Medaxion Pulse Platform

EHR Usability Test Report

Test period:	March 19, 2018 – March 23, 2018
Date of report:	April 25, 2018
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Executive Summary

This Test Report describes the production-ready acceptance testing of those features within the Medaxion Pulse Platform which are specifically referenced for validation by the requirements for ONC ATL/ATCB approved Certified Electronic Health Record Technologies and provides evidence of the usability of the system under test for features specifically addressed by the following CEHRT criteria:

- 170.315 (a)(1) Computerized provider order entry (CPOE) – medications
- 170.315 (a)(2) Computerized provider order entry (CPOE) – laboratory
- 170.315 (a)(3) Computerized provider order entry (CPOE) – diagnostic imaging
- 170.315 (a)(4) Drug-drug, drug-allergy interaction checks for CPOE
- 170.315 (a)(5) Demographics
- 170.315 (a)(6) Problem list
- 170.315 (a)(7) Medication list
- 170.315 (a)(8) Medication allergy list
- 170.315 (a)(9) Clinical decision support (CDS)
- 170.315 (a)(14) Implantable device list
- 170.315 (b)(2) Clinical information reconciliation and incorporation

During the March 2018 test period 11 individuals participated in formal functional user testing to provide feedback on feature design and adoptability. The participant group included practicing clinicians, clerical staff, and clinical quality specialists, among others. Further demographic detail regarding the participants can be found in the Participants section of this document.

Participants were instructed to use the Medaxion Pulse Platform to add information to, edit, and reconcile inbound information on medical records. Reconciliation of records was against existing (simulated) medical records that either contained or were empty of historical data, as well as attempting to reconcile against records which either did or did not have associated Transfer of Care documents. All participants operated independently and were not provided assistance during the test.

Participant data is de-identified. The timing of actions taken were tracked in the logs and reported on appropriately, while summative assessments were based on satisfaction (subjective analysis) metrics.

No participant was compensated by Medaxion, Inc. or any private entity related to Medaxion, Inc. for participating in these usability evaluations. All testing is done on a voluntary basis, without direct or indirect incentive or remuneration.

Major findings and areas for improvement are described in detail in the Results section of the report.

Introduction

Medaxion Pulse is a cloud-based Software-as-a-Service Electronic Health Record currently focused on servicing the Anesthesia clinical specialty.

Measures of effectiveness, efficiency, and user satisfaction were constrained to a group of practicing clinicians and associated staff who currently operate within the anesthesia specialty. Test patterns were built of tasks which reflected the daily activities of an anesthesiologist in order to measure the effectiveness of presentation and entry methodology, and included the following tasks specific to the SED testing:

- 170.315 (a)(1) - CPOE Medications
    - Adding medication order
- 170.315 (a)(2) - CPOE Labs
    - Adding laboratory order
- 170.315 (a)(3) - CPOE Imaging
    - Adding diagnostic imaging order
- 170.315 (a)(4) - Drug-drug
    - View drug-drug interaction
    - View drug-allergy interaction
- 170.315 (a)(5) - Demographics
    - Adding patient demographics
- 170.315 (a)(6) - Problem List
    - Add problem
    - View problem list
- 170.315 (a)(7) - Medication List
    - Add medication
    - View medication list
- 170.315 (a)(8) - Medication Allergy List
    - Add medication allergy
    - View medication allergy list
- 170.315 (a)(9) - Clinical Decision Support
    - View alerts and messages
- 170.315 (a)(14) - Implantable Device List
    - Add implantable device
- 170.315 (b)(2) - Clinical Information
    - Reconcile medication lists
    - Reconcile medication allergy lists
    - Reconcile problem lists

