
ALEX MACDONALD

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Required Skills:

Web Development
Android and/or iOS development

Preferred Team Communications:

Conference Call, to be discussed

Data Sources:

To be discussed.

Other Items:

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

Team Info:

Needs a Developer, Project Manager and QA. Allows one team of 4-6 members.

HEREDITARY CANCER PATIENT MANAGER

The field of cancer genetics continues to expand with the recognition of almost 100 known genes when affected can cause hereditary cancer syndrome. Often patients with these conditions are at risk to develop multiple cancers during their lifetime.

The goal of treatment in these individuals is early recognition and treatment to prevent long-term morbidity and mortality.

For example, Von Hippel-Lindau is a disease that has been recognized for a century. The incidence is 1-35,000 individuals, making it one of the more common hereditary cancer syndromes. Patients are at risk of developing tumors in the central nervous system, adrenal gland, pancreas, kidneys, eyes, and reproductive organs. The disease penetrance of this condition is incredibly high with nearly all affected individuals showing signs of disease during their lifetime. The frequency and onset of these disease manifestations varies by organ and all patients are now followed with strict surveillance guidelines. In the past survival past the age of 50 was rare however with newer management strategies patients can live a healthy and productive life under close medical care. Coordination of care can be challenging as many patients have a half dozen physicians and the burden of scheduling which organ needs which screening modality can be confusing. When visits or screening are missed, unnecessary problems can occur ranging from loss of vision, loss of hearing, to cancer dissemination and ultimate death.

To improve patient care coordination and ensure adherence to guidelines, there needs to be a simple interface for both patients and their providers. Such care portal would allow patients to keep track of the physician they see for that particular problem, the last time they had screening, and the next suggested time frame for evaluation. Any linkage to the EMR would be useful to allow their providers to monitor other physicians involved with the care and avoid duplication of efforts to monitor the same site. Finally, a linkage to calendars to send our reminders would be useful to ensure that no screening is delayed to hopefully prevent catastrophic complications.

PROJECT OBJECTIVES

Build a web/mobile tool that uses a FHIR Server (PCP's own or publicly available like HealthVault) to perform the following functions:

1. Capture and maintenance of a treatment regime per condition
2. Capture and maintenance of a patient's profile
 - specific condition being managed
 - Providers
3. Provide a web/mobile dashboard listing all recommended tests/checkups and timing, as well as matching appointments.
4. A provider specific interface that lists all patients under management with upcoming events to facilitate making appointments
5. Integrate mobile calendar and scheduling to allow entry and tracking of appointments by the patient on their primary PIM.

Intellectual Property: None

SUCCESSFUL PROJECT

A proof of concept that demonstrates the technology and techniques that facilitate effective patient management while maintaining HIPAA privacy requirements.
