Complete HealthCare Solutions, Inc.

# EHR Usability Test Report

December 2018

# EHR Usability Test Report of UnifiMD® version 2.0

UnifiMD® version 2.0

Date of Usability Test:  Various dates through October-November 2018 dependent on the practice's schedules

Date of Report:  12/24/18

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# 1. EXECUTIVE SUMMARY

A usability test of UnifiMD® version 2.0, a modular HER, was conducted via remote connections to a PC in our office in a one on one scenario. The purpose of this test was to test and validate the usability of the current user interface and provide evidence of usability in the UnifiMD® system. During the usability test, 10 healthcare professionals matching our target demographic criteria served as participants and used the UnifiMD® system in simulated, but representative tasks.

This study collected performance data on 6 tasks typically conducted on an EHR:

- o Record, Change and Access lab order via CPOE
- o Record, Change and Access imaging order via CPOE
- o Record, Change and Access specified patient demographic information
- o Add and Trigger various Clinical Decision Support interventions
- o Record, Change and Access Implantable Device information
- o Incorporate a CCDA and conduct reconciliation of medications, allergies and problems

All participants were provided the end-user software manual prior to the test date and then given one on one training of the areas they would need to use for the test.

During the 60 minute one-on-one usability test, a Complete HealthCare Solutions, Inc. (CHS) team member granted remote access for each participant to our test data base for access from within their office. At the time of scheduling the appointment, the participant was securely emailed a packet for completion including informed consent form, non-disclosure form, questionnaire of items required for SED checklist, and an abbreviated training manual with areas not being tested removed. These can be found in the section 5.1 Appendix. At the start of the appointment, the CHS administrator reviewed the Preliminary Questionnaire to ensure all the answers were correct and factual. CHS administrator also ensured the Non-disclosure agreement and the Informed consent form were signed. The participants were instructed that they could withdraw at any time.

Participants had varying levels of prior experience with an EHR. All Participants were provided with a training review on the safety enhanced design measures that the tasks required to showcase, the UnifiMD® program, as well as a written training manual that was reviewed with each of the measures covered. The administrator introduced the test and instructed participants to complete a series of tasks (given one at a time) using the UnifiMD® system. During the testing, the administrator timed the test, logged data and recorded user performance data on paper. The administrator did not give the participant assistance in how to complete the tasks.

The following types of data were collected for each participant:

- ✓ If the task was 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 and no correspondence could be made from the identity of the participant to the data collected. Following the conclusion of the testing, participants were compensated 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. The final scores and metrics can be found in the attached 2015 Edition SED Checklist.

The Likert Scale (5= easiest, 1 most difficult) was used by participants to score the ease of use of each measure being tested.

In addition to the performance data, the following qualitative observations were made and recorded by the test proctor:
- o User reactions to work flows
- o Repeated errors among users
- o Comments made about screen designs
- o Items commonly tested without error
- o Recommendations by participants

# 2. INTRODUCTION

The EHRUT tested for this study was UnifiMD® version 2.0, a modular EHR. UnifiMD® is designed to present medical information to healthcare providers in private/independent/group practice. CHS is focused on the small to mid-sized practices, as well as large groups in primary care. Our focus includes multiple specialties in the ambulatory setting. The UnifiMD® system consists of patient clinical data management, record keeping, interoperability, reporting, with a strong focus on usability following the user centered design and safety enhanced design. The usability testing attempted to represent realistic exercises and conditions.

The purpose of this study was to test and validate the usability of the current user interface and provide evidence of usability in the UnifiMD® system. To this end, measures of effectiveness, efficiency and user satisfaction, such as time to complete tasks were captured during the usability resting and recorded on the proctor's test log, later transferred to the attached 2015 Edition SED Checklist.

# 3. METHOD

## 3.1 PARTICIPANTS

A total of 10 participants were tested on the UnifiMD® EHR. Participants in the test were Medical Doctors, Nurse Practitioners, Medical Assistants and office managers. 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 users would 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 the preliminary questions shown below.

<u>CHS example script of our recruitment screening</u>

*Thank you for taking our call, Complete HealthCare Solutions, Inc. (CHS) is proud to have the working relationship we have had with your office and are hoping we can count on your help with a usability test for our UnifiMD® EHR software system.*

*If you agree to participate, we will be asking you a few questions to document the demographics of our participants. Then CHS will provide you access to the UnifiMD® software system, as there are 6 tasks that need to be performed. Each task will be scored and timed. During these tasks we ask that you focus on usability as well as overall look of our software and answer the questions honestly and fully.*

*Would you be willing to take part in this brief usability test to help CHS improve on our product, and release a more complete user friendly software system based on your productive feedback? All feedback and results will remain anonymous and will also assist CHS to certify our UnifiMD® software with Drummond Group Inc.*

*CHS is providing a $100 gift card for compensation for your time.*

*Everyone's next question is how long will it take and who should do it?  We are booking 2 hour appointments but it will not take that long.  The person in your office who is the most computer savvy and comfortable moving around in an EMR would be best.  We were thinking from who we have worked with in your office in the past maybe _____ would be a good fit?  What do you think?*

*If want to know the areas that are tested:*
*Entering in a lab order*
*Entering in an imaging order*
*Entering some specific demographic information for a patient*
*Creating health maintenance alerts for a patient*
*Entering info about a patient with an implantable device*
*Importing and reconciling a CCDA*
*We will give you a manual that shows exactly what to do and will also review it with you immediately before the test.*

*We appreciate your time today, and are thankful for your willingness to be a part of this with us. We will be in contact to schedule a representative to facilitate the test.*

After the phone screening, CHS requested our participants to complete and verify the following preliminary questionnaire. An example of our preliminary questionnaire is shown below.

