

Smart Wheel Chair: A Design to Accommodate Vital Sign Monitoring

Authors : Stephanie Nihan, Jayson M. Fadrigalan, Pyay P. San, Steven M. Santos, Weihui Li

Abstract : People of all ages who use wheelchairs are left with the inconvenience of not having an easy way to take their vital signs. Typically, patients are required to visit the hospital in order to take the vital signs. VitalGO is a wheel chair system that equipped with medical devices to take vital signs and then transmit data to a mobile application for convenient, long term health monitoring. The vital signs include oxygen saturation, heart rate, and blood pressure, breathing rate and body temperature. Oxygen saturation and heart rate are monitored through pulse oximeter. Blood pressure is taken through a radar sensor. Breathing rate is derived through thoracic impedance while body temperature is measured through an infrared thermometer. The application receives data through bluetooth and stores in a database for review in a simple graphical interface. The application will have the ability to display this data over various time intervals such as a day, week, month, 3 months, 6 months and a year. The final system for the mobile app can also provide an interface for both the user and their physician(s) to record notes or keep record of daily symptoms that a patient might be having. The user's doctor will be granted access by the user to view the patient information for assistance with a more accurate diagnosis. Also, this wheelchair accessory conveniently includes a foldable table/desk as somewhere to place an electronic device that may be used to access the app. The foldable table will overall contribute to the wheelchair user's increased comfort and will give them somewhere to place food, a book, or any other form of entertainment that would normally be hard to juggle on their lap.

Keywords : wheel chair, vital sign, mobile application, telemedicine

Conference Title : ICBDEM 2017 : International Conference on Biomedical Device Engineering and Materials

Conference Location : Boston, United States

Conference Dates : April 24-25, 2017