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**B.A, Computer Science and Economics** 

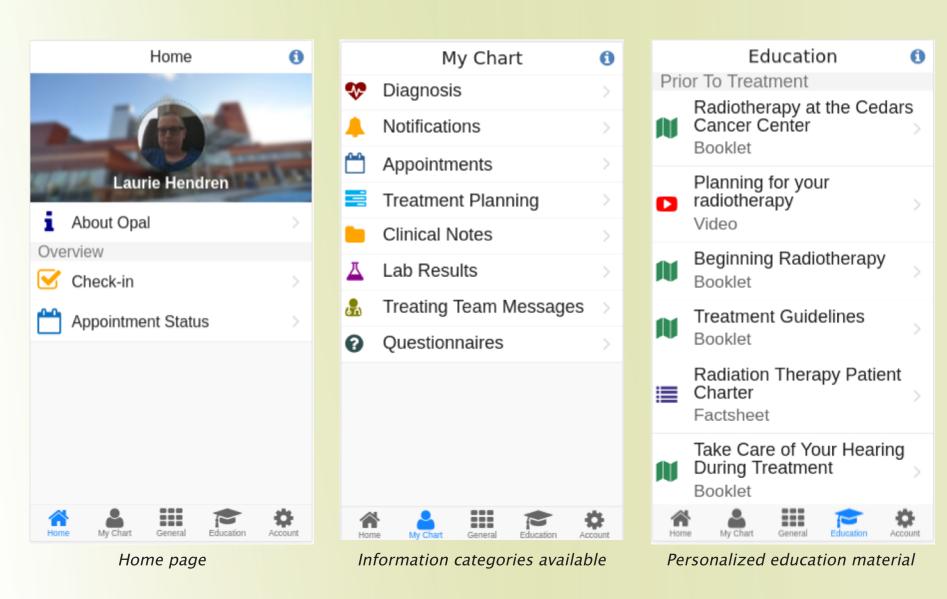
Supervised by Prof. Laurie Hendren (Computer Science) and Prof. John Kildea (Medical Physics)

#### **Abstract**

Through rapid development in information technology, health informatics has become an increasingly important aspect of the overall healthcare landscape as it provides an opportunity to deliver improved care for patients outside the hospital through the exchange of information. At the McGill University Health Centre (MUHC), doctors and computer scientists teamed together to develop the Oncology Portal and Application (OPAL) for radiation oncology patients which enables them to access and manage their personal health data on their mobile devices. The goal of this project was to extend this pre-existing application by developing a 'caregiver' functionality that enabled caregivers to connect with their patients, gain authorized access to their health data and remain up to speed with their patient's treatment process.