<u>Preliminary Questionnaire</u>
*Thank you for participating, Complete HealthCare Solutions, Inc. (CHS) is proud to be working with such great business partners as we roll out this exciting new project.*

*Today we are required to ask you a few questions to document the demographics of our participants. These responses (other than your name and contact info) will be reported back to our assigned test proctor with the Drummond Group.*

1. *Are you male or female?*
2. *Which of the following best describes your age? [20-29, 30-39; 40-49; 50-59; 60-69; 70-79; 89-89]*
3. *Which of the following describes your highest level of education? [no high school degree; high school graduate or equivalent; some college credit, no degree; trade/tech/vocational training; Associate's Degree; Bachelor's Degree; Master's Degree; Doctorate degree]*
4. *What is your current position and title?*
5. *How long have you held this position?*
6. *How long have you been working on a computer for your position?*
7. *Do you have experience using UnifiMD®? If so, for how long?*
8. *Do you require any assistive technology to work in the EHR?*
Contact Information
1. *Name of participant:*
2. *Address:*
3. *City, State, Zip:*
4. *Preferred phone number:*
5. *Email address:*

*This all sounds perfect, let's schedule a date and time for this appointment. Although the test itself should only take roughly an hour I would like to give you an overview training of the product first and leave time for a short break or two, so let's both plan on a 2 hour window of time. What works best for you?*

After scheduling, CHS administrator securely emailed Informed Consent and Non-Disclosure Forms to participant to sign and return along with join.me conference information for the appointment time.

CHS established our list of participants based on our screening and preliminary questionnaire and recorded all information in the attached 2015 Edition SED Checklist. It documents gender, age range, education level, occupation, professional/computer and product experience, as well as any requirements for assistive devices. None required assistive technology. Participant names were replaced with Participant IDs so that an individual's data cannot be tied back to individual identities.

| Part ID | Sex | Age | Educ | Occupation | Professional Experience (mos) | Computer Experience (mos) | Product Experience (mos) |
|---|---|---|---|---|---|---|---|
| 1 | M | 30-39 | Assoc | Office Manager | 30 | 30 | 18 |
| 2 | F | 30-39 | HS Dipl | Med Asst | 84 | 84 | 0 |
| 3 | F | 40-49 | HS Dipl | Office Manager | 12 | 12 | 8 |
| 4 | F | 50-59 | Master | Office Manager | 12 | 12 | 0 |
| 5 | F | 30-39 | Assoc | Admin Asst | 120 | 108 | 0 |
| 6 | F | 50-59 | Doctor | Physician | 36 | 36 | 24 |
| 7 | F | 40-49 | Some coll | Med Asst | 276 | 168 | 0 |
| 8 | F | 20-29 | Assoc | Lead nurse | 102 | 102 | 0 |
| 9 | M | 40-49 | Doctor | Physician | 132 | 132 | 0 |
| 10 | F | 60-69 | Bachelor | Office Manager | 324 | 240 | 0 |

10 participants (listed above) were recruited and all 10 participants participated in the usability test. Each participant was scheduled for 120 mins with a CHS team member with a brief break between each task to level set the previous task and allow for documentation by the CHS data logger. The CHS testing log report was used to document each of the tasks success and failures.

## 3.2 STUDY DESIGN

Overall, the objective of this test was to uncover areas where the application performed well – that is, effectively, efficiently, and with satisfaction - as well as areas where the application failed to meet the needs and expectations of the participants. The data from this test may serve as a baseline for future tests with an updated version of the UnifiMD® EHR system. In short, this testing serves as both a means to record or benchmark current usability for the Safety enhanced design measures, but also to identify areas where improvements must be made to ensure effective use of the software.

During the usability test, participants interacted with the UnifiMD® EHR. Each participant used the system within their office location, connected to the same remote PC in our office, and was provided with the same instructions. The system was evaluated for effectiveness, efficiency and satisfaction as defined by measures collected and analyzed for each participant:

- ✓ Number of tasks successfully completed within the allotted time without assistance
- ✓ Time to complete each task
- ✓ Number and types of errors

- ✓ Path deviations
- ✓ Participant's verbalizations (comments)
- ✓ Participant's satisfaction ratings of the system.
- ✓ Administrator comments

## 3.3 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 that are based on the safety enhanced design criteria to ensure our software is usable, efficient, and done with satisfaction for our customer base.

These tasks include a list of the following:

1. Record, Change and Access lab order via CPOE
2. Record, Change and Access imaging order via CPOE
3. Record, Change and Access specified patient demographic information
4. Add and Trigger various Clinical Decision Support interventions
5. Record, Change and Access Implantable Device information
6. Incorporate a CCDA and conduct reconciliation of medications, allergies and problems

Tasks were selected in light of the study objectives, to showcase and test the safety enhanced design measures within the UnifiMD® EHR. Our goal with the tasks chosen was to showcase typical daily functions of an EHR that most offices will record and review at most encounters. We also hope to test our direct usability on the Safety Enhanced Design specific functions for critical and valuable feedback from our participants.

## 3.4 PROCEDURES

Our testing was done remotely with a CHS representative on the phone with the customer with a secure connection to a PC in our office with all participants connecting to the same practice. Appointments were held individually with each practice between one participant from the end user's office and one CHS representative.

The participant was assigned a participant ID. Each participant reviewed and signed an (A) Informed consent and release form as well as the (B) Non-disclosure agreement (both found in Appendix section 5.1). The CHS representative discussed the document and the client emailed it back to CHS before the scheduled test date.

To ensure that the test ran smoothly, CHS representative was present on the phone through the entire testing procedure. The CHS representative conducting the test has experience with training Healthcare practitioners. All CHS representatives involved have over 5 years training and consulting experience.

The CHS representative moderated the session including administering instructions and tasks. The administrator also monitored task times, obtained post-task rating data, took notes on participant comments, logged data, took notes on task success, path deviations, number and type of errors, and

comments. Participants were instructed to perform the tasks as quickly as possible making as few errors and deviations as possible. CHS constructed appropriate tasks of critical importance to the validity of a usability test. CHS administrators were given permission to provide immaterial guidance and clarification on tasks, but not instructions on use. 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.

Following each task the participant verbally rated the individual task using the Likert Scale and the CHS representative logged those responses. The participant was mailed a gift card for the time.

Participants' demographic information, task success rate, time on task, errors, deviations, verbal responses, and Likert Scale ratings were recorded into a spreadsheet.

## 3.5 TEST LOCATION

Each testing location was unique to the participant, as CHS's staff was conducting the test remotely from the CHS office with the participant in their office location. In all testing scenarios, the participant was asked to prepare a quiet test location for the time period required with no distractions or interruptions.

