

## Norman Design Fund - Project Report

Family member involvement has been shown to be key to the well-being and recovery of patients in an Intensive Care Unit (ICU), but they often find themselves overwhelmed and in an emotionally heightened state. ICU care teams, especially nurses, are typically considered to be in the best position to help and provide support to family members of patients. However, the heavy workload, lack of time, and personal interaction styles can make it difficult for them to be receptive to family member needs. To understand how current aids in the ICU are used and the challenges associated with them, we conducted 22 interviews with both family members and the care team. We also created prototypes of family-centered aids through a co-design session to reveal the opportunities that emerge for technology to facilitate family member support in the ICU without adding additional burdens on the care team.

We conducted a total of 22 semi-structured interviews with 18 family members (ages 28-73) and 4 care team members (ages 34-51) in the ICU of a large teaching hospital in San Diego, California. 16 of the family members were interviewed during their ICU stay and 2 family members were interviewed after the patient had been discharged. The 4 care-team members comprised of a nurse practitioner, a nurse manager, a charge nurse, and a primary/patient nurse. The interviews were conducted in the ICU and lasted 30-40 minutes each. Interviews with family members included a discussion of their ICU experience, the current aids they use, and the challenges faced. Interviews with the care team members focused on their work-flow, how they support family members, and the barriers encountered. We also conducted a co-design session with two other family members during their ICU stay and the previously interviewed care team members. The co-design session consisted of an open discussion of the challenges encountered while using current aids, and the characteristics of these aids that family members deemed important. We then used paper-prototyping to envision better systems that reflected these characteristics.

Family members play an integral role in the care and recovery of their loved one, however, unaddressed needs and a lack of aids prevent their full engagement, especially in the Intensive Care Unit. In this project, we investigated how current aids support families in the ICU and explored potential solutions that would better address their day-to-day needs. Our prototypes provided an initial direction for how technology could better engage family members throughout their stay in the ICU. We plan on continuing to design and deploy more comprehensive family-centered aids and evaluate their performance in the ICU.