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## VIKAS O'REILLY-SHAH

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[HTTPS://WWW.LINKEDIN.COM/IN/VIKAS-O-R  
ILLY-SHAH-489BAA116/](https://www.linkedin.com/in/vikas-o-rilly-shah-489bba116/)

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### Required Skills:

C#/Xamarin (the codebase is in the cross-platform Xamarin framework), User Interface and Experience, Healthcare/Medicine, HIPAA, Basic Database/SQL.

### Preferred Team

#### Communications:

Very responsive by email and would be happy to meet with teams every 2-3 weeks, more as necessary, to explain the project in further details and goals for further development

#### Data Sources:

Source code from last year's team and scope documents are available. <http://bit.ly/anesonfhir> for video of final state of project from last year, including comments on areas needing further development.

#### Other Items:

Project has timezone flexibility. Mentors and students will determine a good time for virtual meeting

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## ANESTHESIOLOGIST

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Anesthesiologist is a free Android app designed for anesthesia healthcare professionals providing age and weight based guidelines for airway equipment, physiological reference data, and drug dosing. It is installed on ~100,000 devices globally.

Background: Anesthesiologist was written in the Java programming language using the Eclipse IDE and Android SDK. It was released publicly in the Google Play App Store in 2011. The app was refined on the basis of design considerations and user feedback over the next several years. Released in 2011, it is installed on approximately 100,000 devices globally.

In 2015, the Survalytics platform was designed, written and integrated into the app. This module has been described in detail in a published journal article. Briefly, the platform allows for cloud-based delivery of survey questions and cloud storage of both survey responses and app analytics, using the Amazon Web Services DynamoDB NoSQL cloud database service.

The study of Anesthesiologist with the Survalytics package installed was launched in December 2015. From then until May 2017, 80,000 users updated the app to the study version; 48,000 subjects consented to enrollment. Users are from 206 countries and include all levels of healthcare providers. Several papers have been written on the basis of data from this study.

Survalytics been converted into Xamarin C#, using Visual Studio for development. Xamarin is (<https://www.xamarin.com/>) as a platform built on .NET that allows for cross platform development of Android, iOS and Windows apps using native UI elements and very limited platform specific code.

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## PROJECT OBJECTIVES

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Continue work on FHIR-mediated integration with the electronic medical record in a number of ways, including pre-population of patient specific information such as age, height/weight/BMI, estimated creatinine clearance, serum potassium and other anesthesiologically relevant information. This data will then be used to provide patient-specific alerts about specific information presented in the app. Intraoperative provider alerts for new information (e.g. lab results) would also be helpful. This project was started by a previous CS6440 team and the new team will be responsible for continuing development on this project.

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**Intellectual Property: Students will own the IP from this project.**

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## SUCCESSFUL PROJECT

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An application that can create, send/receive, and ingest electronic Long Term Services and Supports (eLTSS) Service Plans using available FHIR resources.

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