## 3.6 TEST ENVIRONMENT

The UnifiMD® system would be typically be used in a healthcare office or facility. In this instance, the testing was conducted using a remote connection via Join.me where UnifiMD was installed and configured on a Windows computer located at Complete Healthcare solutions, Inc. and the end user was connected remotely using their own hardware.
The computer hosting the remote session is running Windows 10 Professional. The participants used mouse and keyboard, when interacting with the EHRUT. The application was set up by CHS to typical end user set-up and preparation. The application itself was running on Windows 10 using a training database 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.

## 3.7 TEST FORMS AND TOOLS
During the usability test, various documents and instruments were used,

Including:
- ✓ Non-Disclosure agreement
- ✓ Informed Consent
- ✓ UnifiMD® training manual
    - o Specific to the program areas being tested
- ✓ SED Test log

The participant's interaction with UnifiMD® was captured and recorded digitally with screen capture software running on the test machine

## 3.8 PARTICIPANT INSTRUCTIONS
The administrator reads the following instructions aloud to each participant.

**Orientation**

*Our session today will last approximately 60 mins.*

*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 offer to 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 when we can discuss freely.*

*All of the information that you provide will be kept confidential and your name will not be associated with our comments at any time.*

*For each of the 6 tasks that follow, to ensure your office is able to follow the procedures before you to minimize risk, I will read the description to you and answer questions if you are unsure of the task requests. At that point, I will start the timer while you perform the task and stop it then you let me know you believe you have successfully completed the task. If you have questions or are unable to complete the task for whatever reason, please inform me. Once the task is complete, I will ask you your impressions about that task, and provide time for you to comment while I document your findings as well as verify the optimal path was followed. I also will ask you to rate the ease of that task on a scale of 1-5, with 1 being very difficult and 5 being very easy.*

Once the proctor read the task description the timer was started. It stopped when the task was completed. The proctor recorded time, errors, and path deviations. The proctor noted any observations as well as comments from the participant and their Likert Scale rating before going on to the next task.

## 3.9 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 UnifiMD® version 2.0, a modular EHR, by measuring participant success rates and errors.

2. Efficiency of UnifiMD® version 2.0, a modular EHR, by measuring the average task time and path deviations.

3. Satisfaction with UnifiMD® version 2.0, a modular EHR, by measuring ease of use ratings.

# 4. RESULTS

## 4.1 DATASCORING

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

| Measures | Rationale and Scoring |
|---|---|
| Task Success - Mean | Task success was determined using a combination of the path deviations and the time it took the participant to complete the task in comparison to the optimal time.<br><br>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.<br><br>One percentage score was determined by diving the ideal time in seconds (determined by a CHS employee performing the tasks) by the participants time in seconds.<br>A second percentage score was determined by dividing optimal steps (determined by a CHS employee performing the tasks) by the participants number of steps.<br>The final success percentage per task was found by using 40% of the time percentage and 60% of the steps percentage to reach a final percentage. |
| Task success – Std Dev | Standard deviation from the mean success rate was calculated for each task using the task success percentages found above. |
| Task path deviation – Observed # | 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. |
| Task path Deviation – Optimal # | The optimal path for each task was determined by a CHS trainer and recorded when constructing tasks. |
| Task Time – Mean | Each task was timed from when the CHS representative finished reading the task instructions until the participant said, "Done." If he or she failed to say "Done," the time was stopped when the participant stopped performing the task. Mean time in seconds was calculated for each task. |
| Task Time – Standard Deviation | The standard deviation for the time to complete each task was calculated and recorded (in seconds). |

| | |
|---|---|
| Task Time Deviation – Mean Observed | The deviation in seconds from the mean observed time was calculated and recorded. |
| Task Time Deviation – Mean Optimal | The deviation in seconds from the mean optimal time was calculated and recorded. |
| Task Errors – Mean | The mean percentage or errors was calculated by diving the optimal # of steps (determined by a CHS trainer) by the participants # of steps for each task and recorded. |
| Task Errors – Standard Deviation | The standard deviation for the errors percentage for each task was calculated and recorded (in seconds). |
| Task Rating | Participant's subjective impression of the ease of use of the application was measured by administering a simple post-task question and recording their verbal response.  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 responses were averaged across  participants. CHS was very pleased with these results as all tasks averaged above a rating of 4. |
| Task Rating Standard Deviation | The standard deviation for the task rating was calculated and recorded (in seconds) for each task.  The greatest deviation was 1.1. |

## 4.2 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 the session and task instructions had their data excluded from the analyses.

The usability testing results for the UnifiMD® system are detailed in the attached 2015 Edition Safety-Enhanced Design Checklist.. The results should be viewed considering 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. Tasks were assigned based on Drummond Group tasks for each measure. Risk was assessed by prioritizing tasks in accordance with the risk associated with user errors, should they occur. Analysis of those risks can be found on page 15.

The results from the Likert Scale, used to score the subjective satisfaction with the system based on performance and ease of use related to the assigned tasks was found to be to be above average.

See summarized Likert scale results below:

