

# DREU Final Report: An Interface to Improve Oncologist-Patient Communication

## **Introduction**

We are developing a tool to improve oncologist-patient communication. The aim of our research is to explore ways provide personalized information to cancer patients in a clear, easy-to-comprehend manner.

## **Background**

The goal of our research is to improve oncologist-patient communication in discussions and to help provide more personalized information to patients. Patients diagnosed with cancer have vital communication needs that must be addressed by their physicians. Prior research has shown that effective communication contributes to positive patient outcomes [1]. After diagnosis, a cancer patient is scheduled to meet with their oncologist to discuss five topics: specific diagnosis, prognosis, likelihood of metastasis, treatment options, and likely side effects. However, in interviews conducted by researchers after the discussions, patients and physicians often disagree on what was effectively communicated during the meeting [2]. This indicates that the communication in these meetings does not always meet the patient's needs. Also, while doctors provide their patients with documentation to take home, it is typically in the form of generic pamphlets, which may not be very relevant as a personalized takeaway.

## **Approach**

We are exploring novel interfaces to achieve our research goals. One possibility that we have been looking into is a shared interface on a touch-screen mobile device that would supplement the face-to-face discussion [3]. This interface could be in the form of a personalized dynamic checklist. A prototype of this format implemented using the Android platform is shown in Figure 1. A patient would be able to check off each topic as it was covered, ensuring that both the oncologist and patient leave the discussion without any ambiguity about what was discussed. After the meeting, the oncologist would be able to

print or email the personalized information to the patient. In a separate “doctor view”, shown in Figure 2, the application would allow the physician to input information tailored to the patient before the meeting. The information entered would automatically appear on the checklist interface for use in the meeting. This “view” would also be able to automatically populate the checklist interface with information based on options chosen by the oncologist.

We are also considering augmenting the checklist interface with a larger display, either on a computer monitor or a projection system this display would work with the touch-screen interface to display images and information in a larger format for the doctor and patient to review together.

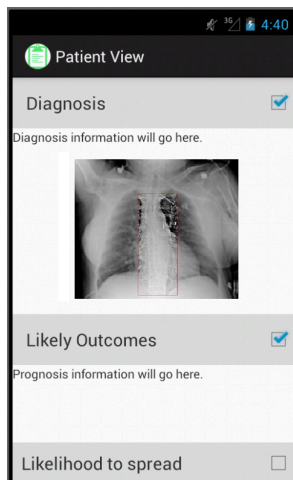


Figure 1: Patient View

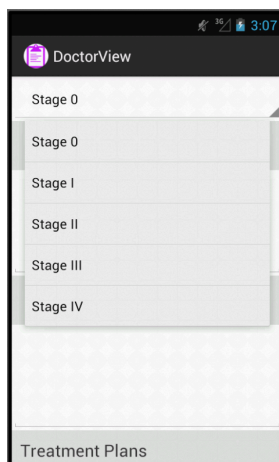


Figure 2: Doctor View

## Progress

To explore the feasibility of our ideas, we held interviews with two local oncologists. These interviews helped us to gauge the desirability of a shared interface, and also gave us some new ideas to explore further. In the interviews, one of the doctors thought that a having a tablet-based interview would be beneficial, while one thought that it would be unnecessary. Both doctors suggested that having an online repository for the patient's information would be of value, either in conjunction with or instead of an in-meeting interface. Another idea that came up was the possibility of using speech recognition software to record a transcript of the dialog in the discussion that the patient could view later on. This software could have the ability to pick out certain key words that the patient might not be familiar with, and could supply links for more information on them.

Moving forward, we will soon hold more design workshops with oncologists and patients to determine which interfaces and options would be most beneficial, and look into the ideas gleaned from these discussions.

## References

- [1] T.F. Hack, L.F. Degner, and P. a. Parker, "The communication goals and needs of cancer patients: a review." *Psycho-Oncology*, 14(10), Oct 2005.
- [2] S. Eggly et al."Patient, companion, and oncologist agreement regarding information discussed during triadic oncology clinical interactions," *Psycho-Oncology*, 2012.
- [2] Gonzales, M.J. and Riek, L.D. (2012). "A Shared Interface to Improve Oncologist-Patient Communication" 6th International Conference on Pervasive Computing Technologies for Healthcare.