IOT based Healthcare Solution for Releaving backpain

Client Profile:

A healthcare brand based in UK has developed a back movement sensor system to measure the bending of the spine during everyday situations. The collected data serves as a basis for analysis and consultation on lumbar motion monitoring and health.

Goal

The client required a multi-platform mobile application that can be used by both the patient as well as the health experts to track lumbar movements, sitting positions, identify errors in movement, postures and advice exercise or medication as per movements tracked by the sensor.

Challenges

- The client needed a shift from the manual system where the patient was required to submit movement data through a phone call to the Doctor or the Platforms Helpdesk. They needed a solution that could automate the back movement tracking.

- The solution also needed to be patient centric so that there are no lags in recording the Lumbar movement data.

- Patients had to travel to the facility to get any advice or solution for their health needs. The Covid19 pandemic further made these visits even more difficult with restrictions on physical contact.

- Being a capital-intensive and time-bound venture, the client wanted a hands-on approach with daily reporting.

eLuminous Solution

- We assembled a team of developers lead by an ACP certified team leader to follow agile delivery model and design a user-friendly dashboard that allowed coaches and doctors to manage their clients (patients) effortlesly.

- The application allowed patient to simply login with an SMS authentication, view the exercises for the selected modes and movements.

- Patient were able to communicate with the assigned coach by sending messages or email using the mobile app.

- Mobile App received data recorded by the sensor, and the recorded data is updated on app server. After specified time intervals, app will send the data via API and receive exercise data as per the recorded parameters via API Thus reducing the physical interaction between patients and coach/doctors.

- Patient can view the list of exercises / movements and can start performing them. Start, pause, stop functions which are in app send the exercise status to the app server, which helps coach/doctor to analyse the patient exercise performance.

A Valuable Change:

- Product development life cycle was reduced by 2 months with agile delivery methods.

- 74% of patients registered significant relief in their back pain.

- Product development life cycle was reduced by 2 months with agile approach.

- Physiotherapists & doctors were able to monitor back movements, patterns of pain and effectively diagnose earlier. This helped in effective overall treatment and reducing the period of ailment.

Vivaback
Medical app (iOS / Andriod)

Sensor Device

Patient Back-Movement Data

Patient Will Perform All excercises

Patient Excercise Data

Patient Will See All Recommendated Excercises (Video, Images, Audio)

Patient Device (iOS/Andriod)

Patient Mobile (iOS/Android)

Patient Back-Movement Data

AWS Server

Patient Back-Movement Data

Fitness Coaches Checks Patient's Movement Data, Make Analysis and Assign Excercises

(Vivaback WebApp)