| | Part1 | Part2 | Part3 | Part4 | Part5 | Part6 | Part7 | Part8 | Part9 | Part 10 | Mean |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Task 1a | 5 | 4 | 5 | 5 | 5 | 4 | 5 | 5 | 5 | 5 | 4.8 |
| Task 1b | 5 | 4 | 5 | 5 | 4.5 | 4 | 5 | 5 | 5 | 5 | 4.8 |
| Task 1c | 5 | 4 | 5 | 5 | 4 | 4 | 5 | 5 | 5 | 5 | 4.7 |
| Task 2a | 3.5 | 3.5 | 3 | 5 | 5 | 4 | 4 | 5 | 5 | 4 | 4.2 |
| Task 2b | 4 | 3.5 | 3 | 5 | 5 | 4 | 4 | 5 | 5 | 4 | 4.3 |
| Task 2c | 4 | 3.5 | 3 | 5 | 5 | 4 | 5 | 5 | 5 | 5 | 4.5 |
| Task 3a | 5 | 4 | 5 | 4 | 5 | 5 | 5 | 5 | 5 | 5 | 4.8 |
| Task 3b | 5 | 4 | 5 | 4 | 5 | 5 | 5 | 5 | 5 | 5 | 4.8 |
| Task 3c | 5 | 4 | 5 | 4 | 5 | 5 | 5 | 5 | 5 | 5 | 4.8 |
| Task 4a | 5 | 5 | 5 | 4 | 5 | 5 | 5 | 5 | 5 | 5 | 4.9 |
| Task 4b | 5 | 5 | 5 | 4 | 5 | 5 | 5 | 5 | 5 | 5 | 4.9 |
| Task 4c | 5 | 5 | 5 | 4 | 5 | 5 | 5 | 5 | 5 | 5 | 4.9 |
| Task 5a | 5 | 5 | 3 | 2 | 4 | 5 | 5 | 5 | 5 | 5 | 4.4 |
| Task 5b | 5 | 5 | 3 | 2 | 4 | 5 | 5 | 5 | 3 | 5 | 4.2 |
| Task 6a-g | 5 | 3.5 | 4 | 3 | 5 | 5 | 4 | 5 | 5 | 4 | 4.4 |
| Task 6h-n | 5 | 4.5 | 5 | 5 | 5 | 5 | 5 | 5 | 4 | 5 | 4.9 |
| Task 6o-q | 5 | 5 | 5 | 4 | 4.5 | 5 | 5 | 5 | 4 | 4 | 4.7 |
| Task 6r | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5.0 |
| Task 6h2 | 5 | 4.5 | 5 | 5 | 5 | 5 | 5 | 5 | 4 | 5 | 4.9 |

## 4.3 DISCUSSION OF FINDINGS

UnifiMD® EHR has been reviewed by our chosen demographic, and the overall response was a positive one. The 6 tasks that were requested and reviewed met the Safety enhanced design criteria that was set forth in the (g)(3) measure. Our feedback was overall positive in light of those 6 tasks, and the system as a whole. Most testers found the system to be easy to use and navigate. It is intuitive and easy to maneuver with minimal training or assistance. Some of the tasks required more attention than others, but the overall stance was that task were easy to complete, and with minimal deviations from the optimal path.

EFFECTIVENESS

CHS has evaluated the responses from our Participants and feel that our software has been deemed effective and useful. Our participants were able to effectively complete the tasks with minor to no deviations, and minimal assistance needed.

EFFICIENCY

The task submitted were completed within a normal range of time expected from minimal exposure to the software. Our results were what was expected from our testing group as well as the tasks presented to them.

SATISFACTION

Our participants overall impression of the software was its ease of use. Several tasks were seen as easy to complete with minor to no path deviations. The Likert Scale for ease of use results rated our UnifiMD® product easy to use, with several measures hitting high marks.

MAJOR FINDINGS

Complete HealthCare Solutions, Inc. found a few areas where small visual changes would make the system more intuitive for end users and has already begun vetting those changes for updates in 2019. Those items include:

- Date formatting in a few areas does not match the majority of the system
- Creating health maintenance items section has more clicks than necessary, could be incorporated into one screen
- Lookup of UDI codes should default to lookup screen instead of manual entry screen

AREAS FOR IMPROVEMENT

Complete HealthCare Solutions, Inc. team evaluated the responses and suggestions from our participants. We feel that we need to make some adjustments to the workflow and screens in a couple of areas that were reviewed to increase usability. We have begun to make some adjustments based on

feedback of our tasks to better improve the customer experience, and will continue to evaluate each task to ensure we have succeed in that improvement. Our overall feedback was most of the tasks were easily completed, and a few some were a bit cumbersome to complete. On those items we are already scoping out how to make those items easier to complete for our customers.


RISK ASSESSMENT:

CHS reviewed the areas where errors occurred by test participants to analyze if they were risk prone areas with a potential likelihood of occurrence and adverse consequences. We found that the errors that commonly had test participant errors (1) were not going to cause any danger to patients, simply were going to make the process take a few extra clicks by the user and (2) were similar across the board of test participants and therefore have started the process of changing the workflows in those areas to be more intuitive. Those situations are listed here:

- Change demographics:
    - errors occurred due to confusion over radio button vs check boxes in race and ethnicity
    - errors occurred due to confusion over date of birth format when you try to change the year users expected the cursor to default to end of the year
- Generate CCDA:
    - errors occurred due to confusion over leaving ranges blank to include all visits in CCDA
- Record implantable device:
    - errors occurred due to test participants not thinking to click lookup button to search for UDI
- Create intervention
    - Errors occurred due to test participants not finding the flow of clicking the criteria then action then recurrence in sequence intuitive to create the intervention template and they would occasionally click them out of order

With all of these errors participants were forced by the system to correct their mistake in order to move on or save, therefore not creating any patient safety issues by having those errors occur.

# 5. Appendices

**5.1 Forms**

<u>Informed consent agreement:</u>

Complete HealthCare Solutions, Inc. would like to thank you for participating in this study. The purpose of this study is to evaluate an electronic health records system. You will be asked to perform several tasks using the EMR and give your feedback. The study will last approximately 60 minutes.  At the conclusion of the test, you will be compensated for your time.

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

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

I understand and agree that the data collected from this study may be shared outside of Complete HealthCare Solutions, Inc. and Drummond Group LLC.  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 Complete HealthCare Solution's 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.


Practice Name: _____

Participant Printed Name: _____

Signature: _____

Date: _____

Non-Disclosure:

THIS AGREEMENT is entered into as of _____, between _____ ("the Participant") and the testing organization Complete HealthCare Solutions, Inc. main office located at 1497 North Main St. Palmer, MA 01069.

The participant acknowledges that 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 Complete HealthCare Solutions Inc. or otherwise acquired by the participant, in the course of today's study.

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

Any information the participant acquires relating to this product during this study is confidential and proprietary to Complete Healthcare Solutions, Inc. and is being disclosed solely for the purposes of the participant's participation in today's usability study. By signing this form, the participant acknowledges s/he will not disclose this confidential information obtained today to anyone else or any other organizations.

