed
[ ] Completed with difficulty or help :: Describe below[
] Not completed *Comments:*

Task Time: 316 Seconds

Optimal Path: 1. *Open Chart □ Summary □ Current Medications*
2. Open Chart □ Chart Left Folders □ Prescription folder □ Order Rx
3. Open Chart □ Summary □ Allergies
4. Open Chart □ Chart Left Folders □ Lab Orders
[X] Correct
Minor Deviations / Cycles :: Describe below ☐ Major Deviations :: Describe below *Comments:*

Observed Errors and Verbalizations: No errors made.
Comments:

Rating: 2
Show participant written scale: "Very Easy" (1) to "Very Difficult" (5)
Administrator / Note taker Comments: None

Task 5: Patient 2 – Tasks: View implantable device list (170.315 (a)(14)), Change implantable device list (170.315 (a)(14)), Record implantable device list (170.315 (a)(14))

- The client tells you that they just had an implantable device removed. You want to see if the history of this implantable device is in their record. Open the Implantable Device List.
- **Enter the unique device identifier (00643169007222). Get the information of device using Parse functionality in EHR. Review the information that has been returned and save to patient.**
- Since the device is removed from the patient currently, Edit the record and set the status as inactive.

Success:
[X] Easily completed
[ ] Completed with difficulty or help :: Describe below[
] Not completed *Comments:*

Task Time:98 Seconds

Optimal Path: 1. *Open Chart □ Chart Left Folders □ Implantable Device*

[X] Correct
Minor Deviations / Cycles :: Describe below ☐ Major Deviations :: Describe below *Comments:*

Observed Errors and Verbalizations: No errors made.
Comments:

Rating: 1

Show participant written scale: “Very Easy” (1) to “Very Difficult” (5)

Administrator / Note taker Comments: None

Task 6:

Patient 3 – Patient 2 – Tasks: View problem list (170.315 (a)(6)), Record problem (170.315 (a)(6)), Changeproblem (170.315 (a)(6))

- **The patient has been complaining of a Foot Pain.**
- Add the problem Foot Pain to the patient’s problem list and the Date Identified.
- **The patient also tells you they no longer have the Low back pain. Convert the status of low back pain to resolve.**

Success:

[X] Easily completed
[ ] Completed with difficulty or help :: Describe below[
] Not completed *Comments:*

Task Time: 88 Seconds

Optimal Path: 1. *Open Chart □ Summary □ Problem list.*

[X] Correct
Minor Deviations / Cycles :: Describe below ☐ Major Deviations :: Describe below *Comments:*

Observed Errors and Verbalizations: No errors made. Felt that completing task is easy and application is userfriendly in finding the appropriate diagnosis code.

Comments:

Rating: 1
Show participant written scale: “Very Easy” (1) to “Very Difficult” (5)

Administrator / Note taker Comments: None

Task 7: Patient 3 – Tasks: View lab test results (170.315 (a)(2)), Change lab test (170.315 (a)(2)), Add radiology order (170.315 (a)(3)), Change radiology order (170.315 (a)(3)), View radiology order (170.315 (a)(3)), Change medication (170.315 (a)(1))

- At the last visit you ordered a urinalysis lab test. Review the lab test results for the order.
- **You decide to order a CT scan to determine if the patient’s symptoms could be related to a stroke.**
- After placing the order, the patient tells he will be out of town for 1 week, Now change the order start dateto 1 week later. Edit the placed order and re-order the new order with the new start date. Confirm the order change.

Success:

[X] Easily completed
[ ] Completed with difficulty or help :: Describe below[
] Not completed *Comments:*

Task Time: 295 Seconds

Optimal Path: 1. *Open Chart □ Chart Left side folders □ Labs Folder*

[X] Correct
Minor Deviations / Cycles :: Describe below ☐ Major Deviations :: Describe below *Comments:*

Observed Errors and Verbalizations: No errors made. Participant took time to find the option to enter result forthe test.

Rating: 2
Show participant written scale: "Very Easy" (1) to "Very Difficult" (5)
Administrator / Notetaker Comments: None

Task 8: Patient 3 – Tasks: Clinical Decision Support (170.315(a) (9))

- Enable the Clinical Decision Support for a provider through the CDS admin.
- **Configure each CDS alert with a combination of:**

1 Problem & 1 Medication

- **Patient Gender & Problem List**

1 Medication & 1 Allergy

- **Hba1c >8.0 & High Blood Pressure**
- The Patient was added with CDS Intervention and /or reference resource for all the 7 required elementslisted below:

1) Problem List;

2) Medication List;

3) Medication allergy list;

4) At least one demographic (specified in 170.315(a)(5)(i));

5) Laboratory tests;

6) Vital Signs; and

7) Combination (based on at least two of the elements listed above)

- Now the user triggers the CDS interventions/resources added using the applicable data elements from eachof the required elements.
- **Verify that the user can view the intervention/resource information using the Infobutton standard for data elements in the problem list, medication list, and demographics**
- Create a new patient and import a CDA through incorporate CCDA module with at least one matchingalert from above configured rules.
- **Verify that the CDS alert gets triggered post successful incorporation of data from CCDA.**
- Verify that following attributes exists for one of the triggered CDS interventions/resources: bibliographic citation, developer, funding source, release/revision date.

Success:

[X] Easily completed
[ ] Completed with difficulty or help :: Describe below[
] Not completed *Comments:*

Task Time: 320 Seconds

Optimal Path: 1. *Dashboard □ Settings □ Add/ Edit/Delete clinical decision support rules (HM Rules)*

[X] Correct
Minor Deviations / Cycles :: Describe below ☐ Major Deviations :: Describe below *Comments:*

Observed Errors and Verbalizations: No errors made. Participant says; tasks look too heavy and took time to accomplish it.
Comments:

Rating: 2
Show participant written scale: "Very Easy" (1) to "Very Difficult" (5)
Administrator / Note taker Comments: Participant is excited to see the alerts after creating rules.

Task 9: Patient C – Tasks: Clinical Information Reconciliation and Incorporation 170.315(b) (2)

- Verify that you have received a sample CCDA for Isabella Jones before executing this test.
- **Search a patient with name "Isabella Jones". If not found, create a new patient with same first name, last name and DOB as in sample CCDA.**
- Import the sample CCDA into "Isabella Jones" clinical documents.
- **Right click and select incorporate data.**
- Verify that reconciliation confirmation dialog shows you external data with respect to problems and medications as in sample CCDA.
- **Accept the changes and verify that problems and medications are added to patient chart, post successful reconciliation.**
- Navigate to release of information module and create a new transition of care document for the patient.
- **Verify that the reconciled data shows in generated CCDA.**

Success:
[X] Easily completed
[ ] Completed with difficulty or help :: Describe below[
] Not completed *Comments:*

Task Time:390 Seconds

Optimal Path: 1. *Dashboard □ Import Clinical Message Received Electronically*
2. Open Chart □ Patient chart left folders □ Clinical Information Reconciliation

[X] Correct
Minor Deviations / Cycles :: Describe below ☐ Major Deviations :: Describe below *Comments:*

Observed Errors and Verbalizations: No errors made. Took few seconds to find the accurate path and ablecomplete without errors.
Comments:
Rating: 2

Show participant written scale: “Very Easy” (1) to “Very Difficult” (5)
Administrator / Note taker Comments: None

End of Participant # 2

Participant # : 3

Location: 4276 54th place, San Dieog, CA,

92115Date: 07/01/2018

Time: 11.30 AM

Prior to testing

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

Prior to each participant:

- Reset application
- Start session recordings with *tool*

Prior to each task:

- Reset application to starting point for next task

After each participant:

- End session recordings with *tool*

After all testing

- Back up all video and data files

Orientation (*10 mins*)

Thank you for participating in this study. Our session today will last ***60 mins***. During that time you will take alook 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. Youwill 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 help you with anything to do with the system itself. Please save your detailed comments until the end of atask or the end of the session as a whole when we can discuss freely.

I did not have any involvement in its creation, so please be honest with your opinions.The

product you will be using today is *EHR Your Way (6.9.0.0)*

Some of the data may not make sense as it is placeholder data.

We are recording the audio and screenshots of our session today. All of the information that you provide will bekept confidential and your name will not be associated with your comments at any time.

Do you have any questions or concerns?

Preliminary Questions (*5* minutes)

What is your job title / appointment? I am a Physician.
How long have you been working in this role? About 25 years
What are some of your main responsibilities? I am Gastroenterologist, my responsibility to treat patientswith GI problems..
Tell me about your experience with electronic health records. : I have been using different HER Productsfor approximately 8 years.

Task 0: First Impressions (45 *Seconds*)

This is the application you will be working with. Have you heard of it?I know this application but I stopped using this from past 1 year.

Please don't click on anything just yet.
What do you notice? My scheduler, To do and my Inbox.
Notes / Comments: None

Task 1: Record Demographics (*105 Seconds*)

Take the participant to the starting point for the task.
Record demographics (170.315 (a)(5))

- A new client comes in for an appointment. Verify if that patient exists in your system and Add if not available.
- Document patients Last Name (Richard), First Name(John), Sex(Male), DOB(25/06/1962) and Save.
- Search for the existing patient and add More information by Editing the patient demographics.
- Edit the patient and enter Home Address (1357 Amber Drive, Beaverton, OR 97006, US) Home Telephone((816)276-6909), Ethnicity(Not Hispanic or Latino), Race (white), Preferred Language(English), Gender Identity(Male) and Save.

Success:
[X] Easily completed
☐ Completed with difficulty or help :: Describe below
☐ Not completed *Comments:*

Task Time: 105 Seconds

Optimal Path: *Dashboard □ Add Patient Icon □ Enter data and click Save button*
Optimal Path is Correct

Observed Errors and Verbalizations: No errors observed.

Comments:

Rating: Overall, this task was: 1
Show participant written scale: "Very Easy" (1) to "Very Difficult" (5)
Administrator / Note taker Comments: Participant made a good start.

Task 2: View and Change Demographics (*55 Seconds*)

Patient 2 – Tasks: View demographics (170.315 (a)(5)), Change demographics (170.315 (a)(5))

•Patient has changed the address. He wants his address to be changed to 1369 Amber Drive, Beaverton, OR 97006, US). Change the address.

Success:
[X] Easily completed
☐ Completed with difficulty or help :: Describe below
☐ Not completed *Comments:*

Task Time: 55 Seconds
Optimal Path: *Dashboard □ Search Patient □ Edit Demographics*
[X] Correct
☐ Minor Deviations / Cycles :: Describe below ☐ Major Deviations :: Describe below
☐ *Comments:*

Observed Errors and Verbalizations: No errors.
Comments:

Rating: 1
Show participant written scale: "Very Easy" (1) to "Very Difficult" (5)

Administrator / Notetaker Comments: None

Task 3: View Medication list, Medication allergy list, change Medication list and Prescribe drug electronically (*178 Seconds*)

Patient 2 –: View medications/medication list (170.315 (a)(1)) & (170.315 (a)(7)), View medication allergy list (170.315 (a)(8)), Change medication/medication list (170.315 (a)(1)) & (170.315 (a)(7)), Electronically Prescribe (170.315 (b)(3))

- Based on your patients input you understood that Paxil 10 mg is not giving good progress, and observed he has Paxil 10 mg in drug allergy list. So you decided to give "Lexapro" and stop Paxil 10mg.
- You prescribe a new drug, Lexapro 10 mg table oral, 1 tab, QD.
- Upon completing the prescription will send via eRx to the CVS pharmacy.
- Change the frequency of Lexapro 10 mg from QD to BID.

Success:
[X] Easily completed
[ ] Completed with difficulty or help :: Describe below[
] Not completed *Comments:*

Task Time:182 Seconds

Optimal Path: 1. *Open Chart □ Summary □ Current Medications*
2. Open Chart □ Chart Left Folders □ Prescription folder □ Order Rx
3. Open Chart □ Summary □ Allergies

[X] Correct
[ ] Minor Deviations / Cycles :: Describe below ☐ Major Deviations :: Describe below *Comments:*

Observed Errors and Verbalizations: No errors made.
Rating: 1
Show participant written scale: "Very Easy" (1) to "Very Difficult" (5)
Administrator / Notetaker Comments: None

Task 4: Patient 2– Tasks: View medication allergies (170.315 (a)(8)), Record medication allergy (170.315 (a)(8)), Change medication allergy (170.315 (a)(8)), View lab tests (170.315 (a)(2)), Order lab test (170.315 (a)(2)), Record medication (170.315 (a)(1)), View drug-allergy interactions (170.315 (a)(4)), View drug-drug interactions (170.315 (a)(4)), Change medication (170.315 (a)(1)), Change the level of severity for drug-drug interactions (170.315 (a)(4))

- Patient has come for regular visit. After few mins of discussion with him you understood that patient is experiencing Mild Irritable after he takes Hydralazine drug. Update the chart with this information
- **View all allergies for the patient. Verify that the Hydralazine allergy appears in the client's known allergies list.**
- The client also indicates that their Egg allergy has gone away and they no longer have any reactions to eating Egg. Discontinue the Egg allergy. Return to allergies, change the severity of the Hydralazine allergy to Moderate, because the patient indicated that their Irritable gets severe after taking Hydralazine.
- **The patient complains about painful urinating. Order urinalysis and CMP.**
- You also want to prescribe Bactrim for the suspected UTI.
- **Proceed to prescribe Bactrim.**
- After you speak to your client more, you decide to add a Comprehensive Metabolic Panel.
- **The patient reports they don't feel like the Flonase has been working, so you decide to discontinue Flonase as well as Hydralazine, since the client reported the allergic reaction. (312 seconds)**

Success:
[X] Easily completed
[ ] Completed with difficulty or help :: Describe below[
] Not completed *Comments:*

Task Time: 312 Seconds

Optimal Path: 1. *Open Chart □ Summary □ Current Medications*
2. Open Chart □ Chart Left Folders □ Prescription folder □ Order Rx
3. Open Chart □ Summary □ Allergies
4. Open Chart □ Chart Left Folders □ Lab Orders
[X] Correct
Minor Deviations / Cycles :: Describe below ☐ Major Deviations :: Describe below *Comments:*

Observed Errors and Verbalizations: No errors made.
Comments:

Rating: 2
Show participant written scale: "Very Easy" (1) to "Very Difficult" (5)
Administrator / Note taker Comments: None

Task 5: Patient 2 – Tasks: View implantable device list (170.315 (a)(14)), Change implantable device list (170.315 (a)(14)), Record implantable device list (170.315 (a)(14))

- The client tells you that they just had an implantable device removed. You want to see if the history of this implantable device is in their record. Open the Implantable Device List.
- **Enter the unique device identifier (00643169007222). Get the information of device using Parse functionality in EHR. Review the information that has been returned and save to patient.**
- Since the device is removed from the patient currently, Edit the record and set the status as inactive.

