Background & Problem

- Families of traumatic brain injury (TBI) patients ranked the need for honest, clear communication, knowledge of the patient condition, treatment, prognosis and general medical information as the most important factors in patients treated in the ICU.

- 1/3rd of caregivers are affected by clinically significant anxiety, depression and post traumatic stress disorder (PTSD)

- Ineffective communication between family members and health care providers has been identified as a major source of stress for both families and nursing staff and there has been little innovation in this area.

- Nursing concerns about providing care to patients with moderate to severe TBI include:
  - Providing adequate education
  - Providing support
  - Promoting recovery

- Nursing staff report barriers to providing adequate care include:
  - lack of knowledge
  - limited staffing
  - inadequate resources

Proposal

- With the recent advent of augmented reality/virtual reality (AR/VR) in the entertainment industry, we proposed the development of an AR/VR education tool to enhance the ability of family members of patients experiencing severe TBI to help process and deal with the event and to help optimize their ability to participate in the care and recovery of their loved one.

- We also hypothesize that an AR/VR education tool could help decrease time challenges imposed on care providers as they engage in the actual care of the patient, especially as family members of the same patient asynchronously enter the system caring for their loved one.

AR/VR Development

- We started with rigorous engagement of key stakeholders such as physicians, nurses, social workers, respiratory therapists, and previous TBI patients and their families to better understand educational needs

- Integrated an experienced AR/VR business entity, Elm Park Labs

- Development of interactive content and application prototyping

- Roll out of a usable AR/VR app to trial in real time with families of patients with severe TBI

Benefits

- Education
- Orientation to unit and medical equipment
- Treatment modalities
- Appropriate for all ages and skill set

Summary

- Goal is to commercialize the AR/VR application and to make available to a broader market

- Decreasing family member stress and burden

- Decrease time constraints on nursing staff so that more time can be focused on patient care and management