Participant's printed name: _____

Signature: _____

Date: _____

**5.2 Instructions and optimal path/steps**

**Task 1 (a.5 demographics)**

**Task instructions for participant:**

A) Record a patient's demographic information as specified below:
  - name: Sally Smith
  - date of birth: 01/01/1988
  - sex: Female
  - gender identity: Identifies as female
  - sexual orientation: Bisexual
  - ethnicity: Declined
  - race: Asian
  - preferred language: Chinese
  - Close the chart
B) Change demographic information
  - Re-open Sally Smith and change the patient ' s demographic information to:
  - date of birth: 01/01/1987
  - sex: Male
  - gender identity: Male-to-female
  - sexual orientation: Choose not to disclose
  - ethnicity: Non-Hispanic
  - race: Declined
  - preferred language: English
  - Close the chart
C) View the changed information in the demographics
  - Re-open Sally Smith and verify all information above saved and displays

**Optimal path:**

A) Record a patient's demographic information as specified below:
  1. Open the Patient Charts tab
  2. Click New
  3. Type patients first and last name: Sally Smith
  4. Type patient's date of birth: 01/01/1988
  5. Choose sex: Female
  6. Choose gender identity: Identifies as female
  7. Choose sexual orientation: Bisexual
  8. Choose ethnicity: Declined
  9. Check box for race: Asian
  10. Select preferred language: Chinese
  11. Click OK to save and close the chart
B) Change:
  1. Open Sally Smith's chart
  2. Change the date of birth: 01/01/1987
  3. Change the sex: Male

4. Change the gender identity: Male-to-female
5. Change the sexual orientation: Choose not to disclose
6. Change the ethnicity: Non-Hispanic
7. Change the race: Declined
8. Change the preferred language: English
9. Click OK to save and close the chart
C) View the changed information
   1. Re-open Sally Smith and verify all information above saved and displays


## Task 2 (a.14 Implantable Device)

## Task instructions for participant:

A) Record the UDI
   • Open Sally Smith's chart
   • Record & Save an Implantable Device using UDI number:
     (01)10884521062856(11)141231(17)150707(10)A213B1(21)1234
   • Add an implant date of 05/01/2010
   • Save and **exit**
B) Change the UDI status
   • Open the UDI
   • Change the implantable device type from current to inactive
   • Save and exit
C) View UDI
   • Open the UDI and verify the information saved and status shows as inactive


## Optimal path:

A) Record UDI
   1. Open Sally Smith's Chart
   2. Click on the implantable devices tab
   3. Click New
   4. Click Look Up
   5. Enter UDI Number (01)10884521062856(11)141231(17)150707(10)A213B1(21)1234
   6. Select Device that is returned
   7. Click OK
   8. Enter Implant Date
   9. Click OK

B) Change the UDI status
   1. Open Sally Smith's Chart
   2. Click on the implantable device tab
   3. Highlight Device
   4. Click Edit
   5. Change Status
   6. Click OK

C) View UDI, device description, identifiers, and attributes
   1. Open Sally Smith's Chart

2. Click the implantable devices tab
3. Verify information is present

## Task 3 (a.2 CPOE Lab)

## Task instructions for participant:

A) Record a lab order
   • Open patient chart Sally Smith
   • Enter a new order for CBC (Complete Blood Count)
   • Choose provider Dr Danny Little
   • Choose a diagnosis of Acute Pharyngitis J02.9
   • Save and return to chart
B) Change a lab order
   • Open patient chart Sally Smith
   • Edit CBC lab ordered today
   • Choose a diagnosis of Fever, unspecified RS0.9
   • Save and return to chart
C) View the changed information in the order
   • Open patient chart Sally Smith
   • Open CBC lab ordered today and verify diagnosis is RS0.9

## Optimal path:

A) Record a lab order
   1. Open Sally Smith's chart
   2. Click on Orders tab
   3. Click on New
   4. Click magnifying glass beside Order Guide
   5. Choose CBC
   6. Click Yes to question that pops up
   7. Choose provider Dr Danny Little from drop down
   8. Click drop down beside diagnosis
   9. Type Acute in search bar
   10. Check box beside Acute Pharacuteyngitis J02.9
   11. Click OK on diagnosis selection screen
   12. Click OK to exit lab screen

B) Change a lab order
   1. Open Sally Smith's chart
   2. Click on Orders tab
   3. Open CBC lab ordered today
   4. Click drop down beside diagnosis
   5. Type Fever in search bar
   6. Check box beside Fever, unspecified R50.9
   7. Click OK on diagnosis selection screen
   8. Click OK to exit lab screen

C) View the changed information in the order
  1. Open Sally Smith's chart
  2. Click on Orders tab
  3. Open the CBC lab ordered today
  4. Verify the diagnosis of R50.9 is still there.

## Task 4 (a.3 CPOE Imaging)

## Task instructions for participant:

A) Record an imaging order
  • Open patient chart Sally Smith
  • Enter a new order for CTA Abdomen W/3D W
  • Choose provider Dr Michelle Lynn
  • Choose a diagnosis of Abdominal Pain, left lower quadrant R10.32
  • Save and return to chart
B) Change an imaging order
  • Open patient chart Sally Smith
  • Edit CTA Abdomen ordered today
  • Change diagnosis to Abdominal Pain, right lower quadrant R10.31
  • Save and return to chart
C) View the changed information in the order
  • Open patient chart Sally Smith
  • Open CBC lab ordered today and verify diagnosis is R10.31

## Optimal path:

A) Record a lab order
  1. Open Sally Smith's chart
  2. Click on Orders tab
  3. Click on New
  4. Click magnifying glass beside Order Guide
  5. Choose CTA Abdomen W/3D W
  6. Click Yes to question that pops up
  7. Choose provider Dr Michelle Lynn from drop down
  8. Click drop down beside diagnosis
  9. Type "abdom" in search bar
  10. Check box beside Abdominal Pain, left lower quadrant R10.32
  11. Click OK on diagnosis selection screen
  12. Click OK to exit lab screen

B) Change a lab order
  1. Open Sally Smith's chart
  2. Click on Orders tab
  3. Open CTA Abdomen ordered today
  4. Click drop down beside diagnosis
  5. Type Abd in search bar
  6. Check box beside Abdominal Pain, right lower quadrant R10.31
  7. Click OK on diagnosis selection screen
  8. Click OK to exit lab screen

C) **View** the changed information in the order
   1. Open Sally Smith's chart
   2. Click on Orders tab
   3. Open the CTA Abdomen lab ordered today
   4. Verify the diagnosis of R10.31 is still there.