Success:
[X] Easily completed
[ ] Completed with difficulty or help :: Describe below[
] Not completed *Comments:*

Task Time:98 Seconds

Optimal Path: 1. *Open Chart □ Chart Left Folders □ Implantable Device*

[X] Correct
Minor Deviations / Cycles :: Describe below ☐ Major Deviations :: Describe below *Comments:*

Observed Errors and Verbalizations: No errors made.
Comments:

Rating: 1

Show participant written scale: “Very Easy” (1) to “Very Difficult” (5)

Administrator / Note taker Comments: None

Task 6:

Patient 3 – Patient 2 – Tasks: View problem list (170.315 (a)(6)), Record problem (170.315 (a)(6)), Changeproblem (170.315 (a)(6))

- **The patient has been complaining of a Foot Pain.**
- Add the problem Foot Pain to the patient’s problem list and the Date Identified.
- **The patient also tells you they no longer have the Low back pain. Convert the status of low back pain to resolve.**

Success:

[X] Easily completed
[ ] Completed with difficulty or help :: Describe below[
] Not completed *Comments:*

Task Time: 90 Seconds

Optimal Path: 1. *Open Chart □ Summary □ Problem list.*

[X] Correct
Minor Deviations / Cycles :: Describe below ☐ Major Deviations :: Describe below *Comments:*

Observed Errors and Verbalizations:
Comments:

Rating: 1
Show participant written scale: “Very Easy” (1) to “Very Difficult” (5)
Administrator / Note taker Comments: None

Task 7: Patient 3 – Tasks: View lab test results (170.315 (a)(2)), Change lab test (170.315 (a)(2)), Add radiology order (170.315 (a)(3)), Change radiology order (170.315 (a)(3)), View radiology order (170.315 (a)(3)), Change medication (170.315 (a)(1))

- At the last visit you ordered a urinalysis lab test. Review the lab test results for the order.
- **You decide to order a CT scan to determine if the patient’s symptoms could be related to a stroke.**
- After placing the order, the patient tells he will be out of town for 1 week, Now change the order start dateto 1 week later. Edit the placed order and re-order the new order with the new start date. Confirm the order change.

Success:

[X] Easily completed
[ ] Completed with difficulty or help :: Describe below[
] Not completed *Comments:*

Task Time: 295 Seconds

Optimal Path: 1. *Open Chart □ Chart Left side folders □ Labs Folder*

[X] Correct
Minor Deviations / Cycles :: Describe below ☐ Major Deviations :: Describe below *Comments:*

Observed Errors and Verbalizations: No errors made.

Rating: 1
Show participant written scale: “Very Easy” (1) to “Very Difficult” (5)
Administrator / Notetaker Comments: None

Task 8: Patient 3 – Tasks: Clinical Decision Support (170.315(a) (9))

- Enable the Clinical Decision Support for a provider through the CDS admin.
- **Configure each CDS alert with a combination of:**

1 Problem & 1 Medication

- **Patient Gender & Problem List**

1 Medication & 1 Allergy

- **Hba1c >8.0 & High Blood Pressure**

- The Patient was added with CDS Intervention and /or reference resource for all the 7 required elementslisted below:

1) Problem List;

2) Medication List;

3) Medication allergy list;

4) At least one demographic (specified in 170.315(a)(5)(i));

5) Laboratory tests;

6) Vital Signs; and

7) Combination (based on at least two of the elements listed above)

- Now the user triggers the CDS interventions/resources added using the applicable data elements from eachof the required elements.
- **Verify that the user can view the intervention/resource information using the Infobutton standard for data elements in the problem list, medication list, and demographics**
- Create a new patient and import a CDA through incorporate CCDA module with at least one matchingalert from above configured rules.
- **Verify that the CDS alert gets triggered post successful incorporation of data from CCDA.**
- Verify that following attributes exists for one of the triggered CDS interventions/resources: bibliographic citation, developer, funding source, release/revision date.

Success:

[X] Easily completed
[ ] Completed with difficulty or help :: Describe below[
] Not completed *Comments:*

Task Time: 325 Seconds

Optimal Path: 1. *Dashboard □ Settings □ Add/ Edit/Delete clinical decision support rules (HM Rules)*

[X] Correct
Minor Deviations / Cycles :: Describe below ☐ Major Deviations :: Describe below *Comments:*

Observed Errors and Verbalizations: No errors made. OMG…big task
Comments:

Rating: 2
Show participant written scale: "Very Easy" (1) to "Very Difficult" (5)
Administrator / Note taker Comments: Satisfied looking at the alerts.

Task 9: Patient C – Tasks: Clinical Information Reconciliation and Incorporation 170.315(b) (2)

- Verify that you have received a sample CCDA for Isabella Jones before executing this test.
- **Search a patient with name "Isabella Jones". If not found, create a new patient with same first name, last name and DOB as in sample CCDA.**
- Import the sample CCDA into "Isabella Jones" clinical documents.
- **Right click and select incorporate data.**
- Verify that reconciliation confirmation dialog shows you external data with respect to problems and medications as in sample CCDA.
- **Accept the changes and verify that problems and medications are added to patient chart, post successful reconciliation.**
- Navigate to release of information module and create a new transition of care document for the patient.
- **Verify that the reconciled data shows in generated CCDA.**

Success:
[X] Easily completed
[ ] Completed with difficulty or help :: Describe below[
] Not completed *Comments:*

Task Time:390 Seconds

Optimal Path: 1. *Dashboard □ Import Clinical Message Received Electronically*
2. Open Chart □ Patient chart left folders □ Clinical Information Reconciliation

[X] Correct
Minor Deviations / Cycles :: Describe below ☐ Major Deviations :: Describe below *Comments:*

Observed Errors and Verbalizations: No errors made.
Comments:
Rating: 2
Show participant written scale: "Very Easy" (1) to "Very Difficult" (5)
Administrator / Note taker Comments: None

End of Participant # 3

Participant # : 4

Location: 4276 54th place, San Dieog, CA,

92115Date: 07/01/2018

Time: 12.45 PM

Prior to testing

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

Prior to each participant:

- Reset application
- Start session recordings with *tool*

Prior to each task:

- Reset application to starting point for next task

After each participant:

- End session recordings with *tool*

After all testing

- Back up all video and data files

Orientation (*10 mins*)

Thank you for participating in this study. Our session today will last ***60 mins***. During that time you will take alook 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. Youwill 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 help you with anything to do with the system itself. Please save your detailed comments until the end of atask or the end of the session as a whole when we can discuss freely.

I did not have any involvement in its creation, so please be honest with your opinions.The

product you will be using today is *EHR Your Way (6.9.0.0)*

Some of the data may not make sense as it is placeholder data.

We are recording the audio and screenshots of our session today. All of the information that you provide will bekept confidential and your name will not be associated with your comments at any time.

Do you have any questions or concerns?

Preliminary Questions (*5* minutes)

What is your job title / appointment? I am a Nurse Practitioner.How
long have you been working in this role? About 18 years
What are some of your main responsibilities? To assist provider in treating his patients.
Tell me about your experience with electronic health records. : I had bitter experience with medical recors. They are difficult to learn

---

Task 0: First Impressions (45 *Seconds*)

This is the application you will be working with. Have you heard of it?Not much. .!

Please don't click on anything just yet.
What do you notice? Some thing looks like scheduler, some folders, Inbox, it is probably email box.
Notes / Comments: Explained that Inbox shows all pending unsigned documents and is not email box.

Task 1: Record Demographics (*102 Seconds*)

Take the participant to the starting point for the task.
Record demographics (170.315 (a)(5))

- A new client comes in for an appointment. Verify if that patient exists in your system and Add if not available.
- Document patients Last Name (Richard), First Name(John), Sex(Male), DOB(25/06/1962) and Save.
- Search for the existing patient and add More information by Editing the patient demographics.
- Edit the patient and enter Home Address (1357 Amber Drive, Beaverton, OR 97006, US) Home Telephone((816)276-6909), Ethnicity(Not Hispanic or Latino), Race (white), Preferred Language(English), Gender Identity(Male) and Save.

Success:
[X] Easily completed
☐ Completed with difficulty or help :: Describe below
☐ Not completed *Comments:*

Task Time: 102 Seconds

Optimal Path: *Dashboard □ Add Patient Icon □ Enter data and click Save button*
Optimal Path is Correct

Observed Errors and Verbalizations: No errors observed.

Comments:

Rating: Overall, this task was: 1
Show participant written scale: "Very Easy" (1) to "Very Difficult" (5)

Administrator / Note taker Comments: Participant started with the impression that E H R Your way is difficultand not easy to accomplish the task. But found it is easy and finished task successfully.

Task 2: View and Change Demographics (*55 Seconds*)

Patient 2 – Tasks: View demographics (170.315 (a)(5)), Change demographics (170.315 (a)(5))

•Patient has changed the address. He wants his address to be changed to 1369 Amber Drive, Beaverton, OR 97006, US). Change the address.

Success:
[X] Easily completed
☐ Completed with difficulty or help :: Describe below
☐ Not completed *Comments:*

Task Time: 55 Seconds
Optimal Path: *Dashboard □ Search Patient □ Edit Demographics*
[X] Correct
☐ Minor Deviations / Cycles :: Describe below ☐ Major Deviations :: Describe below
☐ *Comments:*

Observed Errors and Verbalizations: No errors.
Comments:

Rating: 1
Show participant written scale: "Very Easy" (1) to "Very Difficult" (5)

Administrator / Note taker Comments: Participant felt confident that this application is user friendly and not badas he experienced with other products.

Task 3: View Medication list, Medication allergy list, change Medication list and Prescribe drug electronically (*182 Seconds*)

Patient 2 –: View medications/medication list (170.315 (a)(1)) & (170.315 (a)(7)), View medication allergy list (170.315 (a)(8)), Change medication/medication list (170.315 (a)(1)) & (170.315 (a)(7)), Electronically Prescribe (170.315 (b)(3))

- Based on your patients input you understood that Paxil 10 mg is not giving good progress, and observed he has Paxil 10 mg in drug allergy list. So you decided to give "Lexapro" and stop Paxil 10mg.
- You prescribe a new drug, Lexapro 10 mg table oral, 1 tab, QD.
- Upon completing the prescription will send via eRx to the CVS pharmacy.
- Change the frequency of Lexapro 10 mg from QD to BID.

Success:
[X] Easily completed
[ ] Completed with difficulty or help :: Describe below[
] Not completed *Comments:*

Task Time:182 Seconds

Optimal Path: 1. *Open Chart □ Summary □ Current Medications*
2. Open Chart □ Chart Left Folders □ Prescription folder □ Order Rx
3. Open Chart □ Summary □ Allergies

[X] Correct
[ ] Minor Deviations / Cycles :: Describe below ☐ Major Deviations :: Describe below *Comments:*

Observed Errors and Verbalizations: No errors made.
Rating: 1
Show participant written scale: "Very Easy" (1) to "Very Difficult" (5)
Administrator / Notetaker Comments: None

Task 4: Patient 2– Tasks: View medication allergies (170.315 (a)(8)), Record medication allergy (170.315 (a)(8)), Change medication allergy (170.315 (a)(8)), View lab tests (170.315 (a)(2)), Order lab test (170.315 (a)(2)), Record medication (170.315 (a)(1)), View drug-allergy interactions (170.315 (a)(4)), View drug-drug interactions (170.315 (a)(4)), Change medication (170.315 (a)(1)), Change the level of severity for drug-drug interactions (170.315 (a)(4))

- Patient has come for regular visit. After few mins of discussion with him you understood that patient is experiencing Mild Irritable after he takes Hydralazine drug. Update the chart with this information
- **View all allergies for the patient. Verify that the Hydralazine allergy appears in the client's known allergies list.**
- The client also indicates that their Egg allergy has gone away and they no longer have any reactions to eating Egg. Discontinue the Egg allergy. Return to allergies, change the severity of the Hydralazine allergy to Moderate, because the patient indicated that their Irritable gets severe after taking Hydralazine.
- **The patient complains about painful urinating. Order urinalysis and CMP.**
- You also want to prescribe Bactrim for the suspected UTI.
- **Proceed to prescribe Bactrim.**
- After you speak to your client more, you decide to add a Comprehensive Metabolic Panel.
- **The patient reports they don't feel like the Flonase has been working, so you decide to discontinue Flonase as well as Hydralazine, since the client reported the allergic reaction. (315 seconds)**

Success:
[X] Easily completed
[ ] Completed with difficulty or help :: Describe below[
] Not completed *Comments:*

Task Time: 315 Seconds

Optimal Path: 1. *Open Chart □ Summary □ Current Medications*
2. Open Chart □ Chart Left Folders □ Prescription folder □ Order Rx
3. Open Chart □ Summary □ Allergies
4. Open Chart □ Chart Left Folders □ Lab Orders
[X] Correct
Minor Deviations / Cycles :: Describe below ☐ Major Deviations :: Describe below *Comments:*

Observed Errors and Verbalizations: No errors made. Participant felt happy with the functionality of search suggestions of drugs while searching.
Comments:

Rating: 1
Show participant written scale: "Very Easy" (1) to "Very Difficult" (5)
Administrator / Note taker Comments: Search of drug names is made easy. This made participant feel satisfiedabout the application.

Task 5: Patient 2 – Tasks: View implantable device list (170.315 (a)(14)), Change implantable device list (170.315 (a)(14)), Record implantable device list (170.315 (a)(14))

- The client tells you that they just had an implantable device removed. You want to see if the history of this implantable device is in their record. Open the Implantable Device List.
- **Enter the unique device identifier (00643169007222). Get the information of device using Parse functionality in EHR. Review the information that has been returned and save to patient.**
- Since the device is removed from the patient currently, Edit the record and set the status as inactive.

