**2015 CAMRT Research Grant Program Final Report**

**Colleen Dickie**

**October 24, 2016**

**Sarcoma Mobile Learning Module CAMRT Grant Summary**

Progress report:

Soft tissue sarcomas (STS) are rare malignancies that account for approximately 1% of all adult cancer in North America. The rarity of these malignancies coupled with its diversity in presentation and subtypes pose a unique challenge in the standardization of evidence based management strategies and clinical guidelines. Moreover, institutions that specialize in the treatment of this rare disease are few, and scattered throughout the world, limiting effective and efficient collaboration.

Recognizing the advantages of using an electronic platform for education, we have developed a mobile application based module specifically geared towards disseminating evidence-based clinical radiation therapy guidelines for the management of STS. This module is meant to be an easily assessable resource for the training of new radiation therapy hires, refreshing current staff, or educating other medical professionals in related fields. The purpose of this study was to assess knowledge acquisition and usability of the beta release of this mobile application with a radiotherapy student population.

The beta version of the mobile learning app was released to 28 first year trainees in a Medical Radiation Sciences Program specializing in radiation therapy at a University level. At the time of participation, the students had not received sarcoma specific training as part of their curriculum. 8 of the 28 students did not complete the module and were excluded from the analysis.

The results of the beta version release demonstrated that all participants showed an improvement between pre-and post-module evaluations in their knowledge of soft tissue sarcoma. The mean and median scores for the pre-and post-module evaluations were 50.0% vs. 80.4%, and 50.8% vs. 80.8% respectively. This difference in means is shown to be statistically significant (p < 0.0001). The overall mean score for user experience was 4.0 out of 5 with “value to clinical knowledge” rated the highest (mean=4.27).

The first design iteration of this mobile learning application has been effective at improving the knowledge and self-assessed competency of trainees. It has received overwhelmingly positive user feedback. The next design iteration will incorporate the changes suggested by student feedback and will be released to radiation therapy staff within the radiation medicine department at our institution.

Summary of Expenditures:

|  |  |
| --- | --- |
| Invoice for mobile APP development | Cost (CAD) |
| INVOICE # 325 (Electronic version attached) | 4,294.00 |
| INVOICE # 400 (Electronic version attached) | 1,128.19 |
| **TOTAL:** | **5,422.19** |

**List of Research Dissemination Activities**

**Scholarly Presentations:**

### Abstracts:

2015 **Principal Author.** CI Dickie, C Hill. Online Learning Module For Evidence-Based Radiation Treatment Of Soft Tissue Sarcoma. RTi3 Annual Meeting. Workshop.

2015 **Senior Author.** L Nguyen, N Harnett, C Gillan, C Catton, C Dickie. Student eLearning imaging module initiative for soft tissue sarcoma radiotherapy treatment. RTi3 Annual Meeting.

Invited Lectures and Presentations:

2016 **Guest Lecturer**. “Sarcoma Program Overview”, Master of Health Science in Medical Radiation Sciences, Radiation Oncology, The University of Toronto, Toronto, Canada.

2016 **Invited Speaker.** ‘E-Learning initiatives and APP development’, IAEA Faculty for e-learning material for RTTs, Turin, Italy.

2016 **Invited Speaker.** ‘Sarcoma mobile and e-learning Development’, Radiation Medicine Program Education Rounds, The Princess Margaret Cancer Centre, The University of Toronto, Toronto, Canada

2015 **Guest Speaker.** Radiation Therapy Monthly Meeting, Radiation Medicine Program, The Princess Margaret Cancer Centre, The University of Toronto, Toronto, Canada

2014 **Invited Speaker.** CCO Provincial Community of Practice Committee Meeting. Sarcoma eLearning Module and discussion of the formation of a Sarcoma Community of Practice.

**Manuscript in Progress**. Intended submission to: Journal of Medical Imaging and Radiation Sciences