## Task 5 (b.2 CCDA)

## Task instructions for participant:

A) Incorporate a CCDA and conduct reconciliation of the medications, medication allergies, and problems in the CCDA with the information currently in the patient's record
   • Access the CCDA Import Tool
   • Parse CCDA for Steve Lyashtuck (stored on the desktop of the PC) for Steve who is already a patient
   • Reconcile Medications
   • Reconcile Allergies
   • Reconcile Problems
   • Import
B) Generate a new CCDA with reconciled data
   • Open Steve Lyashtuck's Chart
   • Generate CCDA

## Optimal path:

A) Incorporate a CCDA and conduct reconciliation of the medications, medication allergies, and problems in the CCDA with the information currently in the patient's record
   1. Click Tools
   2. Click CCDA
   3. Import CCDA
   4. Click the Magnify Glass to Browse for File
   5. Browse to file location on desktop (if not remembered by Windows)
   6. Select File
   7. Click OK
   8. Lookup patient
   9. Uncheck New patient
   10. Click Parse CCDA
   11. Reconcile Medications
   12. Reconcile Allergies
   13. Reconcile Problems
   14. Click import

B) Generate a new CCDA with reconciled data
   1. Open Steve Lyashtuck's Chart
   2. Click on the Clinical Encounters Button
   3. Click New
   4. Click Generate Clinical Summary
   5. Preview data to be extracted
   6. Click OK
   7. Select File Location
   8. Name the file

9. Save

## Task 6 (a.9 Clinical Decision Support)

## Task instructions for participant:

A) Add a Clinical Decision Support intervention and/ or reference resource for **Problem list**
- Create a new HM guide for patient with a <u>diagnosis of E11.9 for tracking of HGB A1C every 6 months</u>
  1. Enter Name: Diabetes
  2. Enter Description: Diabetic Patient Follow Up
  3. Enter Funding Source: Federal Funding and Research Programs
  4. Enter Source: http://www.diabetesmonitor.com/ resources/health-maintenance-schedule.htm
  5. Enter the Bibliographic Reference:
     a. Author Name: Jill Weisenberger, MS, RD, CDE
     b. Title: Diabetes Monitor
     c. Date of Publication: June 12, 2012
  6. Users to Alert: Select all user groups
  7. Display Source To: Select only the providers and admin user groups
  8. Enter appropriate Criteria and Items for underlined info above
  9. Save the Record

B) Add a Clinical Decision Support intervention and/ or reference resource for **Medication list**
- Create a new HM guide for patient with a <u>medication of Warfarin for tracking of INR every 4 weeks</u>
  1. Enter Name: Oral Anticoagulants
  2. Enter Description: Coumadin/Warfarin Tracking
  3. Enter appropriate Criteria and Items for underlined info above
  4. Save the Record

C) Add a Clinical Decision Support intervention and/ or reference resource for **Medication allergy list**
- Create a new HM guide for patient with a <u>medication allergy of Penicillin for tracking of Penicillin Allergy Testing every 6 months</u>
  1. Enter Name: Penicillin Allergy
  2. Enter Description: Penicillin Allergy Testing
  3. Enter appropriate Criteria and Items for underlined info above
  4. Save the Record

D) Add a Clinical Decision Support intervention and/ or reference resource for **At least one demographic**
- Create a new HM guide for patients who are <u>females between the ages of 18 and 39 tracking Flu shot done every year</u>
  1. Enter Name: 18 -39 Females
  2. Enter Description: Age/Sex Template for Females 18-39
  3. Enter appropriate Criteria and Items for underlined info above
  4. Save Record

E) Add a Clinical Decision Support intervention and/ or reference resource for **Laboratory test**
- Create a new HM guide for patients who have an <u>WBC result outside of normal ranges {2800 -3500) tracking Repeat CBC every year</u>
  1. Enter Name: WBC
  2. Enter Description: White Blood Cell Count
  3. Enter appropriate Criteria and Items for underlined info above
  4. Save Record

F) Add a Clinical Decision Support intervention and/ or reference resource for **Vital Signs**
- Create a new HM guide for patient who have <u>high blood pressure reading outside of normal ranges {Systolic 80-120 and Diastolic 60-75} tracking Repeat BP every month</u>

1. Enter Name: High BP
2. Enter Description: High blood pressure Follow Up
3. Enter appropriate Criteria and Items for underlined info above
4. Save Record

**G)** Add a Clinical Decision Support intervention and/or reference resource for **A combination of 2 of the elements listed above**

- Create a new HM guide for patients who are <u>diabetic and between the ages of 60-90 years of age tracking Flu Shot done yearly.</u>
    1. Enter Name: Diabetic Patients 60-90 years old
    2. Enter Description: Diabetic Patient Follow Up 60-90 years old
    3. Enter appropriate Criteria and Items for underlined info above
    4. Save Record

H) Trigger the **Problem** intervention
    1. Open Patient Chart: Sarah Lyashtuck
    2. Record a new <u>Problem</u> of Diabetes, E11.9
    3. Accept CDS Intervention
    4. Verify the bibliographic citation, developer, funding source and revision dates are displayed

I) Trigger the **Medication** intervention
    1. Open Patient Chart: Sarah Lyashtuck
    2. Record a new <u>Medication</u> of Warfarin 2 mg
    3. Accept CDS Intervention

J) Trigger the **Medication Allergy** intervention
    1. Open Patient Chart: Sarah Lyashtuck
    2. Record a new <u>Allergy</u> of Penicillins
    3. Accept CDS Intervention

K) Trigger the **Demographic** intervention
    1. Open Patient Chart: Sarah Lyashtuck
    2. Update her <u>birth year</u> to 1982
    3. Accept CDS Intervention

L) Trigger the **Laboratory Test** intervention
    1. Open Patient Chart: Sarah Lyashtuck
    2. Record a <u>lab result</u> for WBC of 1000
    3. Accept CDS Intervention