Success:
[X] Easily completed
[ ] Completed with difficulty or help :: Describe below[
] Not completed *Comments:*

Task Time: 95 Seconds

Optimal Path: 1. *Open Chart □ Chart Left Folders □ Implantable Device*

[X] Correct
Minor Deviations / Cycles :: Describe below ☐ Major Deviations :: Describe below *Comments:*

Observed Errors and Verbalizations: No errors made.
Comments:

Rating: 1
Show participant written scale: "Very Easy" (1) to "Very Difficult" (5)
Administrator / Note taker Comments: None

Task 6:

Patient 3 – Patient 2 – Tasks: View problem list (170.315 (a)(6)), Record problem (170.315 (a)(6)), Changeproblem (170.315 (a)(6))

- **The patient has been complaining of a Foot Pain.**
- Add the problem Foot Pain to the patient's problem list and the Date Identified.
- **The patient also tells you they no longer have the Low back pain. Convert the status of low back pain to resolve.**

Success:

[X] Easily completed
[ ] Completed with difficulty or help :: Describe below[
] Not completed *Comments:*

Task Time: 92 Seconds

Optimal Path: 1. *Open Chart □ Summary □ Problem list.*

[X] Correct
Minor Deviations / Cycles :: Describe below ☐ Major Deviations :: Describe below *Comments:*

Observed Errors and Verbalizations:
Comments:

Rating: 1
Show participant written scale: "Very Easy" (1) to "Very Difficult" (5)
Administrator / Note taker Comments: None

Task 7: Patient 3 – Tasks: View lab test results (170.315 (a)(2)), Change lab test (170.315 (a)(2)), Add radiology order (170.315 (a)(3)), Change radiology order (170.315 (a)(3)), View radiology order (170.315 (a)(3)), Change medication (170.315 (a)(1))

- At the last visit you ordered a urinalysis lab test. Review the lab test results for the order.
- **You decide to order a CT scan to determine if the patient's symptoms could be related to a stroke.**
- After placing the order, the patient tells he will be out of town for 1 week, Now change the order start dateto 1 week later. Edit the placed order and re-order the new order with the new start date. Confirm the order change.

Success:

[X] Easily completed
[ ] Completed with difficulty or help :: Describe below[
] Not completed *Comments:*

Task Time: 287 Seconds

Optimal Path: 1. *Open Chart □ Chart Left side folders □ Labs Folder*

[X] Correct

Minor Deviations / Cycles :: Describe below ☐ Major Deviations :: Describe below *Comments:*

Observed Errors and Verbalizations: No errors made.

Rating: 1
Show participant written scale: “Very Easy” (1) to “Very Difficult” (5)
Administrator / Notetaker Comments: None

Task 8: Patient 3 – Tasks: Clinical Decision Support (170.315(a) (9))

- Enable the Clinical Decision Support for a provider through the CDS admin.
- **Configure each CDS alert with a combination of:**

1 Problem & 1 Medication

- **Patient Gender & Problem List**

1 Medication & 1 Allergy

- **Hba1c >8.0 & High Blood Pressure**

- The Patient was added with CDS Intervention and /or reference resource for all the 7 required elementslisted below:

1) Problem List;

2) Medication List;

3) Medication allergy list;

4) At least one demographic (specified in 170.315(a)(5)(i));

5) Laboratory tests;

6) Vital Signs; and

7) Combination (based on at least two of the elements listed above)

- Now the user triggers the CDS interventions/resources added using the applicable data elements from eachof the required elements.
- **Verify that the user can view the intervention/resource information using the Infobutton standard for data elements in the problem list, medication list, and demographics**
- Create a new patient and import a CDA through incorporate CCDA module with at least one matchingalert from above configured rules.
- **Verify that the CDS alert gets triggered post successful incorporation of data from CCDA.**
- Verify that following attributes exists for one of the triggered CDS interventions/resources: bibliographic citation, developer, funding source, release/revision date.

Success:

[X] Easily completed
[ ] Completed with difficulty or help :: Describe below[
] Not completed *Comments:*

Task Time: 325 Seconds

Optimal Path: 1. *Dashboard □ Settings □ Add/ Edit/Delete clinical decision support rules (HM Rules)*

[X] Correct
Minor Deviations / Cycles :: Describe below ☐ Major Deviations :: Describe below *Comments:*

Observed Errors and Verbalizations: No errors made. Very satisfied after finishing the task, since participant isable to find the alerts working.

Comments: Since it is big task, participant is not sure if whatever he/she is doing is correct or not.

Rating: 2

Show participant written scale: "Very Easy" (1) to "Very Difficult" (5)

Administrator / Note taker Comments: None.

Task 9: Patient C – Tasks: Clinical Information Reconciliation and Incorporation 170.315(b) (2)

- Verify that you have received a sample CCDA for Isabella Jones before executing this test.
- **Search a patient with name "Isabella Jones". If not found, create a new patient with same first name, last name and DOB as in sample CCDA.**
- Import the sample CCDA into "Isabella Jones" clinical documents.
- **Right click and select incorporate data.**
- Verify that reconciliation confirmation dialog shows you external data with respect to problems and medications as in sample CCDA.
- **Accept the changes and verify that problems and medications are added to patient chart, post successful reconciliation.**
- Navigate to release of information module and create a new transition of care document for the patient.
- **Verify that the reconciled data shows in generated CCDA.**

Success:

[X] Easily completed

[ ] Completed with difficulty or help :: Describe below[

] Not completed *Comments:*

Task Time:399 Seconds

Optimal Path: 1. *Dashboard □ Import Clinical Message Received Electronically*

2. Open Chart □ Patient chart left folders □ Clinical Information Reconciliation

[X] Correct

Minor Deviations / Cycles :: Describe below ☐ Major Deviations :: Describe below *Comments:*

Observed Errors and Verbalizations: No errors made. Took long time to import the clinical message and importthe message to client chart.

Comments:

Rating: 2

Show participant written scale: "Very Easy" (1) to "Very Difficult" (5)

Administrator / Note taker Comments: None

End of Participant # 4

Participant # : 5

Location: 4276 54th place, San Dieog, CA,

92115Date: 07/01/2018

Time:02.45 PM

Prior to testing

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

Prior to each participant:

- Reset application
- Start session recordings with *tool*

Prior to each task:

- Reset application to starting point for next task

After each participant:

- End session recordings with *tool*

After all testing

- Back up all video and data files

Orientation (*10 mins*)

Thank you for participating in this study. Our session today will last ***60 mins***. During that time you will take alook 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. Youwill 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 help you with anything to do with the system itself. Please save your detailed comments until the end of atask or the end of the session as a whole when we can discuss freely.

I did not have any involvement in its creation, so please be honest with your opinions.The

product you will be using today is *EHR Your Way (6.9.0.0)*

Some of the data may not make sense as it is placeholder data.

We are recording the audio and screenshots of our session today. All of the information that you provide will bekept confidential and your name will not be associated with your comments at any time.

Do you have any questions or concerns?

Preliminary Questions (*5* minutes)

What is your job title / appointment? I am a Medical assistant.How long have you been working in this role? About 30 years

What are some of your main responsibilities? I do appointment booking, collecting vitals and send Providerauthorized ERx to pharmacy etc.,.

Tell me about your experience with electronic health records. : I had good experience with EHR. Most ofthem are not user friendly, but there are few products like EHR Your way which are user interactive.

Task 0: First Impressions (45 *Seconds*)

This is the application you will be working with. Have you heard of it?Yes, I know this application and had +ve opinion

Please don't click on anything just yet.
What do you notice?Scheduler, Inbox and To do list
Notes / Comments: None

Task 1: Record Demographics (*100 Seconds*)

Take the participant to the starting point for the task.
Record demographics (170.315 (a)(5))

- A new client comes in for an appointment. Verify if that patient exists in your system and Add if not available.
- Document patients Last Name (Richard), First Name(John), Sex(Male), DOB(25/06/1962) and Save.
- Search for the existing patient and add More information by Editing the patient demographics.
- Edit the patient and enter Home Address (1357 Amber Drive, Beaverton, OR 97006, US) Home Telephone((816)276-6909), Ethnicity(Not Hispanic or Latino), Race (white), Preferred Language(English), Gender Identity(Male) and Save.

Success:
[X] Easily completed
☐ Completed with difficulty or help :: Describe below
☐ Not completed *Comments:*

Task Time: 100 Seconds

Optimal Path: *Dashboard □ Add Patient Icon □ Enter data and click Save button*
Optimal Path is Correct

Observed Errors and Verbalizations: No errors observed.

Comments:

Rating: Overall, this task was: 1
Show participant written scale: “Very Easy” (1) to “Very Difficult” (5)
Administrator / Note taker Comments: None

Task 2: View and Change Demographics (*55 Seconds*)

Patient 2 – Tasks: View demographics (170.315 (a)(5)), Change demographics (170.315 (a)(5))

•Patient has changed the address. He wants his address to be changed to 1369 Amber Drive, Beaverton, OR 97006, US). Change the address.

Success:
[X] Easily completed
☐ Completed with difficulty or help :: Describe below
☐ Not completed *Comments:*

Task Time: 55 Seconds
Optimal Path: *Dashboard □ Search Patient □ Edit Demographics*
[X] Correct
☐ Minor Deviations / Cycles :: Describe below ☐ Major Deviations :: Describe below
☐ *Comments:*

Observed Errors and Verbalizations: No errors.
Comments:

Rating: 1
Show participant written scale: “Very Easy” (1) to “Very Difficult” (5)

Administrator / Note taker Comments: None

Task 3: View Medication list, Medication allergy list, change Medication list and Prescribe drug electronically (*182 Seconds*)

Patient 2 –: View medications/medication list (170.315 (a)(1)) & (170.315 (a)(7)), View medication allergy list (170.315 (a)(8)), Change medication/medication list (170.315 (a)(1)) & (170.315 (a)(7)), Electronically Prescribe (170.315 (b)(3))

- Based on your patients input you understood that Paxil 10 mg is not giving good progress, and observed he has Paxil 10 mg in drug allergy list. So you decided to give “Lexapro” and stop Paxil 10mg.
- You prescribe a new drug, Lexapro 10 mg table oral, 1 tab, QD.
- Upon completing the prescription will send via eRx to the CVS pharmacy.
- Change the frequency of Lexapro 10 mg from QD to BID.

Success:
[X] Easily completed

[ ] Completed with difficulty or help :: Describe below[
] Not completed *Comments:*

Task Time:182 Seconds

Optimal Path: 1. *Open Chart □ Summary □ Current Medications*
2. Open Chart □ Chart Left Folders □ Prescription folder □ Order Rx
3. Open Chart □ Summary □ Allergies

[X] Correct
[ ] Minor Deviations / Cycles :: Describe below ☐ Major Deviations :: Describe below *Comments:*

Observed Errors and Verbalizations: No errors made.
Rating: 1
Show participant written scale: "Very Easy" (1) to "Very Difficult" (5)
Administrator / Notetaker Comments: None

Task 4: Patient 2– Tasks: View medication allergies (170.315 (a)(8)), Record medication allergy (170.315 (a)(8)), Change medication allergy (170.315 (a)(8)), View lab tests (170.315 (a)(2)), Order lab test (170.315 (a)(2)), Record medication (170.315 (a)(1)), View drug-allergy interactions (170.315 (a)(4)), View drug-drug interactions (170.315 (a)(4)), Change medication (170.315 (a)(1)), Change the level of severity for drug-drug interactions (170.315 (a)(4))

- Patient has come for regular visit. After few mins of discussion with him you understood that patient is experiencing Mild Irritable after he takes Hydralazine drug. Update the chart with this information
- **View all allergies for the patient. Verify that the Hydralazine allergy appears in the client's known allergies list.**
- The client also indicates that their Egg allergy has gone away and they no longer have any reactions to eating Egg. Discontinue the Egg allergy. Return to allergies, change the severity of the Hydralazine allergy to Moderate, because the patient indicated that their Irritable gets severe after taking Hydralazine.
- **The patient complains about painful urinating. Order urinalysis and CMP.**
- You also want to prescribe Bactrim for the suspected UTI.
- **Proceed to prescribe Bactrim.**
- After you speak to your client more, you decide to add a Comprehensive Metabolic Panel.
- **The patient reports they don't feel like the Flonase has been working, so you decide to discontinue Flonase as well as Hydralazine, since the client reported the allergic reaction. (315 seconds)**

Success:
[X] Easily completed
[ ] Completed with difficulty or help :: Describe below[
] Not completed *Comments:*

Task Time: 315 Seconds

Optimal Path: 1. *Open Chart □ Summary □ Current Medications*

2. Open Chart □ Chart Left Folders □ Prescription folder □ Order Rx
3. Open Chart □ Summary □ Allergies
4. Open Chart □ Chart Left Folders □ Lab Orders

[X] Correct

Minor Deviations / Cycles :: Describe below ☐ Major Deviations :: Describe below *Comments:*

Observed Errors and Verbalizations: No errors made.
Comments:

Rating: 1
Show participant written scale: "Very Easy" (1) to "Very Difficult" (5)
Administrator / Note taker Comments: None

Task 5: Patient 2 – Tasks: View implantable device list (170.315 (a)(14)), Change implantable device list (170.315 (a)(14)), Record implantable device list (170.315 (a)(14))

- The client tells you that they just had an implantable device removed. You want to see if the history of this implantable device is in their record. Open the Implantable Device List.
- **Enter the unique device identifier (00643169007222). Get the information of device using Parse functionality in EHR. Review the information that has been returned and save to patient.**
- Since the device is removed from the patient currently, Edit the record and set the status as inactive.

Success:
[X] Easily completed
[ ] Completed with difficulty or help :: Describe below[
] Not completed *Comments:*

Task Time: 95 Seconds

Optimal Path: 1. *Open Chart □ Chart Left Folders □ Implantable Device*

[X] Correct
Minor Deviations / Cycles :: Describe below ☐ Major Deviations :: Describe below *Comments:*

Observed Errors and Verbalizations: No errors made.
Comments:

Rating: 1
Show participant written scale: "Very Easy" (1) to "Very Difficult" (5)
Administrator / Note taker Comments: None

Task 6:

Patient 3 – Patient 2 – Tasks: View problem list (170.315 (a)(6)), Record problem (170.315 (a)(6)), Changeproblem (170.315 (a)(6))

- **The patient has been complaining of a Foot Pain.**
- Add the problem Foot Pain to the patient's problem list and the Date Identified.