Method

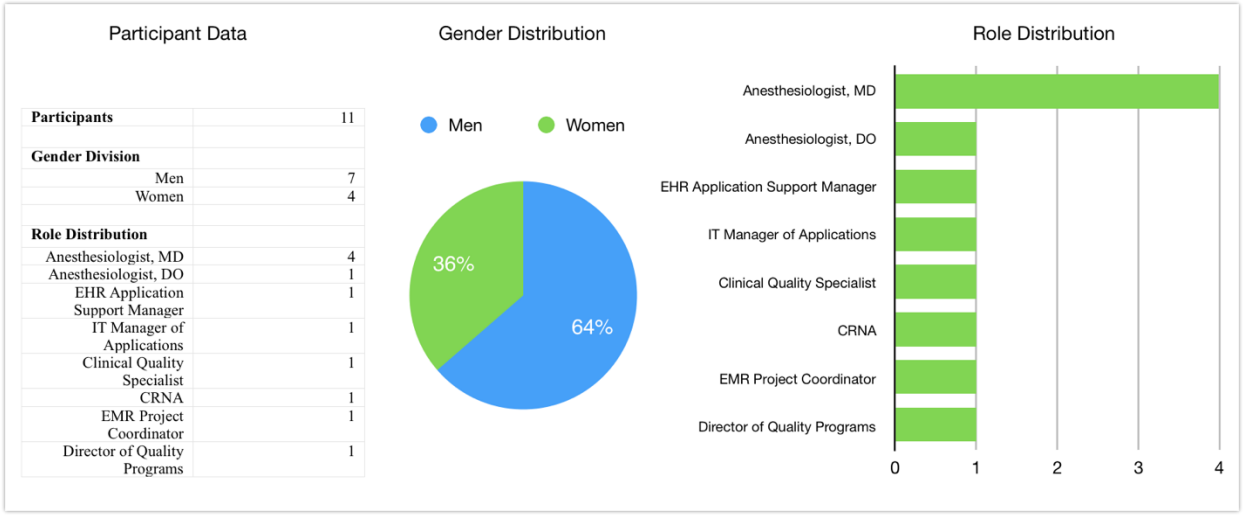
Participants

During the test period 11 participants performed operations related to the criteria under test. As the workflow, presentation, and interaction with data was substantially similar to existing functionality in the application, a small group of users was selected to give the test a specific clinical review after the less formal beta and review processes facilitated via Agile development practices.

All participants were contacted directly by Medaxion, Inc. No recruitment or testing firms were used. Some users had experience specifically with the Medaxion Pulse Platform, as well as with other CEHRTs.

The selections of users were specifically picked to create a representative sample of all the different types of users that currently utilize the application. There were users represented from the Clinical, IT, Quality, and Project Management professions. Genders were also sampled to help support that gender bias is not built into the software or processes.

Participant demographic summary:



Participants	11
Gender Division	
Men	7
Women	4
Role Distribution	
Anesthesiologist, MD	4
Anesthesiologist, DO	1
EHR Application Support Manager	1
IT Manager of Applications	1
Clinical Quality Specialist	1
CRNA	1
EMR Project Coordinator	1
Director of Quality Programs	1

Study Design

The objective of this testing period was to uncover areas where the application performs well and areas where the application fails to meet the needs of the target user. Test patterns were designed to validate current usability and to identify areas where improvements might be made.

In general the ideals put forth in the NIST-7741 standard were utilized. The key differences between the standard and our process lies in the method of testing that allows the user to test on their own time and then we gather the required information through information in the system logs. As a result we end up with both quantitative data from the timings and qualitative data from the SUS survey.

Further information on the NIST-7741 can be found here:

https://nvlpubs.nist.gov/nistpubs/Legacy/IR/nistir7741.pdf

During the test period studies were performed via “Stretch testing”. Stretch testing occurred during working breaks and after hours, and requires that testers be familiar with the work atmosphere for which the software is targeted, e.g. acting clinical anesthesiology staff, as the Medaxion Pulse Platform is anesthesia specific.

Stretch testing encourages the user to apply their experience and ‘at work thinking’ to document with a thought towards the atypical and unusual events that they have either personally encountered or of which they have otherwise become cognizant. Stretch testing pushes the boundaries of the software in order to help identify situations where the software might be inadequate for the potential user. To this end the test is monitored via logged events, rather than coordination via proctor.

Tasks and actions for Medaxion’s regular stretch testing mimic both the consistent and variable aspects of a complete anesthetic record; from adding a patient (simulating emergency room arrival) to reviewing and signing a completed anesthetic record (though in stretch testing users are encouraged to also document medical records where the patient would have failed to resuscitate). For the purpose of this test, anomalous encounters were not specified and the users were asked to treat these patients as if they were normal encounters.

Feedback was captured on all actions performed by the test participants regarding performance, meaningfulness and appropriateness of presentation and content.

