FLEXION

QPP Usability Test Report

Test conducted by Jona Decker & Seth Alt

"If you want a great site, you've got to test."

Steve Krug

12.20.16

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Summary

After preparation of test scripts (described in Appendix I. Tasks) we recruited a group of four users. Two of the users had already participated in the interviews leading to the development of our persona, Debra, and those users helped us identify other individuals who would be representative of the users likely to be charged with submitting data on behalf of a small medical practice.

On December 20, 2016 we traveled to the test subjects' workplace and conducted private sessions in one of the test subject's office. Two researchers were present, and both recorded their interaction with the product while the users were performing typical tasks. Three of four users consented to screen and audio recording in addition to note taking. One user was uncomfortable with screen and audio recording, so we recorded via note taking only.

Analysis of the sessions showed that:

- Form fields should make use of placeholder values especially potentially confusing fields like dates, ZIP codes, or phone numbers. Field validation messaging should also be visually apparent (forcing focus when leaving field and messaging on individual form fields if possible rather than on submit)
- Status messaging and/or next steps need to be very apparent while retaining accessibility best practices
- When scrolling is required, users have to work harder and are much more likely to miss important information on screen.

Further recommendations can be found in the section "Recommendations".

The following document details the way we've conducted the research, describes the results, and provides a list of recommended changes.

If you have any questions or comments, please feel free to contact Jona Decker jdecker@flexion.us or Seth Alt – salt@flexion.us

Introduction

A usability test is a method of evaluating a product by testing it on users. A classic method would require usage of usability lab with a strictly controlled environment. The work of Steve Krug (best known as the author of "Don't Make Me Think") inspired professionals all over the world to think "outside the lab" and do lower budget, more spontaneous so-called guerrilla usability testing.

In a guerilla usability test, the testing environment is controlled in a minimal way and a smaller number of subjects is considered acceptable (usually 4 – 10). The statistical significance of the numbers is not factored into guerilla usability testing. It is a method of gathering quick feedback, broadening the researchers understanding of a real world user, and inspiring positive, rapid change in iterations of the user interface..

Because of the rapid timeline of this project we decided to take the guerilla approach and test the product with a small group of users, all of whom are users of other CMS tools/applications and have experience reporting quality data on behalf of a medical facility. A group of four users was identified. We believe a sample size of four is sufficient to inform us about the performance of the interface for this set of tasks.

After thorough preparation, the test was conducted on December 20, 2016 at a Long Term Acute Care Hospital in Northern Illinois. User interaction with the interface was recorded and analyzed by the two researchers, which informed our recommendations for improving the overall product usability.

Key Hypotheses

After initial analysis of the QPP interface of we came up with three hypotheses that we wanted to test during further research:

H1: Users will be able to successfully complete their profile.
H2: Users will be able to search for and connect with a medical practice.
H3: Users will be able understand the information displayed on the dashboard, particularly their own connections to medical practices and any requests from surrogates awaiting their approval.

Based on the hypotheses mentioned above, we have come up with three use case scenarios that were the foundation of our testing script.

Goals

Goals of the conducted test:

- Through a series of iterations we'll improve the success rate for each tested task
- Through a series of iterations, our lostness score will drop below 0.2.

Methodology

The usability test conducted during the usability assessment of the QPP interface consisted of a short interview, an introduction, and 3 tasks. We instructed the participants to think out loud and share their thoughts with the researchers throughout the test.

Tasks were read aloud by the researcher (a printed version was also given to participants). Sessions were performed on an individual basis with each session lasting approximately 20 minutes.

Because of the rapid timeframe of this project we decided that any readily fixable issues identified in any user test session would be addressed before the next session. This led us to identifying a weakness in the Profile Form during the first user session and applying a small change to a date form field (placeholder values) in that field to better guide users. This alteration rolled into subsequent test sessions.

During session two we received feedback from the user completing the task that she expected her cursor to change when hovering over a link to a next step. While the text was in fact a hyperlink, the cursor did not change to the expected pointer on hover, so a change to the stylesheet--setting the cursor style on hover on those elements--was made after that test session and in place for the following two users.

While no changes were made between subjects three and four, both session provided useful insights into status messaging that were not readily addressable but which have been captured as backlog for this sprint. Users were compensated with $25 Amazon gift cards for their participation.

Following the last session, qualitative and quantitative data were analyzed and summarized and recommendations for design changes were made.

Scenarios & Tasks

Basing on our initial research and hypotheses, we formed three test-scenarios and a set of tasks that were read and assigned to users during the test. Please see Appendix I. Tasks.

Results

Task Completion

Subject	Task 1	Task 2	Task 3
Subject 1	0	1	1
Subject 2	1	0	1
Subject 3	1	0	0
Subject 4	1	1	1
Sum	3	2	3
Success Rate	75%	50%	75%

Lostness

While observing the performance of users, we've also tried to assess if they feel lost on their path to success by using a "lostness" score. The lostness score measure is the user's ability to find specific information. Lostness is expressed as the ratio of the optimal number of nodes required to complete a task to the actual number of nodes visited while searching for task information. The closer the lostness value was to 1.00, the less lost the user was on the website.