M) Trigger the **Vital Signs** intervention
    1. Open Patient Chart: Sarah Lyashtuck
    2. Record a new set of <u>Vitals</u>, capturing BP as 160/90
    3. Accept CDS Intervention

N) Trigger the **Combination** intervention
    1. Open Patient Chart: Susan Lyashtuck
    2. Record a new <u>Problem</u> of Diabetes, E11.9
    3. Accept CDS Intervention

O) View the intervention/ resource information using the info button standard for data elements in the <u>problem list</u>
    1. Open Patient Chart: Sarah Lyashtuck
    2. Access Resource information via Info Button for Diabetes

P) View the intervention/ resource information using the info button standard for data elements in the <u>medication list</u>
    1. Open Patient Chart: Sarah Lyashtuck
    2. Access Resource information via Info Button for Warfarin

Q) View the intervention/ resource information using the info button standard for data elements in demographics
    1. Open Patient Chart: Sarah Lyashtuck
    2. Access Resource information via Info Button for Diabetes from patient's health maintenance tab

R) Trigger the CDS interventions/resources based on data elements in the problem list, medication list and medication allergy by incorporating patient information from a transition of care/referral summary
- Import & Parse CCDA Record for Isabella Jones (stored on the desktop of the PC)
    1. Reconcile Medications
    2. Reconcile Allergies
    3. Reconcile Problem
    4. Import Records
    5. Accept CDS Interventions

## Optimal path:

A) Add a Clinical Decision Support intervention and/ or reference resource for **Problem list**
1. Click on Guides
2. Select HM
3. Select HM Guides
4. Click New
5. Enter Name: Diabetes
6. Enter Description: Diabetic Patient Follow Up
7. Enter Funding Source: Federal Funding and Research Programs
8. Enter Source: http://www.diabetesmonitor.com/resources/health-maintenance-schedule.htm
9. Enter the Bibliographic Reference:
   Author Name: Jill Weisenberger, MS, RD, CDE
   Title: Diabetes Monitor
   Date of Publication: June 12, 2012
10. Users to Alert: Select all user groups
11. Display Source To: Select only the providers and admin user groups
12. Click the Criteria button
13. Click the Diagnosis Tab
14. Click the DX code of E11.9
15. Click the Arrow to move the code over
16. Click OK
17. Click in the Item Field
18. Click on the ellipse button
19. Search for HGB A1C
20. Click OK
21. Click in the Repeat Field:
22. Click on the ellipse button
23. Enter the procedure rule to be due every 6 months
24. Click OK
25. Click Save

B) Add a Clinical Decision Support intervention and/ or reference resource for **Medication list**
1. Click on Guides
2. Select HM
3. Select HM Guides
4. Click New
5. Enter Name: Oral Anticoagulants
6. Enter Description: Coumadin/Warfarin Tracking
7. Users to Alert: Select all user groups

8. Display Source To: Select only the providers and admin user groups
9. Click the Criteria button
10. Click the Medication Tab
11. Locate Coumadin
12. Click the arrow to move it over
13. Locate Warfarin
14. Click the arrow to move it over
15. Click OK
16. Click in the ItemField
17. Click on the ellipse button
18. Search for INR
19. Click OK
20. Click in the Repeat Field
21. Click on the ellipse button
22. Enter the procedure rule to be due every 1 month
23. Click OK
24. Click Save

C) Add a Clinical Decision Support intervention and/ or reference resource for **Medication allergy list**
   1. Click on Guides
   2. Select HM
   3. Select HM Guides
   4. Click New
   5. Enter Name: Penicillin Allergy
   6. Enter Description: Penicillin Allergy Testing
   7. Users to Alert: Select all user groups
   8. Display Source To: Select only the providers and admin user groups
   9. Click the Criteria button
   10. Click the Allergy Tab
   11. Locate Penicillins
   12. Click the arrow to move it over
   13. Click OK
   14. Click in the Item Field
   15. Click on the ellipse button
   16. Search for SkinTest
   17. Click OK
   18. Click in the Repeat Field
   19. Click on the ellipse button
   20. Enter the procedure rule to be due every 6 months
   21. Click OK
   22. Click Save

D) Add a Clinical Decision Support intervention and/ or reference resource for **At least one demographic**
   1. Click on Guides
   2. Select HM
   3. Select HM Guides
   4. Click New
   5. Enter Name: 18-39 Females
   6. Enter Description: Age/Sex Template for Females 18-39

7. Users to Alert: Select all user groups
8. Display Source To: Select only the providers and admin user groups
9. Click the Criteria button
10. Select Female
11. Enter the age range of 018/00 to 039/11
12. Click OK
13. Click in the Item Field
14. Click on the ellipse button
15. Search for Flu Shot
16. Click OK
17. Click in the Repeat Field
18. Click on the ellipse button
19. Enter the procedure rule to be due every 1 year
20. Click OK
21. Click Save

**E)** Add a Clinical Decision Support intervention and/ or reference resource for **Laboratory test**
1. Click on Guides
2. Select HM
3. Select HM Guides
4. Click New
5. Enter Name: WBC
6. Enter Description: White Blood Cell Count
7. Users to Alert: Select all user groups
8. Display Source To: Select only the providers and admin user groups
9. Click the Criteria button
10. Click the Lab Results Tab
11. Locate WBC
12. Click the arrow to move it over
13. Enter 2800 – 3500 in low and high values
14. Click OK
15. Click in the Item Field
16. Click on the ellipse button
17. Search for CBC
18. Click OK
19. Click in the Repeat Field
20. Click on the ellipse button
21. Enter the procedure rule to be due every 1 year
22. Click OK
23. Click Save

**F)** Add a Clinical Decision Support intervention and/ or reference resource for **Vital Signs**
1. Click on Guides
2. Select HM
3. Select HM Guides
4. Click New
5. Enter Name: High BP
6. Enter Description: High Blood Pressure Follow Up
7. Users to Alert: Select all user groups
8. Display Source To: Select only the providers and admin user groups

