Project

Title & pictures related to the project: Fun weight & and vital signs measurements for kids in hospital

Introduction: (Explain the framework of the project and the problem to be solved)
Children from 6 months to 6 years old can present issues related to the anthropometric and vital signs measurement. So, when they are in the hospital, especially at the moment of entering an invasive procedure such as a surgery, it is very important that parameters like weight, blood pressure, temperature, pulse oximetry, heart rate and others are correctly determined or measured. Children are usually afraid and they don't collaborate with nurses for these simple procedures. Children often cry and do not understand why they are naked and someone (intimidating stranger) applies medical devices to them: thermometer, blood pressure cuff, pulse oximeter sensor ... In these cases, children react with avoidance behaviours and manifestations of anxiety, which can lead, in turn, to changes in vital signs (especially blood pressure and heart rate).
There are 2 main problems to solve: a) Obtaining real and correct values of biologic and anthropometric parameters b) Decreasing the level of anxiety and bad experience, offering something fun and likely for the child.

Project Brief: (Describe the project specifying the main objective and its outcomes, design specifications, etc…)
The project should include the integration of all medical devices used to measure children parameters in a doctor’s office, mainly weight, and possibly also other parameters (blood pressure, heart rate, temperature), in a “toy-car” where the child can “enter” or jump inside. The scale to weight children should be for the patient in a sitting position, facilitating that subjects unable to remain standing independently also can use the “toy-car”. Other parameters can be showed on the dashboard of the car, simulating a playing experience, with lights and sounds, and perhaps with different “voices” which give positive reinforcement and messages. If possible, the results of the measures can be automatically transferred to the electronic medical records. If not, could be printed on a piece of paper.

Company

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Project team:

Number of students: 4

Students speciality:
- Business Management
- Mechanical engineering
- Electrical engineering
- Electronics engineering
- Chemical engineering
- Computer engineering.
- Telecommunications engineering.
- Design.

Medical devices used to measure body parameters