• **The patient also tells you they no longer have the Low back pain. Convert the status of low back pain to resolve.**

Success:
[X] Easily completed
[ ] Completed with difficulty or help :: Describe below[
] Not completed *Comments:*

Task Time: 92 Seconds

Optimal Path: 1. *Open Chart □ Summary □ Problem list.*

[X] Correct
Minor Deviations / Cycles :: Describe below ☐ Major Deviations :: Describe below *Comments:*

Observed Errors and Verbalizations:
Comments:

Rating: 1
Show participant written scale: "Very Easy" (1) to "Very Difficult" (5)
Administrator / Note taker Comments: None

Task 7: Patient 3 – Tasks: View lab test results (170.315 (a)(2)), Change lab test (170.315 (a)(2)), Add radiology order (170.315 (a)(3)), Change radiology order (170.315 (a)(3)), View radiology order (170.315 (a)(3)), Change medication (170.315 (a)(1))

• At the last visit you ordered a urinalysis lab test. Review the lab test results for the order.
• **You decide to order a CT scan to determine if the patient's symptoms could be related to a stroke.**
• After placing the order, the patient tells he will be out of town for 1 week, Now change the order start dateto 1 week later. Edit the placed order and re-order the new order with the new start date. Confirm the order change.

Success:
[X] Easily completed
[ ] Completed with difficulty or help :: Describe below[
] Not completed *Comments:*

Task Time: 287 Seconds

Optimal Path: 1. *Open Chart □ Chart Left side folders □ Labs Folder*

[X] Correct
Minor Deviations / Cycles :: Describe below ☐ Major Deviations :: Describe below *Comments:*

Observed Errors and Verbalizations: No errors made.

Rating: 1

Show participant written scale: “Very Easy” (1) to “Very Difficult” (5)
Administrator / Notetaker Comments: None

Task 8: Patient 3 – Tasks: Clinical Decision Support (170.315(a) (9))

- Enable the Clinical Decision Support for a provider through the CDS admin.
- **Configure each CDS alert with a combination of:**

1 Problem & 1 Medication

- **Patient Gender & Problem List**

1 Medication & 1 Allergy

- **Hba1c >8.0 & High Blood Pressure**

- The Patient was added with CDS Intervention and /or reference resource for all the 7 required elementslisted below:

1) Problem List;

2) Medication List;

3) Medication allergy list;

4) At least one demographic (specified in 170.315(a)(5)(i));

5) Laboratory tests;

6) Vital Signs; and

7) Combination (based on at least two of the elements listed above)

- Now the user triggers the CDS interventions/resources added using the applicable data elements from eachof the required elements.
- **Verify that the user can view the intervention/resource information using the Infobutton standard for data elements in the problem list, medication list, and demographics**
- Create a new patient and import a CDA through incorporate CCDA module with at least one matchingalert from above configured rules.
- **Verify that the CDS alert gets triggered post successful incorporation of data from CCDA.**
- Verify that following attributes exists for one of the triggered CDS interventions/resources: bibliographic citation, developer, funding source, release/revision date.

Success:

[X] Easily completed
[ ] Completed with difficulty or help :: Describe below[
] Not completed *Comments:*

Task Time: 325 Seconds

Optimal Path: 1. *Dashboard □ Settings □ Add/ Edit/Delete clinical decision support rules (HM Rules)*

[X] Correct
Minor Deviations / Cycles :: Describe below ☐ Major Deviations :: Describe below *Comments:*

Observed Errors and Verbalizations: No errors made.
Comments:

Rating: 2

Show participant written scale: “Very Easy” (1) to “Very Difficult” (5)
Administrator / Note taker Comments: None.

Task 9: Patient C – Tasks: Clinical Information Reconciliation and Incorporation 170.315(b) (2)

- Verify that you have received a sample CCDA for Isabella Jones before executing this test.
- **Search a patient with name “Isabella Jones”. If not found, create a new patient with same first name, last name and DOB as in sample CCDA.**
- Import the sample CCDA into “Isabella Jones” clinical documents.
- **Right click and select incorporate data.**
- Verify that reconciliation confirmation dialog shows you external data with respect to problems and medications as in sample CCDA.
- **Accept the changes and verify that problems and medications are added to patient chart, post successful reconciliation.**
- Navigate to release of information module and create a new transition of care document for the patient.
- **Verify that the reconciled data shows in generated CCDA.**

Success:
[X] Easily completed
[ ] Completed with difficulty or help :: Describe below[
] Not completed *Comments:*

Task Time:400 Seconds

Optimal Path: 1. *Dashboard □ Import Clinical Message Received Electronically*
2. Open Chart □ Patient chart left folders □ Clinical Information Reconciliation

[X] Correct
Minor Deviations / Cycles :: Describe below ☐ Major Deviations :: Describe below *Comments:*

Observed Errors and Verbalizations: No errors made.
Comments:
Rating: 2
Show participant written scale: “Very Easy” (1) to “Very Difficult” (5)
Administrator / Note taker Comments: None

End of Participant # 5

Participant # : 6

Location: 4276 54th place, San Dieog, CA,

92115Date: 07/01/2018

Time: 04.15 PM

Prior to testing

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

Prior to each participant:
- Reset application
- Start session recordings with *tool*

Prior to each task:
- Reset application to starting point for next task

After each participant:
- End session recordings with *tool*

After all testing
- Back up all video and data files

Orientation (*10 mins*)

Thank you for participating in this study. Our session today will last ***60 mins***. During that time you will take alook 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. Youwill 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 help you with anything to do with the system itself. Please save your detailed comments until the end of atask or the end of the session as a whole when we can discuss freely.

I did not have any involvement in its creation, so please be honest with your opinions.The

product you will be using today is *EHR Your Way (6.9.0.0)*

Some of the data may not make sense as it is placeholder data.

We are recording the audio and screenshots of our session today. All of the information that you provide will bekept confidential and your name will not be associated with your comments at any time.

Do you have any questions or concerns?

Preliminary Questions (*5* minutes)

What is your job title / appointment? Medical assistant. How long have you been working in this role? About 2 years
What are some of your main responsibilities? I assist provider in treating patients.

Tell me about your experience with electronic health records. : I did not work on multiple functionalities,but scheduler, vitals and current medications are only modules on which I worked more.

Task 0: First Impressions (45 *Seconds*)

This is the application you will be working with. Have you heard of it?Yes,
looks good for me.

Please don't click on anything just yet.
What do you notice? Dashboard, scheduler, refill requests, inbox
Notes / Comments: None

Task 1: Record Demographics (*100 Seconds*)

Take the participant to the starting point for the task.
Record demographics (170.315 (a)(5))

- A new client comes in for an appointment. Verify if that patient exists in your system and Add if not available.
- Document patients Last Name (Richard), First Name(John), Sex(Male), DOB(25/06/1962) and Save.
- Search for the existing patient and add More information by Editing the patient demographics.
- Edit the patient and enter Home Address (1357 Amber Drive, Beaverton, OR 97006, US) Home Telephone((816)276-6909), Ethnicity(Not Hispanic or Latino), Race (white), Preferred Language(English), Gender Identity(Male) and Save.

Success:
[X] Easily completed
☐ Completed with difficulty or help :: Describe below
☐ Not completed *Comments:*

Task Time: 99 Seconds

Optimal Path: *Dashboard □ Add Patient Icon □ Enter data and click Save button*
Optimal Path is Correct

Observed Errors and Verbalizations: No errors observed.

Comments:

Rating: Overall, this task was: 1
Show participant written scale: "Very Easy" (1) to "Very Difficult" (5)
Administrator / Note taker Comments: None

Task 2: View and Change Demographics (*58 Seconds*)

Patient 2 – Tasks: View demographics (170.315 (a)(5)), Change demographics (170.315 (a)(5))

•Patient has changed the address. He wants his address to be changed to 1369 Amber Drive, Beaverton, OR 97006, US). Change the address.

Success:
[X] Easily completed
☐ Completed with difficulty or help :: Describe below
☐ Not completed *Comments:*

Task Time: 58 Seconds
Optimal Path: *Dashboard □ Search Patient □ Edit Demographics*
[X] Correct
☐ Minor Deviations / Cycles :: Describe below ☐ Major Deviations :: Describe below
☐ *Comments:*

Observed Errors and Verbalizations: No errors.
Comments:

Rating: 1
Show participant written scale: "Very Easy" (1) to "Very Difficult" (5)
Administrator / Note taker Comments: None

Task 3: View Medication list, Medication allergy list, change Medication list and Prescribe drug electronically (*185 Seconds*)

Patient 2 –: View medications/medication list (170.315 (a)(1)) & (170.315 (a)(7)), View medication allergy list (170.315 (a)(8)), Change medication/medication list (170.315 (a)(1)) & (170.315 (a)(7)), Electronically Prescribe (170.315 (b)(3))

- Based on your patients input you understood that Paxil 10 mg is not giving good progress, and observed he has Paxil 10 mg in drug allergy list. So you decided to give "Lexapro" and stop Paxil 10mg.
- You prescribe a new drug, Lexapro 10 mg table oral, 1 tab, QD.
- Upon completing the prescription will send via eRx to the CVS pharmacy.
- Change the frequency of Lexapro 10 mg from QD to BID.

Success:
[X] Easily completed
[ ] Completed with difficulty or help :: Describe below[
] Not completed *Comments:*

Task Time:185 Seconds

Optimal Path: 1. *Open Chart □ Summary □ Current Medications*
2. Open Chart □ Chart Left Folders □ Prescription folder □ Order Rx

3. Open Chart □ Summary □ Allergies

[X] Correct
[ ] Minor Deviations / Cycles :: Describe below ☐ Major Deviations :: Describe below *Comments:*

Observed Errors and Verbalizations: No errors made.
Rating: 1
Show participant written scale: "Very Easy" (1) to "Very Difficult" (5)
Administrator / Notetaker Comments: None

Task 4: Patient 2– Tasks: View medication allergies (170.315 (a)(8)), Record medication allergy (170.315 (a)(8)), Change medication allergy (170.315 (a)(8)), View lab tests (170.315 (a)(2)), Order lab test (170.315 (a)(2)), Record medication (170.315 (a)(1)), View drug-allergy interactions (170.315 (a)(4)), View drug-drug interactions (170.315 (a)(4)), Change medication (170.315 (a)(1)), Change the level of severity for drug-drug interactions (170.315 (a)(4))

- Patient has come for regular visit. After few mins of discussion with him you understood that patient is experiencing Mild Irritable after he takes Hydralazine drug. Update the chart with this information
- **View all allergies for the patient. Verify that the Hydralazine allergy appears in the client's known allergies list.**
- The client also indicates that their Egg allergy has gone away and they no longer have any reactions to eating Egg. Discontinue the Egg allergy. Return to allergies, change the severity of the Hydralazine allergy to Moderate, because the patient indicated that their Irritable gets severe after taking Hydralazine.
- **The patient complains about painful urinating. Order urinalysis and CMP.**
  - You also want to prescribe Bactrim for the suspected UTI.
- **Proceed to prescribe Bactrim.**
  - After you speak to your client more, you decide to add a Comprehensive Metabolic Panel.
- **The patient reports they don't feel like the Flonase has been working, so you decide to discontinue Flonase as well as Hydralazine, since the client reported the allergic reaction. (319 seconds)**

Success:
[X] Easily completed
[ ] Completed with difficulty or help :: Describe below[
] Not completed *Comments:*

Task Time: 319 Seconds

Optimal Path: 1. *Open Chart □ Summary □ Current Medications*
2. Open Chart □ Chart Left Folders □ Prescription folder □ Order Rx
3. Open Chart □ Summary □ Allergies
4. Open Chart □ Chart Left Folders □ Lab Orders

[X] Correct
Minor Deviations / Cycles :: Describe below ☐ Major Deviations :: Describe below *Comments:*

Observed Errors and Verbalizations: No errors made.

Comments:

Rating: 1
Show participant written scale: “Very Easy” (1) to “Very Difficult” (5)
Administrator / Note taker Comments: None

Task 5: Patient 2 – Tasks: View implantable device list (170.315 (a)(14)), Change implantable device list (170.315 (a)(14)), Record implantable device list (170.315 (a)(14))

- The client tells you that they just had an implantable device removed. You want to see if the history of this implantable device is in their record. Open the Implantable Device List.
- **Enter the unique device identifier (00643169007222). Get the information of device using Parse functionality in EHR. Review the information that has been returned and save to patient.**
- Since the device is removed from the patient currently, Edit the record and set the status as inactive.

Success:
[X] Easily completed
[ ] Completed with difficulty or help :: Describe below[
] Not completed *Comments:*

Task Time: 95 Seconds

Optimal Path: 1. *Open Chart □ Chart Left Folders □ Implantable Device*

[X] Correct
Minor Deviations / Cycles :: Describe below ☐ Major Deviations :: Describe below *Comments:*

Observed Errors and Verbalizations: No errors made.
Comments:

Rating: 1
Show participant written scale: “Very Easy” (1) to “Very Difficult” (5)
Administrator / Note taker Comments: None

Task 6:
Patient 3 – Patient 2 – Tasks: View problem list (170.315 (a)(6)), Record problem (170.315 (a)(6)), Changeproblem (170.315 (a)(6))

- **The patient has been complaining of a Foot Pain.**
- Add the problem Foot Pain to the patient’s problem list and the Date Identified.
- **The patient also tells you they no longer have the Low back pain. Convert the status of low back pain to resolve.**

Success:
[X] Easily completed
[ ] Completed with difficulty or help :: Describe below[
] Not completed *Comments:*

Task Time: 92 Seconds

Optimal Path: 1. *Open Chart □ Summary □ Problem list.*

[X] Correct
Minor Deviations / Cycles :: Describe below ☐ Major Deviations :: Describe below *Comments:*

Observed Errors and Verbalizations:
Comments:

Rating: 1
Show participant written scale: "Very Easy" (1) to "Very Difficult" (5)
Administrator / Note taker Comments: None

Task 7: Patient 3 – Tasks: View lab test results (170.315 (a)(2)), Change lab test (170.315 (a)(2)), Add radiology order (170.315 (a)(3)), Change radiology order (170.315 (a)(3)), View radiology order (170.315 (a)(3)), Change medication (170.315 (a)(1))

- At the last visit you ordered a urinalysis lab test. Review the lab test results for the order.
- **You decide to order a CT scan to determine if the patient's symptoms could be related to a stroke.**
  - After placing the order, the patient tells he will be out of town for 1 week, Now change the order start dateto 1 week later. Edit the placed order and re-order the new order with the new start date. Confirm the order change.