9. Click the Criteria button
10. Click the Vitals Tab
11. Locate BP-Systolic
12. Click the arrow to move it over
13. Enter Low Value of 80
14. Enter High Value of 120
15. Locate BP-Diastolic
16. Click the arrow to move it over
17. Enter Low Value of 60
18. Enter High Value of 75
19. Click OK
20. Click in the Item Field
21. Click on the ellipse button
22. Search for Repeat BP
23. Click OK
24. Click in the Repeat Field
25. Click on the ellipse button
26. Enter the procedure rule to be due every 1 month
27. Click OK
28. Click Save

**G)** Add a Clinical Decision Support intervention and/ or reference resource for **A combination of 2 of the elements listed above**

1. Click on Guides
2. Select HM
3. Select HM Guides
4. Click New
5. Enter Name: Diabetic Patients 60-90 years old
6. Enter Description: Diabetic Patient Follow Up 60-90 years
7. Users to Alert: Select all user groups
8. Display Source To: Select only the providers and admin user groups
9. Click the Criteria button
10. Click the Age/Sex Tab
11. Enter age range of 060/00 - 090/11
12. Click the Diagnosis Tab
13. Locate E11.9
14. Click the arrow to move it over
15. Click OK
16. Click in the Item Field
17. Click on the ellipse button
18. Search for Flu Shot
19. Click OK
20. Click in the Repeat Field
21. Click on the ellipse button
22. Enter the procedure rule to be due every 1 year
23. Click OK
24. Click Save

H) Trigger the Problem intervention
1. Open Patient Chart: Sarah Lyashtuck
2. Click on Problem List
3. Click New
4. Enter Description of Diabetic Mellitus
5. Click the Magnify Glass in the Diagnosis Code Field
6. Click in the Code Field
7. Search for E11.9
8. Select E11.9
9. **Click OK**
10. Click OK (yes again)
11. Diabetic HM Intervention will appear, enter a reason for accepting the intervention
12. Visually verify the bibliographic citation, developer, funding source and revision dates are displayed
13. Click Apply to accept

I) Trigger the Medication intervention
1. Open Patient Chart: Sarah Lyashtuck
2. Click on Medications Tab
3. Click New
4. Click the Magnify Glass in the Medication Field
5. Click in the Name Field
6. Search for Warfarin
7. Select Warfarin 2 mg
8. Click OK Select Current
9. Click OK
10. Oral Anticoagulant intervention will appear, enter a reason for accepting the intervention
11. Click Apply to accept

J) Trigger the Medication Allergy intervention
1. Open Patient Chart: Sarah Lyashtuck
2. Click on Allergies Tab
3. Click New
4. Click the Magnify Glass in the Allergy Field
5. Click in the Name Field
6. Search for Penicillins
7. Select Penicillins
8. Click OK
9. Enter Primary Reaction
10. Enter Severity
11. Click OK
12. Penicillin Allergy Testing intervention will appear, enter a reason for accepting the intervention
13. Click Apply to accept

K) Trigger the Demographic intervention
1. Open Patient Chart: Sarah Lyashtuck
2. Click On the demographics button
3. Edit her birth year to 1982
4. Click OK
5. 18-39 Females intervention will appear, enter a reason for accepting the intervention
6. Click Apply to accept

L) Trigger the Laboratory Test intervention
1. Open Patient Chart: Sarah Lyashtuck
2. Click on the Labs Tab
3. Click New
4. Click the Magnify Glass in the guide field
5. Click in the Name Field
6. Search for WBC
7. Select WBC
8. Click OK
9. Fill out Lab Value for WBC of 1500
10. Click OK
11. WBC intervention will appear, enter a reason for accepting the intervention
12. Click Apply to accept

M) Trigger the Vital Signs intervention
1. Open Patient Chart: Sarah Lyashtuck
2. Click on the Vitals Tab
3. Click New
4. Place a check mark next to BP
5. Enter Location
6. Enter Systolic Pressure 160
7. Enter Diastolic Pressure 80
8. Click OK
9. High BP intervention will appear, enter a reason for accepting the intervention
10. Click Apply to accept

N) Trigger the Combination intervention
1. Open Patient Chart: Susan Lyashtuck
2. Click on Problem List
3. Click New
4. Enter Description of Diabetic Mellitus
5. Click the Magnify Glass in the Diagnosis Code Field
6. Click in the Code Field
7. Search for E11.9
8. Select E11.9
9. Click OK
10. 10. Click OK (yes again)
11. Diabetic Patients 60-90 years old Intervention will appear, enter a reason for accepting the intervention
12. Click Apply to accept

0) View the intervention/ resource information using the info button standard for data elements in the problem list
1. Open Patient Chart: Sarah Lyashtuck
2. Click on Problem List
3. Right Click on the problem Diabetic Mellitus
4. Select Info Button
5. Review the Article and Close

P) View the intervention/ resource information using the info button standard for data elements in the medication list
1. Open Patient Chart: Sarah Lyashtuck
2. Click on Medications

3.  Right Click on the medication of Warfarin
4.  Select Info Button
5.  Review the Article and Close

Q) View the intervention/ resource information using the info button standard for data elements in demographics
1.  Open Patient Chart: Sarah Lyashtuck
2.  Click on Health maintenance
3.  Right Click on the trigger for any item.
4.  Click Diagnosis
5.  Review the Article and Close

R) Trigger the CDS interventions/resources based on data elements in the problem list, medication list and, medication allergy list by incorporating patient information from a transition of care/referral summary
1.  Click Tools
2.  Click CCDA
3.  Import CCDA
4.  Click the Magnify Glass to Browse for File
5.  Browse to file location (if not remember by Windows)
6.  Select File
7.  Click OK
8.  Click Parse CCDA
9.  Click on the Medication of Warfarin on the left
10. Click the Arrow in the middle to move it over
11. Click on the Allergy of Penicillins
12. Click the arrow in the middle to move it over
13. Click on the problem of Diabetes
14. Click the arrow in the middle to move it over
15. Click import
16. First CDS intervention appears
17. Enter accept reason
18. Click apply
19. Second CDS intervention appears
21. Enter accept reason
22. Click apply
23. Third and final CDS intervention appears
24. Enter accept reason
25. Click apply
S) Access the following attributes for one of the triggered CDS interventions/resources: bibliographic citation, developer, funding source, release/revision date
  - This is verified under triggering of Problem list (step H above) – client is done after R item.