Subject	Task 1	Task 2	Task 3
Subject 1	.2	.7	1
Subject 2	.7	.2	1
Subject 3	1	.1	.1
Subject 4	1	.7	1
Average	.73	.43	.78

This lostness measure shows that Task 2 caused a lot of confusion among users. While all three users quickly connected to a practice, we observed consistent problems with messaging:

- Only one user noticed the success message and speculated that since the request was pending they must be "done" with the task.
- Three users failed to notice the success message box when it appeared. This may be correlated to users selecting facilities from the bottom of the list vs. the top. Users who scrolled down the page to select a facility were less likely to notice a change at the top of the page.
- When the message indicating the connection request was pending was read, the message did not effectively denote to two test users that the task was complete.
- One user wondered out loud why the facility she'd requested to connect to disappeared from the results list after initiating a connection request, causing her to repeatedly search for the missing facility.

Errors

Results of the test clearly showed that:

- Form fields should make use of placeholder values especially potentially confusing fields like dates, ZIP codes, or phone numbers. Field validation messaging should also be visually apparent (forcing focus when leaving field and messaging on individual form fields if possible rather than on submit)
- Status messaging and/or next steps need to be very apparent while retaining accessibility best practices
- When scrolling is required, users have to work harder and are much more likely to miss important information on screen.

Task	Description	Occurred
Task 1	Failed to enter Date of Birth	2
Task 1	Could not located failing field upon submit attempt	1
Task 2	Could not determine where to start the Connect to Practice process	1
Task 2	Could not determine they had successfully Connected to a Practice - not reading Success Alert box	2
Task 2	Could not determine they had successfully Connected to a Practice - Success Alert box required scroll to top	2
Task 3	Could not find list of Medical Practices or Users	1

Recommendations

#	Observation	Interpretation	Severity (1-5)	Recommendations
1	Date field entry caused validation error	Need better guidance on data entry on forms	3	Use of placeholder text, potentially tooltips if more complex requirements
2	Form validation error too subtle	Need more apparent error state messaging and direction to problem form field	3	Better (more elaborate) error messaging. Greater visual distinction on fields in error state (red border currently...may need background color in field or greater visual signals)
3	The three clickable areas for next step were not equally apparent	More guidance required	2	Text as link must have expected hover state. Does the checkbox (which also steps the user forward) need visual feedback on hover as well?
4	Users must scroll up and down on two key screens (profile and connect to practice)	Scrolling increased the likelihood that messaging was missed, causing confusion	3	See “Success/fail messaging not apparent”
5	Success/fail messaging not apparent	Placement, color, font, weight, more need to be evaluated for improvement	3	Bump up font, border width. Consider modal state to ensure user sees message no matter where on page they are (also forces acknowledgement--must still be accessible)
6	Confusion caused by “Connect” language	Connect may imply an immediacy that is not accurate.	2	Consider revising language to include the “request” piece in both initiating and success messaging. Redirect to Dashboard upon successful request.

#	Observation	Interpretation	Severity (1-5)	Recommendations
7	Dashboard headings did not appear meaningful to one user	More visual distinction to headers	2	Consider size/weight/separator to increase visual distinction and guide viewers. Icons might be a good addition for non-native English speakers and users who are fast page scanners

Conclusion

The usability test of the QPP web portal shows that while the majority of users were able to successfully complete the three tasks key to the user story, there are issues particularly related to connecting to a medical practice that need addressing.

Observing the users offered some real insights into user behavior and exposed several opportunity areas for improvements. Implementing the recommendations and continuing to work with users will give us the insights needed to continue improving the product.

Appendix I. Tasks

Task 1 - User Profile

Background:

As a new enrollee in the Quality Payment Program, your organization has started the account registration process.

You've been emailed a username and password, and have been asked to complete your user profile by visiting the QPP web page.

You can fill out the form with any info you want (fake is fine) but the username and password to log in are provided below.

- From the QPP landing page, log in with the following username and password:

  Username: user@presencehealth.org

  Password: password

  Please talk through the process.

- Fill out the profile with any information you want (fake info is fine here). **Please talk through the process.**
- Submit the form.
- When you think you've completed the task, please tell the tester.

Task 2 - Connect to Practice

Background:

Now that you've completed your profile you need to be connected with your medical practice as an "Authorized Official" so that you can manage other users, submit quality measures and view reports.

Note: You can search for anything on this page but the results list has already been created for the purpose of this test.

- From the QPP page, search for a medical practice. **Please talk through the process.**
- Request to Connect to a Practice and self-identify yourself as an "Authorized Official."

  Please talk through the process.
- Connect to the practice. **Please talk through the process.**
- When you think you've completed the task, please tell the tester.

Task 3 - Approve a Surrogate User

Background:

At CMS, users who are authorized to submit data on behalf of a medical practice but who are not Authorized Officials are called “Surrogates.” Surrogates might be service providers you contract with, or employees that report to you.

Now that you’ve been verified as an “Authorized Official” you have a more complete Dashboard view of the practices you have connected to or have requested access to, and you can see anyone who has requested Surrogate status for a medical practice you’re connected to.

- From the QPP Dashboard, find a medical practice that you’re connected to. **Please talk through how you’ve determined this.**
- Find a medical practice that you’re requested to connect to but which is still pending. **Please talk through how you’ve determined this.**
- Find a Surrogate User that is pending and approve them. **Please talk through the process.**
- When you think you’ve completed the task, please tell the tester.