Success:
[X] Easily completed
[ ] Completed with difficulty or help :: Describe below[
] Not completed *Comments:*

Task Time: 289 Seconds

Optimal Path: 1. *Open Chart □ Chart Left side folders □ Labs Folder*

[X] Correct
Minor Deviations / Cycles :: Describe below ☐ Major Deviations :: Describe below *Comments:*

Observed Errors and Verbalizations: No errors made.

Rating: 1
Show participant written scale: "Very Easy" (1) to "Very Difficult" (5)
Administrator / Notetaker Comments: None

Task 8: Patient 3 – Tasks: Clinical Decision Support (170.315(a) (9))

- Enable the Clinical Decision Support for a provider through the CDS admin.
- **Configure each CDS alert with a combination of:**
  - **1 Problem & 1 Medication**

Patient Gender & Problem List

o 1 Medication & 1 Allergy

Hba1c >8.0 & High Blood Pressure

- **The Patient was added with CDS Intervention and /or reference resource for all the 7 required elements listed below:**

1) Problem List;

2) Medication List;

3) Medication allergy list;

4) At least one demographic (specified in 170.315(a)(5)(i));

5) Laboratory tests;

6) Vital Signs; and

7) Combination (based on at least two of the elements listed above)

- **Now the user triggers the CDS interventions/resources added using the applicable data elements from each of the required elements.**
  - Verify that the user can view the intervention/resource information using the Infobutton standard for data elements in the problem list, medication list, and demographics
- **Create a new patient and import a CDA through incorporate CCDA module with at least one matching alert from above configured rules.**
- Verify that the CDS alert gets triggered post successful incorporation of data from CCDA.
- **Verify that following attributes exists for one of the triggered CDS interventions/resources: bibliographic citation, developer, funding source, release/revision date.**

Success:

[X] Easily completed

[ ] Completed with difficulty or help :: Describe below[

] Not completed *Comments:*

Task Time: 320 Seconds

Optimal Path: 1. *Dashboard □ Settings □ Add/ Edit/Delete clinical decision support rules (HM Rules)*

[X] Correct

Minor Deviations / Cycles :: Describe below ☐ Major Deviations :: Describe below *Comments:*

Observed Errors and Verbalizations: No errors made.

Comments:

Rating: 2

Show participant written scale: “Very Easy” (1) to “Very Difficult” (5)

Administrator / Note taker Comments: User able to complete the task faster than others and looks like he/she understood the actual need of the CDS module in EHR.

Task 9: Patient C – Tasks: Clinical Information Reconciliation and Incorporation 170.315(b) (2)

- Verify that you have received a sample CCDA for Isabella Jones before executing this test.

- **Search a patient with name "Isabella Jones". If not found, create a new patient with same first name, last name and DOB as in sample CCDA.**
- Import the sample CCDA into "Isabella Jones" clinical documents.
- **Right click and select incorporate data.**
  - Verify that reconciliation confirmation dialog shows you external data with respect to problems and medications as in sample CCDA.
- **Accept the changes and verify that problems and medications are added to patient chart, post successful reconciliation.**
- Navigate to release of information module and create a new transition of care document for the patient.
- **Verify that the reconciled data shows in generated CCDA.**

Success:
[X] Easily completed
[ ] Completed with difficulty or help :: Describe below[
] Not completed *Comments:*

Task Time:396 Seconds

Optimal Path: 1. *Dashboard □ Import Clinical Message Received Electronically*
2. Open Chart □ Patient chart left folders □ Clinical Information Reconciliation

[X] Correct
Minor Deviations / Cycles :: Describe below ☐ Major Deviations :: Describe below *Comments:*

Observed Errors and Verbalizations: No errors made.
Comments:
Rating: 2
Show participant written scale: "Very Easy" (1) to "Very Difficult" (5)
Administrator / Note taker Comments: None

End of Participant # 6

Participant # : 7

Location: 4276 54th place, San Dieog, CA,

92115Date: 07/01/2018

Time: 05.30 PM

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

Prior to each participant:

- Reset application
- Start session recordings with *tool*

Prior to each task:
- Reset application to starting point for next task

After each participant:
- End session recordings with *tool*

After all testing
- Back up all video and data files

Orientation (*10 mins*)

Thank you for participating in this study. Our session today will last ***60 mins***. During that time you will take alook 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. Youwill 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 help you with anything to do with the system itself. Please save your detailed comments until the end of atask or the end of the session as a whole when we can discuss freely.

I did not have any involvement in its creation, so please be honest with your opinions.The

product you will be using today is *EHR Your Way (6.9.0.0)*

Some of the data may not make sense as it is placeholder data.

We are recording the audio and screenshots of our session today. All of the information that you provide will bekept confidential and your name will not be associated with your comments at any time.

Do you have any questions or concerns?

Preliminary Questions (*5* minutes)

What is your job title / appointment? Receptionist.
How long have you been working in this role? About 2 years
What are some of your main responsibilities? I do check in the patients in clinic, verify insurance eligibility andenter vitals and current medications. .
Tell me about your experience with electronic health records. : As far as I know most of the EHR are good forfront desk managing appointments and vitals, current meds etc.,.

Task 0: First Impressions (45 *Seconds*)

This is the application you will be working with. Have you heard of it?Yes, but not much

Please don't click on anything just yet.
What do you notice? Dashboard, scheduler, refill requests, inbox
Notes / Comments: None

Task 1: Record Demographics (*100 Seconds*)

Record demographics (170.315 (a)(5))

- A new client comes in for an appointment. Verify if that patient exists in your system and Add if not available.
- Document patients Last Name (Richard), First Name(John), Sex(Male), DOB(25/06/1962) and Save.
- Search for the existing patient and add More information by Editing the patient demographics.
- Edit the patient and enter Home Address (1357 Amber Drive, Beaverton, OR 97006, US) Home Telephone((816)276-6909), Ethnicity(Not Hispanic or Latino), Race (white), Preferred Language(English), Gender Identity(Male) and Save.

Success:
[X] Easily completed
☐ Completed with difficulty or help :: Describe below
☐ Not completed *Comments:*

Task Time: 100 Seconds

Optimal Path: *Dashboard □ Add Patient Icon □ Enter data and click Save button*
Optimal Path is Correct

Observed Errors and Verbalizations: No errors observed.

Comments:

Rating: Overall, this task was: 1
Show participant written scale: "Very Easy" (1) to "Very Difficult" (5)
Administrator / Note taker Comments: None

Task 2: View and Change Demographics (*55 Seconds*)

Patient 2 – Tasks: View demographics (170.315 (a)(5)), Change demographics (170.315 (a)(5))

•Patient has changed the address. He wants his address to be changed to 1369 Amber Drive, Beaverton, OR 97006, US). Change the address.

Success:
[X] Easily completed
☐ Completed with difficulty or help :: Describe below
☐ Not completed *Comments:*

Task Time: 55 Seconds
Optimal Path: *Dashboard □ Search Patient □ Edit Demographics*
[X] Correct
☐ Minor Deviations / Cycles :: Describe below ☐ Major Deviations :: Describe below
☐ *Comments:*

Observed Errors and Verbalizations: No errors.
Comments:

Rating: 1
Show participant written scale: "Very Easy" (1) to "Very Difficult" (5)

Administrator / Note taker Comments: None

Task 3: View Medication list, Medication allergy list, change Medication list and Prescribe drug electronically (*189 Seconds*)

Patient 2 –: View medications/medication list (170.315 (a)(1)) & (170.315 (a)(7)), View medication allergy list (170.315 (a)(8)), Change medication/medication list (170.315 (a)(1)) & (170.315 (a)(7)), Electronically Prescribe (170.315 (b)(3))

- Based on your patients input you understood that Paxil 10 mg is not giving good progress, and observed he has Paxil 10 mg in drug allergy list. So you decided to give "Lexapro" and stop Paxil 10mg.
- You prescribe a new drug, Lexapro 10 mg table oral, 1 tab, QD.
- Upon completing the prescription will send via eRx to the CVS pharmacy.
- Change the frequency of Lexapro 10 mg from QD to BID.

Success:
[X] Easily completed
[ ] Completed with difficulty or help :: Describe below[
] Not completed *Comments:*

Task Time:189 Seconds

Optimal Path: 1. *Open Chart □ Summary □ Current Medications*
2. Open Chart □ Chart Left Folders □ Prescription folder □ Order Rx
3. Open Chart □ Summary □ Allergies

[X] Correct
[ ] Minor Deviations / Cycles :: Describe below ☐ Major Deviations :: Describe below *Comments:*

Observed Errors and Verbalizations: No errors made.
Rating: 1
Show participant written scale: “Very Easy” (1) to “Very Difficult” (5)
Administrator / Notetaker Comments: None

Task 4: Patient 2– Tasks: View medication allergies (170.315 (a)(8)), Record medication allergy (170.315 (a)(8)), Change medication allergy (170.315 (a)(8)), View lab tests (170.315 (a)(2)), Order lab test (170.315 (a)(2)), Record medication (170.315 (a)(1)), View drug-allergy interactions (170.315 (a)(4)), View drug-drug interactions (170.315 (a)(4)), Change medication (170.315 (a)(1)), Change the level of severity for drug-drug interactions (170.315 (a)(4))

- Patient has come for regular visit. After few mins of discussion with him you understood that patient isexperiencing Mild Irritable after he takes Hydralazine drug. Update the chart with this information
- **View all allergies for the patient. Verify that the Hydralazine allergy appears in the client’s known allergies list.**
- The client also indicates that their Egg allergy has gone away and they no longer have any reactions to eatingEgg. Discontinue the Egg allergy. Return to allergies, change the severity of the Hydralazine allergy to Moderate, because the patient indicated that their Irritable gets severe after taking Hydralazine.
- **The patient complains about painful urinating. Order urinalysis and CMP.**
- You also want to prescribe Bactrim for the suspected UTI.
- **Proceed to prescribe Bactrim.**
- After you speak to your client more, you decide to add a Comprehensive Metabolic Panel.
- **The patient reports they don’t feel like the Flonase has been working, so you decide to discontinue Flonase as well as Hydralazine, since the client reported the allergic reaction. (319 seconds)**

Success:
[X] Easily completed
[ ] Completed with difficulty or help :: Describe below[
] Not completed *Comments:*

Task Time: 319 Seconds

Optimal Path: 1. *Open Chart □ Summary □ Current Medications*
2. Open Chart □ Chart Left Folders □ Prescription folder □ Order Rx
3. Open Chart □ Summary □ Allergies
4. Open Chart □ Chart Left Folders □ Lab Orders
[X] Correct
Minor Deviations / Cycles :: Describe below ☐ Major Deviations :: Describe below *Comments:*

Observed Errors and Verbalizations: No errors made.
Comments:

Rating: 1
Show participant written scale: “Very Easy” (1) to “Very Difficult” (5)
Administrator / Note taker Comments: None

Task 5: Patient 2 – Tasks: View implantable device list (170.315 (a)(14)), Change implantable device list (170.315 (a)(14)), Record implantable device list (170.315 (a)(14))

- The client tells you that they just had an implantable device removed. You want to see if the history of this implantable device is in their record. Open the Implantable Device List.
- **Enter the unique device identifier (00643169007222). Get the information of device using Parse functionality in EHR. Review the information that has been returned and save to patient.**
- Since the device is removed from the patient currently, Edit the record and set the status as inactive.

Success:

[X] Easily completed
[ ] Completed with difficulty or help :: Describe below[
] Not completed *Comments:*

Task Time: 95 Seconds

Optimal Path: 1. *Open Chart □ Chart Left Folders □ Implantable Device*

[X] Correct
Minor Deviations / Cycles :: Describe below ☐ Major Deviations :: Describe below *Comments:*

Observed Errors and Verbalizations: No errors made.
Comments:

Rating: 1
Show participant written scale: “Very Easy” (1) to “Very Difficult” (5)
Administrator / Note taker Comments: None

Task 6:

Patient 3 – Patient 2 – Tasks: View problem list (170.315 (a)(6)), Record problem (170.315 (a)(6)), Changeproblem (170.315 (a)(6))

- **The patient has been complaining of a Foot Pain.**
- Add the problem Foot Pain to the patient’s problem list and the Date Identified.
- **The patient also tells you they no longer have the Low back pain. Convert the status of low back pain to resolve.**

Success:

[X] Easily completed
[ ] Completed with difficulty or help :: Describe below[
] Not completed *Comments:*

Task Time: 96 Seconds

Optimal Path: 1. *Open Chart □ Summary □ Problem list.*

[X] Correct

Minor Deviations / Cycles :: Describe below ☐ Major Deviations :: Describe below *Comments:*

Observed Errors and Verbalizations:
Comments:

Rating: 1
Show participant written scale: "Very Easy" (1) to "Very Difficult" (5)
Administrator / Note taker Comments: None

Task 7: Patient 3 – Tasks: View lab test results (170.315 (a)(2)), Change lab test (170.315 (a)(2)), Add radiology order (170.315 (a)(3)), Change radiology order (170.315 (a)(3)), View radiology order (170.315 (a)(3)), Change medication (170.315 (a)(1))

- At the last visit you ordered a urinalysis lab test. Review the lab test results for the order.
- **You decide to order a CT scan to determine if the patient's symptoms could be related to a stroke.**
  - After placing the order, the patient tells he will be out of town for 1 week, Now change the order start date to 1 week later. Edit the placed order and re-order the new order with the new start date. Confirm the order change.

Success:
[X] Easily completed
[ ] Completed with difficulty or help :: Describe below[
] Not completed *Comments:*

Task Time: 290 Seconds

Optimal Path: 1. *Open Chart □ Chart Left side folders □ Labs Folder*

[X] Correct
Minor Deviations / Cycles :: Describe below ☐ Major Deviations :: Describe below *Comments:*

Observed Errors and Verbalizations: No errors made.

Rating: 1
Show participant written scale: "Very Easy" (1) to "Very Difficult" (5)
Administrator / Notetaker Comments: None

Task 8: Patient 3 – Tasks: Clinical Decision Support (170.315(a) (9))

- Enable the Clinical Decision Support for a provider through the CDS admin.
- **Configure each CDS alert with a combination of:**

1 Problem & 1 Medication
- **Patient Gender & Problem List**

1 Medication & 1 Allergy
- **Hba1c >8.0 & High Blood Pressure**
  - The Patient was added with CDS Intervention and /or reference resource for all the 7 required elements listed below:

1) Problem List;
2) Medication List;
3) Medication allergy list;
4) At least one demographic (specified in 170.315(a)(5)(i));
5) Laboratory tests;
6) Vital Signs; and
7) Combination (based on at least two of the elements listed above)

- Now the user triggers the CDS interventions/resources added using the applicable data elements from each of the required elements.

