

# Medifo

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## **1 Team Info:**

Team Name: Spectre Team

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Project Name: Medifo

## **2 World Problem:**

It is crucial for EMT's to properly diagnose patients that are severely injured. Providing the wrong medicine to someone who may be allergic to that medicine could do more harm than good. When EMT's arrive to a scene, they dont have much information on the person being treated.

## **3 Evidence:**

I interviewed a friend[4] of mine that is currently undergoing EMT training. During his practice he has had to properly diagnose patients. They base how to diagnose patients by taking their blood pressure and series of other tests which are effective but may take some time. So it is up to them to run diagnostics quickly on a patient before they can properly provide medicine. To expediate diagnosing a patient what if the EMT can access medical information about the patient to get the patient the medicine they need fast.

## **4 Software Applications:**

The software approach towards solving this problem would be to supply EMT's with fastly accessible information about the patient. This would help increase the chance of a persons survival that is in critical condition. With knowledge about a persons medical history, the EMT can correctly diagnose an injured person. One way this can be accomplished is by a phone app that the EMT can access. Another idea is to make an wearable embedded device that would be scannable. The scannable item could be a medical card that has a chip in it similar to a regular credit card. Then from the scan, the scanner would communicate with a database of registered peoples medical history.

## **5 Other Approaches:**

In my research I have found other similar applications. One of which is known as iBlueButton[1]. This app keeps medical information handy for the user to provide to a doctor. Many other medical apps are similar in that aspect. The one thing that's different about my app is that the user can provide medical information even if they can't physically show the information themselves. What I mean by this is what if a user is in a situation that they are unconscious. Unable to willingly show the doctor any information about themselves. The doctor must do what they can to properly assist a person. Medifo, would provide medical information in an instant to a scan. This allows medical officers in emergency situations to get the information they need fast in order to correctly diagnose their patients. Hopefully it can save lives.

## **6 Limitations:**

Some limitations to a application like this would be if people actually used it. This couldn't actually be used if only five or even a hundred people use this application. This would have to be an application that becomes standardized in the medical field in order for it to be useful.

## **7 Resources:**

IDE: Android Studio

Language: JAVA

Future Resources:

Microchip  
RF Scanner Large  
Scale Database

## **8 Challenges:**

One main challenge to an application like this would be security. Users must be able to trust that their information will be kept confidential and secure. An application that is scannable means that potentially malicious users can randomly scan anyone stealing information. Other challenges would include linking multiple devices to the same database, so the correct information is provided.

## **9 Component Architecture:**

Initially the project was aimed for just an app that contains the users medical history. But how would EMT's be able to access the information, phone number? If they were facebook friends? That wouldn't be efficient nor effective. So the application must be scannable.

The interface will be organized into categories such as allergies, vaccinations, recent checkups, etc. The goal of this application is simplicity. It is crucial that the user interface is clear and easy to read. As well as easy to update any medical information.

A future goal would be to design a scannable medical card that the user can keep in their wallet. They can update their information any time via phone app. If a user is in serious condition, an EMT can scan the card and pull medical information from a database.

## 10 References:

- [1] <https://www.komando.com/tips/344610/3-apps-to-track-your-medical-history/all>
- [2] <http://www.jmlr.org/papers/volume18/14-249/14-249.pdf>
- [3] <https://www.computer.org/cms/Computer.org/transactions/feature/tpami/extended.pdf>
- [4] [4] *Diego Vaca EMT in training.*