P7 Part I: Experience Evaluation Plan

Team **UX in Rx**

Project Description:

Our project aims to improve communication between nurses and patients in a hospital to enable nurses to interact with their patients as much as possible and provide excellent care. This product is a messaging app that allows for quick and straightforward messaging between patients and nurses. The key features are access to patient records for both patients and nurses, a message inbox, differentiation between inpatient and outpatient messages in a nurse's inbox, and multiple action options for nurses replying to inpatient messages. The nurses and patients will input their respective credentials to gain access to the app. The app has few pathways, and is meant to simplify the process of messaging in order to convey the most important information.

Purpose:

The purpose of this study is to test the usability of our paper prototype. In observing potential users interacting with our paper prototype, we hope to identify areas of weakness in our designs to further improve the user's experience. The findings gained from these usability tests will help ensure we make constructive changes in future iterations of the product.

Participant Profiles:

The intended users of our system are registered nurses. However, due to their busy schedules, we were unable to conduct our user testing interviews with them. Because of this, we aimed to interview participants who were majoring in a medical related major (i.e. Biology, Public Health, BioChemistry, etc.) in hopes that they would have a closer understanding of the nursing profession. The three rounds of user testing were conducted by all three group members in Odegaard Undergraduate Library.

Participant 1:

Our first participant is a junior at the University of Washington studying Statistics and Public Health. She believes she has a relatively intermediate level of experience with technology, claiming that she knows how to work it, but doesn't understand how most of it works. She is very familiar with

messaging applications, such as Facebook Messenger, Slack, and others, and uses them daily. As a Public Health major, she knows about the nursing profession, and is aware of nurses' responsibilities.

Participant 2:

Our second participant is a junior at the University of Washington studying Chemistry. He is relatively comfortable with technology, and uses messaging applications like iMessages, and Facebook messenger often. He is not very aware of the nursing profession, and has only been exposed to them through his doctor visits.

Participant 3:

Our third participant is a junior at the University of Washington studying Biology. He feels very comfortable with technology, as he uses both his laptop and phone regularly. He is also very familiar with messaging applications, and uses WhatsApp, Facebook Messenger, iMessages, and Viber. He is aware that the nursing profession is similar to one of a doctor and that it is in the medical field, but he is not familiar with the details of the profession.

Method:

1. **Pre-Observation:** Asked about demographics of participant
    a. What is your year and major?
        - This question provides some basic background about the participant.
    b. What is your level of experience with technology?
        - This questions provides information on how comfortable the participant is with using technology, particularly smart phones, which is important since our product is a smart phone application.
    c. How familiar are you with messaging applications? If familiar, which applications do you use?
        - This question provides background on the participant's experience and familiarity with messaging applications, and the types of applications he/she uses.
    d. How familiar are you with the nursing profession?
        - This question provides information on the participant's understanding and awareness of the nursing profession, and responsibilities and roles they have.

2. **Task Completion:** Participants will complete the following tasks, ideally without asking questions or requiring assistance.

   - **Task 1:** Patient will check in for their appointment using the messaging app, and will send a message related to their appointment to a nurse.
     In this task, a patient will be reminded of their appointment by the messaging app, and will have the option of checking into their appointment through the app.
       - **Gauge for Completion:** *Successfully check-in for appointment with in-patient code, and get to confirmation page.*

   - **Task 2:** Nurse will receive a message from a patient, and choose to respond by visiting the patient in-person.
     In this task, nurses can view their inbox sorted between in-patients and out-patients. For in-patients, nurses will view the message and respond by stating their estimated time of arrival (ETA) to the patient. The app will display where the patient is located in the building.
       - **Gauge for Completion:** *Respond to patient with ETA (15 minutes) of when they will arrive to visit to answer the patient's questions.*

   - **Task 3:** Nurse will access a patient's medical records in order to find patient-specific information needed to respond to a question.
     In this task, the nurses should be able to quickly and easily access medical records for their patients from the messages section. The nurse should be able to open a message from a patient, and be able to open all the medical records for that particular patient, to enable him/her to better respond to the patient.
       - **Gauge for Completion:** *Successfully access patient records and respond to patient.*

3. **Post-Observation:** Asked questions about experience
   a. What were your impressions about the system? What did you like and dislike?
      - This question provided us with the participant's overall likes and dislikes about the prototype, giving us clues as to what works well with the participants and what doesn't work as well.
   b. What was your experience like while using the system? Did you feel comfortable and relaxed, confused, pressured?
      - This question provided us with information about how intuitive our system is, and the emotions of the participant while using the system.
   c. Do you have any suggestions that you think might improve our system?
      - This question provided us with new ideas from the perspective of the participant of what we can do to improve our system so that the participant has a better experience and impression of the system.