- **Verify that the user can view the intervention/resource information using the Infobutton standard for data elements in the problem list, medication list, and demographics**
  - Create a new patient and import a CDA through incorporate CCDA module with at least one matching alert from above configured rules.
- **Verify that the CDS alert gets triggered post successful incorporation of data from CCDA.**
  - Verify that following attributes exists for one of the triggered CDS interventions/resources: bibliographic citation, developer, funding source, release/revision date.

Success:
[X] Easily completed
[ ] Completed with difficulty or help :: Describe below[
] Not completed *Comments:*

Task Time: 325 Seconds

Optimal Path: 1. *Dashboard □ Settings □ Add/ Edit/Delete clinical decision support rules (HM Rules)*

[X] Correct
Minor Deviations / Cycles :: Describe below ☐ Major Deviations :: Describe below *Comments:*

Observed Errors and Verbalizations: No errors made.
Comments:

Rating: 1
Show participant written scale: “Very Easy” (1) to “Very Difficult” (5)
Administrator / Note taker Comments: Participant looks like familiar with this kind of functionality and finishedthe task comfortably.

Task 9: Patient C – Tasks: Clinical Information Reconciliation and Incorporation 170.315(b) (2)

- Verify that you have received a sample CCDA for Isabella Jones before executing this test.
- **Search a patient with name “Isabella Jones”. If not found, create a new patient with same first name, last name and DOB as in sample CCDA.**
- Import the sample CCDA into “Isabella Jones” clinical documents.
- **Right click and select incorporate data.**
  - Verify that reconciliation confirmation dialog shows you external data with respect to problems and medications as in sample CCDA.

- **Accept the changes and verify that problems and medications are added to patient chart, post successful reconciliation.**
  - Navigate to release of information module and create a new transition of care document for the patient.
- **Verify that the reconciled data shows in generated CCDA.**

Success:
[X] Easily completed
[ ] Completed with difficulty or help :: Describe below[
] Not completed *Comments:*

Task Time:396 Seconds

Optimal Path: 1. *Dashboard □ Import Clinical Message Received Electronically*
2. Open Chart □ Patient chart left folders □ Clinical Information Reconciliation

[X] Correct
Minor Deviations / Cycles :: Describe below ☐ Major Deviations :: Describe below *Comments:*

Observed Errors and Verbalizations: No errors made.
Comments:
Rating: 2
Show participant written scale: “Very Easy” (1) to “Very Difficult” (5)
Administrator / Note taker Comments: None

End of Participant # 7

Participant # : 8

Location: 4276 54th place, San Dieog, CA,

92115Date: 07/01/2018

Time: 07.00 PM

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

Prior to each participant:
- Reset application
- Start session recordings with *tool*

Prior to each task:
- Reset application to starting point for next task

After each participant:

- End session recordings with *tool*

After all testing

- Back up all video and data files

Orientation (*10 mins*)

Thank you for participating in this study. Our session today will last ***60 mins***. During that time you will take alook 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. Youwill 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 help you with anything to do with the system itself. Please save your detailed comments until the end of atask or the end of the session as a whole when we can discuss freely.

I did not have any involvement in its creation, so please be honest with your opinions.The

product you will be using today is *EHR Your Way (6.9.0.0)*

Some of the data may not make sense as it is placeholder data.

We are recording the audio and screenshots of our session today. All of the information that you provide will bekept confidential and your name will not be associated with your comments at any time.

Do you have any questions or concerns?

Preliminary Questions (*5* minutes)

What is your job title / appointment? Clinician.
How long have you been working in this role? 25 years
What are some of your main responsibilities? I am a doctor and treat patients with GI problems.
Tell me about your experience with electronic health records. : Good to maintain health records. Helps to givebetter care to my patients. It reduces lot of paper work.

Task 0: First Impressions (45 *Seconds*)

This is the application you will be working with. Have you heard of it?
Yes, know the other version of this product for 8 years and I feel new one is web based and gives better performance.

Please don't click on anything just yet.
What do you notice? My scheduler, Inbox
Notes / Comments: None

Task 1: Record Demographics (*101 Seconds*)

Record demographics (170.315 (a)(5))

- A new client comes in for an appointment. Verify if that patient exists in your system and Add if not available.
- Document patients Last Name (Richard), First Name(John), Sex(Male), DOB(25/06/1962) and Save.
- Search for the existing patient and add More information by Editing the patient demographics.
- Edit the patient and enter Home Address (1357 Amber Drive, Beaverton, OR 97006, US) Home Telephone((816)276-6909), Ethnicity(Not Hispanic or Latino), Race (white), Preferred Language(English), Gender Identity(Male) and Save.

Success:
[X] Easily completed
☐ Completed with difficulty or help :: Describe below
☐ Not completed *Comments:*

Task Time: 101 Seconds

Optimal Path: *Dashboard Add Patient Icon Enter data and click Save button*
Optimal Path is Correct

Observed Errors and Verbalizations: No errors observed. Client said wow its faster.

Comments:

Rating: Overall, this task was: 1
Show participant written scale: "Very Easy" (1) to "Very Difficult" (5)
Administrator / Note taker Comments: None

Task 2: View and Change Demographics (*59 Seconds*)

Patient 2 – Tasks: View demographics (170.315 (a)(5)), Change demographics (170.315 (a)(5))

•Patient has changed the address. He wants his address to be changed to 1369 Amber Drive, Beaverton, OR 97006, US). Change the address.

Success:
[X] Easily completed
☐ Completed with difficulty or help :: Describe below
☐ Not completed *Comments:*

Task Time: 59 Seconds
Optimal Path: *Dashboard □ Search Patient □ Edit Demographics*
[X] Correct
☐ Minor Deviations / Cycles :: Describe below ☐ Major Deviations :: Describe below
☐ *Comments:*

Observed Errors and Verbalizations: No errors. Expressed the satisfaction that application performance is fast.
Comments:

Rating: 1
Show participant written scale: "Very Easy" (1) to "Very Difficult" (5)

Administrator / Note taker Comments: None

Task 3: View Medication list, Medication allergy list, change Medication list and Prescribe drug electronically (*199 Seconds*)

Patient 2 –: View medications/medication list (170.315 (a)(1)) & (170.315 (a)(7)), View medication allergy list (170.315 (a)(8)), Change medication/medication list (170.315 (a)(1)) & (170.315 (a)(7)), Electronically Prescribe (170.315 (b)(3))

- Based on your patients input you understood that Paxil 10 mg is not giving good progress, and observed he has Paxil 10 mg in drug allergy list. So you decided to give "Lexapro" and stop Paxil 10mg.
- You prescribe a new drug, Lexapro 10 mg table oral, 1 tab, QD.
- Upon completing the prescription will send via eRx to the CVS pharmacy.
- Change the frequency of Lexapro 10 mg from QD to BID.

Success:
[X] Easily completed
[ ] Completed with difficulty or help :: Describe below[
] Not completed *Comments:*

Task Time:199 Seconds

Optimal Path: 1. *Open Chart □ Summary □ Current Medications*
2. Open Chart □ Chart Left Folders □ Prescription folder □ Order Rx
3. Open Chart □ Summary □ Allergies

[X] Correct
[ ] Minor Deviations / Cycles :: Describe below ☐ Major Deviations :: Describe below *Comments:*

Observed Errors and Verbalizations: No errors made.

Rating: 1

Show participant written scale: “Very Easy” (1) to “Very Difficult” (5)

Administrator / Notetaker Comments: None

Task 4: Patient 2– Tasks: View medication allergies (170.315 (a)(8)), Record medication allergy (170.315 (a)(8)), Change medication allergy (170.315 (a)(8)), View lab tests (170.315 (a)(2)), Order lab test (170.315 (a)(2)), Record medication (170.315 (a)(1)), View drug-allergy interactions (170.315 (a)(4)), View drug-drug interactions (170.315 (a)(4)), Change medication (170.315 (a)(1)), Change the level of severity for drug-drug interactions (170.315 (a)(4))

- Patient has come for regular visit. After few mins of discussion with him you understood that patient isexperiencing Mild Irritable after he takes Hydralazine drug. Update the chart with this information
- **View all allergies for the patient. Verify that the Hydralazine allergy appears in the client’s known allergies list.**
  - The client also indicates that their Egg allergy has gone away and they no longer have any reactions to eatingEgg. Discontinue the Egg allergy. Return to allergies, change the severity of the Hydralazine allergy to Moderate, because the patient indicated that their Irritable gets severe after taking Hydralazine.
- **The patient complains about painful urinating. Order urinalysis and CMP.**
  - You also want to prescribe Bactrim for the suspected UTI.
- **Proceed to prescribe Bactrim.**
  - After you speak to your client more, you decide to add a Comprehensive Metabolic Panel.
- **The patient reports they don’t feel like the Flonase has been working, so you decide to discontinue Flonase as well as Hydralazine, since the client reported the allergic reaction. (320 seconds)**

Success:

[X] Easily completed

[ ] Completed with difficulty or help :: Describe below[

] Not completed *Comments:*

Task Time: 320 Seconds

Optimal Path: 1. *Open Chart □ Summary □ Current Medications*

2. Open Chart □ Chart Left Folders □ Prescription folder □ Order Rx

3. Open Chart □ Summary □ Allergies

4. Open Chart □ Chart Left Folders □ Lab Orders

[X] Correct

Minor Deviations / Cycles :: Describe below ☐ Major Deviations :: Describe below *Comments:*

Observed Errors and Verbalizations: No errors made.

Comments:

Rating: 1

Show participant written scale: “Very Easy” (1) to “Very Difficult” (5)

Administrator / Note taker Comments: None

Task 5: Patient 2 – Tasks: View implantable device list (170.315 (a)(14)), Change implantable device list (170.315 (a)(14)), Record implantable device list (170.315 (a)(14))

• The client tells you that they just had an implantable device removed. You want to see if the history of thisimplantable device is in their record. Open the Implantable Device List.

- **Enter the unique device identifier (00643169007222). Get the information of device using Parse functionality in EHR. Review the information that has been returned and save to patient.**
- Since the device is removed from the patient currently, Edit the record and set the status as inactive.

Success:

[X] Easily completed
[ ] Completed with difficulty or help :: Describe below[
] Not completed *Comments:*

Task Time: 99 Seconds

Optimal Path: 1. *Open Chart □ Chart Left Folders □ Implantable Device*

[X] Correct
Minor Deviations / Cycles :: Describe below ☐ Major Deviations :: Describe below *Comments:*

Observed Errors and Verbalizations: No errors made.
Comments:

Rating: 1
Show participant written scale: “Very Easy” (1) to “Very Difficult” (5)
Administrator / Note taker Comments: None

Task 6:

Patient 3 – Patient 2 – Tasks: View problem list (170.315 (a)(6)), Record problem (170.315 (a)(6)), Changeproblem (170.315 (a)(6))

- **The patient has been complaining of a Foot Pain.**
- Add the problem Foot Pain to the patient’s problem list and the Date Identified.
- **The patient also tells you they no longer have the Low back pain. Convert the status of low back pain to resolve.**

Success:

[X] Easily completed
[ ] Completed with difficulty or help :: Describe below[
] Not completed *Comments:*

Task Time: 93 Seconds

Optimal Path: 1. *Open Chart □ Summary □ Problem list.*

[X] Correct
Minor Deviations / Cycles :: Describe below ☐ Major Deviations :: Describe below *Comments:*

Observed Errors and Verbalizations: No errors, participant is happy to see multiple options to search therequired Diagnosis code and flexibility make their common list.

Comments:

Rating: 1

Show participant written scale: “Very Easy” (1) to “Very Difficult” (5)

Administrator / Note taker Comments: None

Task 7: Patient 3 – Tasks: View lab test results (170.315 (a)(2)), Change lab test (170.315 (a)(2)), Add radiology order (170.315 (a)(3)), Change radiology order (170.315 (a)(3)), View radiology order (170.315 (a)(3)), Change medication (170.315 (a)(1))

- At the last visit you ordered a urinalysis lab test. Review the lab test results for the order.
- **You decide to order a CT scan to determine if the patient’s symptoms could be related to a stroke.**
  - After placing the order, the patient tells he will be out of town for 1 week, Now change the order start dateto 1 week later. Edit the placed order and re-order the new order with the new start date. Confirm the order change.

Success:

[X] Easily completed

[ ] Completed with difficulty or help :: Describe below[

] Not completed *Comments:*

Task Time: 292 Seconds

Optimal Path: 1. *Open Chart □ Chart Left side folders □ Labs Folder*

[X] Correct

Minor Deviations / Cycles :: Describe below ☐ Major Deviations :: Describe below *Comments:*

Observed Errors and Verbalizations: No errors made.

Rating: 1

Show participant written scale: “Very Easy” (1) to “Very Difficult” (5)

Administrator / Notetaker Comments: None

Task 8: Patient 3 – Tasks: Clinical Decision Support (170.315(a) (9))

- Enable the Clinical Decision Support for a provider through the CDS admin.
- **Configure each CDS alert with a combination of:**

1 Problem & 1 Medication

- **Patient Gender & Problem List**

1 Medication & 1 Allergy

- **Hba1c >8.0 & High Blood Pressure**
  - The Patient was added with CDS Intervention and /or reference resource for all the 7 required elementslisted below:

1) Problem List;
2) Medication List;
3) Medication allergy list;
4) At least one demographic (specified in 170.315(a)(5)(i));
5) Laboratory tests;
6) Vital Signs; and
7) Combination (based on at least two of the elements listed above)

• Now the user triggers the CDS interventions/resources added using the applicable data elements from eachof the required elements.

- **Verify that the user can view the intervention/resource information using the Infobutton standard for data elements in the problem list, medication list, and demographics**

• Create a new patient and import a CDA through incorporate CCDA module with at least one matchingalert from above configured rules.

- **Verify that the CDS alert gets triggered post successful incorporation of data from CCDA.**

• Verify that following attributes exists for one of the triggered CDS interventions/resources: bibliographiccitation, developer, funding source, release/revision date.