Tasks

Assigned tasks encompassed the functionality specific to the referenced criteria. The Medaxion Pulse Platform functionality relevant to the criteria included:

- capturing/reviewing clinical information
    - record current / past medications
    - record current / past allergies
    - record current / past medical problems
- capturing/reviewing patient demographic data
- capturing/reviewing patient implantable device information
- computerized provider order entry (CPOE) for the following:
    - medications
    - laboratory
    - diagnostic imaging
- reviewing drug-drug and drug-allergy interaction checks for CPOE
- reviewing clinical decision support alerts
- reconciling clinical information inbound from Transition of Care documents
    - reconciling non-equivalent medication lists into a ‘final’ set
    - reconciling non-equivalent allergy lists into a ‘final’ set
    - reconciling non-equivalent medical problem lists into a ‘final’ set

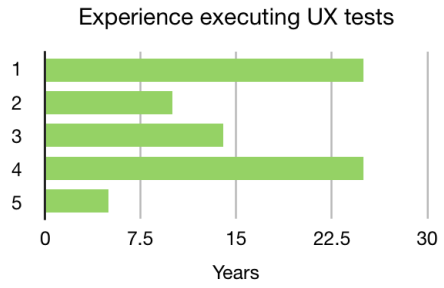
Procedures

Participants were selected from existing Pulse users and asked if they would be willing to participate in a usability test. Once participants indicated interest user accounts were created in a production-equivalent test deployment (e.g. an environment identical to that of a production customer) of Medaxion Pulse and the features under test were exposed to those users. Task instructions were communicated to the participants and they were directed to the medical records which had been provided them. Feedback was assembled using a brief survey returned to the test proctor and from logging performed by the application to account for times taken on each task.

Participants were directed to use the Medaxion Pulse Platform in a manner compliant with their legal record-keeping responsibilities.

Test administrator characteristics:

Admin ID	Experience with Agile software methodologies	Experience developing Software	Experience executing UX tests	Experience with anesthesia processes
1	10	26	25	11
2	13	34	10	11
3	3	0	14	0
4	11	25	25	10
5	11	36	5	5



Test Locations

Testers were encouraged to perform test activities in environments similar to their regular working environment if testing in their regular work environment was not possible. While it would not be appropriate to expect an MD or CRNA to perform testing activities during surgery, performing the test at their facility and using their normally available computing and network resources leads to a more realistic usage test, given the variety of equipment quality, operating system and application patches, and other 'random' facility related factors that they encounter during their regular work cycle.

Test Environment

The Pulse functionality relevant to the test is typically utilized in clinical settings, and participants were encouraged to attempt the tests such that the environment was consistent with the infrastructure typical of expected daily use. For testing, the participants provided their own access to the system under test (e.g. internet access and computing resources). The system-under-test was deployed in a manner consistent with normal production deployments.

Test Forms and Tools

Each participant was directed to fill out a data sheet that recorded their clinical practice experience, age, credentials, and experience with paper record-keeping and EHR use. All participants were given a set of general instructions on how to perform the test, and then left to work through the instructions themselves. Each user then filled out a survey regarding the specific features and general system use.

Participant Instructions

No participant received instructions or orientation other than the general instructions on what to do to accomplish the test activities. The instructions (found in Appendix A of this document) included basic, general directions on how to look up a patient and perform the necessary activities, but participants were otherwise challenged to perform the test as if they did not have access to support and had to accomplish the tasks on their own.

All test participants were asked to complete all tests found in the test activities document they received, which was the same for all testers.

Usability Metrics

Per NIST guidance Medaxion Pulse should support a usability pattern that provides a meaningful, adoptable and satisfactory experience for the recording of anesthetic data related to the care of a patient and the processing of that record. Medaxion works to proactively achieve this level of performance through the continuous improvement and development model of Agile and its ability to enable iterative UCD, and much of this iterative review occurred prior to the execution of this summative test. For the purposes of this Test Report summations of usability, meaningful presentation, and appropriate function related to the following categories were utilized in order to measure user satisfaction:

- ease of data entry
- ease of editing data
- ease of saving data
- navigation and context within the application

Two intertwined models were used to test usability and gather metrics for a consistent and reusable process, Usability Testing and System Usability Scale.

Usability Testing

This model describes the use of a set of instructions and monitoring the time it takes a user to complete tasks, and also the time between tasks. This gives an objective view of how successful/easy it is for a user to accomplish the desired functions, which may span one or more of the features under test.

Some resources and further explanation can be found here:

https://www.usability.gov/how-to-and-tools/methods/usability-testing.html

System Usability Scale (SUS)

This model describes the use of a 1 through 5 assessment scale to determine how (subjectively) easy the features were for the user. These answers can be analyzed to provide a summary of usability by measuring their satisfaction with the SUTs design modality, and appropriateness of workflow.

