
JANICE NEWSOME & ZACHARY BERCU

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Required Skills:

FHIR, Cerner, Android/iOS, Web Development, Responsive Web Design, Project Management, Communications

Preferred Team Communications:

Weekly or as needed

Data Sources:

TBD.

Other Items:

Familiarity with data retrieval from the radiology scheduling system (Cerner) adhering to strict requirements for encryption and access.

Ability to create a flexible rules-based solution.

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

ROOM UTILIZATION OPTIMIZATION

Surgical specialties, including our field (Interventional Radiology; IR), are based on complex workflow. A solution for one of the most complex workflows (IR) could work easily for other fields. Patients include: outpatients, inpatients, emergencies from the Emergency Room, Intensive Care Unit, and wards. Patient workflow involves a Pre- and Post-Procedure Care Area (PPCA) and the Post-Anesthesia Care Unit (PACU). Rooms utilized include three angiosuites, a Computed Tomography (CT) suite, and a spare area in the PPCA for simple non-imaging guided or ultrasound (US) procedures. The three angiosuites also have different capabilities, with two including the ability to perform CT-like imaging during a procedure, one being optimized for transradial access, and one being optimized for the presence of an anesthesia team (if IR-administered sedation is not safe). Staffing is also an issue. Is an anesthesia team needed? How many procedural nurses are available? How many doctors or technologists are available?

PROJECT OBJECTIVES

To create an algorithm and user interface to recommend certain procedures to be scheduled at certain times in a certain order.

SUCCESSFUL PROJECT

The solution would integrate a rules-based system (procedure X should always be done after procedure Y, avoid putting procedure Y after 10 am, procedure Z should always be in room 2, procedure Z always requires Doctor Y to be on schedule given regulatory requirements, etc.) to assess resources and needs to recommend an optimized schedule. Students would need access to data on what procedures are performed, how long they last, and potential causes of delays. Interfaces could be web-based or mobile.

Additional Information: The mentors are interventional radiologists who perform clinical duties at Emory University Hospital Midtown. The division is busy with approximately 10-20 procedures daily. The attendings have significant experience working with Georgia Tech

Intellectual Property: TBD.

students and teams for clinical needs driven innovation and are committed to education.
