reliable communication and consistent goals. The second challenge was to provide a province-wide repository for sharing information and facilitating communication. In parallel with addressing these challenges, developmental work on streamlining and standardizing the RT process occurred.

**Results:** The initial SC was assembled in Q1 2015; and full assembly of the SC and CG was completed in Q1 2016. The SC meets virtually on a weekly basis. The SC meets every ~6 weeks. Every second SC meeting is face-to-face at alternating RT centre locations. A Sharepoint site, accessible both inside and outside the organizational network, provides a central repository for information. RT process developments to-date include: 1) standard use of ARIA RO V11 MR 5.2 Prescribed Treatment workspace; 2) the entry of Diagnosis and Staging in ARIA RO; 3) standard definitions for a number of variables in our provincial minimum dataset; and 4) generation of an End of Treatment summary in ARIA RO with future distribution to other systems.

**Conclusions:** The participation of all disciplines and facilities involved in the radiotherapy process is essential. Collaboration and communication between the four RT centres has greatly improved because of this project. North and South ARIA RO are now utilizing the same software versions and are converging in processes, carepaths, and definitions. The SC and CG provide a radiation oncology voice for communication with other provincial cancer control and healthcare initiatives.

**176 MEASURING UPTAKE OF THE CANADIAN PARTNERSHIP FOR QUALITY RADIOThERAPY (CPQR) PROGRAMmatic Key QUALITY INDICATORS (KQI) FOR CANADIAN RADIATION TREATMENT PROGRAMS (QRT) RECOMMENDING KEY QUALITY INDICATORS (KQI) OF HIGH QUALITY, SAFE RADIOTherapy (RT).** As it is unknown to what degree radiation oncology programs (ROP) use the guideline or meet these KQIs, we conducted a pan-Canadian survey of ROPs to ascertain current guideline use and perceived barriers to its use as a self-auditing quality improvement (QI) tool.

**Methods and Materials:** An invitation to participate was sent May 2015 to all Canadian ROPs through their local CPQR representatives requesting one response per ROP (completed by December 2015). Each ROP was asked about use of the QRT document comprised of 47 KQIs: 34 KQI scored as a (0) no or (1) yes. 13 KQI scored as a continuous variable of percentage compliance. To inquire about perceived barriers to unmet KQIs, personalized surveys were issued to each ROP based on results of their submitted self-audit of guideline KQIs.

**Results:** The majority of ROPs completed the requested guideline self-audit (n = 44/45, 98%), with most (75%, 33/44) indicating previous use of the QRT. ROPs in the Prairies and Quebec accounted for 82% of centres (9/11) reporting no previous QRT use. Across ROP, there was a range of compliance for the 34 KQI scorable as 0 (no) or 1 (yes) (median 31/34, range 19-34). Those binary KQIs identified as the most challenging included #22 (frequent policy and procedure review) with 50% compliant ROP (22/44) and #17 (RTQAC monitoring of technical quality control) with 66% compliant ROP (29/44). All 44 responding ROP reported compliance with the following KQI: #32 (RT prescription), #39 (on RT patient evaluation), #41 (emergency RT procedures/policies) and #42 (RT plan record maintenance). Of the KQIs scored as a continuous variable, compliance was highest (100% median, range 60-100%) for #10 (radiation oncologist certification) and lowest (median 50%, range 10-100%) for #33 (peer review pre-RT start). Two KQI appear particularly challenging, with only 59% (26/44) and 57% (25/44) of ROP responding regarding #44 (toxicity outcomes, median 30% ROP score, range 0-100%) and #45 (disease control/survival outcomes, median 25% ROP score, range 0-100%), respectively. Commonly perceived barriers included lack of resources, data tracking ability or even disagreement with certain KQIs. Many centres reported progress with unfulfilled KQIs, of which #2 and #3 (RTQAC monitoring and terms of reference) were most commonly cited.

**Conclusions:** Since initial release of CPQR QRT, the majority of Canadian ROPs have used the guideline at least once to perform a quality self-audit. There are, however, gaps in guideline use and variations among centres in terms of KQI compliance. Future studies of potential facilitators to KQI uptake are warranted, as knowledge of perceived barriers may inform future strategies for optimizing QI initiatives across Canadian ROP.

**177 CANADIAN CANCER CENTRES ARE STRUGGLING TO INVEST IN DEVELOPMENT OF FUTURE LEADERS: RESULTS OF A PAN CANADIAN SURVEY**

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**Purpose:** To evaluate leadership models in Canadian cancer centres, and assess leadership development programs within these centres.

**Methods and Materials:** This mixed methods health services study was performed between August and October 2015 by the leadership of a Canadian cancer centre. It used literature review, a pan-Canadian survey and structured interviews with fifty administrative leads of free standing cancer centres registered with the Canadian Association of Provincial Cancer Agencies (40 invited to complete a written survey; 10 phone interviews). The survey consisted of 26 questions organized into categories such as: rating of current leadership; important elements of leadership; traits that identify emerging leaders; the use of competency frameworks to evaluate leaders and the availability of programs to improve skills in leaders.

**Results:** Twenty three of the potential 50 participants (46%) provided responses including representation from all provinces. Synthesis of responses provided the following insights: 1) there is strong consensus about the effectiveness of current leaders and which elements of leadership are considered important; 2) good agreement was reached on the traits that identify emerging leaders; 3) it was clear that competency frameworks are not employed consistently. Fewer than 70% of respondents used the LEADS tool to evaluate their leaders; and 4) none of the respondents used formal succession planning tools. 75% of respondents did not systematically offer skill development programs to their leaders.