Some resources and further explanation can be found here:

https://www.usability.gov/how-to-and-tools/methods/system-usability-scale.html

Data Scoring

The following descriptions illustrate the categories of response tracking for tests in progress. Given the reasonably simple nature of the test and its coverage only of navigation to and performance of the assigned tasks specific to the criteria referenced above, results data was collected at the end of the test.

Tasks related to Ease of Data Entry:

Measure	Rationale and Scoring
Very Easy	Data entry fields were clearly marked. Data entry fields were easy to access once identified. Data entry was not difficult (appropriate selections or free text).
Easy	Data entry fields were marked and could be found with some work. Data entry fields were easy to access once identified. Data entry was not difficult (appropriate selections or free text).
Average	Data entry fields could be determined without extensive effort. Data entry fields could be accessed once identified. Data entry could be completed without error.
Difficult	Data entry fields were not well marked. Data entry fields required work to access. Data entry required validation before completing.
Very Difficult	Data entry fields were not well marked or were mislabeled. Data entry fields required multiple steps (clicks) to access. Data entry required validation before completing, or had to be entered multiple times to create an accurate entry.

Tasks related to Ease of Editing Data:

Measure	Rationale and Scoring
Very Easy	Data fields to be edited were clearly marked. Data fields to be edited were easy to access once identified. Data editing was not difficult (appropriate selections or free text).
Easy	Data fields were marked and could be found with some work. Data fields were easy to edit once identified. Data editing was not difficult (appropriate selections or free text).
Average	Data fields could be determined without extensive effort. Data fields could be edited once identified. Data editing could be completed without error.
Difficult	Data fields were not well marked. Data fields required work to edit. Data editing required validation before completing.
Very Difficult	Data fields were not well marked or were mislabeled. Data fields required multiple steps (clicks) to edit. Data editing required validation before completing, or had to be edited multiple times to create an accurate entry.

Tasks related to Ease of Saving Data:

Measure	Rationale and Scoring
Very Easy	Method to save data was clearly marked. Method to save data was easy once identified. Data that would be saved was easily identified on the screen. Confirmation of having saved data was clear.
Easy	Method to save data could be found with some work. Method to save data was easy once identified. Data that would be saved was easily identified on the screen. Confirmation of having saved data was clear.
Average	Method to save data could be found without extensive effort. Method to save data could be performed without extensive effort. Data that would be saved required effort to determine the fields. Confirmation of having saved data was clear.
Difficult	Method to save data was not well marked. Method to save data required work to complete. Data that would be saved was not easily identified. Confirmation of having saved data was unclear.
Very Difficult	Method to save data was not marked or incorrectly identified. Method to save data required multiple steps to complete. Data that would be saved was not or incorrectly identified.

Tasks related to Navigation:

Measure	Rationale and Scoring
Very Easy	Navigation was intuitive and needed no instructions.
Easy	Navigation was intuitive, but some instructions would have increased efficiency.
Average	Navigation was somewhat intuitive, but instructions would have increased efficiency significantly.
Difficult	Navigation was not intuitive, previous knowledge and instructions would have increased efficiency significantly.
Very Difficult	Navigation was poor, help would be necessary to achieve the specified tasks, or the user was unable to complete them.

Satisfaction, error, and feature relevance reporting was gathered in free text.

Results

Analysis and Reporting

Analysis of user responses is performed by the testing team and delivered to the product management team. As this testing period was subsequent to many prior test periods performed as beta test reviews and related to the extension of current functionality rather than the development of new functionality, no negative issues were reported. Some comments of a neutral nature were reported, as well as a few feature suggestions. These items were reported to Product Management per the stated process.

Task, Path, and Error Summary:

Task Identifier	Task Success - Mean (%)	Task Success - Std Dev (%)	Task Path Deviation - Observed #	Task Path Deviation - Optimal #	Task Errors - Mean (%)	Task Errors - Std Dev (%)
A1.1	100	0	0	0	0	0
A2.1	100	0	0	0	0	0
A3.1	100	0	0	0	0	0
A4.1	100	0	0	0	0	0
A5.1	100	0	0	0	0	0
A6.1	100	0	0	0	0	0
A7.1	100	0	0	0	0	0
A8.1	100	0	0	0	0	0
A9.1	100	0	0	0	0	0
A14.1	100	0	0	0	0	0
B2.1	100	0	0	0	0	0

Summative Analysis of Task Rating using a System Usability Scale:

User	User 1	User 2	User 3	User 4	User 5	User 6	User 7	User 8	User 9	User 10	User 11	Average
Ease of Data Entry	5	5	5	4	5	5	4	5	5	4	3	4.55
Ease of Editing	5	5	5	4	5	5	4	5	5	4	4	4.64
Ease of Saving	5	5	5	4	5	5	4	5	5	4	5	4.73
Navigation	5	5	5	3	5	5	3	5	5	4	2	4.27

The overall task rating for all tasks and all users was 4.54 if aggregated together. The standard deviation for that overall rating was 0.215 which is quite low and would indicate general happiness with the software and usability.