P7 Part II: Simple Evaluation

Finding 1: Confusion for the files icon

At the bottom of each screen in our system, we included a menu bar that contains three buttons, the first is an envelope representing messages, the second is a document with a corner folded down representing files, and the third is a box displaying the date representing the calendar. While brainstorming icons, we had trouble coming up with an icon that was easily identifiable as one that would represent files and documents. This confusion came up with all three participants during our user testing. While thinking out loud during the testing, each participant mentioned confusion over what the middle icon was for. Two participants believed it would open a new tab or new file if it was clicked, and the third was unsure.

- **Suggestion:** Change the files icon to show an open manila folder with papers inside

  After the confusion from the first participant, we drew various other options as to what we could change the icon to be and asked the participants which one they thought best represented documents and files. All three of the participants responded saying that an open manila folder with papers inside was the best icon, so we have decided to switch from our previous icon to the manila folder.

Finding 2: Inconsistency with navigation

In Task 3, we used two pop-ups as part of our system's functionality. For these pop-ups, participants were only given the choice of the close fd("X") button to close the pop-up in order to continue with the task at hand, while previous screens had a back button ("<") displayed. All three participants were confused at first, since they were expecting a back button in the upper left corner, and when they could not find one, they felt stuck.

- **Suggestion:** Using color to differentiate pop-ups

  Throughout our paper prototypes, we had three ways indicating pop-ups are present. One prototype used notification banners, the other showcased pop-ups as 3D blocks and lastly showcasing a widget to indicate pop ups. Because of this, pop-ups were not differentiable from the rest of the screens. Using one format for pop-ups will create consistency and help differentiate pop-ups. Our participants suggested using a different color or shade for the

pop-up screens so that it would be clear that the pop-ups were different, or making the close button bigger or "pop" more. They also suggested using the back button instead of the close button, so that the pop-ups were consistent with the other screens.

Finding 3: Confusion over function of *Visit* button

One of the main goals of our system was to allow nurses the opportunity to connect with and spend more time with their patients. We incorporated this goal into our system with a *Visit* button, which allowed nurses to respond to a patient's question by clicking the *Visit* button, and inputting an ETA, which would notify the patient that the nurse would answer their question in person within the inputted time. In Task 2, participants were asked to use this button, and although one of our participants clearly understood its functionality, the other two found the button confusing, and were unsure of what it meant. One believed that it gave details about the patient's visit, such as why the patient was in the hospital, when they are admitted, etc. while the other did not know what it meant.

- **Suggestion:** Incorporate the functionality of the *Visit* button in the text input bar

  Due to the confusion of having two buttons to choose between when responding to an in-patient, we have decided to incorporate the *Visit* button into the text input bar. What this entails is that the user would only see one button when responding to a patient: the text input bar. When this bar is pressed, the user would see a keyboard to allow them to type, and a bar with buttons above the keyboard displaying "*Visit in: 5 min 10 min 15 min ...*" This would give the user a clear place to click when the message is opened, and then they would be able to see that they can easily click a button to send a visit message rather than type it out.

Finding 4: Confusion of the preview text

On the inbox homescreen there are three components to each message. The first is their name, second is the patient's profile image or abbreviation of their name, and lastly is the preview text from the message. During our testing, participants had several opinions of what the preview text was, causing some confusion. One participant thought it was information about the patient and another thought it was quick reply text options.

- **Suggestion:** Improve on the organizational structure

  Due to the misinterpretation of the preview text, the use of hierarchy (size, shape, placement), rhythm (pattern, breaks), and axis (alignment) can greatly improve content organization.