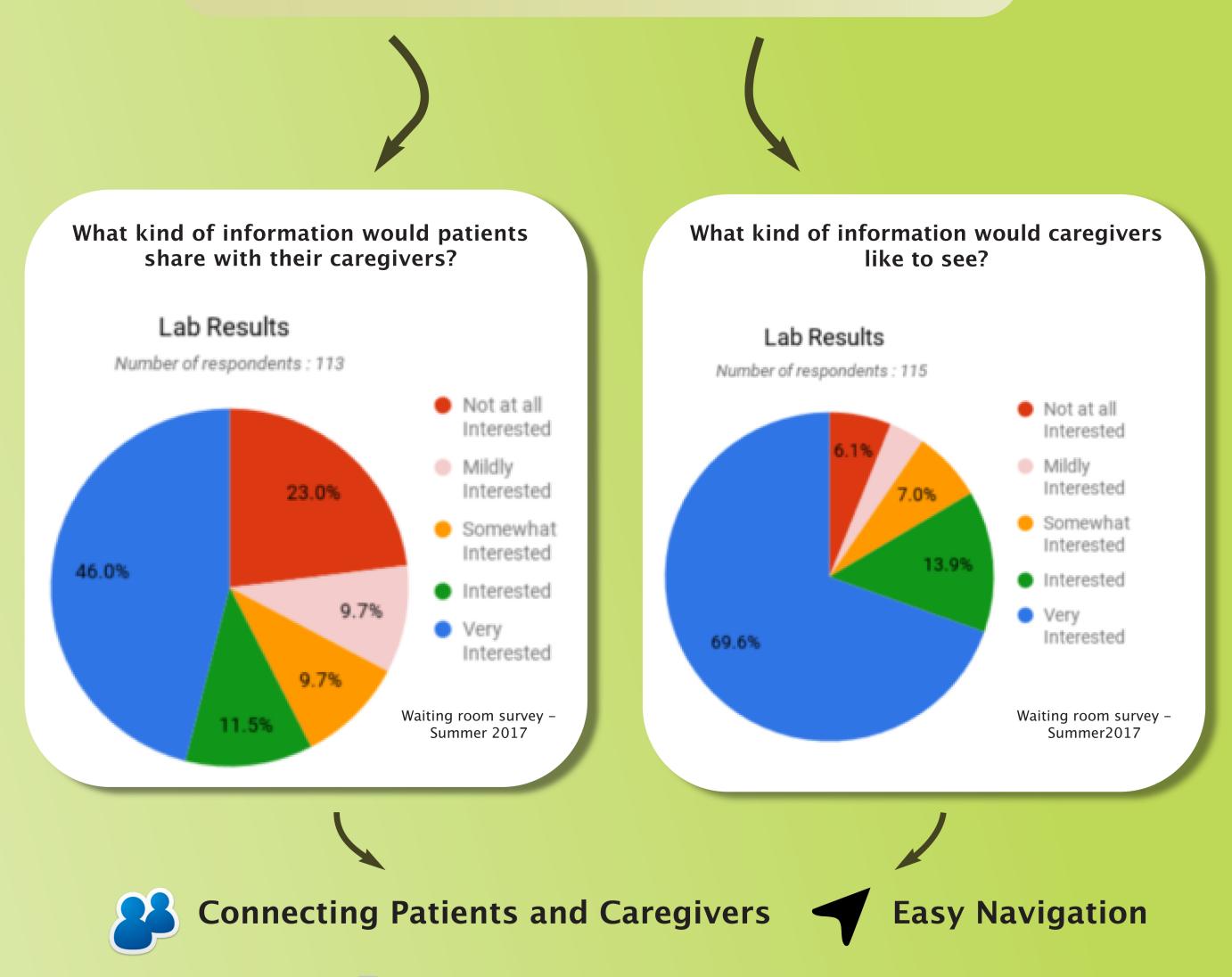
## Background

At the MUHC Cedars Cancer Center, patients receive treatment on a daily basis. These patients, however, can feel a sense of alienation from their treatment process as they do not have the means to access and understand their information at all times. This is due to the fact that hospitals find it difficult to cater to individual patient requirements as they do not possess a platform through which this can be efficiently done. The Oncology Portal and Application (OPAL), initiated by Prof. Laurie Hendren, Prof. John Kildea and Dr. Tarek Hijal, aimed to tackle this problem by developing a mobile application for radiation oncology patients undergoing treatment at the hospital. The Opal App bridges the information gap between patients and hospitals by providing a medium through which information can be securely communicated. The app enables patients to access material relating to their treatment such as lab results, check in for their appointments and obtain education material relevant to their diagnosis.



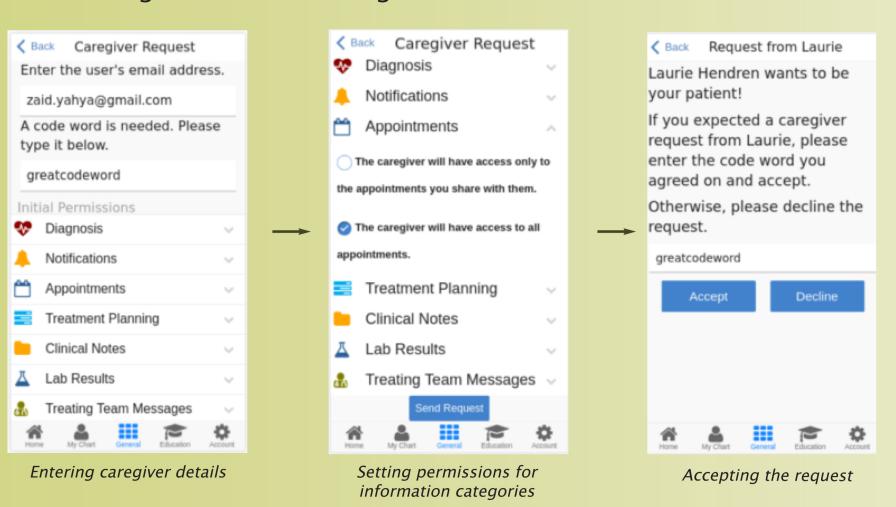
## **Motivation**

During the development of the Oncology Portal and Application (OPAL) for patients, it soon became apparent that a similar application for caregivers, who form a large section of people close to patients, would prove highly beneficial. This is due to the fact that presently caregivers remain somewhat excluded from the treatment process as they do not have the required information to keep tabs on their patient. However, as patients could now view their personal health data on the application, they could also allow registered caregivers to gain access to this information. It was believed that enabling this exchange of information would improve the patient-caregiver connection and ultimately enable caregivers to provide better care for their patients.



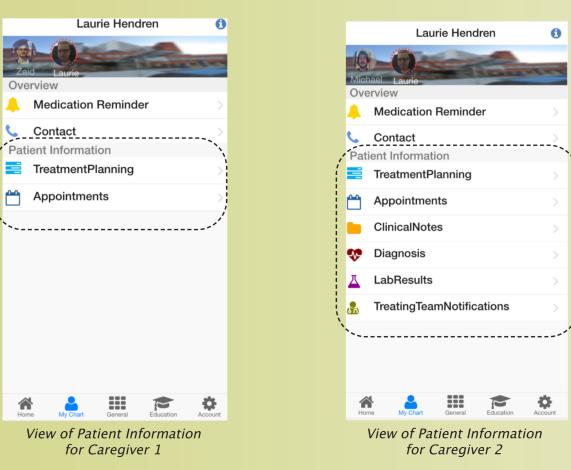
#### How it works

#### Connecting Patient and Caregiver



A caregiver request is sent from a patient to another user of the application. As part of the request, the patient determines what they want to share with the caregiver by setting 'permissions' on their information categories. The patient can choose to edit these permissions at any time through the app.

#### Navigation and Viewing Information



Once the request has been accepted, the patient appears on the banner at the top. This banner is used to navigate between the different 'profiles'. To view the patient's information, simply select the patient on the banner and all the relevant information is loaded up. It is important to notice that the caregiver can only view what the patient has allowed them to see.

### Acknowledgements

I would like to thank Professor Laurie Hendren and the Arts Internship Office for giving me the opportunity to work on this exciting project. I would like to acknowledge the contribution of my partner on this project, Michaël Medeiros Charbonneau under the guidance of our supervisor, Prof. John Kildea. Additionally, I would like to thank the Medical Physics Department at MUHC for providing us with the space and my fellow OPAL team members for a wonderful summer.





Ensure patients remain in control of their information