Further, analysis was performed on the time taken to perform each task asked of the tester (partial data included below). The times were found to be quite low and consistent. The boxes in yellow indicate an outlier. Some of these can be attributed to simply stepping aware from their desk during stretch testing as the users were performing

these tests within their facility where they could be called upon for other duties, simulating real usage as well as the effort needed to come back to the work when interrupted.

Example of captured timing data:

Case Name	CPOE Meds	Sec	CPOE Lab	Sec	CPOE Image	Sec	D/D Inter Med List	Sec	D/A Inter Med All List	Sec	Demo	Sec	Problem	Sec	CDS	Time	Implants	Sec	Recon	Sec
Smith, Echo	908	60	908-910	120	911	60	913-915	120	918	60	9290-9293	180	923	60	1034-1045	660	1152	60	1153-1155	120
Smith, Foxtrot	1606	60	1606-1607	60	1607-1608	60	1608-1610	120	1610-1612	120	1613-1615	120	1327	60	1653-1656	180	1658	60	1659-1700	60
Smith, Golf	1155	60	1155-12	300	12-1201	60	1202-1205	180	1205-1206	60	1207-1209	120	1209	60	1236-1240	240	1245	60	1246-1247	60
Smith, Hotel	1643	60	1643-1705	1380	1706	60	1710-1711	60	1711-1714	180	1715-1717	120	1718	60	1718-1725	420	1730	60	1727-1731	240
Smith, India	1245	60	1245-1258	780	1303-1307	240	1309-1310	60	1310-13-15	300	1317-1319	120	1319	60	1323-1332	540	1338	60	1340-1341	60
Smith, Juliet	2231	60	2231-2233	120	2233	60	2233-2235	120	2235-2237	120	2237-2241	240	2241	60	2241-2248	420	2251	60	2248-2252	240
Smith, Kilo	1402	60	1402-1405	180	1405-1406	60	11/7/03	60	1407-1409	120	1410-1411	120	1412	60	1412-1415	180	1416	60	1415-1418	180
Smith, Mike	0011-	60	0011-0015	240	0015	60	0015-0017	120	0017-0020	180	0020-0024	240	0024-0025	60	0025-0030	300	0033	60	0030-0034	240
Smith, November	1040	60	1040-1048	480	1048-1050	120	1050-1053	180	1053-1055	120	1055-1100	300	1100-1101	60	1101-1106	300	1110	60	1110-1111	60
Smith, Oscar	1704	60	1704-1708	240	1708-1709	60	1709-1711	120	1711-1712	60	1712-1715	180	1715	60	1715-1724	540	1724	60	1725-1726	60
Smith, Papa	2112	60	2112-2116	240	2116-2117	60	2117-2125	480	2125-2131	360	2131-2135	240	2135	60	2135-2200	1500	2202	60	2204-2207	180

This captured data was summarized as follows:

Task Identifier	Task Time - Mean (seconds)	Task Time - Std Dev (seconds)	Task Time Deviation - Mean Observed Seconds	Task Time Deviation - Mean Optimal Seconds
A1.1	60	0	0	0
A2.1	376.4	370.8	0	0
A3.1	81.82	52.88	0	0
A4.1	150	103.53	0	0
A5.1	180	62.67	0	0
A6.1	60	0	0	0
A7.1	150	112.6	0	0
A8.1	152.7	93.53	0	0
A9.1	480	355.4	0	0
A14.1	60	0	0	0
B2.1	136.4	77.14	0	0

Discussion of the Findings

No significant issues related to the functionality were reported. In all categories the Medaxion Pulse Platform received an average score better than 4.0, indicating an above average satisfaction ranking by the test participants. Any scores lower than 3 were specifically flagged and reviewed regarding the necessity for changes or enhancements.

Users were found to be very focused and on task. The only few exceptions were when users were interrupted by real life situations that arose and took precedence over their designated testing. These delays are present in the numbers therefore inflating some of the actual task completion time. This can often be seen in the above data by a large standard deviation (i.e. A2.1 and A9.1).

