



SAFETY ENHANCED DESIGN (SED) SUMMARY Report **Hru2day created by Sargas International Chronic Care Management** **Cloud®**

Version: 21.9

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

SARGAS INTERNATIONAL CHRONIC CARE MANAGEMENT CLOUD®, PHYSICIAN, PATIENT &
PHARMACY PORTALS

Version 21.9

Ambulatory EHR Module

Date of Usability Test: September 15,2021
Date or Report: September 15,2021
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EXECUTIVE SUMMARY

A usability test of Sargas International Chronic Care Management Cloud®, Physician, Patient & Pharmacy Portals, version 21.9 Ambulatory EHR Module was conducted on September 15, 2021 in Sargas International Offices located at 6401 Truxtun Ave Suite 220, Bakersfield, California. The purpose of this test was to test and validate the usability of the current user interface, and provide evidence of usability for Safety Enhanced Design-SED. During the usability test, 22 healthcare providers and/or other intended users matching the target demographic criteria served as participants and used the EHRUT in simulated, but representative tasks.

This study collected performance data on 5 tasks typically conducted on an EHR:

- Add Prescription to patient profile
- Add lab order
- Add diagnostic notes
- Post allergies
- Add patient demographics



During this one-on-one usability test of sixty minutes, each participant was greeted by the administrator and asked to review and sign an informed consent/release form; they were instructed that they could withdraw at any time. Participants comprised of prior experience with and without the HER. The administrator introduced the test, and instructed participants to complete a series of tasks given one at a time using the EHRUT. During the testing, the administrator timed the test and, along with the data logger(s) recorded user performance data on paper and electronically. The administrator did not give the participant assistance in how to complete the task.

The following types of data were collected for each participant:

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

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

| Task Description | Task Success - Mean (%) | Task Success - Std Dev (%) | Task Path Deviation - Observed # | Task Path Deviation - Optimal # | Task Time - Mean (seconds) | Task Time - Standard Deviation (seconds) | Task Time Deviation - Observed Seconds | Task Time Deviation - Optimal Seconds | Task Errors Mean (%) | Task Errors - Std Dev (%) | Task Rating | Task Rating - Standard Deviation | Participant Identifiers |
|---------------------------------|-------------------------|----------------------------|----------------------------------|---------------------------------|----------------------------|--|--|---------------------------------------|----------------------|---------------------------|-------------|----------------------------------|-------------------------|
| Add prescription to the patient | 77.0 | 18.0 | 5 | 5 | 65 | 60 | 5.0 | 5 | 5 | 5 | 88 | 18.00 | 22 |
| Add Lab orders | 77.0 | 18.0 | 4 | 5 | 70 | 60 | 10.0 | 5 | 5 | 5 | 90 | 5.00 | 22 |
| Add diagnostic notes | 68.0 | 18.0 | 2 | 2 | 55 | 47 | 8.0 | 8 | 7 | 7 | 89 | 3.00 | 22 |



| | | | | | | | | | | | | | |
|--------------------------|------|------|----|---|----|----|-----|---|---|---|----|-------|----|
| Post Allergies | 91.0 | 18.0 | 3 | 4 | 30 | 25 | 5.0 | 4 | 2 | 2 | 82 | 20.00 | 22 |
| Add patient demographics | 90.0 | 2.0 | 20 | 2 | 20 | 18 | 2.0 | 3 | 2 | 2 | 92 | 6.00 | 22 |

The results from the System Usability Scale scored the subjective satisfaction with the system based on performance with these tasks to be: above 80%

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

- Major findings
 - o Overall the system was user friendly and easy to use
- Areas for improvement
 - o Prescription entry needs to be easier and finding the patient report has to be simplified

INTRODUCTION

The EHRUT(s) tested for this study was Sargas International Chronic Care Management Cloud[®], Physician, Patient & Pharmacy Portals, Version 21.9

Designed to present medical information to healthcare providers in primary care and specialty clinic setting like oncology and other, the EHRUT consists of chronic care management and drug monitoring protocols. The usability testing attempted to represent realistic exercises and conditions.

The purpose of this study was to test and validate the usability of the current user interface, and provide evidence of usability in the EHR Under Test (EHRUT). To this end measures of effectiveness, efficiency and user satisfaction were captured during the usability testing.

METHOD

PARTICIPANTS

A total of 22 participants were tested on the EHRUT(s). Participants in the test were oncologists, Physician Assistants, Pharmacy techs, Medical Assistants, Assistive tech needs and high school



students. Participants were recruited by Sargas International and were compensated from \$200 to \$50 based on their education level for their time. In addition, participants had no direct connection to the development of or organization producing the EHRUT(s). Participants were not from the testing or supplier organization. Participants were given the opportunity to have the same orientation and level of training as the actual end users would have received.

For the test purposes, end-user characteristics were identified and translated into a recruitment screener used to solicit potential participants

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

| | Gender | Physicians or PA’s w/EHR Exp | Medical Assistants w/Exp | Nurses | Intake Coordinator | Phlebotomist |
|----------|--------|------------------------------------|--------------------------------|--------|-----------------------|--------------|
| 1 | Male | 3 | 0 | 0 | 4 | 0 |
| 2 | Female | 2 | 5 | 5 | 0 | 3 |
| <i>N</i> | | 5 | 5 | 5 | 4 | 3 |

Participants were scheduled for one hour sessions with time, in between each session for debrief by the administrator(s) and data logger(s), and to reset systems to proper test conditions. A spreadsheet was used to keep track of the participant schedule, and included each participant’s demographic characteristics as provided by the recruiting firm.

STUDY DESIGN

Overall, the objective of this test was to uncover areas where the application performed well – that is, effectively, efficiently, and with satisfaction – and areas where the application failed to meet the needs of the participants. The data from this test may serve as a baseline for future tests with an updated version of the same EHR and/or comparison with other EHRs provided the same tasks are used. In short, this testing serves as both a means to record or benchmark current usability, but also to identify areas where improvements must be made.