Success:
[X] Easily completed
[ ] Completed with difficulty or help :: Describe below[
] Not completed *Comments:*

Task Time: 329 Seconds

Optimal Path: 1. *Dashboard □ Settings □ Add/ Edit/Delete clinical decision support rules (HM Rules)*

[X] Correct
Minor Deviations / Cycles :: Describe below ☐ Major Deviations :: Describe below *Comments:*

Observed Errors and Verbalizations: No errors made.
Comments:

Rating: 1
Show participant written scale: “Very Easy” (1) to “Very Difficult” (5)
Administrator / Note taker Comments: Participant looks like familiar with this kind of functionality and finishedthe task comfortably.

Task 9: Patient C – Tasks: Clinical Information Reconciliation and Incorporation 170.315(b) (2)

- Verify that you have received a sample CCDA for Isabella Jones before executing this test.
- **Search a patient with name “Isabella Jones”. If not found, create a new patient with same first name, last name and DOB as in sample CCDA.**
- Import the sample CCDA into “Isabella Jones” clinical documents.
- **Right click and select incorporate data.**

• Verify that reconciliation confirmation dialog shows you external data with respect to problems andmedications as in sample CCDA.

- **Accept the changes and verify that problems and medications are added to patient chart, post successful reconciliation.**
  - Navigate to release of information module and create a new transition of care document for the patient.
- **Verify that the reconciled data shows in generated CCDA.**

Success:
[X] Easily completed
[ ] Completed with difficulty or help :: Describe below[
] Not completed *Comments:*

Task Time:382 Seconds

Optimal Path: 1. *Dashboard □ Import Clinical Message Received Electronically*
2. Open Chart □ Patient chart left folders □ Clinical Information Reconciliation

[X] Correct
Minor Deviations / Cycles :: Describe below ☐ Major Deviations :: Describe below *Comments:*

Observed Errors and Verbalizations: No errors made.
Comments:
Rating: 2
Show participant written scale: “Very Easy” (1) to “Very Difficult” (5)
Administrator / Note taker Comments: None

End of Participant # 8

Participant # : 9

Location: 4276 54th place, San Dieog, CA,

92115Date: 07/01/2018

Time: 08.00 PM

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

Prior to each participant:
- Reset application
- Start session recordings with *tool*

Prior to each task:
- Reset application to starting point for next task

After each participant:

- End session recordings with *tool*

After all testing

- Back up all video and data files

Orientation (*10 mins*)

Thank you for participating in this study. Our session today will last ***60 mins***. During that time you will take alook 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. Youwill 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 help you with anything to do with the system itself. Please save your detailed comments until the end of atask or the end of the session as a whole when we can discuss freely.

I did not have any involvement in its creation, so please be honest with your opinions.The

product you will be using today is *EHR Your Way (6.9.0.0)*

Some of the data may not make sense as it is placeholder data.

We are recording the audio and screenshots of our session today. All of the information that you provide will bekept confidential and your name will not be associated with your comments at any time.

Do you have any questions or concerns?

Preliminary Questions (*5* minutes)

What is your job title / appointment? Front End Staff.How
long have you been working in this role? 6 years
What are some of your main responsibilities? Check in and check out the patients and take care of their insuranceeligibility. Documenting vitals and current medications.
Tell me about your experience with electronic health records. : I am using EHR since 4 years. I faced reallyminor issues in initial days due to lack of knowledge. Rest all went good.

Task 0: First Impressions (45 *Seconds*)

This is the application you will be working with. Have you heard of it?
I have been using this for 4 years and helps me keep track of my daily work effectively.

Please don't click on anything just yet.
What do you notice? Scheduler of our Doctors and Scanned documents. Inbox and To do list.
Notes / Comments: None

Task 1: Record Demographics (*95 Seconds*)

Record demographics (170.315 (a)(5))

- A new client comes in for an appointment. Verify if that patient exists in your system and Add if not available.
- Document patients Last Name (Richard), First Name(John), Sex(Male), DOB(25/06/1962) and Save.
- Search for the existing patient and add More information by Editing the patient demographics.
- Edit the patient and enter Home Address (1357 Amber Drive, Beaverton, OR 97006, US) Home Telephone((816)276-6909), Ethnicity(Not Hispanic or Latino), Race (white), Preferred Language(English), Gender Identity(Male) and Save.

Success:
[X] Easily completed
☐ Completed with difficulty or help :: Describe below
☐ Not completed *Comments:*

Task Time: 95 Seconds

Optimal Path: *Dashboard □ Add Patient Icon □ Enter data and click Save button*
Optimal Path is Correct

Observed Errors and Verbalizations: No errors observed.

Comments:

Rating: Overall, this task was: 1
Show participant written scale: "Very Easy" (1) to "Very Difficult" (5)
Administrator / Note taker Comments: None

Task 2: View and Change Demographics (*59 Seconds*)

Patient 2 – Tasks: View demographics (170.315 (a)(5)), Change demographics (170.315 (a)(5))

•Patient has changed the address. He wants his address to be changed to 1369 Amber Drive, Beaverton, OR 97006, US). Change the address.

Success:
[X] Easily completed
☐ Completed with difficulty or help :: Describe below
☐ Not completed *Comments:*

Task Time: 59 Seconds
Optimal Path: *Dashboard □ Search Patient □ Edit Demographics*
[X] Correct
☐ Minor Deviations / Cycles :: Describe below ☐ Major Deviations :: Describe below
☐ *Comments:*

Observed Errors and Verbalizations: No errors.
Comments:

Rating: 1
Show participant written scale: "Very Easy" (1) to "Very Difficult" (5)

Administrator / Note taker Comments: None

Task 3: View Medication list, Medication allergy list, change Medication list and Prescribe drug electronically (*206 Seconds*)

Patient 2 –: View medications/medication list (170.315 (a)(1)) & (170.315 (a)(7)), View medication allergy list (170.315 (a)(8)), Change medication/medication list (170.315 (a)(1)) & (170.315 (a)(7)), Electronically Prescribe (170.315 (b)(3))

- Based on your patients input you understood that Paxil 10 mg is not giving good progress, and observed he has Paxil 10 mg in drug allergy list. So you decided to give "Lexapro" and stop Paxil 10mg.
- You prescribe a new drug, Lexapro 10 mg table oral, 1 tab, QD.
- Upon completing the prescription will send via eRx to the CVS pharmacy.
- Change the frequency of Lexapro 10 mg from QD to BID.

Success:
[X] Easily completed
[ ] Completed with difficulty or help :: Describe below[
] Not completed *Comments:*

Task Time:206 Seconds

Optimal Path: 1. *Open Chart □ Summary □ Current Medications*
2. Open Chart □ Chart Left Folders □ Prescription folder □ Order Rx
3. Open Chart □ Summary □ Allergies

[X] Correct
[ ] Minor Deviations / Cycles :: Describe below ☐ Major Deviations :: Describe below *Comments:*

Observed Errors and Verbalizations: No errors made.
Rating: 1
Show participant written scale: “Very Easy” (1) to “Very Difficult” (5)
Administrator / Notetaker Comments: None

Task 4: Patient 2– Tasks: View medication allergies (170.315 (a)(8)), Record medication allergy (170.315 (a)(8)), Change medication allergy (170.315 (a)(8)), View lab tests (170.315 (a)(2)), Order lab test (170.315 (a)(2)), Record medication (170.315 (a)(1)), View drug-allergy interactions (170.315 (a)(4)), View drug-drug interactions (170.315 (a)(4)), Change medication (170.315 (a)(1)), Change the level of severity for drug-drug interactions (170.315 (a)(4))

- Patient has come for regular visit. After few mins of discussion with him you understood that patient isexperiencing Mild Irritable after he takes Hydralazine drug. Update the chart with this information
- **View all allergies for the patient. Verify that the Hydralazine allergy appears in the client’s known allergies list.**
- The client also indicates that their Egg allergy has gone away and they no longer have any reactions to eatingEgg. Discontinue the Egg allergy. Return to allergies, change the severity of the Hydralazine allergy to Moderate, because the patient indicated that their Irritable gets severe after taking Hydralazine.
- **The patient complains about painful urinating. Order urinalysis and CMP.**
- You also want to prescribe Bactrim for the suspected UTI.
- **Proceed to prescribe Bactrim.**
- After you speak to your client more, you decide to add a Comprehensive Metabolic Panel.
- **The patient reports they don’t feel like the Flonase has been working, so you decide to discontinue Flonase as well as Hydralazine, since the client reported the allergic reaction. (322 seconds)**

Success:
[X] Easily completed
[ ] Completed with difficulty or help :: Describe below[
] Not completed *Comments:*

Task Time: 322 Seconds

Optimal Path: 1. *Open Chart □ Summary □ Current Medications*
2. Open Chart □ Chart Left Folders □ Prescription folder □ Order Rx
3. Open Chart □ Summary □ Allergies
4. Open Chart □ Chart Left Folders □ Lab Orders
[X] Correct
Minor Deviations / Cycles :: Describe below ☐ Major Deviations :: Describe below *Comments:*

Observed Errors and Verbalizations: No errors made.
Comments:

Rating: 1
Show participant written scale: “Very Easy” (1) to “Very Difficult” (5)
Administrator / Note taker Comments: None

Task 5: Patient 2 – Tasks: View implantable device list (170.315 (a)(14)), Change implantable device list (170.315 (a)(14)), Record implantable device list (170.315 (a)(14))

- The client tells you that they just had an implantable device removed. You want to see if the history of thisimplantable device is in their record. Open the Implantable Device List.
- **Enter the unique device identifier (00643169007222). Get the information of device using Parse functionality in EHR. Review the information that has been returned and save to patient.**
- Since the device is removed from the patient currently, Edit the record and set the status as inactive.

Success:
[X] Easily completed
[ ] Completed with difficulty or help :: Describe below[
] Not completed *Comments:*

Task Time: 92 Seconds

Optimal Path: 1. *Open Chart Chart Left Folders Implantable Device*

[X] Correct
Minor Deviations / Cycles :: Describe below ☐ Major Deviations :: Describe below *Comments:*

Observed Errors and Verbalizations: No errors made. This new feature is good to have.
Comments:

Rating: 1
Show participant written scale: “Very Easy” (1) to “Very Difficult” (5)
Administrator / Note taker Comments: None

Task 6:

Patient 3 – Patient 2 – Tasks: View problem list (170.315 (a)(6)), Record problem (170.315 (a)(6)), Changeproblem (170.315 (a)(6))

- **The patient has been complaining of a Foot Pain.**
- Add the problem Foot Pain to the patient’s problem list and the Date Identified.
- **The patient also tells you they no longer have the Low back pain. Convert the status of low back pain to resolve.**

Success:
[X] Easily completed
[ ] Completed with difficulty or help :: Describe below[
] Not completed *Comments:*

Task Time: 98 Seconds

Optimal Path: 1. *Open Chart Summary Problem list.*

[X] Correct
Minor Deviations / Cycles :: Describe below ☐ Major Deviations :: Describe below *Comments:*

Observed Errors and Verbalizations: No errors
Comments:

Rating: 1
Show participant written scale: "Very Easy" (1) to "Very Difficult" (5)
Administrator / Note taker Comments: None

Task 7: Patient 3 – Tasks: View lab test results (170.315 (a)(2)), Change lab test (170.315 (a)(2)), Add radiology order (170.315 (a)(3)), Change radiology order (170.315 (a)(3)), View radiology order (170.315 (a)(3)), Change medication (170.315 (a)(1))

- At the last visit you ordered a urinalysis lab test. Review the lab test results for the order.
- **You decide to order a CT scan to determine if the patient's symptoms could be related to a stroke.**
  - After placing the order, the patient tells he will be out of town for 1 week, Now change the order start dateto 1 week later. Edit the placed order and re-order the new order with the new start date. Confirm the order change.

Success:
[X] Easily completed
[ ] Completed with difficulty or help :: Describe below[
] Not completed *Comments:*

Task Time: 286 Seconds

Optimal Path: 1. *Open Chart □ Chart Left side folders □ Labs Folder*

[X] Correct
Minor Deviations / Cycles :: Describe below ☐ Major Deviations :: Describe below *Comments:*

Observed Errors and Verbalizations: No errors made.

Rating: 1
Show participant written scale: "Very Easy" (1) to "Very Difficult" (5)
Administrator / Notetaker Comments: None

Task 8: Patient 3 – Tasks: Clinical Decision Support (170.315(a) (9))

- Enable the Clinical Decision Support for a provider through the CDS admin.
- **Configure each CDS alert with a combination of:**

1 Problem & 1 Medication
o Patient Gender & Problem List
1 Medication & 1 Allergy
o Hba1c >8.0 & High Blood Pressure

- The Patient was added with CDS Intervention and /or reference resource for all the 7 required elementslisted below:

1) Problem List;

2) Medication List;
3) Medication allergy list;
4) At least one demographic (specified in 170.315(a)(5)(i));
5) Laboratory tests;
6) Vital Signs; and
7) Combination (based on at least two of the elements listed above)

- Now the user triggers the CDS interventions/resources added using the applicable data elements from eachof the required elements.

- **Verify that the user can view the intervention/resource information using the Infobutton standard for data elements in the problem list, medication list, and demographics**
  - Create a new patient and import a CDA through incorporate CCDA module with at least one matchingalert from above configured rules.
- **Verify that the CDS alert gets triggered post successful incorporation of data from CCDA.**
  - Verify that following attributes exists for one of the triggered CDS interventions/resources: bibliographiccitation, developer, funding source, release/revision date.