Effectiveness

The Medaxion Pulse Platform was evidenced to be effective at Clinical Information Reconciliation. All participants were able to successfully complete their tasks in reasonable time, without error or frustration.

Efficiency

Real-world use has shown that, generally, anesthesia cases last between ten minutes and three hours. Efficiency on cases lasting more than an hour is relative - most of that is ‘down’ time for the clinical anesthesiology provider - and therefore special attention was paid to the ten minute cases. Repeated trials of the product in such scenarios has shown that the product is usable in short duration cases.

Satisfaction

Subjective analysis of the Medaxion Pulse Platform via questionnaire showed significant satisfaction in the product, in particular features related to entry (4.5), correction (4.6) and saving of data (4.7). Navigation of the system scored 4.2. Scores between 4 and 5 are considered above average and a score of 3 is considered average.

Major Findings

Agile development processes accompanied by user centered design, extensive testing, and user focused improvement and validation processes have led to the development of an adoptable, meaningful anesthesia record keeper in the form of the Medaxion Pulse Platform.

The lack of major adoption-related issues underscores the effectiveness of an interaction-based release system that achieves design validation through frequent user trials. The low number of reported negative issues, the frequent positive feedback on feature improvements, and the high service model available to organizations which deliver their product in a SaaS model have contributed to the current efficacy of the platform.

Areas for Improvement

Recent testing shows no major areas for improvement with the current product though Medaxion as an organization that continues to seek incremental improvements to presentation, quality, and performance.

Appendix A - Instructions for Testers

medaxion:

I. PURPOSE

The intention of this document is to aid testers in demonstrating evidence of usability of Medaxion Pulse. The following steps outline the areas of the application that need to be validated for functionality, as it pertains to the Medaxion Pulse platform as a Certified Electronic Health Record Technology.

II. TEST VERIFICATION

- 170.315 (a) (1) Computerized Provider Order Entry (CPOE) - Medications
- 170.315 (a) (2) Computerized Provider Order Entry (CPOE) - Laboratory
- 170.315 (a) (3) Computerized Provider Order Entry (CPOE) - Diagnostic Imaging
- 170.315 (a) (4) Drug-Drug Interaction Checks for CPOE
- 170.315 (a) (4) Drug-Allergy Interaction Checks for CPOE
- 170.315 (a) (5) Demographics
- 170.315 (a) (6) Problem List
- 170.315 (a) (7) Medication List
- 170.315 (a) (8) Medication Allergy List
- 170.315 (a) (9) Clinical Decision Support
- 170.315 (a) (14) Implantable Device List
- 170.315 (b) (2) Clinical Information Reconciliation and Incorporation

III. DESCRIPTION

The following descriptions are taken from the https://beta.healthit.gov/topic/certification-ehrs/2015-edition-test-method document.

- 170.315 (a) (1) Computerized Provider Order Entry (CPOE) - Medications

  Enables a user to record, change and access medication orders.

- 170.315 (a) (2) Computerized Provider Order Entry (CPOE) - Laboratory

  Enables a user to record, change and access laboratory orders.

- 170.315 (a) (3) Computerized Provider Order Entry (CPOE) - Diagnostic Imaging

  Enables a user to record, change and access diagnostic imaging orders.

- 170.315 (a) (4) Drug-Drug Interaction Checks for CPOE

Before a medication order is completed and acted upon during computerized provider order entry (CPOE), interventions must automatically indicate to a user drug-drug and drug-allergy contraindications based on a patient's medication list and medication allergy list.

- 170.315 (a) (4) Drug-Allergy Interaction Checks for CPOE

  Before a medication order is completed and acted upon during computerized provider order entry (CPOE), interventions must automatically indicate to a user drug-drug and drug-allergy contraindications based on a patient's medication list and medication allergy list.

- 170.315 (a) (5) Demographics

  Enables a user to record, change, and access patient demographic data including race, ethnicity, preferred language, sex, sexual orientation, gender identity, and date of birth.

- 170.315 (a) (6) Problem List

  Enables a user to record, change, and access a patient's active problem list.

- 170.315 (a) (7) Medication List

  Enables a user to record, change, and access a patient's active medication list as well as medication history.

- 170.315 (a) (8) Medication Allergy List

  Enables a user to record, change, and access a patient's active medication allergy list as well as medication allergy history.

- 170.315 (a) (9) Clinical Decision Support (CDS)

  Enable interventions based on the following data:

  i) Problem list
  ii) Medication list
  iii) Medication allergy list
  iv) At least one specified demographic (I.e. date of birth)
  v) Laboratory tests
  vi) Vital signs

- 170.315 (a) (14) Implantable Device List

  Record Unique Device Identifiers associated with a patient's Implantable Devices.

