

Title of Project

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We write introduction stuff here

1 Introduction

Information is a vital resource, especially in the context of Healthcare. When a patient's health is at risk, their medical history becomes the most important piece of information in providing them with appropriate care.

At present, in Ontario, there exists no secure, lifetime record of your health history. When faced with a problem, healthcare providers are left without the big picture, and often fumble for generic solutions, instead of catering care to each individual.

One situation where this information gap is the most noticeable is when patients receive care from Emergency First Responders (EFRs). Today, EFRs respond to emergencies knowing little or nothing about the people in their care. This is unfortunate, considering how beneficial information is in improving patient outcomes.

The objective of this capstone is to therefore develop an information management system that stores health records for access by patients, and their healthcare providers. Specifically, the goal of the capstone is to develop software that can be used by Emergency First Responders to access patient health records while responding to a call. This will provide EFRs with information vital to providing patients with the best care possible. In addition to software, hardware will be developed that provides EFRs with a means to quickly identify patients and access their information on the system. This hardware will also include a real-time vitals tracker, which has the potential to track vitals (i.e. Heart Rate) deemed useful by EFRs.

2 Resources

The following is a list of resources that have been used in the research process thus far.

- Currently we are in communication with 2 Ontario Paramedics who have provided us insight on the various issues and difficulties that they run into on a daily basis.
- We are also in communication with Dr. Aleksandar Jeremic and Dr. Hubert deBruin to gather their insight on this project.
- We have access to a Bioinstrumentation laboratory at McMaster University which will allow us to test our hardware components both on patients and patient simulators to ensure everything is working properly and safely.

3 Description

3.1 Motivation

Cam

3.2 Background

All of us

3.3 Project details milestone and completion

Glenne

4 Scheduling

Glenne

5 Assumptions and Risks

5.1 Assumptions

As of present, it is assumed that there is no centralized health record that contains the cumulative health information of Ontario residents. The information required for this system is not available today, and we are developing software based on the assumption, that in the future, this information will need to be collected.

For this capstone, the software being built is focused on how health information is to be handled, and the best way to present this information to the user, specifically EFRs. As a component of the capstone, we will brainstorm the best methods by which to collect and aggregate health records, however the means by which to collect these records will not be built.

5.2 Risks

Software development is inherently difficult to estimate and schedule. While we have done our best to estimate the time required to reach our goals, we do not have experience with large-scale software projects. Without experience, we do not truly know the length of time each component of the system will take to develop, and there is a risk we may not meet our initial development goals. To mitigate this risk, we will be having weekly meetings to gauge our progress, allowing us to modify our goals as required. Additionally, we have been conservative in our deliverable estimates, giving us ample opportunity to add, or remove features to the software depending on the availability of time.

6 Deliverables

6.1 Bronze

The bronze category is the bare minimum of what is to be accomplished for the final product. The following are Bronze Level goals.

- Working User Interface
 - The user interface for this application is the most important aspect as this is what the Paramedic or Emergency personnel will be looking at when inputting and accessing data. At this level, the user interface must have the following functionality. Firstly
 - Firstly, the application must be compatible with iOS and Android devices. There is currently no standardization for the tools that Paramedics use and having an app that can be used on any platform makes it more readily useable with current technology.
 - Secondly, this application must be able to access a database of health information assumed to exist and display said data on the screen of the user's device. This will be done in a layout similar to the software
- Another entry in the list

Taylor

7 Conclusion

Throughout the development process, both the software and hardware will be tested to ensure it meets design requirements. In terms of software, each module will be verified using test cases that have known outcomes to ensure functionality. The hardware will be tested in a similar way, using test cases to verify the hardware meets specification.

An example of real-world testing that can be used is in verifying the pulse-sensing capabilities. The hardware can be tested on a group member with a

known pulse (through traditional human pulse reading), to ensure that the device senses pulses correctly.

8 Summary