February 5th, 2025

CovaCare Usability Testing

The main functionality of CovaCare is its video processing and machine learning algorithms, designed to detect falls and prolonged inactivity. This operates entirely in the background, and automatically sends a text to emergency contacts if an incident is detected. Therefore, usability testing was not applicable for this part of the system. We plan to conduct different types of testing on that module in the near future. However, CovaCare also includes a mobile application for configuring emergency contacts, setting up cameras, and managing other settings. To test its intuitiveness, we conducted qualitative research with four subjects.

Subject 1: Age 28, medium technical proficiency

Task	Success? (Y/N)	Observations
Add yourself as an emergency contact	Yes	No issues.
Set up a camera that monitors falls 24/7, and inactivity only during the day	Partial Success	User did not know that "Stream URL" was for IP address. Left active time blank for falls (incorrectly assumed blank was 24/7).
Disable yourself as an	Yes	No issues.

emergency contact		

General Comments: Confusion around username, password, and stream url fields for camera.

Keyboard was blocking the form when entering inactivity detection active hours.

Overall Comfort Level (1 to 10): 7

Subject 2: Age 22, medium technical proficiency

Task	Success? (Y/N)	Observations
Add yourself as an emergency contact	Yes	No issues.
Set up a camera that monitors falls 24/7, and inactivity only during the day	Partial Success	Entered time without a colon (incorrect format). Confusion surrounding inactivity "duration" field.
Disable yourself as an emergency contact	Yes	No issues.

General Comments: Confusion around username, password, and stream url fields for camera.

Keyboard was blocking the form when entering inactivity detection active hours.

Overall Comfort Level (1 to 10): 8

Subject 3: Age 56, low/medium technical proficiency

Task	Success? (Y/N)	Observations
Add yourself as an emergency contact	Yes	Tried to tap the screen to exit the keyboard, but was forced to hit "return".
Set up a camera that monitors falls 24/7, and inactivity only during the day	Yes	Thought placeholder text was pre-filled data. Did not know how to represent 24/7. Confusion around "Stream URL". Frustration with keyboard covering part of the form.
Disable yourself as an emergency contact	No	Deleted their contact instead of disabling it.

General Comments: Navigation is intuitive. The forms were frustrating to fill out.

Overall Comfort Level (1 to 10): 7

Subject 4: Age 58, low/medium technical proficiency

Task	Success? (Y/N)	Observations
Add yourself as an emergency contact	Yes	Spent considerable time trying to exit the keyboard by tapping the screen.
Set up a camera that monitors falls 24/7, and inactivity only during the day	Yes	Had a hard time filling out the form since part of it was covered by the keyboard, which they consistently struggled to close.
Disable yourself as an emergency contact	Yes	No issues.

General Comments: Similar to previous subjects. Had difficulty with the forms, but otherwise found the application easy to navigate.

Overall Comfort Level (1 to 10): 7

Overall, this testing was insightful, and helped us identify several areas of improvement within our application. Nearly all confusion was a result of poorly designed forms. The keyboard was covering certain fields, and difficult to close. Additionally, some of the field names left the user guessing what it was for. We believe that subtle changes to the text and behaviour of these

pages will help considerably. After some adjustments, we plan to conduct usability testing again,

as well as get some opinions on our SMS alert message. Our next phase of testing will include

more individuals, with an older average age.