QBurst

TRACKING Medical Conditions to

IMPROVE PATIENT OUTCOMES

Among various advancements in healthcare is the increasing use of mobile technology to improve the quality and effectiveness of healthcare services. In order to support an exploratory study that analyzes the efficacy of medical intervention in the event of a head injury, a mobile solution that records physical and cognitive functions was envisioned. The solution tracks patient recovery and provides valuable insights to healthcare professionals involved in research to alleviate and manage symptoms associated with conditions such as concussion or edema.

Client

The client is one of the premier medical research institutes based in New York dedicated to patient care, education, and research.

Business Requirement

- ◆ Accurately track, monitor, collect, and record results of physical and cognitive tests taken by patients
- ◆ Formulate effective treatment plans for patients with head injuries

QBurst Solution: Small Steps to Achieve Bigger Goals

Participants are enrolled into the study after confirming medical condition, age, diagnosis, and various other parameters. The application tracks patient-reported symptoms during the first month of recovery. Daily reporting includes a survey, a walking test, and a concentration task. The app collects location data to determine the distance traveled during the walking task each day. The solution comprises a mobile application and an Apple Watch to track symptoms such as balance issues, blurred vision, and drowsiness.

Apple Watch is used to measure heart rate. The app employs Apple ResearchKit to gather data, accessing HealthKit and Location Services data in order to track progress. The app also integrates with Sage Bionetworks' Bridge Service.
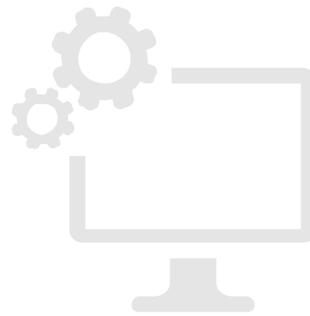
Key Features

- Screening questionnaire
- Daily/weekly surveys to record symptoms
- Walking test with prompts to help maintain speed
- Concentration tests
- Option to share dashboard of results with physician
- Integration with Apple Watch to measure heart rate
- Reminders for activities and surveys
- Graphical representation of results of activities
- App usage tracker

Technologies

- Swift
- Xcode iOS SDK
- Apple ResearchKit and HealthKit
- AppCore Framework
- MMWormHole
- Bridge SDK
- CryptoSwift

Business Benefits: Analyzing Patient Outcomes with Greater Accuracy

- Considerably simplified the process of patient enrollment/participation for research purposes.
- Remotely monitoring patients and reporting observations significantly reduced time and effort.
- Use of a mobile solution to monitor progress helped to engage larger groups of participants.
- Helped the medical team to analyze and predict patient outcomes with greater accuracy.
- Improved accuracy of data, which resulted in formulation of better treatment plans.
- Helped assess treatment protocols with greater understanding of the recovery phase.

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