- 170.315 (b) (2) Clinical Information Reconciliation and Incorporation

  Enable a user to reconcile the data that represent a patient's active medication list, medication allergy list, and problem list as follows.

IV. TEST INSTRUCTIONS

All testing will be performed via the web. Please login to team.medaxion.com to perform your testing. A user login and password will be provided in an email.

PRE-CONDITIONS:

- Login to website
- Open assigned post-op case.
- Select 'Edit' in lower left-hand corner of the screen.

- Computerized Provider Order Entry (CPOE) - Medications

In the 'Medication Orders' field set:
Select 'Add Order'.
Enter a value or use drop menu for 'Drug'.
Enter a value for 'Dose'.
Default 'Status' to 'Pending'.
Default 'Order Date' to today's date or use the calendar icon to change to future date.
Select the check box for 'CPOE order?'.
Select 'Save'.

- Computerized Provider Order Entry (CPOE) - Laboratory

In the 'Lab Tests' field set:
Select 'Add Lab Test'.
Enter a value for 'Lab' (for example 'E Ab - 1016-5') and 'Value'.
Default 'Status' to 'Pending'.
Default 'Test Date' to today's date.
Default 'Order Date' to today's date or use the calendar icon to change to future date.
Select the check box for 'CPOE order?'.
Select 'Save'.

- Computerized Provider Order Entry (CPOE) - Diagnostic Imaging

In the 'Radiology/Imaging Orders' field set:
Select 'Add Order'.
Enter a value for 'CPT' (for example '12001').
Default 'Status' to 'Pending'.
Default 'Order Date' to today's date or use the calendar icon to change to future date.
Select the check box for 'CPOE order?'.
Select 'Save'.

- Drug-Drug Interaction Checks for CPOE
- Medication List

In the 'Medications' field set:
Select 'Add Medication'.
Enter the value 'Aspirin 1191' in the 'Drug' field.
Enter a value for 'Dose'.
Default 'Status' to 'Active'.
Default 'Start Date' and 'Last Taken' values to today's date.

Select 'Add Medication'.
Enter the value 'Ketorolac 35827' in the 'Drug' field.
Enter a value for 'Dose'.
Default 'Status' to 'Active'.
Default 'Start Date' and 'Last Taken' values to today's date.

Select 'Save'.

Select the 'CDS Alerts' button in the lower left of the screen.
Verify on the 'Clinical Decision Support Alert' screen 'Aspirin / Ketorolac (systemic)' is displayed in the 'Drug-Drug Interaction Alerts' field set.

- Drug-Allergy Interaction Checks for CPOE
- Medication Allergy List

In the 'Medications' field set:
Select 'Add Medication'.
Enter the value 'FentaNYL 4337' in the 'Drug' field.
Enter a value for 'Dose'.
Default 'Status' to 'Active'.
Default 'Start Date' and 'Last Taken' values to today's date.

In the 'Allergies' field set:
Select 'Add Allergy'.
Enter the value 'Morphine 7052' in the 'Drug' field.
Default 'Allergy Type' to 'Drug allergy (disorder)'.
Default 'Status' to 'Active'.

Select 'Save'.

Select the 'CDS Alerts' button in the lower left of the screen.
Verify on the 'Clinical Decision Support Alert' screen 'morphine / FentaNYL' is displayed in the 'Drug-Drug Interaction Alerts' field set.

- Demographics

In the 'Patient & Case Information' field set:

Place cursor in the 'Race' field and select a value from the drop-down menu.
Select 'Save'.
Place cursor in the 'Ethnicity' field and select a value from the drop-down menu.
Select 'Save'.
Place cursor in the 'Language' field and select a value from the drop-down menu.
Select 'Save'.
Place cursor in the 'Gender' field and select a value from the drop-down menu.
Select 'Save'.
Place cursor in the 'DOB' field and use the calendar icon to enter a date of birth.
Select 'Save'.

In the 'Medical History Items' field set navigate to 'Social History':
Select 'Edit'.
Select a value from the 'Current Gender Identity' drop- down menu.
Select a value from the 'Patient's Sexual Orientation' drop-down menu.
Select 'Save'.

- Problem List

In the 'Medical History Items' field set navigate to the row for 'Endocrine'.
Select 'Edit'.
Enter 'yes' in the 'BMI>40' field.
Select 'Save'.