**Conclusions:** Although current leaders are perceived as doing well at leading, there seemed to be several gaps needing attention. Firstly, there does not appear to be a consistent expectation of leaders needing to be regularly evaluated. Secondly, it is concerning that administrative and medical leaders within a significant number of Canadian cancer centres do not see the importance of providing opportunities to leaders that would maximize their skills to lead teams or drive innovative change. For cancer programs to thrive there needs to be greater attention to develop emerging leaders.

**178 EVALUATING THE OPTIMAL LOCATION OF RADIUM 223 TREATMENT FACILITIES BASED ON PATIENT TRAVEL TIME**

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**Purpose:** To evaluate leadership models in Canadian cancer centres, and assess leadership development programs within these centres.
Purpose: Develop an evidence-based decision-support framework for optimizing the location of Radium 223 (Ra) treatment facilities based on different metrics of geographic access.

Methods and Materials: Residence at death and death date for all patients who died of prostate cancer in British Columbia between 2009 and 2014 were obtained from a prospectively maintained population-based registry. Patients who died of prostate cancer were considered potentially eligible for Ra treatment prior to death, assuming that they would go through a phase of symptoms from bone metastases. Forty-percent of patients in the province are known to receive palliative radiotherapy to bone prior to death from prostate cancer. Two metrics of geographic access were defined: average travel time to a treatment facility (ATT) and percentage of patients residing within 90 minutes travel to a treatment facility (C90). At the time of analysis, three nuclear medicine facilities were providing Ra (Vancouver, Victoria and Kelowna). All 22 other licensed nuclear medical facilities in the province were considered as feasible new locations for Ra treatment. Travel time from each patient’s residence to every facility was calculated using Microsoft MapPoint. An integer programming model was developed to optimize facility locations that minimize ATT and C90. C90 was considered primary metric as ATT tends to overweight a small number of cases with very long travel times.

Results: 3194 patients met eligibility criteria. Several scenarios seeking to improve geographic access by choosing different locations for Ra treatment were run. The first group of scenarios considered the existing locations and tested the addition of new locations from the nuclear medical facilities. Prior to death, 67% of patients lived within 90 minutes of one of the three centres currently providing Ra. C90 increased to 75%, 79%, and 82% when one, two and three additional facilities were added. ATT decreased from 156 minutes to 89, 79 and 70 minutes respectively. The additional facilities (mid-Vancouver Island, Kamloops and eastern Fraser Valley successively) were in areas with medium-high population density and long distances to the existing Ra facilities. To reach a C90 of 90%, a total of seven additional facilities would have to be opened. A second group of scenarios assumed a “greenfield” setting with no pre-existing facilities. Resulting facility locations differed from the existing locations and improved C90 to 70%, 78%, 82% and 85% with three, four, five and six Ra treatment facilities.

Conclusions: Geographic access is one of the important factors to consider when deciding the location of treatment facilities. By measuring geographic access and determining optimal location of new facilities, the proposed framework provides a data-driven approach to quantitatively evaluate the configuration of a treatment delivery system. This framework can be expanded to include other clinical, operational, and political considerations.

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IT’S CRUNCH TIME: FINDING EFFICIENCIES WITH A NEW, APRT-MEDIATED MODEL OF CARE

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Purpose: With increasing incidence and prevalence of cancer in Canada and beyond, the use of radiation therapy (RT) for both curative and palliative intents will continue to increase. Combined with the unprecedented pace of technological innovation and increasing complexity of care, the RT system must find new models of care to rethink the distribution of work and the skill sets required to do this work. In Ontario, the Clinical Specialist Radiation Therapy (CSRT) Project was created to ascertain if advanced practice radiation therapists (APRT) could add effectiveness and efficiency to the already burdened system in a value-added way. Since 2004, the project team has developed, implemented and evaluated the APRT role in a variety of clinical settings.

Methods and Materials: After a period of time allotted to allow the pilot APRTs to acquire and prove competence in activities specific to their particular positions, mixed methods were used to test the impact of redistributing workflow between APRTs and radiation oncologists (RO) under the headings of: 1) Quantity - ability to increase capacity at point of entry to the system (direct) and within the care pathway (indirect); 2) Quality - improvement in provision of patient care or addition of new services to improve the patient experience and/or satisfaction; and 3) Innovation and Knowledge Translation - the volume of research and innovation activities that include or are being led by APRTs.

Results: In the 2014-2015 year, there were 24 CSRT “active” positions in place, with 21 of them being considered permanent full-time (CCO, 2015). Under the heading of Quantity, many positive direct and indirect impacts have been reported with the addition of CSRTs including: an increase in the number of new patients seen in consult (direct) and the number of RO hours saved (indirect). The reported number of additional patients seen was as high as 28 new patients per month (33% increase; average: 20%) and the reported number of RO hours saved were as high as 50 hours per month (average: 12.5 hours) which, at its maximum, represents a significant amount of ROs’ time allocated to clinical work and patient care (CCO, 2015).

Conclusions: The CSRT-driven model of care can provide significant added value to the existing RT system by adding capacity for an increased number of patients to enter the system and for ROs to focus on more complex activities in their scope. It is suggested that this model should be considered a viable option for managing the pressures of the changing landscape in RT in Canada.

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Abstract withdrawn