**EXECUTIVE SUMMARY**

The Electronic Pre-Operative Anesthetic Plan (EPAP) is a proposed native mobile application prototype for the Android and iOS platforms. This application is designed to increase efficiencies between anesthesia healthcare professionals, technicians and pharmacists in an operating room (OR) setting.

The EPAP application enables anesthesia professionals to create and communicate an anesthetic plan consisting of limited relevant patient data, operation procedural details, medication, and equipment. This plan will enable credentialed anesthesiologists to review the plan, designated pharmacists to fill requested medications earlier, and designated technicians to prepare the operating room with the necessary materials and equipment.

The system will produce benefits including reductions of procedure delays due to unavailable medications or materials, reduction of medication and material waste, and increased efficiency in the provisioning of high-demand equipment.

The core team progressed through the first three phases of the project, including initiation, planning, and design during the first semester. With the guidance of the project sponsors, the team created a thorough list of requirements for the mobile application, concisely summarized above. Subsequently, the project charter collected these requirements and outlined the vision, project scope, assumptions, risks, and management plans. The team defined the project plan, use cases, and the proposed technology stack for development during the planning phase. Prototypes and a thorough data model with relevant information and connections were made during the design phase.

The team utilized the time between semesters to review a self-designed curriculum intended to acquaint the members with the technologies and programming languages to be used in the coding phase, including JavaScript and React Native.

Implementation began at the beginning of the second semester, which involved setting up application development through Github and Atom. Development itself was organized into eight phases, which each focused on different core functionality of the app. Back-end development was handled through Kumulos, a service which contained the database and facilitated the relevant API calls. Testing was also conducted on the finished application and documentation was also created. Full handover is expected to occur at the end of the semester, in May 2018.

**PROJECT OVERVIEW**

The Electronic Pre-Operative Anesthetic Plan (EPAP) is a native mobile application prototype for the Android and iOS platforms. This application is designed to increase efficiencies between anesthesia healthcare professionals, technicians and pharmacists in an operating room (OR) setting.

The EPAP application enables anesthesia professionals to create and communicate an anesthetic plan consisting of limited relevant patient data, operation procedural details, medication, and equipment. This plan enables credentialed anesthesiologists to review the plan, designated pharmacists to fill requested medications earlier, and designated technicians to prepare the operating room with the necessary materials and equipment.

The system creates benefits including reductions of procedure delays due to unavailable medications or materials, reduction of medication and material waste, and increased efficiency in the provisioning of high-demand equipment.

The team largely communicated through Basecamp, a project management tool containing relevant documents, schedules and meeting appointments, checklists, and chat and collaboration functionality.

A functional prototype was created using a service called Mockingbot and included the basic screens which were expected to be in the final application. Kumulos, a mobile backend as a service (MBaaS) utilized by the project, had two-fold purpose of serving as a database and handling API calls.

**PROJECT STAKEHOLDERS**

Project Team Members

* Ashley Reese, Project Manager & Lead Developer
* Ben Pitts, Front End Developer & Test Analyst
* Daniel Crittenden, Assistant Project Manager & Back-end Developer
* John Peeler, Business Analyst & Full-Stack Developer
* Justin Ucol, Full-Stack Developer & Database Administrator

Sponsors

* Dr. Aalap Shah, MD, Subject Matter Expert, Cedars-Sinai Hospital
* Dr. Vikas O’Reilly-Shah, MD, PhD, Technical Liaison & Subject Matter Expert, Emory University

Project Advisors

* Dr. Mark Huber, PhD, Terry College of Business, University of Georgia
* Dr. Nikhil Srinivasan, PhD, Terry College of Business, University of Georgia

**PROJECT SCOPE STATEMENT**

The following deliverables are considered to be within the scope of the project:

* The project team will create a prototype Electronic Pre-Operative Anesthetic Plan (EPAP) native mobile application that is able to run on iOS and Android platforms and that meets the requirements specified in this document.
* The application will pass user testing by the project stakeholders identified in this document.
* Where reasonable, the prototype application will be designed with consideration for:
  + Health Insurance Portability and Accountability Act of 1996 (HIPAA) compliance
  + Fast Healthcare Interoperability Resources (FHIR) compatibility
* The team will create user manuals, application documentation, and thorough code comments to be delivered to
* the project sponsor upon conclusion of the project.
* Basic user training will be provided to project sponsors.
* A transition plan will be created for the purposes of turning over the application and underlying codebase to the project sponsors upon conclusion of the project.

Unless specified, all other items are considered to be outside of the project scope, including:

* The project deployment into a production environment.
* The ongoing maintenance, development, and updates to the application.
* Full integration of the application with electronic health records (EHR).
* Assurance that the application is HIPAA-compliant or that the application meets any other medical-related government regulations.
  + Note: per the above “in-scope” statement, the team will make all reasonable efforts to build a strong foundation for future HIPAA compliance. However, the project team is unable to provide assurances that the prototype will meet HIPAA or other medical-related regulations.
* A web-based version of the application.
* Functionality that provides calculations for weight-based dosing.