In the 'Problems' field set '238136002' will display in the 'Code' field with 'Morbid Obesity' in the 'Name' field.

Select the 'CDS Alerts' button in the lower left of the screen.
Verify 'Risks of Morbid Obesity' is displayed in the 'Intervention Alerts' field set.

- Clinical Decision Support

The CDS Alert function can be triggered several ways. Please complete each of the below.

1) In the 'Patient & Case Information' field set:

Place cursor in the 'DOB' field and use the calendar icon to enter a date of birth greater than the year 1965.

Select the 'CDS Alerts' button in the lower left of the screen.
Verify on the 'Clinical Decision Support Alert' screen 'Stroke Risks in the Elderly' is displayed in the 'Intervention Alerts' field set.

2) In the 'Medications' field set:

Select 'Add Medication'.
Enter the value 'Insulin' in the 'Drug' field.

Enter a value for 'Dose'.
Default 'Status' to 'Active'.
Default 'Start Date' and 'Last Taken' values to today's date.

Select the 'CDS Alerts' button in the lower left of the screen.
Verify on the 'Clinical Decision Support Alert' screen 'Perioperative Insulin Management' is displayed in the 'Intervention Alerts' field set.

3) In the 'Allergies' field set:

Select 'Add Allergy'.
Enter the value 'Succinylcholine' in the 'Drug' field.
Default 'Allergy Type' to 'Drug allergy (disorder)'.
Default 'Status' to 'Active'.

Select the 'CDS Alerts' button in the lower left of the screen.
Verify on the 'Clinical Decision Support Alert' screen 'Succinylcholine Allergy Management' is displayed in the 'Intervention Alerts' field set.

4) In the 'Case Items' field set:

Navigate to the 'Vital Signs' row and select 'Edit'.
In the 'BP systolic' field enter a value greater than '160'.

Select the 'CDS Alerts' button in the lower left of the screen.
Verify on the 'Clinical Decision Support Alert' screen 'Risks of Hypertension' is displayed in the 'Intervention Alerts' field set.

5) In the 'Lab Tests' field set:

Select 'Add Lab Test'.
Enter 'Potassium – 12814-0' in the 'Lab' field.
Enter a value less than 3.5 in the 'Value' field.
Select 'Save'

Select the 'CDS Alerts' button in the lower left of the screen.
Verify on the 'Clinical Decision Support Alert' screen 'Hypokalemia Limits' is displayed in the 'Intervention Alerts' field set.

6) In the 'Problems' field set:

In the 'Medical History Items' field set select 'Edit' for 'Endocrine'. Enter 'yes' in the 'BMI>40' field. Select 'Save'.

In the 'Problems' field set '238136002' will display in the 'Code' field with 'Morbid Obesity' in the 'Name' field.

Select the 'CDS Alerts' button in the lower left of the screen.
Verify on the 'Clinical Decision Support Alert' screen 'Risks of Morbid Obesity' is displayed in the 'Intervention Alerts' field set.

- Implantable Device List

In the 'Implantable Devices' field set:
Select 'Add Implantable Device'.
In the 'UDI' field, add one of the following UDI values.

(01)00857334004286(17)161231(21)A789
(01)00857334004286(17)161031(21)A789
(01)00857338006002(17)161231(21)A789
(01)00857338006200(17)161231(21)A789
(01)00857398006035(17)161231(21)A789
(01)00857398006240(17)161231(21)A789
(01)00807689000921(17)161231(21)A789
(01)00859952006048(17)161231(21)A789
(01)00807689000914(17)161231(21)A789
(01)00813150020626(17)161231(21)A789
(01)00849111001816(17)161231(21)A789
(01)00854166000219(17)161231(21)A789
(01)00807689000938(17)161231(21)A789

Select 'Save'.

- Clinical Information Reconciliation and Incorporation

Navigate to the 'Medications'.
Select 'Reconcile'.
Check one or more boxes under 'Transitions of Care Summary'.
Select 'Save'.

Navigate to the 'Allergies'.
Select 'Reconcile'.
Check one or more boxes under 'Transitions of Care Summary'.
Select 'Save'.

Navigate to the 'Problems'.
Select 'Reconcile'.
Check one or more boxes under 'Transitions of Care Summary'.
Select 'Save'.

V. SURVEY

Please take a moment to complete the survey below.

	Very Easy	Easy	Average	Difficult	Very Difficult
Ease of data entry					
Ease of editing data					
Ease of saving data					
Navigation					

Please include below any additional comments.

Thank you for your participation and assistance.