Success:
[X] Easily completed
[ ] Completed with difficulty or help :: Describe below[
] Not completed *Comments:*

Task Time: 335 Seconds

Optimal Path: 1. *Dashboard □ Settings □ Add/ Edit/Delete clinical decision support rules (HM Rules)*

[X] Correct
Minor Deviations / Cycles :: Describe below ☐ Major Deviations :: Describe below *Comments:*

Observed Errors and Verbalizations: No errors made.
Comments:

Rating: 1
Show participant written scale: “Very Easy” (1) to “Very Difficult” (5)
Administrator / Note taker Comments: None

Task 9: Patient C – Tasks: Clinical Information Reconciliation and Incorporation 170.315(b) (2)

- Verify that you have received a sample CCDA for Isabella Jones before executing this test.
- **Search a patient with name “Isabella Jones”. If not found, create a new patient with same first name, last name and DOB as in sample CCDA.**
- Import the sample CCDA into “Isabella Jones” clinical documents.
- **Right click and select incorporate data.**
  - Verify that reconciliation confirmation dialog shows you external data with respect to problems andmedications as in sample CCDA.
- **Accept the changes and verify that problems and medications are added to patient chart, post successful reconciliation.**

- Navigate to release of information module and create a new transition of care document for the patient.
- **Verify that the reconciled data shows in generated CCDA.**

Success:
[X] Easily completed
[ ] Completed with difficulty or help :: Describe below[
] Not completed *Comments:*

Task Time: 390 Seconds

Optimal Path: 1. *Dashboard □ Import Clinical Message Received Electronically*
2. Open Chart □ Patient chart left folders □ Clinical Information Reconciliation

[X] Correct
Minor Deviations / Cycles :: Describe below ☐ Major Deviations :: Describe below *Comments:*

Observed Errors and Verbalizations: No errors made.
Comments:
Rating: 2
Show participant written scale: "Very Easy" (1) to "Very Difficult" (5)
Administrator / Note taker Comments: None

End of Participant # 9

Participant # : 10

Location: 4276 54th place, San Dieog, CA,

92115Date: 07/01/2018

Time: 07.30 AM

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

Prior to each participant:
- Reset application
- Start session recordings with *tool*

Prior to each task:
- Reset application to starting point for next task

After each participant:
- End session recordings with *tool*

After all testing

- Back up all video and data files

Orientation (*10 mins*)

Thank you for participating in this study. Our session today will last ***60 mins***. During that time you will take alook 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. Youwill 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 help you with anything to do with the system itself. Please save your detailed comments until the end of atask or the end of the session as a whole when we can discuss freely.

I did not have any involvement in its creation, so please be honest with your opinions.The

product you will be using today is *EHR Your Way (6.9.0.0)*

Some of the data may not make sense as it is placeholder data.

We are recording the audio and screenshots of our session today. All of the information that you provide will bekept confidential and your name will not be associated with your comments at any time.

Do you have any questions or concerns?

Preliminary Questions (*5* minutes)

What is your job title / appointment? Front End Staff.How long have you been working in this role? 2 years
What are some of your main responsibilities? Documenting vitals, current meds and appointments.Tell me about your experience with electronic health records. : They are good.

Task 0: First Impressions (45 *Seconds*)

This is the application you will be working with. Have you heard of it?I know
but did not use it much.

Please don't click on anything just yet.
What do you notice? Dashboard , scheduler.
Notes / Comments: None

Task 1: Record Demographics (*90 Seconds*)

Record demographics (170.315 (a)(5))

- A new client comes in for an appointment. Verify if that patient exists in your system and Add if not available.
- Document patients Last Name (Richard), First Name(John), Sex(Male), DOB(25/06/1962) and Save.
- Search for the existing patient and add More information by Editing the patient demographics.
- Edit the patient and enter Home Address (1357 Amber Drive, Beaverton, OR 97006, US) Home Telephone((816)276-6909), Ethnicity(Not Hispanic or Latino), Race (white), Preferred Language(English), Gender Identity(Male) and Save.

Success:
[X] Easily completed
☐ Completed with difficulty or help :: Describe below
☐ Not completed *Comments:*

Task Time: 90 Seconds

Optimal Path: *Dashboard □ Add Patient Icon □ Enter data and click Save button*
Optimal Path is Correct

Observed Errors and Verbalizations: No errors observed.

Comments:

Rating: Overall, this task was: 1
Show participant written scale: "Very Easy" (1) to "Very Difficult" (5)
Administrator / Note taker Comments: None

Task 2: View and Change Demographics (*54 Seconds*)

Patient 2 – Tasks: View demographics (170.315 (a)(5)), Change demographics (170.315 (a)(5))

•Patient has changed the address. He wants his address to be changed to 1369 Amber Drive, Beaverton, OR 97006, US). Change the address.

Success:

[X] Easily completed
☐ Completed with difficulty or help :: Describe below
☐ Not completed *Comments:*

Task Time: 54 Seconds
Optimal Path: *Dashboard □ Search Patient □ Edit Demographics*
[X] Correct
☐ Minor Deviations / Cycles :: Describe below ☐ Major Deviations :: Describe below
☐ *Comments:*

Observed Errors and Verbalizations: No errors.
Comments:

Rating: 1
Show participant written scale: "Very Easy" (1) to "Very Difficult" (5)

Administrator / Note taker Comments: None

Task 3: View Medication list, Medication allergy list, change Medication list and Prescribe drug electronically (*206 Seconds*)

Patient 2 –: View medications/medication list (170.315 (a)(1)) & (170.315 (a)(7)), View medication allergy list (170.315 (a)(8)), Change medication/medication list (170.315 (a)(1)) & (170.315 (a)(7)), Electronically Prescribe (170.315 (b)(3))

- Based on your patients input you understood that Paxil 10 mg is not giving good progress, and observed he has Paxil 10 mg in drug allergy list. So you decided to give "Lexapro" and stop Paxil 10mg.
- You prescribe a new drug, Lexapro 10 mg table oral, 1 tab, QD.
- Upon completing the prescription will send via eRx to the CVS pharmacy.
- Change the frequency of Lexapro 10 mg from QD to BID.

Success:
[X] Easily completed
[ ] Completed with difficulty or help :: Describe below[
] Not completed *Comments:*

Task Time:200 Seconds

Optimal Path: 1. *Open Chart □ Summary □ Current Medications*
2. Open Chart □ Chart Left Folders □ Prescription folder □ Order Rx
3. Open Chart □ Summary □ Allergies

[X] Correct
[ ] Minor Deviations / Cycles :: Describe below ☐ Major Deviations :: Describe below *Comments:*

Observed Errors and Verbalizations: No errors made.
Rating: 1
Show participant written scale: "Very Easy" (1) to "Very Difficult" (5)

Administrator / Notetaker Comments: None

Task 4: Patient 2– Tasks: View medication allergies (170.315 (a)(8)), Record medication allergy (170.315 (a)(8)), Changemedication allergy (170.315 (a)(8)), View lab tests (170.315 (a)(2)), Order lab test (170.315 (a)(2)), Record medication (170.315 (a)(1)), View drug-allergy interactions (170.315 (a)(4)), View drug-drug interactions (170.315 (a)(4)), Change medication (170.315 (a)(1)), Change the level of severity for drug-drug interactions (170.315 (a)(4))

- Patient has come for regular visit. After few mins of discussion with him you understood that patient is experiencing Mild Irritable after he takes Hydralazine drug. Update the chart with this information
- **View all allergies for the patient. Verify that the Hydralazine allergy appears in the client's known allergies list.**
- The client also indicates that their Egg allergy has gone away and they no longer have any reactions to eating Egg. Discontinue the Egg allergy. Return to allergies, change the severity of the Hydralazine allergy to Moderate, because the patient indicated that their Irritable gets severe after taking Hydralazine.
- **The patient complains about painful urinating. Order urinalysis and CMP.**
- You also want to prescribe Bactrim for the suspected UTI.
- **Proceed to prescribe Bactrim.**
- After you speak to your client more, you decide to add a Comprehensive Metabolic Panel.
- **The patient reports they don't feel like the Flonase has been working, so you decide to discontinue Flonase as well as Hydralazine, since the client reported the allergic reaction. (322 seconds)**

Success:
[X] Easily completed
[ ] Completed with difficulty or help :: Describe below[
] Not completed *Comments:*

Task Time: 328 Seconds

Optimal Path: 1. *Open Chart □ Summary □ Current Medications*
2. Open Chart □ Chart Left Folders □ Prescription folder □ Order Rx
3. Open Chart □ Summary □ Allergies
4. Open Chart □ Chart Left Folders □ Lab Orders
[X] Correct
Minor Deviations / Cycles :: Describe below ☐ Major Deviations :: Describe below *Comments:*

Observed Errors and Verbalizations: No errors made.
Comments:

Rating: 1
Show participant written scale: "Very Easy" (1) to "Very Difficult" (5)
Administrator / Note taker Comments: None

Task 5: Patient 2 – Tasks: View implantable device list (170.315 (a)(14)), Change implantable device list (170.315 (a)(14)), Record implantable device list (170.315 (a)(14))

- The client tells you that they just had an implantable device removed. You want to see if the history of this implantable device is in their record. Open the Implantable Device List.

- **Enter the unique device identifier (00643169007222). Get the information of device using Parse functionality in EHR. Review the information that has been returned and save to patient.**
  - Since the device is removed from the patient currently, Edit the record and set the status as inactive.

Success:
[X] Easily completed
[ ] Completed with difficulty or help :: Describe below[
] Not completed *Comments:*

Task Time: 95 Seconds

Optimal Path: 1. *Open Chart Chart Left Folders Implantable Device*

[X] Correct
Minor Deviations / Cycles :: Describe below ☐ Major Deviations :: Describe below *Comments:*

Observed Errors and Verbalizations: No errors made.
Comments:

Rating: 1
Show participant written scale: "Very Easy" (1) to "Very Difficult" (5)
Administrator / Note taker Comments: None

Task 6:
Patient 3 – Patient 2 – Tasks: View problem list (170.315 (a)(6)), Record problem (170.315 (a)(6)), Change problem(170.315 (a)(6))

- **The patient has been complaining of a Foot Pain.**
  - Add the problem Foot Pain to the patient's problem list and the Date Identified.
- **The patient also tells you they no longer have the Low back pain. Convert the status of low back pain to resolve.**

Success:
[X] Easily completed
[ ] Completed with difficulty or help :: Describe below[
] Not completed *Comments:*

Task Time: 99 Seconds

Optimal Path: 1. *Open Chart Summary Problem list.*

[X] Correct
Minor Deviations / Cycles :: Describe below ☐ Major Deviations :: Describe below *Comments:*

Observed Errors and Verbalizations: No errors
Comments:

Rating: 1

Show participant written scale: “Very Easy” (1) to “Very Difficult” (5)
Administrator / Note taker Comments: None

Task 7: Patient 3 – Tasks: View lab test results (170.315 (a)(2)), Change lab test (170.315 (a)(2)), Add radiology order (170.315 (a)(3)), Change radiology order (170.315 (a)(3)), View radiology order (170.315 (a)(3)), Change medication (170.315 (a)(1))

- At the last visit you ordered a urinalysis lab test. Review the lab test results for the order.
- **You decide to order a CT scan to determine if the patient’s symptoms could be related to a stroke.**
- After placing the order, the patient tells he will be out of town for 1 week, Now change the order start date to 1week later. Edit the placed order and re-order the new order with the new start date. Confirm the order change.

Success:
[X] Easily completed
[ ] Completed with difficulty or help :: Describe below[
] Not completed *Comments:*

Task Time: 289 Seconds

Optimal Path: 1. *Open Chart □ Chart Left side folders □ Labs Folder*

[X] Correct
Minor Deviations / Cycles :: Describe below ☐ Major Deviations :: Describe below *Comments:*

Observed Errors and Verbalizations: No errors made.

Rating: 1
Show participant written scale: “Very Easy” (1) to “Very Difficult” (5)
Administrator / Notetaker Comments: None

Task 8: Patient 3 – Tasks: Clinical Decision Support (170.315(a) (9))

- Enable the Clinical Decision Support for a provider through the CDS admin.
- **Configure each CDS alert with a combination of:**
  - **o** 1 Problem & 1 Medication
- **o** **Patient Gender & Problem List**
  - **o** 1 Medication & 1 Allergy
- **o** **Hba1c >8.0 & High Blood Pressure**
- The Patient was added with CDS Intervention and /or reference resource for all the 7 required elements listedbelow:

1) Problem List;
2) Medication List;
3) Medication allergy list;
4) At least one demographic (specified in 170.315(a)(5)(i));
5) Laboratory tests;
6) Vital Signs; and
7) Combination (based on at least two of the elements listed above)

- Now the user triggers the CDS interventions/resources added using the applicable data elements from each ofthe required elements.
- **Verify that the user can view the intervention/resource information using the Infobutton standard for data elements in the problem list, medication list, and demographics**
- Create a new patient and import a CDA through incorporate CCDA module with at least one matching alertfrom above configured rules.
- **Verify that the CDS alert gets triggered post successful incorporation of data from CCDA.**
- Verify that following attributes exists for one of the triggered CDS interventions/resources: bibliographic citation, developer, funding source, release/revision date.

Success:
[X] Easily completed
[ ] Completed with difficulty or help :: Describe below[
] Not completed *Comments:*

Task Time: 325 Seconds

Optimal Path: 1. *Dashboard □ Settings □ Add/ Edit/Delete clinical decision support rules (HM Rules)*

[X] Correct
Minor Deviations / Cycles :: Describe below ☐ Major Deviations :: Describe below *Comments:*

Observed Errors and Verbalizations: No errors made.
Comments:

Rating: 1
Show participant written scale: “Very Easy” (1) to “Very Difficult” (5)
Administrator / Note taker Comments: None

Task 9: Patient C – Tasks: Clinical Information Reconciliation and Incorporation 170.315(b) (2)

- Verify that you have received a sample CCDA for Isabella Jones before executing this test.
- **Search a patient with name “Isabella Jones”. If not found, create a new patient with same first name, last name and DOB as in sample CCDA.**
- Import the sample CCDA into “Isabella Jones” clinical documents.
- **Right click and select incorporate data.**
- Verify that reconciliation confirmation dialog shows you external data with respect to problems and medications as in sample CCDA.
- **Accept the changes and verify that problems and medications are added to patient chart, post successful reconciliation.**
- Navigate to release of information module and create a new transition of care document for the patient.
- **Verify that the reconciled data shows in generated CCDA.**

Success:
[X] Easily completed
[ ] Completed with difficulty or help :: Describe below[
] Not completed *Comments:*

Task Time: 386 Seconds

Optimal Path: 1. *Dashboard □ Import Clinical Message Received Electronically*
2. *Open Chart □ Patient chart left folders □ Clinical Information Reconciliation*

[X] Correct
Minor Deviations / Cycles :: Describe below ☐ Major Deviations :: Describe below *Comments:*

Observed Errors and Verbalizations: No errors made.
Comments:
Rating: 2
Show participant written scale: "Very Easy" (1) to "Very Difficult" (5)
Administrator / Note taker Comments: None

End of Participant # 10

Appendix 5: SYSTEM USABILITY SCALE QUESTIONNAIRE

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

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

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

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

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

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

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

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

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